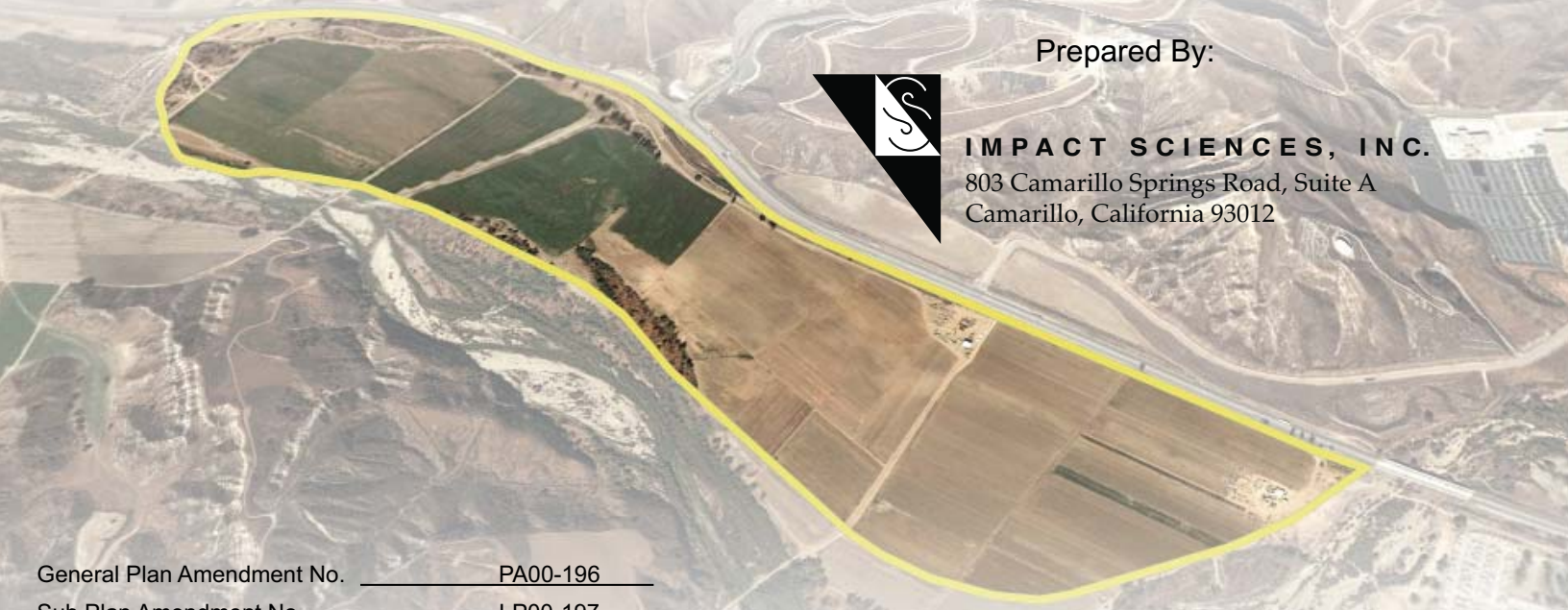
County of Los Angeles

Draft Environmental Impact Report
SCH No. 2004021002

Volume V — Appendices
Appendix 4.7 (Continued)–Appendix 4.10

LANDMARK VILLAGE



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General Plan Amendment No.	PA00-196
Sub Plan Amendment No.	LP00-197
Specific Plan Amendment No.	SP00-198
Vesting Tentative Tract Map No.	53108
SEA Conditional Use Permit No.	RCUP200500112
Oak Tree Permit No.	OTP00-196
Off-Site Materials Transport Approval No.	CUP00-196
Conditional Use Permit (Off-Site Grading)	CUP00-196

NEWHALL RANCH
Newhall Ranch Company

NOVEMBER 2006

DRAFT
ENVIRONMENTAL IMPACT REPORT

for
LANDMARK VILLAGE

SCH No. 2004021002

Volume V - Appendices
Appendix 4.7 (Continued)–Appendix 4.10

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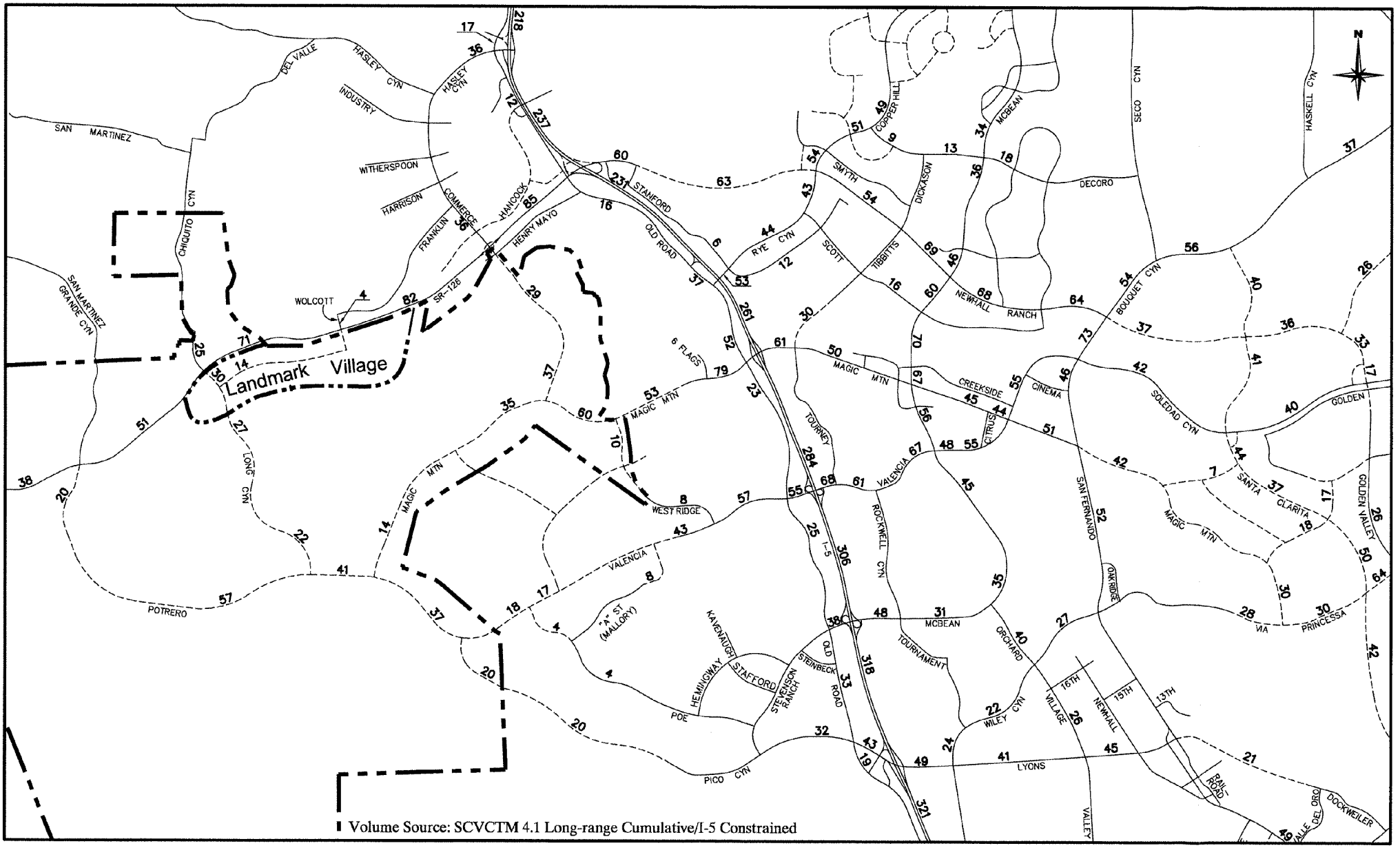

Legend

XX ADT Volumes (000s)

Future Roadway

Newhall Ranch Boundary

Figure 1

ADT VOLUMES
SCVCTM 4.1 - LONG-RANGE CUMULATIVE
(CONSTRAINED)

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
1	2.	Single Family (1-5du/ac)	DU	145.00	1,436	367.00	3,633	222.00	2,197
	3.	Single Family (6-10du/ac)	DU	200.00	1,980	200.00	1,980	0.00	0
		SUB-TOTAL			3,416		5,613		2,197
2	2.	Single Family (1-5du/ac)	DU	336.00	3,326	535.00	5,297	199.00	1,971
		SUB-TOTAL			3,326		5,297		1,971
3	2.	Single Family (1-5du/ac)	DU	641.00	6,346	3,703.00	36,660	3,062.00	30,314
	4.	Condominium/Townhouse	DU	--	--	648.00	5,184	648.00	5,184
	11.	Commercial Center(10-30a)	TSF	150.00	8,109	320.00	17,299	170.00	9,190
	20.	Elementary/Middle School	STU	610.00	885	3,400.00	4,930	2,790.00	4,045
	21.	High School	STU	--	--	2,800.00	5,012	2,800.00	5,012
	30.	Industrial Park	TSF	--	--	256.79	1,541	256.79	1,541
	32.	Manufacturing/Warehouse	TSF	77.49	395	77.49	395	0.00	0
		SUB-TOTAL			15,735		71,021		55,286
4	30.	Industrial Park	TSF	--	--	389.00	2,334	389.00	2,334
		SUB-TOTAL			--		2,334		2,334
5	2.	Single Family (1-5du/ac)	DU	1.00	10	651.00	6,445	650.00	6,435
	4.	Condominium/Townhouse	DU	--	--	100.00	800	100.00	800
	12.	Commercial Center (<10ac)	TSF	--	--	25.00	2,127	25.00	2,127
	13.	Commercial Shops	TSF	2.01	74	2.01	74	0.00	0
	25.	Church	TSF	25.00	233	25.00	233	0.00	0
		SUB-TOTAL			317		9,679		9,362
6	2.	Single Family (1-5du/ac)	DU	10.00	99	330.00	3,267	320.00	3,168
	4.	Condominium/Townhouse	DU	--	--	141.00	1,128	141.00	1,128
		SUB-TOTAL			99		4,395		4,296
7	2.	Single Family (1-5du/ac)	DU	1.00	10	321.00	3,178	320.00	3,168
	3.	Single Family (6-10du/ac)	DU	--	--	480.00	4,752	480.00	4,752
	4.	Condominium/Townhouse	DU	--	--	134.00	1,072	134.00	1,072
	20.	Elementary/Middle School	STU	--	--	1,848.00	2,680	1,848.00	2,680
		SUB-TOTAL			10		11,682		11,672
8	2.	Single Family (1-5du/ac)	DU	10.00	99	70.00	693	60.00	594
		SUB-TOTAL			99		693		594
9	2.	Single Family (1-5du/ac)	DU	1.00	10	166.00	1,643	165.00	1,633
		SUB-TOTAL			10		1,643		1,633
10	2.	Single Family (1-5du/ac)	DU	12.00	119	12.00	119	0.00	0
	4.	Condominium/Townhouse	DU	184.00	1,472	184.00	1,472	0.00	0
	12.	Commercial Center (<10ac)	TSF	20.86	1,774	20.86	1,774	0.00	0
	15.	Sit-Down Restaurant	TSF	12.78	1,666	12.78	1,666	0.00	0
		SUB-TOTAL			5,031		5,031		0
11	2.	Single Family (1-5du/ac)	DU	23.00	228	24.00	238	1.00	10

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
11	3.	Single Family (6-10du/ac)	DU	--	--	84.00	832	84.00	832
	4.	Condominium/Townhouse	DU	138.00	1,104	165.00	1,320	27.00	216
	5.	Apartment	DU	--	--	72.00	497	72.00	497
	12.	Commercial Center (<10ac)	TSF	19.46	1,655	52.76	4,488	33.30	2,833
	13.	Commercial Shops	TSF	2.46	91	2.46	91	0.00	0
	15.	Sit-Down Restaurant	TSF	7.75	1,010	7.75	1,010	0.00	0
	30.	Industrial Park	TSF	--	--	41.82	251	41.82	251
	40.	Commercial Office	TSF	1.23	14	1.23	14	0.00	0
	51.	Developed Park	AC	--	--	2.00	5	2.00	5
		SUB-TOTAL			4,102		8,746		4,644
12	2.	Single Family (1-5du/ac)	DU	213.00	2,109	213.00	2,109	0.00	0
	3.	Single Family (6-10du/ac)	DU	--	--	39.00	386	39.00	386
	14.	Hotel	ROOM	--	--	121.00	996	121.00	996
		SUB-TOTAL			2,109		3,491		1,382
13	2.	Single Family (1-5du/ac)	DU	464.00	4,594	641.00	6,346	177.00	1,752
	4.	Condominium/Townhouse	DU	54.00	432	54.00	432	0.00	0
	11.	Commercial Center(10-30a)	TSF	--	--	114.56	6,193	114.56	6,193
	30.	Industrial Park	TSF	--	--	32.93	198	32.93	198
	40.	Commercial Office	TSF	--	--	21.82	252	21.82	252
		SUB-TOTAL			5,026		13,421		8,395
14	2.	Single Family (1-5du/ac)	DU	19.00	188	291.00	2,881	272.00	2,693
	50.	Golf Course	AC	--	--	150.00	1,194	150.00	1,194
		SUB-TOTAL			188		4,075		3,887
15	2.	Single Family (1-5du/ac)	DU	78.00	772	294.00	2,911	216.00	2,139
		SUB-TOTAL			772		2,911		2,139
16	2.	Single Family (1-5du/ac)	DU	--	--	14.00	139	14.00	139
		SUB-TOTAL			--		139		139
17	2.	Single Family (1-5du/ac)	DU	146.00	1,445	248.00	2,455	102.00	1,010
		SUB-TOTAL			1,445		2,455		1,010
18	2.	Single Family (1-5du/ac)	DU	75.00	743	361.00	3,574	286.00	2,831
	4.	Condominium/Townhouse	DU	--	--	109.00	872	109.00	872
	6.	Mobile Home	DU	113.00	780	113.00	780	0.00	0
	12.	Commercial Center (<10ac)	TSF	--	--	50.00	4,253	50.00	4,253
	51.	Developed Park	AC	--	--	7.00	18	7.00	18
		SUB-TOTAL			1,523		9,497		7,974
19	2.	Single Family (1-5du/ac)	DU	1,306.00	12,929	1,577.00	15,612	271.00	2,683
	20.	Elementary/Middle School	STU	2,205.00	3,198	2,205.00	3,198	0.00	0
	50.	Golf Course	AC	--	--	150.00	1,194	150.00	1,194
		SUB-TOTAL			16,127		20,004		3,877
20	2.	Single Family (1-5du/ac)	DU	245.00	2,426	245.00	2,426	0.00	0
	4.	Condominium/Townhouse	DU	136.00	1,088	136.00	1,088	0.00	0

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
20	30.	Industrial Park	TSF	50.00	300	174.00	1,044	124.00	744
		SUB-TOTAL			3,814		4,558		744
21	2.	Single Family (1-5du/ac)	DU	620.00	6,138	620.00	6,138	0.00	0
	3.	Single Family (6-10du/ac)	DU	--	--	35.00	347	35.00	347
	12.	Commercial Center (<10ac)	TSF	--	--	70.00	5,954	70.00	5,954
		SUB-TOTAL			6,138		12,439		6,301
22	2.	Single Family (1-5du/ac)	DU	350.00	3,465	350.00	3,465	0.00	0
		SUB-TOTAL			3,465		3,465		0
23	2.	Single Family (1-5du/ac)	DU	--	--	373.00	3,693	373.00	3,693
		SUB-TOTAL			--		3,693		3,693
24	2.	Single Family (1-5du/ac)	DU	--	--	422.00	4,178	422.00	4,178
		SUB-TOTAL			--		4,178		4,178
25	20.	Elementary/Middle School	STU	--	--	500.00	725	500.00	725
		SUB-TOTAL			--		725		725
26	13.	Commercial Shops	TSF	--	--	72.90	2,702	72.90	2,702
		SUB-TOTAL			--		2,702		2,702
27	5.	Apartment	DU	--	--	256.00	1,766	256.00	1,766
		SUB-TOTAL			--		1,766		1,766
28	3.	Single Family (6-10du/ac)	DU	91.00	901	400.00	3,960	309.00	3,059
	4.	Condominium/Townhouse	DU	--	--	457.00	3,656	457.00	3,656
		SUB-TOTAL			901		7,616		6,715
29	5.	Apartment	DU	--	--	115.00	794	115.00	794
		SUB-TOTAL			--		794		794
30	4.	Condominium/Townhouse	DU	--	--	275.00	2,200	275.00	2,200
		SUB-TOTAL			--		2,200		2,200
31	3.	Single Family (6-10du/ac)	DU	--	--	65.00	644	65.00	644
	4.	Condominium/Townhouse	DU	--	--	200.00	1,600	200.00	1,600
	20.	Elementary/Middle School	STU	800.00	1,160	1,500.00	2,175	700.00	1,015
		SUB-TOTAL			1,160		4,419		3,259
32	4.	Condominium/Townhouse	DU	--	--	94.00	752	94.00	752
		SUB-TOTAL			--		752		752
33	12.	Commercial Center (<10ac)	TSF	--	--	61.00	5,189	61.00	5,189
		SUB-TOTAL			--		5,189		5,189
34	12.	Commercial Center (<10ac)	TSF	--	--	107.10	9,110	107.10	9,110
		SUB-TOTAL			--		9,110		9,110

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
35	3.	Single Family (6-10du/ac)	DU	--	--	616.00	6,098	616.00	6,098
	4.	Condominium/Townhouse	DU	--	--	60.00	480	60.00	480
	5.	Apartment	DU	--	--	200.00	1,380	200.00	1,380
		SUB-TOTAL			--		7,958		7,958
36	2.	Single Family (1-5du/ac)	DU	190.00	1,881	190.00	1,881	0.00	0
	3.	Single Family (6-10du/ac)	DU	293.00	2,901	293.00	2,901	0.00	0
	4.	Condominium/Townhouse	DU	268.00	2,144	268.00	2,144	0.00	0
		SUB-TOTAL			6,926		6,926		0
37	2.	Single Family (1-5du/ac)	DU	212.00	2,099	212.00	2,099	0.00	0
	4.	Condominium/Townhouse	DU	128.00	1,024	128.00	1,024	0.00	0
	25.	Church	TSF	20.00	186	20.00	186	0.00	0
		SUB-TOTAL			3,309		3,309		0
38	4.	Condominium/Townhouse	DU	--	--	105.00	840	105.00	840
	5.	Apartment	DU	--	--	226.00	1,559	226.00	1,559
	12.	Commercial Center (<10ac)	TSF	--	--	50.00	4,253	50.00	4,253
		SUB-TOTAL			--		6,652		6,652
39	11.	Commercial Center(10-30a)	TSF	--	--	134.00	7,244	134.00	7,244
	30.	Industrial Park	TSF	35.40	212	4,016.00	24,096	3,980.60	23,884
		SUB-TOTAL			212		31,340		31,128
40	2.	Single Family (1-5du/ac)	DU	--	--	45.00	445	45.00	445
	31.	Business Park	TSF	--	--	116.70	1,190	116.70	1,190
	34.	Utilities	TSF	10.00	24	10.00	24	0.00	0
		SUB-TOTAL			24		1,659		1,635
41	30.	Industrial Park	TSF	91.90	551	730.00	4,380	638.10	3,829
		SUB-TOTAL			551		4,380		3,829
42	30.	Industrial Park	TSF	--	--	275.00	1,650	275.00	1,650
		SUB-TOTAL			--		1,650		1,650
43	30.	Industrial Park	TSF	--	--	273.90	1,643	273.90	1,643
		SUB-TOTAL			--		1,643		1,643
44	2.	Single Family (1-5du/ac)	DU	445.00	4,406	445.00	4,406	0.00	0
	12.	Commercial Center (<10ac)	TSF	--	--	25.00	2,127	25.00	2,127
	13.	Commercial Shops	TSF	10.00	371	10.00	371	0.00	0
	20.	Elementary/Middle School	STU	500.00	725	500.00	725	0.00	0
	26.	Day Care	STU	--	--	80.00	362	80.00	362
		SUB-TOTAL			5,502		7,991		2,489
45	30.	Industrial Park	TSF	--	--	1,960.20	11,761	1,960.20	11,761
		SUB-TOTAL			--		11,761		11,761
46	13.	Commercial Shops	TSF	77.00	2,854	77.00	2,854	0.00	0
	30.	Industrial Park	TSF	161.65	970	445.80	2,675	284.15	1,705
		SUB-TOTAL			3,824		5,529		1,705

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
47	30.	Industrial Park	TSF	2,403.65	14,422	4,254.10	25,525	1,850.45	11,103
		SUB-TOTAL			14,422		25,525		11,103
48	30.	Industrial Park	TSF	--	--	720.00	4,320	720.00	4,320
		SUB-TOTAL			--		4,320		4,320
49	30.	Industrial Park	TSF	600.20	3,601	764.30	4,586	164.10	985
		SUB-TOTAL			3,601		4,586		985
50	2.	Single Family (1-5du/ac)	DU	100.00	990	133.00	1,317	33.00	327
	58.	Landfill	SG	10.00	1,000	20.00	2,000	10.00	1,000
		SUB-TOTAL			1,990		3,317		1,327
51	30.	Industrial Park	TSF	--	--	1,300.00	7,800	1,300.00	7,800
		SUB-TOTAL			--		7,800		7,800
52	2.	Single Family (1-5du/ac)	DU	10.00	99	211.00	2,089	201.00	1,990
		SUB-TOTAL			99		2,089		1,990
53	1.	Single Family (<1du/ac)	DU	--	--	250.00	2,475	250.00	2,475
		SUB-TOTAL			--		2,475		2,475
54	2.	Single Family (1-5du/ac)	DU	--	--	210.00	2,079	210.00	2,079
	3.	Single Family (6-10du/ac)	DU	--	--	370.00	3,663	370.00	3,663
		SUB-TOTAL			--		5,742		5,742
55	2.	Single Family (1-5du/ac)	DU	--	--	100.00	990	100.00	990
	3.	Single Family (6-10du/ac)	DU	--	--	330.00	3,267	330.00	3,267
	4.	Condominium/Townhouse	DU	--	--	470.00	3,760	470.00	3,760
	12.	Commercial Center (<10ac)	TSF	--	--	25.00	2,127	25.00	2,127
	51.	Developed Park	AC	--	--	15.00	39	15.00	39
		SUB-TOTAL			--		10,183		10,183
56	2.	Single Family (1-5du/ac)	DU	--	--	60.00	594	60.00	594
		SUB-TOTAL			--		594		594
57	12.	Commercial Center (<10ac)	TSF	--	--	25.00	2,127	25.00	2,127
	31.	Business Park	TSF	--	--	1,100.00	11,220	1,100.00	11,220
	40.	Commercial Office	TSF	--	--	180.00	2,081	180.00	2,081
		SUB-TOTAL			--		15,428		15,428
58	30.	Industrial Park	TSF	850.20	5,101	1,051.50	6,309	201.30	1,208
		SUB-TOTAL			5,101		6,309		1,208
59	35.	Regional Post Office	TSF	764.00	3,820	764.00	3,820	0.00	0
		SUB-TOTAL			3,820		3,820		0
60	30.	Industrial Park	TSF	--	--	411.60	2,470	411.60	2,470
		SUB-TOTAL			--		2,470		2,470

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
61	30.	Industrial Park	TSF	--	--	744.90	4,469	744.90	4,469
		SUB-TOTAL			--		4,469		4,469
62	30.	Industrial Park	TSF	--	--	627.30	3,764	627.30	3,764
		SUB-TOTAL			--		3,764		3,764
63	30.	Industrial Park	TSF	250.02	1,500	575.00	3,450	324.98	1,950
		SUB-TOTAL			1,500		3,450		1,950
64	30.	Industrial Park	TSF	2,742.00	16,452	3,161.48	18,969	419.48	2,517
		SUB-TOTAL			16,452		18,969		2,517
65	10.	Commercial Center (>30ac)	TSF	--	--	150.00	6,009	150.00	6,009
	30.	Industrial Park	TSF	329.00	1,974	329.00	1,974	0.00	0
		SUB-TOTAL			1,974		7,983		6,009
66	10.	Commercial Center (>30ac)	TSF	102.60	4,110	170.45	6,828	67.85	2,718
	30.	Industrial Park	TSF	329.00	1,974	329.00	1,974	0.00	0
		SUB-TOTAL			6,084		8,802		2,718
67	3.	Single Family (6-10du/ac)	DU	--	--	163.00	1,614	163.00	1,614
	4.	Condominium/Townhouse	DU	--	--	90.00	720	90.00	720
		SUB-TOTAL			--		2,334		2,334
68	5.	Apartment	DU	156.00	1,076	208.00	1,435	52.00	359
		SUB-TOTAL			1,076		1,435		359
69	3.	Single Family (6-10du/ac)	DU	--	--	76.00	752	76.00	752
		SUB-TOTAL			--		752		752
70	11.	Commercial Center(10-30a)	TSF	67.00	3,622	147.00	7,947	80.00	4,325
	18.	Health Club	TSF	71.00	2,840	71.00	2,840	0.00	0
	26.	Day Care	STU	150.00	678	150.00	678	0.00	0
	30.	Industrial Park	TSF	397.00	2,382	529.00	3,174	132.00	792
	32.	Manufacturing/Warehouse	TSF	75.00	383	75.00	383	0.00	0
		SUB-TOTAL			9,905		15,022		5,117
71	21.	High School	STU	3,500.00	6,265	2,500.00	4,475	-1,000.00	-1,790
		SUB-TOTAL			6,265		4,475		-1,790
72	13.	Commercial Shops	TSF	--	--	60.00	2,224	60.00	2,224
	20.	Elementary/Middle School	STU	350.00	508	350.00	508	0.00	0
		SUB-TOTAL			508		2,732		2,224
74	3.	Single Family (6-10du/ac)	DU	--	--	153.00	1,515	153.00	1,515
	4.	Condominium/Townhouse	DU	--	--	147.00	1,176	147.00	1,176
		SUB-TOTAL			--		2,691		2,691
75	4.	Condominium/Townhouse	DU	--	--	149.00	1,192	149.00	1,192
	52.	Undeveloped Park	AC	--	--	17.50	9	17.50	9
		SUB-TOTAL			--		1,201		1,201

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
76	5.	Apartment	DU	--	--	188.00	1,297	188.00	1,297
	12.	Commercial Center (<10ac)	TSF	--	--	11.00	936	11.00	936
		SUB-TOTAL			--		2,233		2,233
78	30.	Industrial Park	TSF	1,615.00	9,690	1,776.00	10,656	161.00	966
		SUB-TOTAL			9,690		10,656		966
79	30.	Industrial Park	TSF	685.00	4,110	685.00	4,110	0.00	0
		SUB-TOTAL			4,110		4,110		0
80	30.	Industrial Park	TSF	828.00	4,968	880.00	5,280	52.00	312
		SUB-TOTAL			4,968		5,280		312
81	30.	Industrial Park	TSF	711.00	4,266	711.00	4,266	0.00	0
		SUB-TOTAL			4,266		4,266		0
82	30.	Industrial Park	TSF	714.00	4,284	1,007.55	6,045	293.55	1,761
		SUB-TOTAL			4,284		6,045		1,761
83	30.	Industrial Park	TSF	876.00	5,256	876.00	5,256	0.00	0
		SUB-TOTAL			5,256		5,256		0
84	30.	Industrial Park	TSF	333.00	1,998	333.00	1,998	0.00	0
		SUB-TOTAL			1,998		1,998		0
86	2.	Single Family (1-5du/ac)	DU	11.00	109	346.00	3,425	335.00	3,316
	10.	Commercial Center (>30ac)	TSF	--	--	20.50	821	20.50	821
	12.	Commercial Center (<10ac)	TSF	15.00	1,276	15.00	1,276	0.00	0
	14.	Hotel	ROOM	36.00	296	36.00	296	0.00	0
	15.	Sit-Down Restaurant	TSF	47.26	6,160	47.26	6,160	0.00	0
		SUB-TOTAL			7,841		11,978		4,137
87	30.	Industrial Park	TSF	--	--	1,274.13	7,645	1,274.13	7,645
		SUB-TOTAL			--		7,645		7,645
89	53.	Wayside Honor Ranch	SG	20.00	2,000	30.00	3,000	10.00	1,000
		SUB-TOTAL			2,000		3,000		1,000
90	5.	Apartment	DU	--	--	408.00	2,815	408.00	2,815
	11.	Commercial Center(10-30a)	TSF	--	--	135.00	7,298	135.00	7,298
	30.	Industrial Park	TSF	63.88	383	1,328.65	7,972	1,264.77	7,589
	40.	Commercial Office	TSF	--	--	388.25	4,488	388.25	4,488
		SUB-TOTAL			383		22,573		22,190
91	11.	Commercial Center(10-30a)	TSF	43.38	2,345	247.38	13,373	204.00	11,028
		SUB-TOTAL			2,345		13,373		11,028
92	4.	Condominium/Townhouse	DU	--	--	1,000.00	8,000	1,000.00	8,000
	10.	Commercial Center (>30ac)	TSF	--	--	800.00	32,048	800.00	32,048
	14.	Hotel	ROOM	--	--	300.00	2,469	300.00	2,469

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
92	40.	Commercial Office	TSF	--	--	400.00	4,624	400.00	4,624
		SUB-TOTAL			--		47,141		47,141
93	13.	Commercial Shops	TSF	11.00	408	20.00	741	9.00	333
	14.	Hotel	ROOM	169.00	1,391	169.00	1,391	0.00	0
		SUB-TOTAL			1,799		2,132		333
94	54.	Six Flags Magic Mtn	SG	160.00	16,000	240.00	24,000	80.00	8,000
		SUB-TOTAL			16,000		24,000		8,000
95	11.	Commercial Center(10-30a)	TSF	--	--	115.21	6,228	115.21	6,228
		SUB-TOTAL			--		6,228		6,228
96	1.	Single Family (<1du/ac)	DU	--	--	73.00	723	73.00	723
	2.	Single Family (1-5du/ac)	DU	--	--	73.00	723	73.00	723
	4.	Condominium/Townhouse	DU	--	--	1,574.00	12,592	1,574.00	12,592
	5.	Apartment	DU	--	--	370.00	2,553	370.00	2,553
	11.	Commercial Center(10-30a)	TSF	--	--	133.65	7,225	133.65	7,225
	13.	Commercial Shops	TSF	--	--	41.00	1,519	41.00	1,519
	20.	Elementary/Middle School	STU	--	--	900.00	1,305	900.00	1,305
	40.	Commercial Office	TSF	--	--	75.00	867	75.00	867
		SUB-TOTAL			--		27,507		27,507
97	55.	Travel Village	SG	26.20	2,620	26.20	2,620	0.00	0
		SUB-TOTAL			2,620		2,620		0
98	12.	Commercial Center (<10ac)	TSF	--	--	6.20	527	6.20	527
	31.	Business Park	TSF	--	--	691.50	7,053	691.50	7,053
		SUB-TOTAL			--		7,580		7,580
99	4.	Condominium/Townhouse	DU	--	--	193.00	1,544	193.00	1,544
	5.	Apartment	DU	--	--	292.00	2,015	292.00	2,015
	51.	Developed Park	AC	--	--	25.00	65	25.00	65
		SUB-TOTAL			--		3,624		3,624
100	12.	Commercial Center (<10ac)	TSF	--	--	18.00	1,531	18.00	1,531
	40.	Commercial Office	TSF	--	--	225.00	2,601	225.00	2,601
		SUB-TOTAL			--		4,132		4,132
101	10.	Commercial Center (>30ac)	TSF	--	--	388.30	15,555	388.30	15,555
		SUB-TOTAL			--		15,555		15,555
102	3.	Single Family (6-10du/ac)	DU	--	--	168.00	1,663	168.00	1,663
	4.	Condominium/Townhouse	DU	--	--	434.00	3,472	434.00	3,472
	5.	Apartment	DU	--	--	159.00	1,097	159.00	1,097
	12.	Commercial Center (<10ac)	TSF	--	--	49.00	4,168	49.00	4,168
	13.	Commercial Shops	TSF	--	--	9.50	352	9.50	352
	20.	Elementary/Middle School	STU	--	--	750.00	1,088	750.00	1,088
	40.	Commercial Office	TSF	--	--	9.50	110	9.50	110
	51.	Developed Park	AC	--	--	20.90	54	20.90	54
		SUB-TOTAL			--		12,004		12,004

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
103	3.	Single Family (6-10du/ac)	DU	--	--	140.00	1,386	140.00	1,386
	4.	Condominium/Townhouse	DU	--	--	251.00	2,008	251.00	2,008
	5.	Apartment	DU	--	--	148.00	1,021	148.00	1,021
		SUB-TOTAL			--		4,415		4,415
104	11.	Commercial Center(10-30a)	TSF	--	--	252.00	13,623	252.00	13,623
	40.	Commercial Office	TSF	--	--	370.00	4,277	370.00	4,277
		SUB-TOTAL			--		17,900		17,900
105	5.	Apartment	DU	--	--	144.00	994	144.00	994
	12.	Commercial Center (<10ac)	TSF	--	--	27.10	2,305	27.10	2,305
	40.	Commercial Office	TSF	--	--	315.90	3,652	315.90	3,652
		SUB-TOTAL			--		6,951		6,951
106	12.	Commercial Center (<10ac)	TSF	--	--	90.00	7,655	90.00	7,655
		SUB-TOTAL			--		7,655		7,655
107	2.	Single Family (1-5du/ac)	DU	--	--	240.00	2,376	240.00	2,376
	3.	Single Family (6-10du/ac)	DU	--	--	993.00	9,831	993.00	9,831
	20.	Elementary/Middle School	STU	--	--	1,200.00	1,740	1,200.00	1,740
	21.	High School	STU	--	--	2,230.00	3,992	2,230.00	3,992
		SUB-TOTAL			--		17,939		17,939
108	3.	Single Family (6-10du/ac)	DU	--	--	840.00	8,316	840.00	8,316
	4.	Condominium/Townhouse	DU	--	--	710.00	5,680	710.00	5,680
	12.	Commercial Center (<10ac)	TSF	--	--	50.00	4,253	50.00	4,253
	20.	Elementary/Middle School	STU	--	--	800.00	1,160	800.00	1,160
	51.	Developed Park	AC	--	--	5.00	13	5.00	13
		SUB-TOTAL			--		19,422		19,422
109	3.	Single Family (6-10du/ac)	DU	--	--	60.00	594	60.00	594
		SUB-TOTAL			--		594		594
110	2.	Single Family (1-5du/ac)	DU	--	--	40.00	396	40.00	396
	3.	Single Family (6-10du/ac)	DU	--	--	610.00	6,039	610.00	6,039
	20.	Elementary/Middle School	STU	--	--	800.00	1,160	800.00	1,160
	51.	Developed Park	AC	--	--	15.30	40	15.30	40
		SUB-TOTAL			--		7,635		7,635
111	12.	Commercial Center (<10ac)	TSF	--	--	70.00	5,954	70.00	5,954
	31.	Business Park	TSF	--	--	630.00	6,426	630.00	6,426
		SUB-TOTAL			--		12,380		12,380
113	2.	Single Family (1-5du/ac)	DU	--	--	70.00	693	70.00	693
	3.	Single Family (6-10du/ac)	DU	--	--	450.00	4,455	450.00	4,455
	51.	Developed Park	AC	--	--	28.00	73	28.00	73
		SUB-TOTAL			--		5,221		5,221
114	2.	Single Family (1-5du/ac)	DU	--	--	40.00	396	40.00	396
	3.	Single Family (6-10du/ac)	DU	--	--	370.00	3,663	370.00	3,663
		SUB-TOTAL			--		4,059		4,059

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
115	2.	Single Family (1-5du/ac)	DU	--	--	240.00	2,376	240.00	2,376
	3.	Single Family (6-10du/ac)	DU	--	--	750.00	7,425	750.00	7,425
	51.	Developed Park	AC	--	--	5.00	13	5.00	13
		SUB-TOTAL			--		9,814		9,814
116	3.	Single Family (6-10du/ac)	DU	--	--	1,167.00	11,553	1,167.00	11,553
	4.	Condominium/Townhouse	DU	--	--	1,780.00	14,240	1,780.00	14,240
	11.	Commercial Center(10-30a)	TSF	--	--	650.00	35,139	650.00	35,139
	40.	Commercial Office	TSF	--	--	312.35	3,611	312.35	3,611
	50.	Golf Course	AC	--	--	180.00	1,433	180.00	1,433
		SUB-TOTAL			--		65,976		65,976
117	3.	Single Family (6-10du/ac)	DU	--	--	220.00	2,178	220.00	2,178
	51.	Developed Park	AC	--	--	20.00	52	20.00	52
		SUB-TOTAL			--		2,230		2,230
118	3.	Single Family (6-10du/ac)	DU	--	--	330.00	3,267	330.00	3,267
		SUB-TOTAL			--		3,267		3,267
119	3.	Single Family (6-10du/ac)	DU	--	--	200.00	1,980	200.00	1,980
	4.	Condominium/Townhouse	DU	--	--	2,640.00	21,120	2,640.00	21,120
	12.	Commercial Center (<10ac)	TSF	--	--	60.00	5,104	60.00	5,104
	51.	Developed Park	AC	--	--	5.00	13	5.00	13
		SUB-TOTAL			--		28,217		28,217
120	3.	Single Family (6-10du/ac)	DU	--	--	217.00	2,148	217.00	2,148
	4.	Condominium/Townhouse	DU	--	--	1,574.00	12,592	1,574.00	12,592
	5.	Apartment	DU	--	--	369.00	2,546	369.00	2,546
	11.	Commercial Center(10-30a)	TSF	--	--	133.65	7,225	133.65	7,225
		SUB-TOTAL			--		24,511		24,511
122	2.	Single Family (1-5du/ac)	DU	--	--	143.00	1,416	143.00	1,416
		SUB-TOTAL			--		1,416		1,416
123	3.	Single Family (6-10du/ac)	DU	--	--	440.00	4,356	440.00	4,356
		SUB-TOTAL			--		4,356		4,356
124	7.	Senior (Active)	DU	--	--	1,000.00	3,710	1,000.00	3,710
		SUB-TOTAL			--		3,710		3,710
125	20.	Elementary/Middle School	STU	--	--	1,200.00	1,740	1,200.00	1,740
	21.	High School	STU	--	--	2,400.00	4,296	2,400.00	4,296
		SUB-TOTAL			--		6,036		6,036
126	4.	Condominium/Townhouse	DU	--	--	200.00	1,600	200.00	1,600
	11.	Commercial Center(10-30a)	TSF	--	--	150.00	8,109	150.00	8,109
	40.	Commercial Office	TSF	--	--	225.00	2,601	225.00	2,601
		SUB-TOTAL			--		12,310		12,310
127	3.	Single Family (6-10du/ac)	DU	--	--	450.00	4,455	450.00	4,455

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
127	20.	Elementary/Middle School	STU	--	--	800.00	1,160	800.00	1,160
		SUB-TOTAL			--		5,615		5,615
128	2.	Single Family (1-5du/ac)	DU	--	--	10.00	99	10.00	99
		SUB-TOTAL			--		99		99
129	3.	Single Family (6-10du/ac)	DU	--	--	330.00	3,267	330.00	3,267
		SUB-TOTAL			--		3,267		3,267
130	2.	Single Family (1-5du/ac)	DU	708.00	7,009	708.00	7,009	0.00	0
		SUB-TOTAL			7,009		7,009		0
131	4.	Condominium/Townhouse	DU	--	--	1,400.00	11,200	1,400.00	11,200
	20.	Elementary/Middle School	STU	--	--	900.00	1,305	900.00	1,305
		SUB-TOTAL			--		12,505		12,505
132	2.	Single Family (1-5du/ac)	DU	436.00	4,316	436.00	4,316	0.00	0
	20.	Elementary/Middle School	STU	900.00	1,305	900.00	1,305	0.00	0
	51.	Developed Park	AC	16.00	42	16.00	42	0.00	0
		SUB-TOTAL			5,663		5,663		0
133	11.	Commercial Center(10-30a)	TSF	27.00	1,460	27.00	1,460	0.00	0
		SUB-TOTAL			1,460		1,460		0
134	2.	Single Family (1-5du/ac)	DU	482.00	4,772	482.00	4,772	0.00	0
		SUB-TOTAL			4,772		4,772		0
135	2.	Single Family (1-5du/ac)	DU	20.00	198	174.00	1,723	154.00	1,525
	4.	Condominium/Townhouse	DU	172.00	1,376	172.00	1,376	0.00	0
	50.	Golf Course	AC	208.00	1,656	208.00	1,656	0.00	0
		SUB-TOTAL			3,230		4,755		1,525
137	40.	Commercial Office	TSF	--	--	72.00	832	72.00	832
		SUB-TOTAL			--		832		832
138	11.	Commercial Center(10-30a)	TSF	100.00	5,406	120.00	6,487	20.00	1,081
		SUB-TOTAL			5,406		6,487		1,081
139	5.	Apartment	DU	96.00	662	474.00	3,271	378.00	2,609
		SUB-TOTAL			662		3,271		2,609
140	3.	Single Family (6-10du/ac)	DU	--	--	572.00	5,663	572.00	5,663
	4.	Condominium/Townhouse	DU	--	--	1,250.00	10,000	1,250.00	10,000
	12.	Commercial Center (<10ac)	TSF	--	--	28.48	2,422	28.48	2,422
		SUB-TOTAL			--		18,085		18,085
141	15.	Sit-Down Restaurant	TSF	20.30	2,646	20.30	2,646	0.00	0
	16.	Fast Food Restaurant	TSF	10.10	5,011	10.10	5,011	0.00	0
		SUB-TOTAL			7,657		7,657		0

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
142	3.	Single Family (6-10du/ac)	DU	--	--	72.00	713	72.00	713
	4.	Condominium/Townhouse	DU	--	--	381.00	3,048	381.00	3,048
		SUB-TOTAL			--		3,761		3,761
143	2.	Single Family (1-5du/ac)	DU	77.00	762	96.00	950	19.00	188
	3.	Single Family (6-10du/ac)	DU	407.00	4,029	482.00	4,772	75.00	743
	4.	Condominium/Townhouse	DU	80.00	640	160.00	1,280	80.00	640
	20.	Elementary/Middle School	STU	--	--	850.00	1,233	850.00	1,233
	51.	Developed Park	AC	--	--	7.00	18	7.00	18
		SUB-TOTAL			5,431		8,253		2,822
144	2.	Single Family (1-5du/ac)	DU	--	--	6.00	59	6.00	59
		SUB-TOTAL			--		59		59
145	10.	Commercial Center (>30ac)	TSF	778.00	31,167	778.00	31,167	0.00	0
	12.	Commercial Center (<10ac)	TSF	36.00	3,062	36.00	3,062	0.00	0
	13.	Commercial Shops	TSF	45.74	1,695	45.74	1,695	0.00	0
	15.	Sit-Down Restaurant	TSF	7.80	1,017	7.80	1,017	0.00	0
	16.	Fast Food Restaurant	TSF	6.68	3,314	6.68	3,314	0.00	0
	32.	Manufacturing/Warehouse	TSF	74.50	380	74.50	380	0.00	0
		SUB-TOTAL			40,635		40,635		0
146	2.	Single Family (1-5du/ac)	DU	314.00	3,109	314.00	3,109	0.00	0
	4.	Condominium/Townhouse	DU	296.00	2,368	296.00	2,368	0.00	0
		SUB-TOTAL			5,477		5,477		0
147	3.	Single Family (6-10du/ac)	DU	46.00	455	140.00	1,386	94.00	931
	4.	Condominium/Townhouse	DU	--	--	100.00	800	100.00	800
	5.	Apartment	DU	--	--	567.00	3,912	567.00	3,912
	20.	Elementary/Middle School	STU	850.00	1,233	850.00	1,233	0.00	0
	51.	Developed Park	AC	--	--	5.00	13	5.00	13
		SUB-TOTAL			1,688		7,344		5,656
148	11.	Commercial Center(10-30a)	TSF	183.88	9,941	183.88	9,941	0.00	0
	15.	Sit-Down Restaurant	TSF	7.70	1,004	7.70	1,004	0.00	0
	16.	Fast Food Restaurant	TSF	5.00	2,481	5.00	2,481	0.00	0
		SUB-TOTAL			13,426		13,426		0
149	2.	Single Family (1-5du/ac)	DU	535.00	5,297	535.00	5,297	0.00	0
	4.	Condominium/Townhouse	DU	500.00	4,000	500.00	4,000	0.00	0
	12.	Commercial Center (<10ac)	TSF	34.85	2,964	34.85	2,964	0.00	0
		SUB-TOTAL			12,261		12,261		0
150	2.	Single Family (1-5du/ac)	DU	114.00	1,129	114.00	1,129	0.00	0
		SUB-TOTAL			1,129		1,129		0
151	2.	Single Family (1-5du/ac)	DU	--	--	75.00	743	75.00	743
		SUB-TOTAL			--		743		743
152	2.	Single Family (1-5du/ac)	DU	279.00	2,762	279.00	2,762	0.00	0

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
152	51.	Developed Park	AC	--	--	18.00	47	18.00	47
		SUB-TOTAL			2,762		2,809		47
153	2.	Single Family (1-5du/ac)	DU	--	--	30.00	297	30.00	297
	51.	Developed Park	AC	--	--	5.00	13	5.00	13
		SUB-TOTAL			--		310		310
158	2.	Single Family (1-5du/ac)	DU	--	--	100.00	990	100.00	990
		SUB-TOTAL			--		990		990
159	2.	Single Family (1-5du/ac)	DU	4.00	40	4.00	40	0.00	0
		SUB-TOTAL			40		40		0
160	3.	Single Family (6-10du/ac)	DU	--	--	416.00	4,118	416.00	4,118
	4.	Condominium/Townhouse	DU	--	--	216.00	1,728	216.00	1,728
	7.	Senior (Active)	DU	--	--	203.00	753	203.00	753
	12.	Commercial Center (<10ac)	TSF	--	--	25.50	2,169	25.50	2,169
	15.	Sit-Down Restaurant	TSF	--	--	7.00	912	7.00	912
	16.	Fast Food Restaurant	TSF	--	--	7.00	3,473	7.00	3,473
	51.	Developed Park	AC	--	--	17.50	46	17.50	46
		SUB-TOTAL			--		13,199		13,199
161	1.	Single Family (<1du/ac)	DU	--	--	60.00	594	60.00	594
	2.	Single Family (1-5du/ac)	DU	533.00	5,277	607.00	6,009	74.00	732
	4.	Condominium/Townhouse	DU	531.00	4,248	650.00	5,200	119.00	952
	11.	Commercial Center(10-30a)	TSF	--	--	48.00	2,595	48.00	2,595
	12.	Commercial Center (<10ac)	TSF	5.26	447	54.22	4,612	48.96	4,165
	13.	Commercial Shops	TSF	12.50	463	12.50	463	0.00	0
	14.	Hotel	ROOM	283.00	2,329	283.00	2,329	0.00	0
	15.	Sit-Down Restaurant	TSF	21.10	2,750	21.10	2,750	0.00	0
	16.	Fast Food Restaurant	TSF	16.00	7,938	16.00	7,938	0.00	0
	40.	Commercial Office	TSF	61.66	713	282.41	3,265	220.75	2,552
	56.	CHP Office	SG	55.74	5,574	55.74	5,574	0.00	0
		SUB-TOTAL			29,739		41,329		11,590
162	2.	Single Family (1-5du/ac)	DU	83.00	822	248.00	2,455	165.00	1,633
	11.	Commercial Center(10-30a)	TSF	--	--	102.42	5,537	102.42	5,537
	30.	Industrial Park	TSF	--	--	240.00	1,440	240.00	1,440
		SUB-TOTAL			822		9,432		8,610
163	30.	Industrial Park	TSF	--	--	2,567.08	15,402	2,567.08	15,402
		SUB-TOTAL			--		15,402		15,402
164	2.	Single Family (1-5du/ac)	DU	100.00	990	204.00	2,020	104.00	1,030
	50.	Golf Course	AC	145.00	1,154	145.00	1,154	0.00	0
		SUB-TOTAL			2,144		3,174		1,030
165	2.	Single Family (1-5du/ac)	DU	36.00	356	36.00	356	0.00	0
	4.	Condominium/Townhouse	DU	80.00	640	80.00	640	0.00	0
	12.	Commercial Center (<10ac)	TSF	30.23	2,571	30.23	2,571	0.00	0

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
165	13.	Commercial Shops	TSF	7.60	282	7.60	282	0.00	0
	15.	Sit-Down Restaurant	TSF	23.95	3,122	23.95	3,122	0.00	0
	23.	Hospital	TSF	24.66	414	24.66	414	0.00	0
	30.	Industrial Park	TSF	12.24	73	1,890.89	11,345	1,878.65	11,272
	32.	Manufacturing/Warehouse	TSF	2.47	13	2.47	13	0.00	0
	40.	Commercial Office	TSF	13.81	160	13.81	160	0.00	0
		SUB-TOTAL			7,631		18,903		11,272
166	2.	Single Family (1-5du/ac)	DU	431.00	4,267	431.00	4,267	0.00	0
	4.	Condominium/Townhouse	DU	217.00	1,736	217.00	1,736	0.00	0
	12.	Commercial Center (<10ac)	TSF	48.64	4,137	48.64	4,137	0.00	0
	13.	Commercial Shops	TSF	1.38	51	1.38	51	0.00	0
	15.	Sit-Down Restaurant	TSF	4.34	566	4.34	566	0.00	0
	23.	Hospital	TSF	38.58	648	38.58	648	0.00	0
	32.	Manufacturing/Warehouse	TSF	11.00	56	11.00	56	0.00	0
	40.	Commercial Office	TSF	30.10	348	30.10	348	0.00	0
		SUB-TOTAL			11,809		11,809		0
167	2.	Single Family (1-5du/ac)	DU	180.00	1,782	327.00	3,237	147.00	1,455
		SUB-TOTAL			1,782		3,237		1,455
168	2.	Single Family (1-5du/ac)	DU	247.00	2,445	247.00	2,445	0.00	0
		SUB-TOTAL			2,445		2,445		0
169	2.	Single Family (1-5du/ac)	DU	127.00	1,257	127.00	1,257	0.00	0
	4.	Condominium/Townhouse	DU	94.00	752	94.00	752	0.00	0
	10.	Commercial Center (>30ac)	TSF	200.00	8,012	200.00	8,012	0.00	0
		SUB-TOTAL			10,021		10,021		0
170	2.	Single Family (1-5du/ac)	DU	163.00	1,614	163.00	1,614	0.00	0
		SUB-TOTAL			1,614		1,614		0
171	2.	Single Family (1-5du/ac)	DU	32.00	317	32.00	317	0.00	0
	20.	Elementary/Middle School	STU	675.00	979	675.00	979	0.00	0
		SUB-TOTAL			1,296		1,296		0
172	2.	Single Family (1-5du/ac)	DU	185.00	1,831	185.00	1,831	0.00	0
		SUB-TOTAL			1,831		1,831		0
173	2.	Single Family (1-5du/ac)	DU	336.00	3,326	386.00	3,821	50.00	495
		SUB-TOTAL			3,326		3,821		495
174	11.	Commercial Center(10-30a)	TSF	35.00	1,892	337.20	18,229	302.20	16,337
		SUB-TOTAL			1,892		18,229		16,337
175	2.	Single Family (1-5du/ac)	DU	162.00	1,604	162.00	1,604	0.00	0
	4.	Condominium/Townhouse	DU	160.00	1,280	160.00	1,280	0.00	0
	11.	Commercial Center(10-30a)	TSF	98.01	5,298	98.01	5,298	0.00	0
	20.	Elementary/Middle School	STU	800.00	1,160	800.00	1,160	0.00	0
	34.	Utilities	TSF	87.12	207	87.12	207	0.00	0
		SUB-TOTAL			9,549		9,549		0

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
176	2.	Single Family (1-5du/ac)	DU	686.00	6,791	762.00	7,544	76.00	753
	4.	Condominium/Townhouse	DU	135.00	1,080	135.00	1,080	0.00	0
	10.	Commercial Center (>30ac)	TSF	196.02	7,853	196.02	7,853	0.00	0
	13.	Commercial Shops	TSF	141.57	5,247	141.57	5,247	0.00	0
		SUB-TOTAL			20,971		21,724		753
177	2.	Single Family (1-5du/ac)	DU	477.00	4,722	477.00	4,722	0.00	0
	3.	Single Family (6-10du/ac)	DU	--	--	65.00	644	65.00	644
	4.	Condominium/Townhouse	DU	264.00	2,112	264.00	2,112	0.00	0
	11.	Commercial Center(10-30a)	TSF	97.57	5,275	97.57	5,275	0.00	0
	20.	Elementary/Middle School	STU	535.00	776	535.00	776	0.00	0
		SUB-TOTAL			12,885		13,529		644
178	2.	Single Family (1-5du/ac)	DU	333.00	3,297	333.00	3,297	0.00	0
	11.	Commercial Center(10-30a)	TSF	21.78	1,177	21.78	1,177	0.00	0
	13.	Commercial Shops	TSF	6.53	242	6.53	242	0.00	0
	40.	Commercial Office	TSF	14.81	171	50.81	587	36.00	416
		SUB-TOTAL			4,887		5,303		416
179	2.	Single Family (1-5du/ac)	DU	167.00	1,653	167.00	1,653	0.00	0
	11.	Commercial Center(10-30a)	TSF	--	--	24.47	1,323	24.47	1,323
	13.	Commercial Shops	TSF	21.78	807	21.78	807	0.00	0
	34.	Utilities	TSF	87.12	207	87.12	207	0.00	0
	42.	Medical Office	TSF	24.83	849	24.83	849	0.00	0
		SUB-TOTAL			3,516		4,839		1,323
180	2.	Single Family (1-5du/ac)	DU	428.00	4,237	428.00	4,237	0.00	0
		SUB-TOTAL			4,237		4,237		0
181	3.	Single Family (6-10du/ac)	DU	282.00	2,792	282.00	2,792	0.00	0
	20.	Elementary/Middle School	STU	775.00	1,124	775.00	1,124	0.00	0
		SUB-TOTAL			3,916		3,916		0
182	3.	Single Family (6-10du/ac)	DU	276.00	2,732	276.00	2,732	0.00	0
	4.	Condominium/Townhouse	DU	229.00	1,832	229.00	1,832	0.00	0
	6.	Mobile Home	DU	238.00	1,642	238.00	1,642	0.00	0
	11.	Commercial Center(10-30a)	TSF	76.23	4,121	76.23	4,121	0.00	0
	20.	Elementary/Middle School	STU	83.00	120	83.00	120	0.00	0
	25.	Church	TSF	17.25	160	17.25	160	0.00	0
		SUB-TOTAL			10,607		10,607		0
183	4.	Condominium/Townhouse	DU	634.00	5,072	634.00	5,072	0.00	0
	12.	Commercial Center (<10ac)	TSF	--	--	3.50	298	3.50	298
	22.	College	STU	3,274.00	5,042	3,274.00	5,042	0.00	0
	50.	Golf Course	AC	100.00	796	100.00	796	0.00	0
		SUB-TOTAL			10,910		11,208		298
184	40.	Commercial Office	TSF	--	--	250.00	2,890	250.00	2,890
		SUB-TOTAL			--		2,890		2,890

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
185	2.	Single Family (1-5du/ac)	DU	133.00	1,317	133.00	1,317	0.00	0
	3.	Single Family (6-10du/ac)	DU	211.00	2,089	211.00	2,089	0.00	0
		SUB-TOTAL			3,406		3,406		0
186	3.	Single Family (6-10du/ac)	DU	150.00	1,485	150.00	1,485	0.00	0
	23.	Hospital	TSF	125.24	2,104	125.24	2,104	0.00	0
	42.	Medical Office	TSF	108.90	3,724	108.90	3,724	0.00	0
		SUB-TOTAL			7,313		7,313		0
187	2.	Single Family (1-5du/ac)	DU	111.00	1,099	111.00	1,099	0.00	0
	4.	Condominium/Townhouse	DU	307.00	2,456	307.00	2,456	0.00	0
	34.	Utilities	TSF	217.80	518	217.80	518	0.00	0
	51.	Developed Park	AC	14.00	36	14.00	36	0.00	0
		SUB-TOTAL			4,109		4,109		0
188	2.	Single Family (1-5du/ac)	DU	72.00	713	72.00	713	0.00	0
	4.	Condominium/Townhouse	DU	216.00	1,728	216.00	1,728	0.00	0
		SUB-TOTAL			2,441		2,441		0
189	22.	College	STU	13,543.00	20,856	20,000.00	30,800	6,457.00	9,944
	40.	Commercial Office	TSF	--	--	28.44	329	28.44	329
		SUB-TOTAL			20,856		31,129		10,273
190	2.	Single Family (1-5du/ac)	DU	171.00	1,693	171.00	1,693	0.00	0
		SUB-TOTAL			1,693		1,693		0
191	42.	Medical Office	TSF	--	--	78.56	2,687	78.56	2,687
		SUB-TOTAL			--		2,687		2,687
192	2.	Single Family (1-5du/ac)	DU	164.00	1,624	164.00	1,624	0.00	0
	4.	Condominium/Townhouse	DU	660.00	5,280	660.00	5,280	0.00	0
		SUB-TOTAL			6,904		6,904		0
193	31.	Business Park	TSF	250.00	2,550	250.00	2,550	0.00	0
		SUB-TOTAL			2,550		2,550		0
194	50.	Golf Course	AC	100.00	796	100.00	796	0.00	0
		SUB-TOTAL			796		796		0
195	3.	Single Family (6-10du/ac)	DU	76.00	752	76.00	752	0.00	0
		SUB-TOTAL			752		752		0
196	13.	Commercial Shops	TSF	--	--	16.00	593	16.00	593
		SUB-TOTAL			--		593		593
197	31.	Business Park	TSF	--	--	400.00	4,080	400.00	4,080
		SUB-TOTAL			--		4,080		4,080
198	2.	Single Family (1-5du/ac)	DU	179.00	1,772	179.00	1,772	0.00	0
	3.	Single Family (6-10du/ac)	DU	152.00	1,505	152.00	1,505	0.00	0
		SUB-TOTAL			3,277		3,277		0

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
199	14.	Hotel	ROOM	237.00	1,951	237.00	1,951	0.00	0
	15.	Sit-Down Restaurant	TSF	5.00	652	5.00	652	0.00	0
		SUB-TOTAL			2,603		2,603		0
200	31.	Business Park	TSF	385.10	3,928	578.00	5,896	192.90	1,968
		SUB-TOTAL			3,928		5,896		1,968
201	31.	Business Park	TSF	--	--	250.00	2,550	250.00	2,550
		SUB-TOTAL			--		2,550		2,550
202	5.	Apartment	DU	50.00	345	560.00	3,864	510.00	3,519
	13.	Commercial Shops	TSF	13.00	482	22.00	815	9.00	333
	14.	Hotel	ROOM	250.00	2,058	250.00	2,058	0.00	0
	18.	Health Club	TSF	54.00	2,160	54.00	2,160	0.00	0
	40.	Commercial Office	TSF	13.00	150	13.00	150	0.00	0
		SUB-TOTAL			5,195		9,047		3,852
203	10.	Commercial Center (>30ac)	TSF	742.00	29,725	1,539.00	61,652	797.00	31,927
	40.	Commercial Office	TSF	--	--	90.00	1,040	90.00	1,040
		SUB-TOTAL			29,725		62,692		32,967
204	13.	Commercial Shops	TSF	62.00	2,298	62.00	2,298	0.00	0
	17.	Movie Theater	SEAT	3,300.00	5,808	3,300.00	5,808	0.00	0
	40.	Commercial Office	TSF	400.00	4,624	400.00	4,624	0.00	0
		SUB-TOTAL			12,730		12,730		0
205	11.	Commercial Center(10-30a)	TSF	47.30	2,557	47.30	2,557	0.00	0
	24.	Library	TSF	20.00	1,700	20.00	1,700	0.00	0
	40.	Commercial Office	TSF	198.89	2,299	198.89	2,299	0.00	0
		SUB-TOTAL			6,556		6,556		0
206	11.	Commercial Center(10-30a)	TSF	126.26	6,826	166.11	8,980	39.85	2,154
	15.	Sit-Down Restaurant	TSF	15.73	2,050	21.50	2,802	5.77	752
		SUB-TOTAL			8,876		11,782		2,906
207	40.	Commercial Office	TSF	230.00	2,659	230.00	2,659	0.00	0
		SUB-TOTAL			2,659		2,659		0
208	4.	Condominium/Townhouse	DU	234.00	1,872	234.00	1,872	0.00	0
		SUB-TOTAL			1,872		1,872		0
209	2.	Single Family (1-5du/ac)	DU	414.00	4,099	414.00	4,099	0.00	0
	4.	Condominium/Townhouse	DU	352.00	2,816	352.00	2,816	0.00	0
	20.	Elementary/Middle School	STU	800.00	1,160	800.00	1,160	0.00	0
		SUB-TOTAL			8,075		8,075		0
210	2.	Single Family (1-5du/ac)	DU	205.00	2,029	205.00	2,029	0.00	0
	4.	Condominium/Townhouse	DU	208.00	1,664	208.00	1,664	0.00	0
	11.	Commercial Center(10-30a)	TSF	148.10	8,006	148.10	8,006	0.00	0
		SUB-TOTAL			11,699		11,699		0

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
211	2.	Single Family (1-5du/ac)	DU	167.00	1,653	167.00	1,653	0.00	0
		SUB-TOTAL			1,653		1,653		0
212	2.	Single Family (1-5du/ac)	DU	252.00	2,495	252.00	2,495	0.00	0
	4.	Condominium/Townhouse	DU	272.00	2,176	272.00	2,176	0.00	0
	25.	Church	TSF	18.03	168	18.03	168	0.00	0
	51.	Developed Park	AC	4.20	11	4.20	11	0.00	0
		SUB-TOTAL			4,850		4,850		0
213	2.	Single Family (1-5du/ac)	DU	275.00	2,723	275.00	2,723	0.00	0
	25.	Church	TSF	25.09	233	25.09	233	0.00	0
		SUB-TOTAL			2,956		2,956		0
214	5.	Apartment	DU	107.00	738	307.00	2,118	200.00	1,380
		SUB-TOTAL			738		2,118		1,380
215	2.	Single Family (1-5du/ac)	DU	105.00	1,040	105.00	1,040	0.00	0
	4.	Condominium/Townhouse	DU	52.00	416	52.00	416	0.00	0
	11.	Commercial Center(10-30a)	TSF	100.00	5,406	100.00	5,406	0.00	0
	13.	Commercial Shops	TSF	43.56	1,614	43.56	1,614	0.00	0
	21.	High School	STU	2,928.00	5,241	2,928.00	5,241	0.00	0
	25.	Church	TSF	50.18	467	50.18	467	0.00	0
	34.	Utilities	TSF	47.92	114	47.92	114	0.00	0
		SUB-TOTAL			14,298		14,298		0
216	3.	Single Family (6-10du/ac)	DU	22.00	218	22.00	218	0.00	0
	4.	Condominium/Townhouse	DU	128.00	1,024	128.00	1,024	0.00	0
	11.	Commercial Center(10-30a)	TSF	149.96	8,107	149.96	8,107	0.00	0
	40.	Commercial Office	TSF	10.45	121	10.45	121	0.00	0
		SUB-TOTAL			9,470		9,470		0
217	2.	Single Family (1-5du/ac)	DU	202.00	2,000	202.00	2,000	0.00	0
	4.	Condominium/Townhouse	DU	16.00	128	28.00	224	12.00	96
	11.	Commercial Center(10-30a)	TSF	65.75	3,554	65.75	3,554	0.00	0
	13.	Commercial Shops	TSF	--	--	3.27	121	3.27	121
	14.	Hotel	ROOM	10.00	82	10.00	82	0.00	0
	30.	Industrial Park	TSF	22.44	135	22.44	135	0.00	0
	40.	Commercial Office	TSF	22.44	259	22.44	259	0.00	0
		SUB-TOTAL			6,158		6,375		217
218	2.	Single Family (1-5du/ac)	DU	307.00	3,039	360.00	3,564	53.00	525
	4.	Condominium/Townhouse	DU	641.00	5,128	641.00	5,128	0.00	0
	6.	Mobile Home	DU	151.00	1,042	151.00	1,042	0.00	0
	10.	Commercial Center (>30ac)	TSF	--	--	327.00	13,100	327.00	13,100
	11.	Commercial Center(10-30a)	TSF	--	--	166.62	9,007	166.62	9,007
	13.	Commercial Shops	TSF	64.25	2,381	64.25	2,381	0.00	0
	25.	Church	TSF	9.41	88	9.41	88	0.00	0
		SUB-TOTAL			11,678		34,310		22,632
219	2.	Single Family (1-5du/ac)	DU	40.00	396	160.00	1,584	120.00	1,188
		SUB-TOTAL			396		1,584		1,188

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
220	2.	Single Family (1-5du/ac)	DU	2.00	20	8.00	79	6.00	59
	34.	Utilities	TSF	566.28	1,348	566.28	1,348	0.00	0
		SUB-TOTAL			1,368		1,427		59
221	2.	Single Family (1-5du/ac)	DU	279.00	2,762	408.00	4,039	129.00	1,277
	4.	Condominium/Townhouse	DU	6.00	48	6.00	48	0.00	0
	6.	Mobile Home	DU	30.00	207	30.00	207	0.00	0
	22.	College	STU	362.00	557	362.00	557	0.00	0
	25.	Church	TSF	92.52	860	92.52	860	0.00	0
	30.	Industrial Park	TSF	144.40	866	144.40	866	0.00	0
		SUB-TOTAL			5,300		6,577		1,277
222	2.	Single Family (1-5du/ac)	DU	33.00	327	105.00	1,040	72.00	713
	4.	Condominium/Townhouse	DU	--	--	112.00	896	112.00	896
	20.	Elementary/Middle School	STU	750.00	1,088	750.00	1,088	0.00	0
	22.	College	STU	1,200.00	1,848	1,600.00	2,464	400.00	616
	25.	Church	TSF	16.70	155	16.70	155	0.00	0
	30.	Industrial Park	TSF	--	--	124.15	745	124.15	745
		SUB-TOTAL			3,418		6,388		2,970
223	2.	Single Family (1-5du/ac)	DU	19.00	188	29.00	287	10.00	99
	11.	Commercial Center(10-30a)	TSF	43.38	2,345	43.38	2,345	0.00	0
	23.	Hospital	TSF	4.32	73	4.32	73	0.00	0
	30.	Industrial Park	TSF	70.36	422	70.36	422	0.00	0
	31.	Business Park	TSF	--	--	437.12	4,459	437.12	4,459
	40.	Commercial Office	TSF	0.36	4	0.36	4	0.00	0
		SUB-TOTAL			3,032		7,590		4,558
224	2.	Single Family (1-5du/ac)	DU	230.00	2,277	326.00	3,227	96.00	950
	4.	Condominium/Townhouse	DU	500.00	4,000	500.00	4,000	0.00	0
	6.	Mobile Home	DU	30.00	207	30.00	207	0.00	0
	13.	Commercial Shops	TSF	81.68	3,027	81.68	3,027	0.00	0
	20.	Elementary/Middle School	STU	722.00	1,047	722.00	1,047	0.00	0
	24.	Library	TSF	16.73	1,422	34.40	2,923	17.67	1,501
		SUB-TOTAL			11,980		14,431		2,451
225	2.	Single Family (1-5du/ac)	DU	156.00	1,544	156.00	1,544	0.00	0
	4.	Condominium/Townhouse	DU	151.00	1,208	151.00	1,208	0.00	0
	20.	Elementary/Middle School	STU	1,608.00	2,332	1,608.00	2,332	0.00	0
	51.	Developed Park	AC	14.00	36	14.00	36	0.00	0
		SUB-TOTAL			5,120		5,120		0
226	2.	Single Family (1-5du/ac)	DU	300.00	2,970	300.00	2,970	0.00	0
	4.	Condominium/Townhouse	DU	292.00	2,336	292.00	2,336	0.00	0
	11.	Commercial Center(10-30a)	TSF	--	--	15.68	848	15.68	848
	13.	Commercial Shops	TSF	69.70	2,583	69.70	2,583	0.00	0
	25.	Church	TSF	--	--	8.00	74	8.00	74
		SUB-TOTAL			7,889		8,811		922
227	2.	Single Family (1-5du/ac)	DU	172.00	1,703	172.00	1,703	0.00	0

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
227	4.	Condominium/Townhouse	DU	184.00	1,472	184.00	1,472	0.00	0
	31.	Business Park	TSF	--	--	563.56	5,748	563.56	5,748
		SUB-TOTAL			3,175		8,923		5,748
228	2.	Single Family (1-5du/ac)	DU	358.00	3,544	358.00	3,544	0.00	0
		SUB-TOTAL			3,544		3,544		0
229	1.	Single Family (<1du/ac)	DU	74.00	733	74.00	733	0.00	0
	2.	Single Family (1-5du/ac)	DU	--	--	104.00	1,030	104.00	1,030
		SUB-TOTAL			733		1,763		1,030
230	1.	Single Family (<1du/ac)	DU	1.00	10	10.00	99	9.00	89
		SUB-TOTAL			10		99		89
231	2.	Single Family (1-5du/ac)	DU	--	--	5.00	50	5.00	50
	4.	Condominium/Townhouse	DU	--	--	51.00	408	51.00	408
	34.	Utilities	TSF	--	--	29.00	69	29.00	69
		SUB-TOTAL			--		527		527
232	1.	Single Family (<1du/ac)	DU	--	--	10.00	99	10.00	99
		SUB-TOTAL			--		99		99
233	31.	Business Park	TSF	--	--	569.47	5,809	569.47	5,809
		SUB-TOTAL			--		5,809		5,809
234	11.	Commercial Center(10-30a)	TSF	--	--	100.00	5,406	100.00	5,406
	31.	Business Park	TSF	--	--	470.24	4,796	470.24	4,796
		SUB-TOTAL			--		10,202		10,202
235	11.	Commercial Center(10-30a)	TSF	60.20	3,254	20.00	1,081	-40.20	-2,173
	31.	Business Park	TSF	24.00	245	130.00	1,326	106.00	1,081
		SUB-TOTAL			3,499		2,407		-1,092
236	2.	Single Family (1-5du/ac)	DU	--	--	204.00	2,020	204.00	2,020
	3.	Single Family (6-10du/ac)	DU	--	--	200.00	1,980	200.00	1,980
	20.	Elementary/Middle School	STU	--	--	647.00	938	647.00	938
	51.	Developed Park	AC	--	--	5.00	13	5.00	13
		SUB-TOTAL			--		4,951		4,951
237	2.	Single Family (1-5du/ac)	DU	--	--	225.00	2,228	225.00	2,228
	5.	Apartment	DU	--	--	570.00	3,933	570.00	3,933
	40.	Commercial Office	TSF	--	--	99.00	1,144	99.00	1,144
	51.	Developed Park	AC	--	--	24.40	63	24.40	63
		SUB-TOTAL			--		7,368		7,368
238	2.	Single Family (1-5du/ac)	DU	--	--	163.00	1,614	163.00	1,614
	3.	Single Family (6-10du/ac)	DU	--	--	236.00	2,336	236.00	2,336
	4.	Condominium/Townhouse	DU	--	--	124.00	992	124.00	992
	10.	Commercial Center (>30ac)	TSF	--	--	32.00	1,282	32.00	1,282
	11.	Commercial Center(10-30a)	TSF	--	--	54.45	2,944	54.45	2,944

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
238	12.	Commercial Center (<10ac)	TSF	--	--	50.00	4,253	50.00	4,253
	15.	Sit-Down Restaurant	TSF	--	--	20.00	2,607	20.00	2,607
	30.	Industrial Park	TSF	--	--	175.00	1,050	175.00	1,050
	31.	Business Park	TSF	--	--	227.00	2,315	227.00	2,315
	40.	Commercial Office	TSF	--	--	86.16	996	86.16	996
	51.	Developed Park	AC	--	--	25.90	67	25.90	67
		SUB-TOTAL			--		20,456		20,456
239	13.	Commercial Shops	TSF	87.12	3,229	337.29	12,500	250.17	9,271
	21.	High School	STU	500.00	895	500.00	895	0.00	0
	30.	Industrial Park	TSF	110.00	660	387.07	2,322	277.07	1,662
	32.	Manufacturing/Warehouse	TSF	352.84	1,799	1,552.60	7,918	1,199.76	6,119
	40.	Commercial Office	TSF	17.42	201	262.87	3,039	245.45	2,838
		SUB-TOTAL			6,784		26,674		19,890
240	10.	Commercial Center (>30ac)	TSF	--	--	126.00	5,048	126.00	5,048
	12.	Commercial Center (<10ac)	TSF	--	--	40.00	3,402	40.00	3,402
	15.	Sit-Down Restaurant	TSF	--	--	9.50	1,238	9.50	1,238
	16.	Fast Food Restaurant	TSF	--	--	5.50	2,729	5.50	2,729
		SUB-TOTAL			--		12,417		12,417
241	10.	Commercial Center (>30ac)	TSF	--	--	34.00	1,362	34.00	1,362
	15.	Sit-Down Restaurant	TSF	--	--	10.00	1,303	10.00	1,303
		SUB-TOTAL			--		2,665		2,665
242	40.	Commercial Office	TSF	--	--	115.00	1,329	115.00	1,329
		SUB-TOTAL			--		1,329		1,329
243	2.	Single Family (1-5du/ac)	DU	--	--	211.00	2,089	211.00	2,089
	4.	Condominium/Townhouse	DU	--	--	426.00	3,408	426.00	3,408
	5.	Apartment	DU	--	--	496.00	3,422	496.00	3,422
	10.	Commercial Center (>30ac)	TSF	--	--	75.00	3,005	75.00	3,005
	12.	Commercial Center (<10ac)	TSF	--	--	20.00	1,701	20.00	1,701
	15.	Sit-Down Restaurant	TSF	--	--	34.00	4,432	34.00	4,432
	40.	Commercial Office	TSF	--	--	164.00	1,896	164.00	1,896
		SUB-TOTAL			--		19,953		19,953
244	1.	Single Family (<1du/ac)	DU	95.00	940	95.00	940	0.00	0
	2.	Single Family (1-5du/ac)	DU	322.00	3,188	322.00	3,188	0.00	0
	3.	Single Family (6-10du/ac)	DU	95.00	940	95.00	940	0.00	0
	4.	Condominium/Townhouse	DU	157.00	1,256	157.00	1,256	0.00	0
		SUB-TOTAL			6,324		6,324		0
245	4.	Condominium/Townhouse	DU	148.00	1,184	148.00	1,184	0.00	0
	30.	Industrial Park	TSF	--	--	345.58	2,073	345.58	2,073
	32.	Manufacturing/Warehouse	TSF	61.16	312	61.16	312	0.00	0
		SUB-TOTAL			1,496		3,569		2,073
246	12.	Commercial Center (<10ac)	TSF	--	--	36.00	3,062	36.00	3,062
	32.	Manufacturing/Warehouse	TSF	58.81	300	58.81	300	0.00	0
		SUB-TOTAL			300		3,362		3,062

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
247	11.	Commercial Center(10-30a)	TSF	71.37	3,858	71.37	3,858	0.00	0
		SUB-TOTAL			3,858		3,858		0
248	2.	Single Family (1-5du/ac)	DU	2.00	20	2.00	20	0.00	0
	4.	Condominium/Townhouse	DU	4.00	32	4.00	32	0.00	0
	30.	Industrial Park	TSF	882.09	5,293	882.09	5,293	0.00	0
		SUB-TOTAL			5,345		5,345		0
249	32.	Manufacturing/Warehouse	TSF	291.68	1,488	291.68	1,488	0.00	0
	40.	Commercial Office	TSF	--	--	150.00	1,734	150.00	1,734
		SUB-TOTAL			1,488		3,222		1,734
250	11.	Commercial Center(10-30a)	TSF	--	--	90.66	4,901	90.66	4,901
	13.	Commercial Shops	TSF	58.00	2,149	58.00	2,149	0.00	0
		SUB-TOTAL			2,149		7,050		4,901
252	31.	Business Park	TSF	--	--	858.00	8,752	858.00	8,752
		SUB-TOTAL			--		8,752		8,752
253	1.	Single Family (<1du/ac)	DU	--	--	84.00	832	84.00	832
		SUB-TOTAL			--		832		832
254	11.	Commercial Center(10-30a)	TSF	--	--	107.50	5,811	107.50	5,811
	13.	Commercial Shops	TSF	8.71	323	8.71	323	0.00	0
		SUB-TOTAL			323		6,134		5,811
255	1.	Single Family (<1du/ac)	DU	2.00	20	69.00	683	67.00	663
		SUB-TOTAL			20		683		663
256	2.	Single Family (1-5du/ac)	DU	20.00	198	20.00	198	0.00	0
		SUB-TOTAL			198		198		0
257	2.	Single Family (1-5du/ac)	DU	103.00	1,020	266.00	2,633	163.00	1,613
	3.	Single Family (6-10du/ac)	DU	--	--	38.00	376	38.00	376
	4.	Condominium/Townhouse	DU	11.00	88	11.00	88	0.00	0
		SUB-TOTAL			1,108		3,097		1,989
258	2.	Single Family (1-5du/ac)	DU	54.00	535	97.00	960	43.00	425
	32.	Manufacturing/Warehouse	TSF	--	--	125.00	638	125.00	638
		SUB-TOTAL			535		1,598		1,063
259	3.	Single Family (6-10du/ac)	DU	--	--	14.00	139	14.00	139
	4.	Condominium/Townhouse	DU	--	--	237.00	1,896	237.00	1,896
		SUB-TOTAL			--		2,035		2,035
260	2.	Single Family (1-5du/ac)	DU	27.00	267	402.00	3,980	375.00	3,713
		SUB-TOTAL			267		3,980		3,713
261	2.	Single Family (1-5du/ac)	DU	10.00	99	295.00	2,921	285.00	2,822
		SUB-TOTAL			99		2,921		2,822

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
262	2.	Single Family (1-5du/ac)	DU	220.00	2,178	596.00	5,900	376.00	3,722
	3.	Single Family (6-10du/ac)	DU	126.00	1,247	194.00	1,921	68.00	674
	20.	Elementary/Middle School	STU	750.00	1,088	750.00	1,088	0.00	0
		SUB-TOTAL			4,513		8,909		4,396
263	4.	Condominium/Townhouse	DU	--	--	140.00	1,120	140.00	1,120
		SUB-TOTAL			--		1,120		1,120
264	3.	Single Family (6-10du/ac)	DU	63.00	624	63.00	624	0.00	0
		SUB-TOTAL			624		624		0
265	4.	Condominium/Townhouse	DU	1,338.00	10,704	1,338.00	10,704	0.00	0
		SUB-TOTAL			10,704		10,704		0
266	11.	Commercial Center(10-30a)	TSF	101.04	5,462	101.04	5,462	0.00	0
		SUB-TOTAL			5,462		5,462		0
267	11.	Commercial Center(10-30a)	TSF	100.00	5,406	100.00	5,406	0.00	0
		SUB-TOTAL			5,406		5,406		0
268	4.	Condominium/Townhouse	DU	400.00	3,200	400.00	3,200	0.00	0
	11.	Commercial Center(10-30a)	TSF	182.33	9,857	182.33	9,857	0.00	0
	32.	Manufacturing/Warehouse	TSF	75.00	383	75.00	383	0.00	0
		SUB-TOTAL			13,440		13,440		0
269	2.	Single Family (1-5du/ac)	DU	173.00	1,713	671.00	6,643	498.00	4,930
	3.	Single Family (6-10du/ac)	DU	--	--	16.00	158	16.00	158
	20.	Elementary/Middle School	STU	--	--	500.00	725	500.00	725
	21.	High School	STU	--	--	1,116.00	1,998	1,116.00	1,998
	51.	Developed Park	AC	3.00	8	4.50	12	1.50	4
		SUB-TOTAL			1,721		9,536		7,815
270	1.	Single Family (<1du/ac)	DU	8.00	79	8.00	79	0.00	0
		SUB-TOTAL			79		79		0
271	5.	Apartment	DU	--	--	155.00	1,070	155.00	1,070
	10.	Commercial Center (>30ac)	TSF	--	--	690.66	27,668	690.66	27,668
		SUB-TOTAL			--		28,738		28,738
272	2.	Single Family (1-5du/ac)	DU	665.00	6,583	665.00	6,583	0.00	0
	3.	Single Family (6-10du/ac)	DU	154.00	1,525	302.00	2,990	148.00	1,465
	4.	Condominium/Townhouse	DU	823.00	6,584	823.00	6,584	0.00	0
	12.	Commercial Center (<10ac)	TSF	8.12	691	8.12	691	0.00	0
	20.	Elementary/Middle School	STU	750.00	1,088	750.00	1,088	0.00	0
		SUB-TOTAL			16,471		17,936		1,465
273	2.	Single Family (1-5du/ac)	DU	6.00	59	101.00	1,000	95.00	941
		SUB-TOTAL			59		1,000		941
274	2.	Single Family (1-5du/ac)	DU	--	--	362.00	3,584	362.00	3,584

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
274	31.	Business Park	TSF	--	--	110.06	1,123	110.06	1,123
		SUB-TOTAL			--		4,707		4,707
275	2.	Single Family (1-5du/ac)	DU	225.00	2,228	225.00	2,228	0.00	0
		SUB-TOTAL			2,228		2,228		0
276	3.	Single Family (6-10du/ac)	DU	75.00	743	75.00	743	0.00	0
	4.	Condominium/Townhouse	DU	539.00	4,312	539.00	4,312	0.00	0
	12.	Commercial Center (<10ac)	TSF	98.01	8,337	98.01	8,337	0.00	0
	25.	Church	TSF	7.84	73	7.84	73	0.00	0
		SUB-TOTAL			13,465		13,465		0
277	12.	Commercial Center (<10ac)	TSF	4.91	418	4.91	418	0.00	0
	15.	Sit-Down Restaurant	TSF	3.00	391	3.00	391	0.00	0
		SUB-TOTAL			809		809		0
278	4.	Condominium/Townhouse	DU	757.00	6,056	757.00	6,056	0.00	0
	12.	Commercial Center (<10ac)	TSF	81.89	6,966	81.89	6,966	0.00	0
	50.	Golf Course	AC	50.00	398	50.00	398	0.00	0
		SUB-TOTAL			13,420		13,420		0
279	6.	Mobile Home	DU	313.00	2,160	313.00	2,160	0.00	0
	12.	Commercial Center (<10ac)	TSF	19.33	1,644	26.33	2,240	7.00	596
	30.	Industrial Park	TSF	--	--	58.00	348	58.00	348
	40.	Commercial Office	TSF	0.20	2	0.20	2	0.00	0
		SUB-TOTAL			3,806		4,750		944
280	31.	Business Park	TSF	--	--	38.18	389	38.18	389
		SUB-TOTAL			--		389		389
281	31.	Business Park	TSF	--	--	215.62	2,199	215.62	2,199
		SUB-TOTAL			--		2,199		2,199
282	4.	Condominium/Townhouse	DU	486.00	3,888	486.00	3,888	0.00	0
	11.	Commercial Center(10-30a)	TSF	17.90	968	17.90	968	0.00	0
		SUB-TOTAL			4,856		4,856		0
283	2.	Single Family (1-5du/ac)	DU	161.00	1,594	161.00	1,594	0.00	0
	4.	Condominium/Townhouse	DU	400.00	3,200	400.00	3,200	0.00	0
	20.	Elementary/Middle School	STU	1,116.00	1,618	1,116.00	1,618	0.00	0
		SUB-TOTAL			6,412		6,412		0
284	2.	Single Family (1-5du/ac)	DU	2.00	20	46.00	455	44.00	435
	6.	Mobile Home	DU	346.00	2,387	346.00	2,387	0.00	0
		SUB-TOTAL			2,407		2,842		435
285	2.	Single Family (1-5du/ac)	DU	--	--	80.00	792	80.00	792
	10.	Commercial Center (>30ac)	TSF	--	--	246.99	9,894	246.99	9,894
		SUB-TOTAL			--		10,686		10,686

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
286	2.	Single Family (1-5du/ac)	DU	--	--	82.00	812	82.00	812
		SUB-TOTAL			--		812		812
287	3.	Single Family (6-10du/ac)	DU	--	--	111.00	1,099	111.00	1,099
		SUB-TOTAL			--		1,099		1,099
288	21.	High School	STU	--	--	2,500.00	4,475	2,500.00	4,475
		SUB-TOTAL			--		4,475		4,475
289	2.	Single Family (1-5du/ac)	DU	--	--	55.00	545	55.00	545
	31.	Business Park	TSF	--	--	57.17	583	57.17	583
		SUB-TOTAL			--		1,128		1,128
290	2.	Single Family (1-5du/ac)	DU	64.00	634	64.00	634	0.00	0
	4.	Condominium/Townhouse	DU	93.00	744	93.00	744	0.00	0
		SUB-TOTAL			1,378		1,378		0
291	2.	Single Family (1-5du/ac)	DU	--	--	74.00	733	74.00	733
	31.	Business Park	TSF	8.60	88	181.63	1,853	173.03	1,765
		SUB-TOTAL			88		2,586		2,498
292	2.	Single Family (1-5du/ac)	DU	161.00	1,594	161.00	1,594	0.00	0
		SUB-TOTAL			1,594		1,594		0
293	2.	Single Family (1-5du/ac)	DU	133.00	1,317	133.00	1,317	0.00	0
	4.	Condominium/Townhouse	DU	368.00	2,944	368.00	2,944	0.00	0
		SUB-TOTAL			4,261		4,261		0
294	5.	Apartment	DU	--	--	191.00	1,318	191.00	1,318
	11.	Commercial Center(10-30a)	TSF	124.35	6,722	364.00	19,678	239.65	12,956
	30.	Industrial Park	TSF	210.00	1,260	210.00	1,260	0.00	0
	31.	Business Park	TSF	294.22	3,001	349.98	3,570	55.76	569
	51.	Developed Park	AC	--	--	38.00	99	38.00	99
		SUB-TOTAL			10,983		25,925		14,942
295	32.	Manufacturing/Warehouse	TSF	372.45	1,899	1,020.58	5,205	648.13	3,306
	40.	Commercial Office	TSF	--	--	56.00	647	56.00	647
	51.	Developed Park	AC	21.50	56	21.50	56	0.00	0
		SUB-TOTAL			1,955		5,908		3,953
298	5.	Apartment	DU	830.00	5,727	830.00	5,727	0.00	0
		SUB-TOTAL			5,727		5,727		0
299	11.	Commercial Center(10-30a)	TSF	184.00	9,947	184.00	9,947	0.00	0
		SUB-TOTAL			9,947		9,947		0
300	10.	Commercial Center (>30ac)	TSF	272.00	10,896	272.00	10,896	0.00	0
		SUB-TOTAL			10,896		10,896		0
301	13.	Commercial Shops	TSF	49.24	1,825	49.24	1,825	0.00	0

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
301	19.	Car Dealership	TSF	66.50	2,494	66.50	2,494	0.00	0
	43.	Post Office	TSF	50.00	5,410	50.00	5,410	0.00	0
		SUB-TOTAL			9,729		9,729		0
302	10.	Commercial Center (>30ac)	TSF	384.42	15,400	384.42	15,400	0.00	0
	12.	Commercial Center (<10ac)	TSF	--	--	30.00	2,552	30.00	2,552
	19.	Car Dealership	TSF	31.00	1,163	31.00	1,163	0.00	0
		SUB-TOTAL			16,563		19,115		2,552
303	19.	Car Dealership	TSF	150.00	5,625	150.00	5,625	0.00	0
		SUB-TOTAL			5,625		5,625		0
304	11.	Commercial Center(10-30a)	TSF	33.00	1,784	33.00	1,784	0.00	0
	15.	Sit-Down Restaurant	TSF	15.00	1,955	15.00	1,955	0.00	0
	19.	Car Dealership	TSF	83.00	3,113	83.00	3,113	0.00	0
		SUB-TOTAL			6,852		6,852		0
305	11.	Commercial Center(10-30a)	TSF	197.29	10,665	197.29	10,665	0.00	0
	15.	Sit-Down Restaurant	TSF	5.36	699	5.36	699	0.00	0
	32.	Manufacturing/Warehouse	TSF	--	--	100.00	510	100.00	510
		SUB-TOTAL			11,364		11,874		510
306	11.	Commercial Center(10-30a)	TSF	80.50	4,352	143.90	7,779	63.40	3,427
	25.	Church	TSF	36.10	336	36.10	336	0.00	0
		SUB-TOTAL			4,688		8,115		3,427
307	11.	Commercial Center(10-30a)	TSF	128.00	6,920	128.00	6,920	0.00	0
	16.	Fast Food Restaurant	TSF	4.80	2,381	4.80	2,381	0.00	0
		SUB-TOTAL			9,301		9,301		0
308	5.	Apartment	DU	245.00	1,691	245.00	1,691	0.00	0
	12.	Commercial Center (<10ac)	TSF	175.11	14,895	175.11	14,895	0.00	0
	15.	Sit-Down Restaurant	TSF	5.40	704	5.40	704	0.00	0
	32.	Manufacturing/Warehouse	TSF	29.40	150	29.40	150	0.00	0
		SUB-TOTAL			17,440		17,440		0
309	13.	Commercial Shops	TSF	3.00	111	3.00	111	0.00	0
		SUB-TOTAL			111		111		0
310	19.	Car Dealership	TSF	--	--	111.00	4,163	111.00	4,163
	51.	Developed Park	AC	17.20	45	17.20	45	0.00	0
		SUB-TOTAL			45		4,208		4,163
311	3.	Single Family (6-10du/ac)	DU	132.00	1,307	132.00	1,307	0.00	0
	4.	Condominium/Townhouse	DU	63.00	504	63.00	504	0.00	0
		SUB-TOTAL			1,811		1,811		0
312	11.	Commercial Center(10-30a)	TSF	164.40	8,887	180.00	9,731	15.60	844
	34.	Utilities	TSF	84.00	200	84.00	200	0.00	0
		SUB-TOTAL			9,087		9,931		844

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
313	4.	Condominium/Townhouse	DU	264.00	2,112	264.00	2,112	0.00	0
		SUB-TOTAL			2,112		2,112		0
314	11.	Commercial Center(10-30a)	TSF	178.00	9,623	178.00	9,623	0.00	0
		SUB-TOTAL			9,623		9,623		0
315	4.	Condominium/Townhouse	DU	582.00	4,656	582.00	4,656	0.00	0
		SUB-TOTAL			4,656		4,656		0
316	2.	Single Family (1-5du/ac)	DU	121.00	1,198	121.00	1,198	0.00	0
		SUB-TOTAL			1,198		1,198		0
317	20.	Elementary/Middle School	STU	924.00	1,340	924.00	1,340	0.00	0
	51.	Developed Park	AC	18.00	47	18.00	47	0.00	0
		SUB-TOTAL			1,387		1,387		0
318	2.	Single Family (1-5du/ac)	DU	21.00	208	21.00	208	0.00	0
	4.	Condominium/Townhouse	DU	252.00	2,016	252.00	2,016	0.00	0
		SUB-TOTAL			2,224		2,224		0
319	13.	Commercial Shops	TSF	--	--	2.00	74	2.00	74
	20.	Elementary/Middle School	STU	--	--	250.00	363	250.00	363
	25.	Church	TSF	--	--	80.00	744	80.00	744
	40.	Commercial Office	TSF	--	--	240.00	2,774	240.00	2,774
		SUB-TOTAL			--		3,955		3,955
320	2.	Single Family (1-5du/ac)	DU	125.00	1,238	125.00	1,238	0.00	0
		SUB-TOTAL			1,238		1,238		0
321	3.	Single Family (6-10du/ac)	DU	155.00	1,535	155.00	1,535	0.00	0
	4.	Condominium/Townhouse	DU	66.00	528	66.00	528	0.00	0
		SUB-TOTAL			2,063		2,063		0
322	3.	Single Family (6-10du/ac)	DU	87.00	861	87.00	861	0.00	0
		SUB-TOTAL			861		861		0
323	3.	Single Family (6-10du/ac)	DU	161.00	1,594	161.00	1,594	0.00	0
	4.	Condominium/Townhouse	DU	132.00	1,056	132.00	1,056	0.00	0
		SUB-TOTAL			2,650		2,650		0
325	3.	Single Family (6-10du/ac)	DU	--	--	205.00	2,029	205.00	2,029
		SUB-TOTAL			--		2,029		2,029
326	2.	Single Family (1-5du/ac)	DU	101.00	1,000	101.00	1,000	0.00	0
		SUB-TOTAL			1,000		1,000		0
327	2.	Single Family (1-5du/ac)	DU	105.00	1,040	105.00	1,040	0.00	0
		SUB-TOTAL			1,040		1,040		0
328	2.	Single Family (1-5du/ac)	DU	110.00	1,089	110.00	1,089	0.00	0
		SUB-TOTAL			1,089		1,089		0

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
329	2.	Single Family (1-5du/ac)	DU	50.00	495	50.00	495	0.00	0
	20.	Elementary/Middle School	STU	924.00	1,340	924.00	1,340	0.00	0
		SUB-TOTAL			1,835		1,835		0
330	2.	Single Family (1-5du/ac)	DU	143.00	1,416	143.00	1,416	0.00	0
		SUB-TOTAL			1,416		1,416		0
331	2.	Single Family (1-5du/ac)	DU	167.00	1,653	167.00	1,653	0.00	0
		SUB-TOTAL			1,653		1,653		0
332	2.	Single Family (1-5du/ac)	DU	114.00	1,129	114.00	1,129	0.00	0
	4.	Condominium/Townhouse	DU	102.00	816	102.00	816	0.00	0
		SUB-TOTAL			1,945		1,945		0
333	2.	Single Family (1-5du/ac)	DU	803.00	7,950	803.00	7,950	0.00	0
	4.	Condominium/Townhouse	DU	360.00	2,880	360.00	2,880	0.00	0
	13.	Commercial Shops	TSF	25.05	928	25.05	928	0.00	0
	20.	Elementary/Middle School	STU	924.00	1,340	924.00	1,340	0.00	0
		SUB-TOTAL			13,098		13,098		0
334	2.	Single Family (1-5du/ac)	DU	164.00	1,624	164.00	1,624	0.00	0
		SUB-TOTAL			1,624		1,624		0
335	2.	Single Family (1-5du/ac)	DU	194.00	1,921	194.00	1,921	0.00	0
		SUB-TOTAL			1,921		1,921		0
336	2.	Single Family (1-5du/ac)	DU	589.00	5,831	589.00	5,831	0.00	0
	20.	Elementary/Middle School	STU	924.00	1,340	924.00	1,340	0.00	0
	51.	Developed Park	AC	7.30	19	7.30	19	0.00	0
		SUB-TOTAL			7,190		7,190		0
337	2.	Single Family (1-5du/ac)	DU	390.00	3,861	390.00	3,861	0.00	0
		SUB-TOTAL			3,861		3,861		0
338	11.	Commercial Center(10-30a)	TSF	92.00	4,974	92.00	4,974	0.00	0
		SUB-TOTAL			4,974		4,974		0
339	2.	Single Family (1-5du/ac)	DU	128.00	1,267	128.00	1,267	0.00	0
	3.	Single Family (6-10du/ac)	DU	161.00	1,594	161.00	1,594	0.00	0
	20.	Elementary/Middle School	STU	924.00	1,340	924.00	1,340	0.00	0
	51.	Developed Park	AC	7.00	18	7.00	18	0.00	0
		SUB-TOTAL			4,219		4,219		0
340	2.	Single Family (1-5du/ac)	DU	270.00	2,673	270.00	2,673	0.00	0
	3.	Single Family (6-10du/ac)	DU	124.00	1,228	124.00	1,228	0.00	0
	4.	Condominium/Townhouse	DU	264.00	2,112	264.00	2,112	0.00	0
		SUB-TOTAL			6,013		6,013		0
341	5.	Apartment	DU	325.00	2,243	325.00	2,243	0.00	0
	26.	Day Care	STU	260.00	1,175	260.00	1,175	0.00	0
		SUB-TOTAL			3,418		3,418		0

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
342	4.	Condominium/Townhouse	DU	168.00	1,344	168.00	1,344	0.00	0
		SUB-TOTAL			1,344		1,344		0
343	2.	Single Family (1-5du/ac)	DU	90.00	891	90.00	891	0.00	0
	3.	Single Family (6-10du/ac)	DU	89.00	881	89.00	881	0.00	0
	4.	Condominium/Townhouse	DU	132.00	1,056	132.00	1,056	0.00	0
		SUB-TOTAL			2,828		2,828		0
344	2.	Single Family (1-5du/ac)	DU	415.00	4,109	415.00	4,109	0.00	0
	11.	Commercial Center(10-30a)	TSF	--	--	40.00	2,162	40.00	2,162
		SUB-TOTAL			4,109		6,271		2,162
345	2.	Single Family (1-5du/ac)	DU	23.00	228	23.00	228	0.00	0
		SUB-TOTAL			228		228		0
347	2.	Single Family (1-5du/ac)	DU	313.00	3,099	313.00	3,099	0.00	0
		SUB-TOTAL			3,099		3,099		0
348	2.	Single Family (1-5du/ac)	DU	517.00	5,118	517.00	5,118	0.00	0
		SUB-TOTAL			5,118		5,118		0
349	4.	Condominium/Townhouse	DU	83.00	664	83.00	664	0.00	0
	12.	Commercial Center (<10ac)	TSF	8.00	680	8.00	680	0.00	0
	26.	Day Care	STU	50.00	226	50.00	226	0.00	0
		SUB-TOTAL			1,570		1,570		0
350	25.	Church	TSF	108.61	1,010	108.61	1,010	0.00	0
		SUB-TOTAL			1,010		1,010		0
352	2.	Single Family (1-5du/ac)	DU	440.00	4,356	592.00	5,861	152.00	1,505
		SUB-TOTAL			4,356		5,861		1,505
353	2.	Single Family (1-5du/ac)	DU	259.00	2,564	259.00	2,564	0.00	0
		SUB-TOTAL			2,564		2,564		0
355	2.	Single Family (1-5du/ac)	DU	--	--	500.00	4,950	500.00	4,950
	20.	Elementary/Middle School	STU	--	--	750.00	1,088	750.00	1,088
	51.	Developed Park	AC	--	--	5.00	13	5.00	13
		SUB-TOTAL			--		6,051		6,051
356	2.	Single Family (1-5du/ac)	DU	385.00	3,811	385.00	3,811	0.00	0
		SUB-TOTAL			3,811		3,811		0
357	2.	Single Family (1-5du/ac)	DU	--	--	90.00	891	90.00	891
		SUB-TOTAL			--		891		891
358	2.	Single Family (1-5du/ac)	DU	105.00	1,040	421.00	4,168	316.00	3,128
	4.	Condominium/Townhouse	DU	140.00	1,120	255.00	2,040	115.00	920
	20.	Elementary/Middle School	STU	650.00	943	650.00	943	0.00	0
	51.	Developed Park	AC	10.50	27	19.20	50	8.70	23
		SUB-TOTAL			3,130		7,201		4,071

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
359	2.	Single Family (1-5du/ac)	DU	570.00	5,643	570.00	5,643	0.00	0
	4.	Condominium/Townhouse	DU	192.00	1,536	192.00	1,536	0.00	0
		SUB-TOTAL			7,179		7,179		0
360	2.	Single Family (1-5du/ac)	DU	538.00	5,326	538.00	5,326	0.00	0
	4.	Condominium/Townhouse	DU	248.00	1,984	248.00	1,984	0.00	0
	12.	Commercial Center (<10ac)	TSF	119.00	10,122	119.00	10,122	0.00	0
	20.	Elementary/Middle School	STU	647.00	938	647.00	938	0.00	0
		SUB-TOTAL			18,370		18,370		0
361	2.	Single Family (1-5du/ac)	DU	188.00	1,861	376.00	3,722	188.00	1,861
		SUB-TOTAL			1,861		3,722		1,861
362	2.	Single Family (1-5du/ac)	DU	173.00	1,713	173.00	1,713	0.00	0
	11.	Commercial Center(10-30a)	TSF	--	--	68.28	3,691	68.28	3,691
		SUB-TOTAL			1,713		5,404		3,691
363	2.	Single Family (1-5du/ac)	DU	6.00	59	44.00	436	38.00	377
		SUB-TOTAL			59		436		377
364	3.	Single Family (6-10du/ac)	DU	199.00	1,970	199.00	1,970	0.00	0
		SUB-TOTAL			1,970		1,970		0
365	2.	Single Family (1-5du/ac)	DU	201.00	1,990	201.00	1,990	0.00	0
	4.	Condominium/Townhouse	DU	102.00	816	102.00	816	0.00	0
	12.	Commercial Center (<10ac)	TSF	40.28	3,426	40.28	3,426	0.00	0
		SUB-TOTAL			6,232		6,232		0
366	2.	Single Family (1-5du/ac)	DU	600.00	5,940	600.00	5,940	0.00	0
		SUB-TOTAL			5,940		5,940		0
367	3.	Single Family (6-10du/ac)	DU	437.00	4,326	437.00	4,326	0.00	0
		SUB-TOTAL			4,326		4,326		0
368	2.	Single Family (1-5du/ac)	DU	1,070.00	10,593	1,070.00	10,593	0.00	0
	20.	Elementary/Middle School	STU	675.00	979	675.00	979	0.00	0
	25.	Church	TSF	21.00	195	56.00	521	35.00	326
		SUB-TOTAL			11,767		12,093		326
369	2.	Single Family (1-5du/ac)	DU	202.00	2,000	202.00	2,000	0.00	0
		SUB-TOTAL			2,000		2,000		0
370	2.	Single Family (1-5du/ac)	DU	1,080.00	10,692	1,080.00	10,692	0.00	0
	21.	High School	STU	2,800.00	5,012	2,800.00	5,012	0.00	0
		SUB-TOTAL			15,704		15,704		0
371	2.	Single Family (1-5du/ac)	DU	673.00	6,663	673.00	6,663	0.00	0
	20.	Elementary/Middle School	STU	687.00	996	687.00	996	0.00	0
		SUB-TOTAL			7,659		7,659		0

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
372	2.	Single Family (1-5du/ac)	DU	287.00	2,841	287.00	2,841	0.00	0
	4.	Condominium/Townhouse	DU	230.00	1,840	230.00	1,840	0.00	0
	11.	Commercial Center(10-30a)	TSF	153.55	8,301	153.55	8,301	0.00	0
		SUB-TOTAL			12,982		12,982		0
373	2.	Single Family (1-5du/ac)	DU	236.00	2,336	236.00	2,336	0.00	0
	20.	Elementary/Middle School	STU	462.00	670	462.00	670	0.00	0
	25.	Church	TSF	23.52	219	23.52	219	0.00	0
		SUB-TOTAL			3,225		3,225		0
374	5.	Apartment	DU	--	--	324.00	2,236	324.00	2,236
	11.	Commercial Center(10-30a)	TSF	150.00	8,109	150.00	8,109	0.00	0
		SUB-TOTAL			8,109		10,345		2,236
375	12.	Commercial Center (<10ac)	TSF	--	--	40.00	3,402	40.00	3,402
	16.	Fast Food Restaurant	TSF	5.00	2,481	5.00	2,481	0.00	0
		SUB-TOTAL			2,481		5,883		3,402
376	3.	Single Family (6-10du/ac)	DU	--	--	225.00	2,228	225.00	2,228
	51.	Developed Park	AC	--	--	5.00	13	5.00	13
		SUB-TOTAL			--		2,241		2,241
377	13.	Commercial Shops	TSF	57.50	2,131	57.50	2,131	0.00	0
		SUB-TOTAL			2,131		2,131		0
378	4.	Condominium/Townhouse	DU	--	--	420.00	3,360	420.00	3,360
	6.	Mobile Home	DU	332.00	2,291	332.00	2,291	0.00	0
	13.	Commercial Shops	TSF	41.00	1,519	56.00	2,075	15.00	556
	31.	Business Park	TSF	56.00	571	56.00	571	0.00	0
	40.	Commercial Office	TSF	--	--	110.00	1,272	110.00	1,272
		SUB-TOTAL			4,381		9,569		5,188
379	3.	Single Family (6-10du/ac)	DU	--	--	214.00	2,119	214.00	2,119
		SUB-TOTAL			--		2,119		2,119
380	5.	Apartment	DU	--	--	420.00	2,898	420.00	2,898
		SUB-TOTAL			--		2,898		2,898
381	51.	Developed Park	AC	50.00	130	50.00	130	0.00	0
		SUB-TOTAL			130		130		0
382	34.	Utilities	TSF	21.00	50	21.00	50	0.00	0
	51.	Developed Park	AC	50.00	130	50.00	130	0.00	0
		SUB-TOTAL			180		180		0
383	2.	Single Family (1-5du/ac)	DU	231.00	2,287	257.00	2,544	26.00	257
	13.	Commercial Shops	TSF	8.71	323	8.71	323	0.00	0
		SUB-TOTAL			2,610		2,867		257
384	2.	Single Family (1-5du/ac)	DU	354.00	3,505	354.00	3,505	0.00	0

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
384	12.	Commercial Center (<10ac)	TSF	23.07	1,962	23.07	1,962	0.00	0
		SUB-TOTAL			5,467		5,467		0
385	2.	Single Family (1-5du/ac)	DU	--	--	75.00	743	75.00	743
		SUB-TOTAL			--		743		743
386	2.	Single Family (1-5du/ac)	DU	162.00	1,604	162.00	1,604	0.00	0
		SUB-TOTAL			1,604		1,604		0
387	2.	Single Family (1-5du/ac)	DU	142.00	1,406	1,015.00	10,049	873.00	8,643
	4.	Condominium/Townhouse	DU	180.00	1,440	954.00	7,632	774.00	6,192
		SUB-TOTAL			2,846		17,681		14,835
388	2.	Single Family (1-5du/ac)	DU	--	--	95.00	940	95.00	940
	4.	Condominium/Townhouse	DU	--	--	221.00	1,768	221.00	1,768
	5.	Apartment	DU	--	--	695.00	4,796	695.00	4,796
	20.	Elementary/Middle School	STU	--	--	1,000.00	1,450	1,000.00	1,450
		SUB-TOTAL			--		8,954		8,954
389	2.	Single Family (1-5du/ac)	DU	1,061.00	10,504	1,078.00	10,672	17.00	168
	3.	Single Family (6-10du/ac)	DU	126.00	1,247	126.00	1,247	0.00	0
	20.	Elementary/Middle School	STU	528.00	766	528.00	766	0.00	0
		SUB-TOTAL			12,517		12,685		168
390	2.	Single Family (1-5du/ac)	DU	150.00	1,485	150.00	1,485	0.00	0
		SUB-TOTAL			1,485		1,485		0
391	13.	Commercial Shops	TSF	16.33	605	16.33	605	0.00	0
	30.	Industrial Park	TSF	--	--	70.00	420	70.00	420
	32.	Manufacturing/Warehouse	TSF	376.36	1,919	376.36	1,919	0.00	0
		SUB-TOTAL			2,524		2,944		420
392	2.	Single Family (1-5du/ac)	DU	323.00	3,198	323.00	3,198	0.00	0
	6.	Mobile Home	DU	400.00	2,760	400.00	2,760	0.00	0
	11.	Commercial Center(10-30a)	TSF	--	--	81.68	4,416	81.68	4,416
	13.	Commercial Shops	TSF	20.80	771	20.80	771	0.00	0
	20.	Elementary/Middle School	STU	1,000.00	1,450	1,000.00	1,450	0.00	0
		SUB-TOTAL			8,179		12,595		4,416
393	3.	Single Family (6-10du/ac)	DU	162.00	1,604	162.00	1,604	0.00	0
	4.	Condominium/Townhouse	DU	100.00	800	100.00	800	0.00	0
	12.	Commercial Center (<10ac)	TSF	52.27	4,446	52.27	4,446	0.00	0
	25.	Church	TSF	37.64	350	37.64	350	0.00	0
		SUB-TOTAL			7,200		7,200		0
394	2.	Single Family (1-5du/ac)	DU	325.00	3,217	325.00	3,217	0.00	0
	20.	Elementary/Middle School	STU	720.00	1,044	720.00	1,044	0.00	0
	21.	High School	STU	3,500.00	6,265	3,500.00	6,265	0.00	0
	51.	Developed Park	AC	3.20	8	3.20	8	0.00	0
		SUB-TOTAL			10,534		10,534		0

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
395	3.	Single Family (6-10du/ac)	DU	185.00	1,831	185.00	1,831	0.00	0
	11.	Commercial Center(10-30a)	TSF	165.53	8,949	165.53	8,949	0.00	0
	20.	Elementary/Middle School	STU	1,505.00	2,182	1,505.00	2,182	0.00	0
		SUB-TOTAL			12,962		12,962		0
396	12.	Commercial Center (<10ac)	TSF	76.23	6,484	76.23	6,484	0.00	0
		SUB-TOTAL			6,484		6,484		0
397	3.	Single Family (6-10du/ac)	DU	49.00	485	49.00	485	0.00	0
	4.	Condominium/Townhouse	DU	512.00	4,096	512.00	4,096	0.00	0
	5.	Apartment	DU	67.00	462	67.00	462	0.00	0
	6.	Mobile Home	DU	171.00	1,180	171.00	1,180	0.00	0
	11.	Commercial Center(10-30a)	TSF	310.98	16,812	310.98	16,812	0.00	0
	12.	Commercial Center (<10ac)	TSF	--	--	74.00	6,294	74.00	6,294
		SUB-TOTAL			23,035		29,329		6,294
398	2.	Single Family (1-5du/ac)	DU	1,120.00	11,088	1,120.00	11,088	0.00	0
	4.	Condominium/Townhouse	DU	120.00	960	120.00	960	0.00	0
	12.	Commercial Center (<10ac)	TSF	250.00	21,265	250.00	21,265	0.00	0
	13.	Commercial Shops	TSF	2.68	99	2.68	99	0.00	0
	15.	Sit-Down Restaurant	TSF	8.45	1,101	8.45	1,101	0.00	0
	20.	Elementary/Middle School	STU	820.00	1,189	820.00	1,189	0.00	0
	24.	Library	TSF	17.00	1,445	17.00	1,445	0.00	0
		SUB-TOTAL			37,147		37,147		0
399	2.	Single Family (1-5du/ac)	DU	779.00	7,712	779.00	7,712	0.00	0
	3.	Single Family (6-10du/ac)	DU	80.00	792	80.00	792	0.00	0
	20.	Elementary/Middle School	STU	545.00	790	545.00	790	0.00	0
		SUB-TOTAL			9,294		9,294		0
400	2.	Single Family (1-5du/ac)	DU	--	--	12.00	119	12.00	119
		SUB-TOTAL			--		119		119
401	2.	Single Family (1-5du/ac)	DU	--	--	835.00	8,267	835.00	8,267
	4.	Condominium/Townhouse	DU	--	--	482.00	3,856	482.00	3,856
		SUB-TOTAL			--		12,123		12,123
402	2.	Single Family (1-5du/ac)	DU	300.00	2,970	1,129.00	11,177	829.00	8,207
	11.	Commercial Center(10-30a)	TSF	--	--	150.00	8,109	150.00	8,109
	20.	Elementary/Middle School	STU	656.00	951	656.00	951	0.00	0
		SUB-TOTAL			3,921		20,237		16,316
403	2.	Single Family (1-5du/ac)	DU	111.00	1,099	111.00	1,099	0.00	0
	12.	Commercial Center (<10ac)	TSF	12.00	1,021	46.00	3,913	34.00	2,892
		SUB-TOTAL			2,120		5,012		2,892
404	2.	Single Family (1-5du/ac)	DU	10.00	99	170.00	1,683	160.00	1,584
		SUB-TOTAL			99		1,683		1,584
405	2.	Single Family (1-5du/ac)	DU	24.00	238	296.00	2,930	272.00	2,692
		SUB-TOTAL			238		2,930		2,692

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
406	2.	Single Family (1-5du/ac)	DU	38.00	376	353.00	3,495	315.00	3,119
		SUB-TOTAL			376		3,495		3,119
407	2.	Single Family (1-5du/ac)	DU	--	--	47.00	465	47.00	465
		SUB-TOTAL			--		465		465
408	2.	Single Family (1-5du/ac)	DU	47.00	465	648.00	6,415	601.00	5,950
		SUB-TOTAL			465		6,415		5,950
409	2.	Single Family (1-5du/ac)	DU	--	--	154.00	1,525	154.00	1,525
		SUB-TOTAL			--		1,525		1,525
410	2.	Single Family (1-5du/ac)	DU	25.00	247	248.00	2,455	223.00	2,208
	6.	Mobile Home	DU	--	--	101.00	697	101.00	697
	30.	Industrial Park	TSF	--	--	44.00	264	44.00	264
		SUB-TOTAL			247		3,416		3,169
411	2.	Single Family (1-5du/ac)	DU	--	--	675.00	6,682	675.00	6,682
	20.	Elementary/Middle School	STU	--	--	800.00	1,160	800.00	1,160
		SUB-TOTAL			--		7,842		7,842
412	1.	Single Family (<1du/ac)	DU	120.00	1,188	120.00	1,188	0.00	0
		SUB-TOTAL			1,188		1,188		0
413	2.	Single Family (1-5du/ac)	DU	29.00	287	106.00	1,049	77.00	762
	4.	Condominium/Townhouse	DU	246.00	1,968	614.00	4,912	368.00	2,944
	12.	Commercial Center (<10ac)	TSF	26.94	2,292	44.60	3,794	17.66	1,502
	30.	Industrial Park	TSF	--	--	48.54	291	48.54	291
	32.	Manufacturing/Warehouse	TSF	45.21	231	45.21	231	0.00	0
	40.	Commercial Office	TSF	36.59	423	36.59	423	0.00	0
		SUB-TOTAL			5,201		10,700		5,499
414	2.	Single Family (1-5du/ac)	DU	15.00	149	40.00	396	25.00	247
	4.	Condominium/Townhouse	DU	1,358.00	10,864	1,358.00	10,864	0.00	0
	6.	Mobile Home	DU	250.00	1,725	250.00	1,725	0.00	0
	13.	Commercial Shops	TSF	95.83	3,551	95.83	3,551	0.00	0
	40.	Commercial Office	TSF	--	--	125.00	1,445	125.00	1,445
		SUB-TOTAL			16,289		17,981		1,692
415	2.	Single Family (1-5du/ac)	DU	206.00	2,039	211.00	2,089	5.00	50
	11.	Commercial Center(10-30a)	TSF	--	--	63.71	3,444	63.71	3,444
	30.	Industrial Park	TSF	--	--	125.45	753	125.45	753
	32.	Manufacturing/Warehouse	TSF	27.80	142	27.80	142	0.00	0
		SUB-TOTAL			2,181		6,428		4,247
416	2.	Single Family (1-5du/ac)	DU	579.00	5,732	579.00	5,732	0.00	0
	4.	Condominium/Townhouse	DU	148.00	1,184	148.00	1,184	0.00	0
	13.	Commercial Shops	TSF	15.00	556	15.00	556	0.00	0
	51.	Developed Park	AC	15.00	39	15.00	39	0.00	0
		SUB-TOTAL			7,511		7,511		0

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
417	2.	Single Family (1-5du/ac)	DU	579.00	5,732	579.00	5,732	0.00	0
	4.	Condominium/Townhouse	DU	149.00	1,192	149.00	1,192	0.00	0
	20.	Elementary/Middle School	STU	760.00	1,102	760.00	1,102	0.00	0
		SUB-TOTAL			8,026		8,026		0
418	4.	Condominium/Townhouse	DU	474.00	3,792	474.00	3,792	0.00	0
	5.	Apartment	DU	232.00	1,601	232.00	1,601	0.00	0
	6.	Mobile Home	DU	90.00	621	90.00	621	0.00	0
	11.	Commercial Center(10-30a)	TSF	128.43	6,943	128.43	6,943	0.00	0
		SUB-TOTAL			12,957		12,957		0
419	2.	Single Family (1-5du/ac)	DU	--	--	1,018.00	10,078	1,018.00	10,078
	4.	Condominium/Townhouse	DU	1,834.00	14,672	1,834.00	14,672	0.00	0
		SUB-TOTAL			14,672		24,750		10,078
420	4.	Condominium/Townhouse	DU	40.00	320	40.00	320	0.00	0
		SUB-TOTAL			320		320		0
421	4.	Condominium/Townhouse	DU	752.00	6,016	752.00	6,016	0.00	0
	30.	Industrial Park	TSF	--	--	300.00	1,800	300.00	1,800
	31.	Business Park	TSF	--	--	300.00	3,060	300.00	3,060
		SUB-TOTAL			6,016		10,876		4,860
422	2.	Single Family (1-5du/ac)	DU	74.00	733	76.00	752	2.00	19
	4.	Condominium/Townhouse	DU	80.00	640	80.00	640	0.00	0
	11.	Commercial Center(10-30a)	TSF	--	--	132.00	7,136	132.00	7,136
	12.	Commercial Center (<10ac)	TSF	4.00	340	4.00	340	0.00	0
	20.	Elementary/Middle School	STU	817.00	1,185	817.00	1,185	0.00	0
		SUB-TOTAL			2,898		10,053		7,155
423	2.	Single Family (1-5du/ac)	DU	353.00	3,495	353.00	3,495	0.00	0
	3.	Single Family (6-10du/ac)	DU	--	--	21.00	208	21.00	208
	12.	Commercial Center (<10ac)	TSF	98.01	8,337	98.01	8,337	0.00	0
	40.	Commercial Office	TSF	10.89	126	10.89	126	0.00	0
		SUB-TOTAL			11,958		12,166		208
424	2.	Single Family (1-5du/ac)	DU	2.00	20	189.00	1,871	187.00	1,851
	4.	Condominium/Townhouse	DU	84.00	672	194.00	1,552	110.00	880
		SUB-TOTAL			692		3,423		2,731
425	2.	Single Family (1-5du/ac)	DU	39.00	386	241.00	2,386	202.00	2,000
	4.	Condominium/Townhouse	DU	--	--	80.00	640	80.00	640
	51.	Developed Park	AC	--	--	31.00	81	31.00	81
		SUB-TOTAL			386		3,107		2,721
426	2.	Single Family (1-5du/ac)	DU	30.00	297	560.00	5,544	530.00	5,247
	3.	Single Family (6-10du/ac)	DU	70.00	693	70.00	693	0.00	0
	32.	Manufacturing/Warehouse	TSF	39.60	202	39.60	202	0.00	0
		SUB-TOTAL			1,192		6,439		5,247

LAND USE AND TRIP GENERATION COMPARISON

Zone	Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
427	2. Single Family (1-5du/ac)	DU	249.00	2,465	249.00	2,465	0.00	0
	SUB-TOTAL			2,465		2,465		0
428	2. Single Family (1-5du/ac)	DU	540.00	5,346	2,124.00	21,028	1,584.00	15,682
	11. Commercial Center(10-30a)	TSF	--	--	47.40	2,562	47.40	2,562
	12. Commercial Center (<10ac)	TSF	--	--	39.20	3,334	39.20	3,334
	SUB-TOTAL			5,346		26,924		21,578
429	2. Single Family (1-5du/ac)	DU	42.00	416	55.00	545	13.00	129
	SUB-TOTAL			416		545		129
430	2. Single Family (1-5du/ac)	DU	2.00	20	2.00	20	0.00	0
	SUB-TOTAL			20		20		0
431	2. Single Family (1-5du/ac)	DU	3.00	30	3.00	30	0.00	0
	SUB-TOTAL			30		30		0
433	2. Single Family (1-5du/ac)	DU	8.00	79	55.00	545	47.00	466
	SUB-TOTAL			79		545		466
434	2. Single Family (1-5du/ac)	DU	25.00	247	25.00	247	0.00	0
	SUB-TOTAL			247		247		0
437	2. Single Family (1-5du/ac)	DU	6.00	59	250.00	2,475	244.00	2,416
	4. Condominium/Townhouse	DU	--	--	13.00	104	13.00	104
	59. Cemex	SG	--	--	12.84	1,284	12.84	1,284
	SUB-TOTAL			59		3,863		3,804
438	3. Single Family (6-10du/ac)	DU	--	--	568.00	5,623	568.00	5,623
	4. Condominium/Townhouse	DU	--	--	13.00	104	13.00	104
	SUB-TOTAL			--		5,727		5,727
439	2. Single Family (1-5du/ac)	DU	164.00	1,624	170.00	1,683	6.00	59
	3. Single Family (6-10du/ac)	DU	660.00	6,534	660.00	6,534	0.00	0
	11. Commercial Center(10-30a)	TSF	--	--	41.65	2,252	41.65	2,252
	SUB-TOTAL			8,158		10,469		2,311
440	2. Single Family (1-5du/ac)	DU	--	--	568.00	5,623	568.00	5,623
	SUB-TOTAL			--		5,623		5,623
441	2. Single Family (1-5du/ac)	DU	150.00	1,485	284.00	2,812	134.00	1,327
	20. Elementary/Middle School	STU	360.00	522	360.00	522	0.00	0
	SUB-TOTAL			2,007		3,334		1,327
442	2. Single Family (1-5du/ac)	DU	72.00	713	336.00	3,326	264.00	2,613
	3. Single Family (6-10du/ac)	DU	216.00	2,138	216.00	2,138	0.00	0
	SUB-TOTAL			2,851		5,464		2,613
443	2. Single Family (1-5du/ac)	DU	499.00	4,940	763.00	7,554	264.00	2,614
	20. Elementary/Middle School	STU	985.00	1,428	985.00	1,428	0.00	0

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
443	23.	Hospital	TSF	30.00	504	30.00	504	0.00	0
	40.	Commercial Office	TSF	108.90	1,259	108.90	1,259	0.00	0
		SUB-TOTAL			8,131		10,745		2,614
444	2.	Single Family (1-5du/ac)	DU	775.00	7,672	775.00	7,672	0.00	0
	4.	Condominium/Townhouse	DU	19.00	152	19.00	152	0.00	0
	11.	Commercial Center(10-30a)	TSF	--	--	298.95	16,161	298.95	16,161
	25.	Church	TSF	4.00	37	4.00	37	0.00	0
		SUB-TOTAL			7,861		24,022		16,161
445	2.	Single Family (1-5du/ac)	DU	29.00	287	41.00	406	12.00	119
		SUB-TOTAL			287		406		119
446	2.	Single Family (1-5du/ac)	DU	231.00	2,287	231.00	2,287	0.00	0
		SUB-TOTAL			2,287		2,287		0
447	50.	Golf Course	AC	150.00	1,194	150.00	1,194	0.00	0
		SUB-TOTAL			1,194		1,194		0
448	2.	Single Family (1-5du/ac)	DU	395.00	3,910	691.00	6,841	296.00	2,931
		SUB-TOTAL			3,910		6,841		2,931
449	2.	Single Family (1-5du/ac)	DU	20.00	198	20.00	198	0.00	0
		SUB-TOTAL			198		198		0
450	2.	Single Family (1-5du/ac)	DU	--	--	27.00	267	27.00	267
		SUB-TOTAL			--		267		267
451	2.	Single Family (1-5du/ac)	DU	40.00	396	67.00	663	27.00	267
	30.	Industrial Park	TSF	--	--	47.00	282	47.00	282
		SUB-TOTAL			396		945		549
452	2.	Single Family (1-5du/ac)	DU	6.00	59	38.00	376	32.00	317
		SUB-TOTAL			59		376		317
453	2.	Single Family (1-5du/ac)	DU	172.00	1,703	225.00	2,228	53.00	525
	10.	Commercial Center (>30ac)	TSF	--	--	16.00	641	16.00	641
	20.	Elementary/Middle School	STU	490.00	711	490.00	711	0.00	0
		SUB-TOTAL			2,414		3,580		1,166
454	2.	Single Family (1-5du/ac)	DU	116.00	1,148	125.00	1,238	9.00	90
	11.	Commercial Center(10-30a)	TSF	--	--	34.14	1,846	34.14	1,846
	13.	Commercial Shops	TSF	6.14	228	6.14	228	0.00	0
	52.	Undeveloped Park	AC	745.00	373	745.00	373	0.00	0
	57.	Agua Dulce Airport	SG	34.06	3,406	51.09	5,109	17.03	1,703
		SUB-TOTAL			5,155		8,794		3,639
455	2.	Single Family (1-5du/ac)	DU	80.00	792	80.00	792	0.00	0
		SUB-TOTAL			792		792		0

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
TOTAL	1.	Single Family (<1du/ac)	DU	300.00	2,970	853.00	8,445	553.00	5,475
	2.	Single Family (1-5du/ac)	DU	42,731.00	423,044	68,752.00	680,657	26,021.00	257,613
	3.	Single Family (6-10du/ac)	DU	5,812.00	57,538	19,625.00	194,289	13,813.00	136,751
	4.	Condominium/Townhouse	DU	23,519.00	188,152	44,325.00	354,600	20,806.00	166,448
	5.	Apartment	DU	2,108.00	14,545	9,613.00	66,331	7,505.00	51,786
	6.	Mobile Home	DU	2,464.00	17,002	2,565.00	17,699	101.00	697
	7.	Senior (Active)	DU	--	--	1,203.00	4,463	1,203.00	4,463
	10.	Commercial Center (>30ac)	TSF	2,675.04	107,163	6,446.34	258,241	3,771.30	151,078
	11.	Commercial Center(10-30a)	TSF	4,203.47	227,240	8,783.66	474,844	4,580.19	247,604
	12.	Commercial Center (<10ac)	TSF	1,307.47	111,212	2,654.47	225,789	1,347.00	114,577
	13.	Commercial Shops	TSF	1,168.87	43,318	1,656.71	61,396	487.84	18,078
	14.	Hotel	ROOM	985.00	8,107	1,406.00	11,572	421.00	3,465
	15.	Sit-Down Restaurant	TSF	210.92	27,493	297.19	38,737	86.27	11,244
	16.	Fast Food Restaurant	TSF	47.58	23,606	60.08	29,808	12.50	6,202
	17.	Movie Theater	SEAT	3,300.00	5,808	3,300.00	5,808	0.00	0
	18.	Health Club	TSF	125.00	5,000	125.00	5,000	0.00	0
	19.	Car Dealership	TSF	330.50	12,395	441.50	16,558	111.00	4,163
	20.	Elementary/Middle School	STU	32,506.00	47,140	50,491.00	73,220	17,985.00	26,080
	21.	High School	STU	13,228.00	23,678	23,274.00	41,661	10,046.00	17,983
	22.	College	STU	18,379.00	28,303	25,236.00	38,863	6,857.00	10,560
	23.	Hospital	TSF	222.80	3,743	222.80	3,743	0.00	0
	24.	Library	TSF	53.73	4,567	71.40	6,068	17.67	1,501
	25.	Church	TSF	512.89	4,770	635.89	5,914	123.00	1,144
	26.	Day Care	STU	460.00	2,079	540.00	2,441	80.00	362
	30.	Industrial Park	TSF	15,517.43	93,103	40,016.00	240,096	24,498.57	146,993
	31.	Business Park	TSF	1,017.92	10,383	8,580.24	87,518	7,562.32	77,135
	32.	Manufacturing/Warehouse	TSF	1,970.77	10,052	4,043.66	20,625	2,072.89	10,573
	34.	Utilities	TSF	1,121.24	2,668	1,150.24	2,737	29.00	69
	35.	Regional Post Office	TSF	764.00	3,820	764.00	3,820	0.00	0
	40.	Commercial Office	TSF	1,170.75	13,533	5,781.37	66,831	4,610.62	53,298
	42.	Medical Office	TSF	133.73	4,573	212.29	7,260	78.56	2,687
	43.	Post Office	TSF	50.00	5,410	50.00	5,410	0.00	0
	50.	Golf Course	AC	753.00	5,994	1,233.00	9,815	480.00	3,821
	51.	Developed Park	AC	250.90	652	596.10	1,550	345.20	898
	52.	Undeveloped Park	AC	745.00	373	762.50	382	17.50	9
	53.	Wayside Honor Ranch	SG	20.00	2,000	30.00	3,000	10.00	1,000
	54.	Six Flags Magic Mtn	SG	160.00	16,000	240.00	24,000	80.00	8,000
	55.	Travel Village	SG	26.20	2,620	26.20	2,620	0.00	0
	56.	CHP Office	SG	55.74	5,574	55.74	5,574	0.00	0
	57.	Agua Dulce Airport	SG	34.06	3,406	51.09	5,109	17.03	1,703
	58.	Landfill	SG	10.00	1,000	20.00	2,000	10.00	1,000
	59.	Cemex	SG	--	--	12.84	1,284	12.84	1,284
		TOTAL			1,570,034		3,115,778		1,545,744

Long-Range Cumulative (Buildout) Conditions Traffic Forecasts

LANDMARK VILLAGE
Long-Range Cumulative (Buildout) Conditions Traffic Forecasts

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LANDMARK VILLAGE
Long-Range Cumulative (Buildout) Conditions Traffic Forecasts

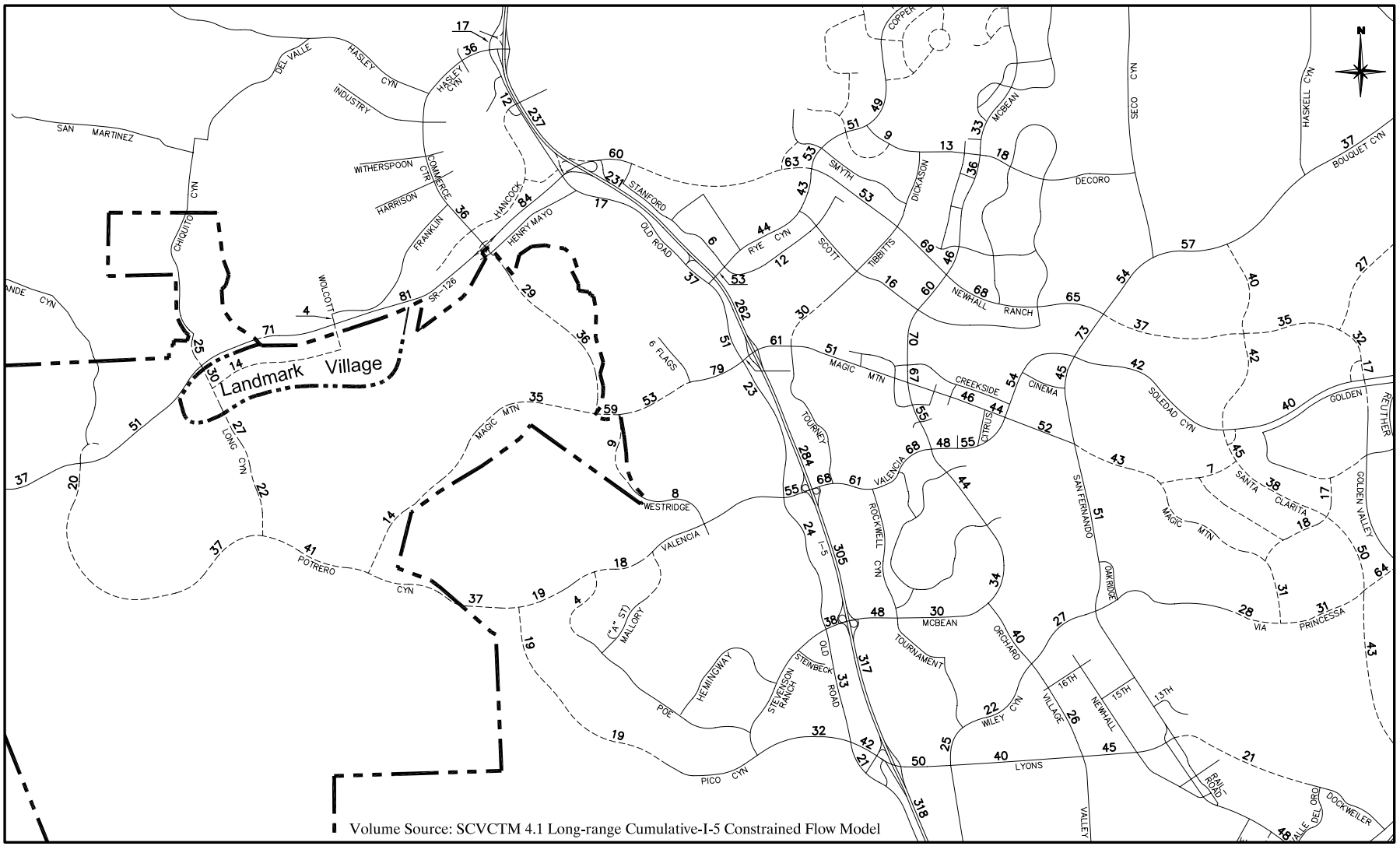
The Environmental Impact Report (EIR) prepared for the Newhall Ranch Specific Plan included information on Long-range Cumulative conditions for the Santa Clarita Valley. This document provides an update to that information by presenting Long-range Cumulative traffic volume forecasts based on the current cumulative project data for the Santa Clarita Valley.

Long-range Cumulative traffic volumes that include traffic generated by the Landmark Village project are illustrated in Figure 1. The illustrated volumes have been derived using the Santa Clarita Valley Consolidated Traffic Model (SCVCTM) Version 4.1 and represent long-range (2030) conditions with buildout of the City and County's General Plans. Known cumulative projects are included in the 2030 forecasts, including those with pending General Plan amendments. Appendix A contains a complete listing of the traffic model zones and land uses used by the base year (2004) and the long-range cumulative (2030) traffic models.

An updated ADT capacity analysis for arterial roadways was also conducted, based on the long-range cumulative land uses noted above. A comparison of tripends with and without the cumulative land uses shows an additional 21,000 ADT (or an increase of 0.7 percent), as shown in Table 1. These additional trips are distributed throughout the model area on both the east and west side of I-5. The resulting updated capacity analysis was then conducted for the Master Plan Highway network, which includes the County Highway Plan and the City's Circulation Plan.

Table 1: Long-Range Trip Generation Comparison

		Long-Range General Plan		Long-Range Cumulative		Difference	
Land Use	**Units**	**Amount**	**ADT**	**Amount**	**ADT**	**Amount**	**ADT**
Single Family Residential	DU	90,924.00	892,468	91,795.00	901,090	871.00	8,622
Multi-Family Residential	DU	48,019.00	374,792	55,141.00	425,394	7,122.00	50,602
Commercial Square Footage	TSF	82,475.13	1,579,917	81,012.70	1,539,260	-1,462.43	-40,657
Other	--	--	247,247	--	250,034	--	2,787
TOTAL	--	--	3,094,424	--	3,115,778	--	21,354
Source: SCVCTM 4.1 DU = Dwelling Units; MSF = Million Square Feet							



Legend

XX ADT Volumes (000s)

Future Roadway

Newhall Ranch Boundary

Figure 1

ADT VOLUMES
SCVCTM 4.1 - LONG-RANGE CUMULATIVE
(I-5 CONSTRAINED FLOW MODEL)

The previously referenced Figure 1 shows the long-range ADT volumes that include both the Landmark Village and the cumulative land uses. The resulting impact of the Landmark Village project is shown in Table 2, which shows those locations with a measurable project impact and includes the project-only contribution.

The table shows how no arterial locations exceed capacity (i.e., a V/C greater than 1.00) with the addition of the cumulative land uses.

Table 2: Long-Range ADT Volume Summary, Arterial Highway Network

Location		Lanes	Capacity	Without Landmark Village		With Landmark Village		Project
				ADT	V/C	ADT	V/C	Cont.
6	Chiquito Cyn n/o SR-126	6	54,000	24,000	.44	25,000	.46	.02
26	Old Road s/o Henry Mayo	6	54,000	14,000	.26	17,000	.31	.06
27	Old Road n/o Rye Cyn	6	54,000	36,000	.67	37,000	.69	.02
37	McBean e/o Rockwell	6	54,000	29,000	.54	30,000	.56	.02
40	McBean n/o Magic Mtn	8	72,000	66,000	.92	67,000	.93	.01
41	McBean s/o Newhall Ranch	8	72,000	59,000	.82	60,000	.83	.01
50	Newhall Ranch e/o I-5	8	72,000	57,000	.79	60,000	.83	.04
51	Newhall Ranch w/o Rye	8	72,000	61,000	.85	63,000	.88	.03
52	Newhall Ranch e/o Rye	8	72,000	52,000	.72	53,000	.74	.01
53	Newhall Ranch w/o Baywood	8a	86,000	68,000	.79	69,000	.80	.01
54	Newhall Ranch e/o McBean	8a	86,000	67,000	.78	68,000	.79	.01
55	Newhall Ranch e/o Bouquet	6	54,000	36,000	.67	37,000	.69	.02
70	Decoro e/o Copper Hill	4	32,000	8,000	.25	9,000	.28	.03
71	Decoro e/o Dickason	4	32,000	12,000	.38	13,000	.41	.03
107	Via Princessa e/o Magic Mtn	6	54,000	30,000	.56	31,000	.57	.02
128	Newhall Ranch w/o Bouquet	8	72,000	64,000	.89	65,000	.90	.01
141	Tibbitts n/o Magic Mtn	6	54,000	29,000	.54	30,000	.56	.02
170	Stanford n/o Rye Cyn	4	32,000	5,000	.16	6,000	.19	.03
197	Magic Mtn n/o Via Princessa	6	54,000	30,000	.56	31,000	.57	.02
222	Santa Clarita s/o Soledad	6	54,000	44,000	.81	45,000	.83	.02
233	Stanford e/o Rye Cyn	4	32,000	11,000	.34	12,000	.38	.03
240	Wolcott n/o SR-126	2	16,000	3,000	.19	4,000	.25	.06
322	McBean s/o Copper Hill	6	54,000	25,000	.46	26,000	.48	.02

Notes:
Volumes Source: SCVCTM 4.1 Long-Range Cumulative (I-5 Constrained Flow Model)
ADT Capacity Source: Newhall Ranch Traffic Analysis
Xa = X Lanes with Augmented Capacity
n/o = north of; s/o = south of; e/o = east of; w/o = west of

Cumulative impacts on the I-5 freeway have been evaluated with an analysis based on peak hour directional volumes, as recommended by Caltrans and as required by the Los Angeles County Congestion Management Program (CMP).

The results of the analysis are presented in the attached Table 3, which shows the combined project and cumulative volume of traffic at each location, for conditions with and without the project and

based on the anticipated year 2030 roadway network. As noted above, the traffic volumes have been obtained from the SCVCTM Version 4.1 Long-Range Cumulative Flow Model, which is used by the County of Los Angeles and the City of Santa Clarita for long-range forecasting of this type. The anticipated roadway network is based on an improvement project currently in the planning and initial design stages. This improvement project will construct an HOV lane in each direction of the I-5 freeway through the Santa Clarita Valley, connecting to the HOV lanes currently under construction on the I-5 freeway south of the SR-14 freeway. This improvement project will also construct a dedicated truck lane in each direction south of the Lyons/Calgrove interchange, connecting to the dedicated truck lanes that currently exist on the I-5 freeway south of the SR-14 freeway.

The table shows that under this long-range cumulative setting, the following freeway segment is anticipated to operate at deficient conditions:

- I-5 south of Valencia Boulevard (PM Peak Hour – Southbound Direction)

While the above segment is projected to operate deficiently, the proposed project does not significantly impact the segment as the project's impact is less than a .02 change to the segments volume to capacity (V/C) ratio (the threshold of significance specified by the Los Angeles CMP).

In conclusion, the proposed Landmark Village project is not projected to significantly impact the I-5 freeway or the arterial roadway system for a Long-Range Cumulative Setting.

Table 3: Freeway V/C Analysis - Long-Range Cumulative Conditions

Location	Total Vol	Mixed Flow Lanes				HOV Lanes				Truck Lanes			
		Lanes	Cap/Ln	Vol	V/C	Lanes	Cap/Ln	Vol	V/C	Lanes	Cap/Ln	Vol	V/C
AM Northbound													
404. I-5 s/o Hasley													
without Project	5,905	4	1,950	5,315	0.68	1	2,000	591	0.30	-	-	-	-
with Project	5,961	4	1,950	5,365	0.69	1	2,000	596	0.30	-	-	-	-
Project Increment	56			50	0.01			6	0.00				
405. I-5 s/o SR-126													
without Project	6,551	4	1,950	5,765	0.74	1	2,000	786	0.39	-	-	-	-
with Project	6,723	4	1,950	5,916	0.76	1	2,000	807	0.40	-	-	-	-
Project Increment	172			151	0.02			21	0.01				
406. I-5 s/o Rye Cyn													
without Project	6,551	4	1,950	5,765	0.74	1	2,000	786	0.39	-	-	-	-
with Project	6,723	4	1,950	5,916	0.76	1	2,000	807	0.40	-	-	-	-
Project Increment	172			151	0.02			21	0.01				
407. I-5 s/o Magic Mtn													
without Project	7,065	4	1,950	6,217	0.80	1	2,000	848	0.42	-	-	-	-
with Project	7,190	4	1,950	6,327	0.81	1	2,000	863	0.43	-	-	-	-
Project Increment	125			110	0.01			15	0.01				
408. I-5 s/o Valencia													
without Project	7,730	4	1,950	6,802	0.87	1	2,000	928	0.46	-	-	-	-
with Project	7,848	4	1,950	6,906	0.89	1	2,000	942	0.47	-	-	-	-
Project Increment	118			104	0.02			14	0.01				
409. I-5 s/o McBean													
without Project	7,625	4	1,950	6,710	0.86	1	2,000	915	0.46	-	-	-	-
with Project	7,744	4	1,950	6,815	0.87	1	2,000	929	0.46	-	-	-	-
Project Increment	119			105	0.01			14	0.00				
410. I-5 s/o Lyons													
without Project	7,119	4	1,950	6,265	0.80	1	2,000	854	0.43	-	-	-	-
with Project	7,223	4	1,950	6,356	0.81	1	2,000	867	0.43	-	-	-	-
Project Increment	104			92	0.01			12	0.00				
411. I-5 s/o Calgrove													
without Project	6,562	4	2,000	5,053	0.63	1	2,000	787	0.39	1	1,300	722	0.56
with Project	6,652	4	2,000	5,122	0.64	1	2,000	798	0.40	1	1,300	732	0.56
Project Increment	90			69	0.01			11	0.01			10	0.00
AM Southbound													
404. I-5 s/o Hasley													
without Project	6,612	4	1,950	5,951	0.76	1	2,000	661	0.33	-	-	-	-
with Project	6,619	4	1,950	5,957	0.76	1	2,000	662	0.33	-	-	-	-
Project Increment	7			6	0.00			1	0.00				
405. I-5 s/o SR-126													
without Project	6,550	4	1,950	5,764	0.74	1	2,000	786	0.39	-	-	-	-
with Project	6,625	4	1,950	5,830	0.75	1	2,000	795	0.40	-	-	-	-
Project Increment	75			66	0.01			9	0.01				

(Cont.)

Table 3: Freeway V/C Analysis - Long-Range Cumulative Conditions (Cont.)

Location	Total Vol	Mixed Flow Lanes				HOV Lanes				Truck Lanes			
		Lanes	Cap/Ln	Vol	V/C	Lanes	Cap/Ln	Vol	V/C	Lanes	Cap/Ln	Vol	V/C
AM Peak Hour Southbound (Cont.)													
406. I-5 s/o Rye Cyn													
without Project	6,814	4	1,950	5,996	0.77	1	2,000	818	0.41	-	-	-	-
with Project	6,854	4	1,950	6,032	0.77	1	2,000	822	0.41	-	-	-	-
Project Increment	40			35	0.00			5	0.00				
407. I-5 s/o Magic Mtn													
without Project	7,160	4	1,950	6,301	0.81	1	2,000	859	0.43	-	-	-	-
with Project	7,160	4	1,950	6,301	0.81	1	2,000	859	0.43	-	-	-	-
Project Increment	0			0	0.00			0	0.00				
408. I-5 s/o Valencia													
without Project	8,045	4	1,950	7,080	0.91	1	2,000	965	0.48	-	-	-	-
with Project	8,040	4	1,950	7,075	0.91	1	2,000	965	0.48	-	-	-	-
Project Increment	-5			-4	0.00			-1	0.00				
409. I-5 s/o McBean													
without Project	7,690	4	1,950	6,767	0.87	1	2,000	923	0.46	-	-	-	-
with Project	7,669	4	1,950	6,749	0.87	1	2,000	920	0.46	-	-	-	-
Project Increment	-21			-18	0.00			-3	0.00				
410. I-5 s/o Lyons													
without Project	7,207	4	2,000	5,549	0.69	1	2,000	865	0.43	1	1,300	793	0.61
with Project	7,195	4	2,000	5,540	0.69	1	2,000	863	0.43	1	1,300	791	0.61
Project Increment	-12			-9	0.00			-1	0.00			-1	0.00
411. I-5 s/o Calgrove													
without Project	7,205	4	2,000	5,548	0.69	1	2,000	865	0.43	1	1,300	793	0.61
with Project	7,177	4	2,000	5,526	0.69	1	2,000	861	0.43	1	1,300	789	0.61
Project Increment	-28			-22	0.00			-3	0.00			-3	0.00
PM Peak Hour Northbound													
404. I-5 s/o Hasley													
without Project	8,271	4	1,950	7,444	0.95	1	2,000	827	0.41	-	-	-	-
with Project	8,334	4	1,950	7,501	0.96	1	2,000	833	0.42	-	-	-	-
Project Increment	63			57	0.01			6	0.01				
405. I-5 s/o SR-126													
without Project	7,556	4	1,950	6,649	0.85	1	2,000	907	0.45	-	-	-	-
with Project	7,624	4	1,950	6,709	0.86	1	2,000	915	0.46	-	-	-	-
Project Increment	68			60	0.01			8	0.01				
406. I-5 s/o Rye Cyn													
without Project	7,556	4	1,950	6,649	0.85	1	2,000	907	0.45	-	-	-	-
with Project	7,624	4	1,950	6,709	0.86	1	2,000	915	0.46	-	-	-	-
Project Increment	68			60	0.01			8	0.01				
407. I-5 s/o Magic Mtn													
without Project	7,923	4	1,950	6,972	0.89	1	2,000	951	0.48	-	-	-	-
with Project	7,959	4	1,950	7,004	0.90	1	2,000	955	0.48	-	-	-	-
Project Increment	36			32	0.01			4	0.00				

(Cont.)

Table 3: Freeway V/C Analysis - Long-Range Cumulative Conditions (Cont.)

Location	Total Vol	Mixed Flow Lanes				HOV Lanes				Truck Lanes			
		Lanes	Cap/Ln	Vol	V/C	Lanes	Cap/Ln	Vol	V/C	Lanes	Cap/Ln	Vol	V/C
PM Peak Hour Northbound (Cont.)													
408. I-5 s/o Valencia													
without Project	8,251	4	1,950	7,261	0.93	1	2,000	990	0.50	-	-	-	-
with Project	8,297	4	1,950	7,301	0.94	1	2,000	996	0.50	-	-	-	-
Project Increment	46			40	0.01			6	0.00				
409. I-5 s/o McBean													
without Project	8,403	4	1,950	7,395	0.95	1	2,000	1,008	0.50	-	-	-	-
with Project	8,428	4	1,950	7,417	0.95	1	2,000	1,011	0.51	-	-	-	-
Project Increment	25			22	0.00			3	0.01				
410. I-5 s/o Lyons													
without Project	8,380	4	1,950	7,374	0.95	1	2,000	1,006	0.50	-	-	-	-
with Project	8,406	4	1,950	7,397	0.95	1	2,000	1,009	0.50	-	-	-	-
Project Increment	26			23	0.00			3	0.00				
411. I-5 s/o Calgrove													
without Project	8,233	4	2,000	7,245	0.91	1	2,000	988	0.49	1	1,300	906	0.70
with Project	8,252	4	2,000	7,262	0.91	1	2,000	990	0.50	1	1,300	908	0.70
Project Increment	19			17	0.00			2	0.01			2	0.00
PM Peak Hour Southbound													
404. I-5 s/o Hasley													
without Project	7,900	4	1,950	6,952	0.89	1	2,000	948	0.47	-	-	-	-
with Project	7,957	4	1,950	7,002	0.90	1	2,000	955	0.48	-	-	-	-
Project Increment	57			50	0.01			7	0.01				
405. I-5 s/o SR-126													
without Project	8,277	4	1,950	6,539	0.84	1	2,000	1,738	0.87	-	-	-	-
with Project	8,439	4	1,950	6,667	0.85	1	2,000	1,772	0.89	-	-	-	-
Project Increment	162			128	0.01			34	0.02				
406. I-5 s/o Rye Cyn													
without Project	9,562	4	1,950	7,640	0.98	1	2,000	1,922	0.96	-	-	-	-
with Project	9,808	4	1,950	7,837	1.00	1	2,000	1,971	0.99	-	-	-	-
Project Increment	246			197	0.02			49	0.03				
407. I-5 s/o Magic Mtn													
without Project	9,413	4	1,950	7,512	0.96	1	2,000	1,901	0.95	-	-	-	-
with Project	9,621	4	1,950	7,649	0.98	1	2,000	1,972	0.99	-	-	-	-
Project Increment	208			137	0.02			71	0.04				
408. I-5 s/o Valencia													
without Project	9,738	4	1,950	7,839	1.01	1	2,000	1,899	0.95	-	-	-	-
with Project	9,922	4	1,950	7,967	1.02	1	2,000	1,955	0.98	-	-	-	-
Project Increment	184			128	0.01			56	0.03				
409. I-5 s/o McBean													
without Project	9,262	4	1,950	7,410	0.95	1	2,000	1,852	0.93	-	-	-	-
with Project	9,416	4	1,950	7,486	0.96	1	2,000	1,930	0.97	-	-	-	-
Project Increment	154			76	0.01			78	0.04				

(Cont.)

Table 3: Freeway V/C Analysis - Long-Range Cumulative Conditions (Cont.)

	Total	Mixed Flow Lanes				HOV Lanes				Truck Lanes			
Location	Vol	Lanes	Cap/Ln	Vol	V/C	Lanes	Cap/Ln	Vol	V/C	Lanes	Cap/Ln	Vol	V/C
PM Peak Hour Southbound (Cont.)													
410. I-5 s/o Lyons													
without Project	8,604	4	2,000	5,937	0.74	1	2,000	1,721	0.86	1	1,300	946	0.73
with Project	8,749	4	2,000	6,037	0.75	1	2,000	1,750	0.87	1	1,300	962	0.74
Project Increment	145			100	0.01			29	0.01			16	0.01
411. I-5 s/o Calgrove													
without Project	8,411	4	2,000	5,804	0.73	1	2,000	1,682	0.84	1	1,300	925	0.71
with Project	8,537	4	2,000	5,891	0.74	1	2,000	1,707	0.85	1	1,300	939	0.72
Project Increment	126			87	0.01			25	0.01			14	0.01

Notes:
HOV = High Occupancy Vehicle (Carpool)
Vol = Peak Hour Volume
Cap/Ln = Capacity per Lane
V/C = Volume to Capacity Ratio

APPENDIX A

LAND USE AND TRIP GENERATION COMPARISON

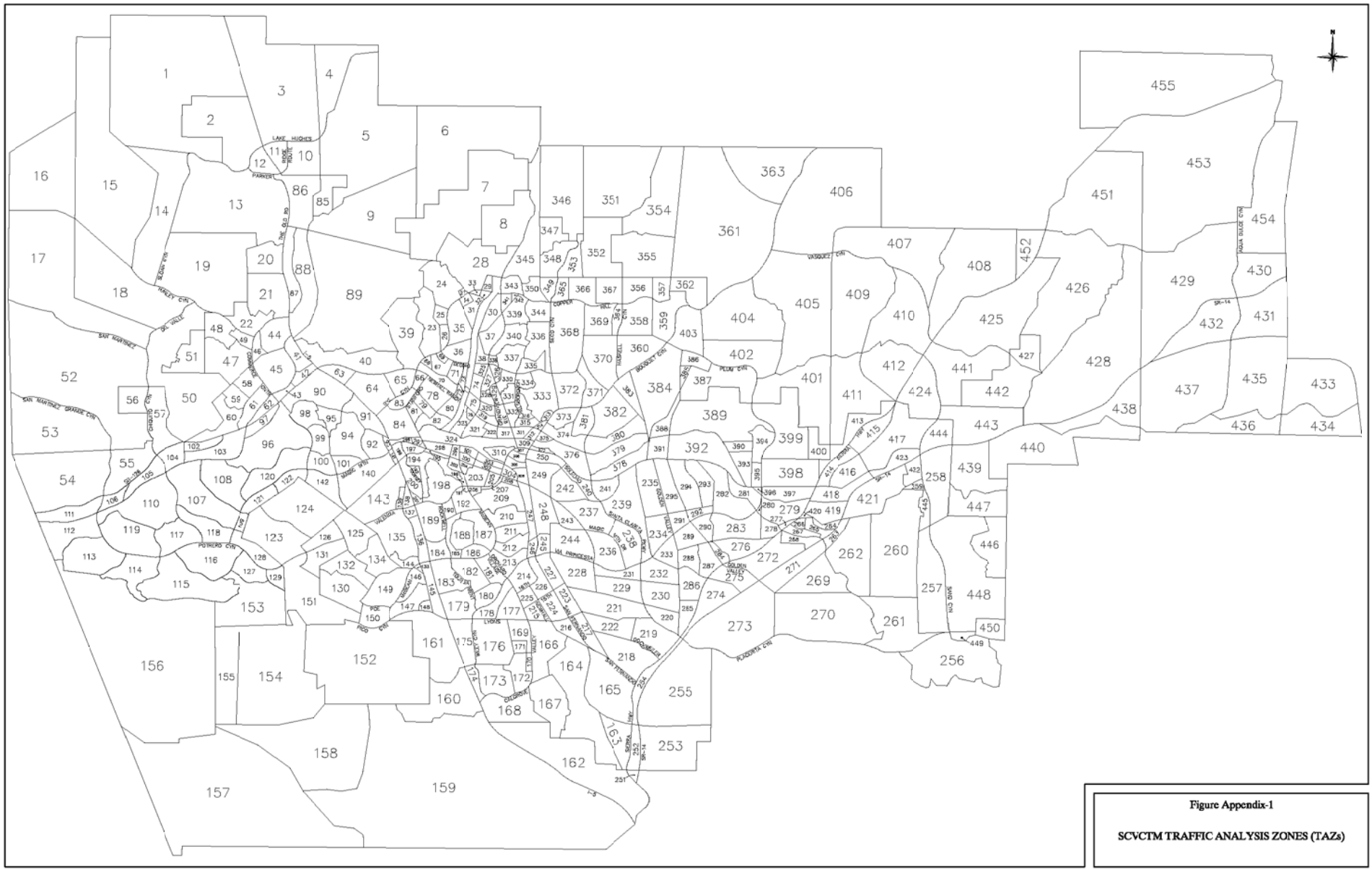


Figure Appendix-1

SCVCTM TRAFFIC ANALYSIS ZONES (TAZs)

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
1	2.	Single Family (1-5du/ac)	DU	145.00	1,436	367.00	3,633	222.00	2,197
	3.	Single Family (6-10du/ac)	DU	200.00	1,980	200.00	1,980	0.00	0
		SUB-TOTAL			3,416		5,613		2,197
2	2.	Single Family (1-5du/ac)	DU	336.00	3,326	535.00	5,297	199.00	1,971
		SUB-TOTAL			3,326		5,297		1,971
3	2.	Single Family (1-5du/ac)	DU	641.00	6,346	3,703.00	36,660	3,062.00	30,314
	4.	Condominium/Townhouse	DU	--	--	648.00	5,184	648.00	5,184
	11.	Commercial Center(10-30a)	TSF	150.00	8,109	320.00	17,299	170.00	9,190
	20.	Elementary/Middle School	STU	610.00	885	3,400.00	4,930	2,790.00	4,045
	21.	High School	STU	--	--	2,800.00	5,012	2,800.00	5,012
	30.	Industrial Park	TSF	--	--	256.79	1,541	256.79	1,541
	32.	Manufacturing/Warehouse	TSF	77.49	395	77.49	395	0.00	0
		SUB-TOTAL			15,735		71,021		55,286
4	30.	Industrial Park	TSF	--	--	389.00	2,334	389.00	2,334
		SUB-TOTAL			--		2,334		2,334
5	2.	Single Family (1-5du/ac)	DU	1.00	10	651.00	6,445	650.00	6,435
	4.	Condominium/Townhouse	DU	--	--	100.00	800	100.00	800
	12.	Commercial Center (<10ac)	TSF	--	--	25.00	2,127	25.00	2,127
	13.	Commercial Shops	TSF	2.01	74	2.01	74	0.00	0
	25.	Church	TSF	25.00	233	25.00	233	0.00	0
		SUB-TOTAL			317		9,679		9,362
6	2.	Single Family (1-5du/ac)	DU	10.00	99	330.00	3,267	320.00	3,168
	4.	Condominium/Townhouse	DU	--	--	141.00	1,128	141.00	1,128
		SUB-TOTAL			99		4,395		4,296
7	2.	Single Family (1-5du/ac)	DU	1.00	10	321.00	3,178	320.00	3,168
	3.	Single Family (6-10du/ac)	DU	--	--	480.00	4,752	480.00	4,752
	4.	Condominium/Townhouse	DU	--	--	134.00	1,072	134.00	1,072
	20.	Elementary/Middle School	STU	--	--	1,848.00	2,680	1,848.00	2,680
		SUB-TOTAL			10		11,682		11,672
8	2.	Single Family (1-5du/ac)	DU	10.00	99	70.00	693	60.00	594
		SUB-TOTAL			99		693		594
9	2.	Single Family (1-5du/ac)	DU	1.00	10	166.00	1,643	165.00	1,633
		SUB-TOTAL			10		1,643		1,633
10	2.	Single Family (1-5du/ac)	DU	12.00	119	12.00	119	0.00	0
	4.	Condominium/Townhouse	DU	184.00	1,472	184.00	1,472	0.00	0
	12.	Commercial Center (<10ac)	TSF	20.86	1,774	20.86	1,774	0.00	0
	15.	Sit-Down Restaurant	TSF	12.78	1,666	12.78	1,666	0.00	0
		SUB-TOTAL			5,031		5,031		0
11	2.	Single Family (1-5du/ac)	DU	23.00	228	24.00	238	1.00	10

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
11	3.	Single Family (6-10du/ac)	DU	--	--	84.00	832	84.00	832
	4.	Condominium/Townhouse	DU	138.00	1,104	165.00	1,320	27.00	216
	5.	Apartment	DU	--	--	72.00	497	72.00	497
	12.	Commercial Center (<10ac)	TSF	19.46	1,655	52.76	4,488	33.30	2,833
	13.	Commercial Shops	TSF	2.46	91	2.46	91	0.00	0
	15.	Sit-Down Restaurant	TSF	7.75	1,010	7.75	1,010	0.00	0
	30.	Industrial Park	TSF	--	--	41.82	251	41.82	251
	40.	Commercial Office	TSF	1.23	14	1.23	14	0.00	0
	51.	Developed Park	AC	--	--	2.00	5	2.00	5
		SUB-TOTAL			4,102		8,746		4,644
12	2.	Single Family (1-5du/ac)	DU	213.00	2,109	213.00	2,109	0.00	0
	3.	Single Family (6-10du/ac)	DU	--	--	39.00	386	39.00	386
	14.	Hotel	ROOM	--	--	121.00	996	121.00	996
		SUB-TOTAL			2,109		3,491		1,382
13	2.	Single Family (1-5du/ac)	DU	464.00	4,594	641.00	6,346	177.00	1,752
	4.	Condominium/Townhouse	DU	54.00	432	54.00	432	0.00	0
	11.	Commercial Center(10-30a)	TSF	--	--	114.56	6,193	114.56	6,193
	30.	Industrial Park	TSF	--	--	32.93	198	32.93	198
	40.	Commercial Office	TSF	--	--	21.82	252	21.82	252
		SUB-TOTAL			5,026		13,421		8,395
14	2.	Single Family (1-5du/ac)	DU	19.00	188	291.00	2,881	272.00	2,693
	50.	Golf Course	AC	--	--	150.00	1,194	150.00	1,194
		SUB-TOTAL			188		4,075		3,887
15	2.	Single Family (1-5du/ac)	DU	78.00	772	294.00	2,911	216.00	2,139
		SUB-TOTAL			772		2,911		2,139
16	2.	Single Family (1-5du/ac)	DU	--	--	14.00	139	14.00	139
		SUB-TOTAL			--		139		139
17	2.	Single Family (1-5du/ac)	DU	146.00	1,445	248.00	2,455	102.00	1,010
		SUB-TOTAL			1,445		2,455		1,010
18	2.	Single Family (1-5du/ac)	DU	75.00	743	361.00	3,574	286.00	2,831
	4.	Condominium/Townhouse	DU	--	--	109.00	872	109.00	872
	6.	Mobile Home	DU	113.00	780	113.00	780	0.00	0
	12.	Commercial Center (<10ac)	TSF	--	--	50.00	4,253	50.00	4,253
	51.	Developed Park	AC	--	--	7.00	18	7.00	18
		SUB-TOTAL			1,523		9,497		7,974
19	2.	Single Family (1-5du/ac)	DU	1,306.00	12,929	1,577.00	15,612	271.00	2,683
	20.	Elementary/Middle School	STU	2,205.00	3,198	2,205.00	3,198	0.00	0
	50.	Golf Course	AC	--	--	150.00	1,194	150.00	1,194
		SUB-TOTAL			16,127		20,004		3,877
20	2.	Single Family (1-5du/ac)	DU	245.00	2,426	245.00	2,426	0.00	0
	4.	Condominium/Townhouse	DU	136.00	1,088	136.00	1,088	0.00	0

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
20	30.	Industrial Park	TSF	50.00	300	174.00	1,044	124.00	744
		SUB-TOTAL			3,814		4,558		744
21	2.	Single Family (1-5du/ac)	DU	620.00	6,138	620.00	6,138	0.00	0
	3.	Single Family (6-10du/ac)	DU	--	--	35.00	347	35.00	347
	12.	Commercial Center (<10ac)	TSF	--	--	70.00	5,954	70.00	5,954
		SUB-TOTAL			6,138		12,439		6,301
22	2.	Single Family (1-5du/ac)	DU	350.00	3,465	350.00	3,465	0.00	0
		SUB-TOTAL			3,465		3,465		0
23	2.	Single Family (1-5du/ac)	DU	--	--	373.00	3,693	373.00	3,693
		SUB-TOTAL			--		3,693		3,693
24	2.	Single Family (1-5du/ac)	DU	--	--	422.00	4,178	422.00	4,178
		SUB-TOTAL			--		4,178		4,178
25	20.	Elementary/Middle School	STU	--	--	500.00	725	500.00	725
		SUB-TOTAL			--		725		725
26	13.	Commercial Shops	TSF	--	--	72.90	2,702	72.90	2,702
		SUB-TOTAL			--		2,702		2,702
27	5.	Apartment	DU	--	--	256.00	1,766	256.00	1,766
		SUB-TOTAL			--		1,766		1,766
28	3.	Single Family (6-10du/ac)	DU	91.00	901	400.00	3,960	309.00	3,059
	4.	Condominium/Townhouse	DU	--	--	457.00	3,656	457.00	3,656
		SUB-TOTAL			901		7,616		6,715
29	5.	Apartment	DU	--	--	115.00	794	115.00	794
		SUB-TOTAL			--		794		794
30	4.	Condominium/Townhouse	DU	--	--	275.00	2,200	275.00	2,200
		SUB-TOTAL			--		2,200		2,200
31	3.	Single Family (6-10du/ac)	DU	--	--	65.00	644	65.00	644
	4.	Condominium/Townhouse	DU	--	--	200.00	1,600	200.00	1,600
	20.	Elementary/Middle School	STU	800.00	1,160	1,500.00	2,175	700.00	1,015
		SUB-TOTAL			1,160		4,419		3,259
32	4.	Condominium/Townhouse	DU	--	--	94.00	752	94.00	752
		SUB-TOTAL			--		752		752
33	12.	Commercial Center (<10ac)	TSF	--	--	61.00	5,189	61.00	5,189
		SUB-TOTAL			--		5,189		5,189
34	12.	Commercial Center (<10ac)	TSF	--	--	107.10	9,110	107.10	9,110
		SUB-TOTAL			--		9,110		9,110

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
35	3.	Single Family (6-10du/ac)	DU	--	--	616.00	6,098	616.00	6,098
	4.	Condominium/Townhouse	DU	--	--	60.00	480	60.00	480
	5.	Apartment	DU	--	--	200.00	1,380	200.00	1,380
		SUB-TOTAL			--		7,958		7,958
36	2.	Single Family (1-5du/ac)	DU	190.00	1,881	190.00	1,881	0.00	0
	3.	Single Family (6-10du/ac)	DU	293.00	2,901	293.00	2,901	0.00	0
	4.	Condominium/Townhouse	DU	268.00	2,144	268.00	2,144	0.00	0
		SUB-TOTAL			6,926		6,926		0
37	2.	Single Family (1-5du/ac)	DU	212.00	2,099	212.00	2,099	0.00	0
	4.	Condominium/Townhouse	DU	128.00	1,024	128.00	1,024	0.00	0
	25.	Church	TSF	20.00	186	20.00	186	0.00	0
		SUB-TOTAL			3,309		3,309		0
38	4.	Condominium/Townhouse	DU	--	--	105.00	840	105.00	840
	5.	Apartment	DU	--	--	226.00	1,559	226.00	1,559
	12.	Commercial Center (<10ac)	TSF	--	--	50.00	4,253	50.00	4,253
		SUB-TOTAL			--		6,652		6,652
39	11.	Commercial Center(10-30a)	TSF	--	--	134.00	7,244	134.00	7,244
	30.	Industrial Park	TSF	35.40	212	4,016.00	24,096	3,980.60	23,884
		SUB-TOTAL			212		31,340		31,128
40	2.	Single Family (1-5du/ac)	DU	--	--	45.00	445	45.00	445
	31.	Business Park	TSF	--	--	116.70	1,190	116.70	1,190
	34.	Utilities	TSF	10.00	24	10.00	24	0.00	0
		SUB-TOTAL			24		1,659		1,635
41	30.	Industrial Park	TSF	91.90	551	730.00	4,380	638.10	3,829
		SUB-TOTAL			551		4,380		3,829
42	30.	Industrial Park	TSF	--	--	275.00	1,650	275.00	1,650
		SUB-TOTAL			--		1,650		1,650
43	30.	Industrial Park	TSF	--	--	273.90	1,643	273.90	1,643
		SUB-TOTAL			--		1,643		1,643
44	2.	Single Family (1-5du/ac)	DU	445.00	4,406	445.00	4,406	0.00	0
	12.	Commercial Center (<10ac)	TSF	--	--	25.00	2,127	25.00	2,127
	13.	Commercial Shops	TSF	10.00	371	10.00	371	0.00	0
	20.	Elementary/Middle School	STU	500.00	725	500.00	725	0.00	0
	26.	Day Care	STU	--	--	80.00	362	80.00	362
		SUB-TOTAL			5,502		7,991		2,489
45	30.	Industrial Park	TSF	--	--	1,960.20	11,761	1,960.20	11,761
		SUB-TOTAL			--		11,761		11,761
46	13.	Commercial Shops	TSF	77.00	2,854	77.00	2,854	0.00	0
	30.	Industrial Park	TSF	161.65	970	445.80	2,675	284.15	1,705
		SUB-TOTAL			3,824		5,529		1,705

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
47	30.	Industrial Park	TSF	2,403.65	14,422	4,254.10	25,525	1,850.45	11,103
		SUB-TOTAL			14,422		25,525		11,103
48	30.	Industrial Park	TSF	--	--	720.00	4,320	720.00	4,320
		SUB-TOTAL			--		4,320		4,320
49	30.	Industrial Park	TSF	600.20	3,601	764.30	4,586	164.10	985
		SUB-TOTAL			3,601		4,586		985
50	2.	Single Family (1-5du/ac)	DU	100.00	990	133.00	1,317	33.00	327
	58.	Landfill	SG	10.00	1,000	20.00	2,000	10.00	1,000
		SUB-TOTAL			1,990		3,317		1,327
51	30.	Industrial Park	TSF	--	--	1,300.00	7,800	1,300.00	7,800
		SUB-TOTAL			--		7,800		7,800
52	2.	Single Family (1-5du/ac)	DU	10.00	99	211.00	2,089	201.00	1,990
		SUB-TOTAL			99		2,089		1,990
53	1.	Single Family (<1du/ac)	DU	--	--	250.00	2,475	250.00	2,475
		SUB-TOTAL			--		2,475		2,475
54	2.	Single Family (1-5du/ac)	DU	--	--	210.00	2,079	210.00	2,079
	3.	Single Family (6-10du/ac)	DU	--	--	370.00	3,663	370.00	3,663
		SUB-TOTAL			--		5,742		5,742
55	2.	Single Family (1-5du/ac)	DU	--	--	100.00	990	100.00	990
	3.	Single Family (6-10du/ac)	DU	--	--	330.00	3,267	330.00	3,267
	4.	Condominium/Townhouse	DU	--	--	470.00	3,760	470.00	3,760
	12.	Commercial Center (<10ac)	TSF	--	--	25.00	2,127	25.00	2,127
	51.	Developed Park	AC	--	--	15.00	39	15.00	39
		SUB-TOTAL			--		10,183		10,183
56	2.	Single Family (1-5du/ac)	DU	--	--	60.00	594	60.00	594
		SUB-TOTAL			--		594		594
57	12.	Commercial Center (<10ac)	TSF	--	--	25.00	2,127	25.00	2,127
	31.	Business Park	TSF	--	--	1,100.00	11,220	1,100.00	11,220
	40.	Commercial Office	TSF	--	--	180.00	2,081	180.00	2,081
		SUB-TOTAL			--		15,428		15,428
58	30.	Industrial Park	TSF	850.20	5,101	1,051.50	6,309	201.30	1,208
		SUB-TOTAL			5,101		6,309		1,208
59	35.	Regional Post Office	TSF	764.00	3,820	764.00	3,820	0.00	0
		SUB-TOTAL			3,820		3,820		0
60	30.	Industrial Park	TSF	--	--	411.60	2,470	411.60	2,470
		SUB-TOTAL			--		2,470		2,470

LAND USE AND TRIP GENERATION COMPARISON

Zone	Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
61	30. Industrial Park	TSF	--	--	744.90	4,469	744.90	4,469
	SUB-TOTAL			--		4,469		4,469
62	30. Industrial Park	TSF	--	--	627.30	3,764	627.30	3,764
	SUB-TOTAL			--		3,764		3,764
63	30. Industrial Park	TSF	250.02	1,500	575.00	3,450	324.98	1,950
	SUB-TOTAL			1,500		3,450		1,950
64	30. Industrial Park	TSF	2,742.00	16,452	3,161.48	18,969	419.48	2,517
	SUB-TOTAL			16,452		18,969		2,517
65	10. Commercial Center (>30ac)	TSF	--	--	150.00	6,009	150.00	6,009
	30. Industrial Park	TSF	329.00	1,974	329.00	1,974	0.00	0
	SUB-TOTAL			1,974		7,983		6,009
66	10. Commercial Center (>30ac)	TSF	102.60	4,110	170.45	6,828	67.85	2,718
	30. Industrial Park	TSF	329.00	1,974	329.00	1,974	0.00	0
	SUB-TOTAL			6,084		8,802		2,718
67	3. Single Family (6-10du/ac)	DU	--	--	163.00	1,614	163.00	1,614
	4. Condominium/Townhouse	DU	--	--	90.00	720	90.00	720
	SUB-TOTAL			--		2,334		2,334
68	5. Apartment	DU	156.00	1,076	208.00	1,435	52.00	359
	SUB-TOTAL			1,076		1,435		359
69	3. Single Family (6-10du/ac)	DU	--	--	76.00	752	76.00	752
	SUB-TOTAL			--		752		752
70	11. Commercial Center(10-30a)	TSF	67.00	3,622	147.00	7,947	80.00	4,325
	18. Health Club	TSF	71.00	2,840	71.00	2,840	0.00	0
	26. Day Care	STU	150.00	678	150.00	678	0.00	0
	30. Industrial Park	TSF	397.00	2,382	529.00	3,174	132.00	792
	32. Manufacturing/Warehouse	TSF	75.00	383	75.00	383	0.00	0
	SUB-TOTAL			9,905		15,022		5,117
71	21. High School	STU	3,500.00	6,265	2,500.00	4,475	-1,000.00	-1,790
	SUB-TOTAL			6,265		4,475		-1,790
72	13. Commercial Shops	TSF	--	--	60.00	2,224	60.00	2,224
	20. Elementary/Middle School	STU	350.00	508	350.00	508	0.00	0
	SUB-TOTAL			508		2,732		2,224
74	3. Single Family (6-10du/ac)	DU	--	--	153.00	1,515	153.00	1,515
	4. Condominium/Townhouse	DU	--	--	147.00	1,176	147.00	1,176
	SUB-TOTAL			--		2,691		2,691
75	4. Condominium/Townhouse	DU	--	--	149.00	1,192	149.00	1,192
	52. Undeveloped Park	AC	--	--	17.50	9	17.50	9
	SUB-TOTAL			--		1,201		1,201

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
76	5.	Apartment	DU	--	--	188.00	1,297	188.00	1,297
	12.	Commercial Center (<10ac)	TSF	--	--	11.00	936	11.00	936
		SUB-TOTAL			--		2,233		2,233
78	30.	Industrial Park	TSF	1,615.00	9,690	1,776.00	10,656	161.00	966
		SUB-TOTAL			9,690		10,656		966
79	30.	Industrial Park	TSF	685.00	4,110	685.00	4,110	0.00	0
		SUB-TOTAL			4,110		4,110		0
80	30.	Industrial Park	TSF	828.00	4,968	880.00	5,280	52.00	312
		SUB-TOTAL			4,968		5,280		312
81	30.	Industrial Park	TSF	711.00	4,266	711.00	4,266	0.00	0
		SUB-TOTAL			4,266		4,266		0
82	30.	Industrial Park	TSF	714.00	4,284	1,007.55	6,045	293.55	1,761
		SUB-TOTAL			4,284		6,045		1,761
83	30.	Industrial Park	TSF	876.00	5,256	876.00	5,256	0.00	0
		SUB-TOTAL			5,256		5,256		0
84	30.	Industrial Park	TSF	333.00	1,998	333.00	1,998	0.00	0
		SUB-TOTAL			1,998		1,998		0
86	2.	Single Family (1-5du/ac)	DU	11.00	109	346.00	3,425	335.00	3,316
	10.	Commercial Center (>30ac)	TSF	--	--	20.50	821	20.50	821
	12.	Commercial Center (<10ac)	TSF	15.00	1,276	15.00	1,276	0.00	0
	14.	Hotel	ROOM	36.00	296	36.00	296	0.00	0
	15.	Sit-Down Restaurant	TSF	47.26	6,160	47.26	6,160	0.00	0
		SUB-TOTAL			7,841		11,978		4,137
87	30.	Industrial Park	TSF	--	--	1,274.13	7,645	1,274.13	7,645
		SUB-TOTAL			--		7,645		7,645
89	53.	Wayside Honor Ranch	SG	20.00	2,000	30.00	3,000	10.00	1,000
		SUB-TOTAL			2,000		3,000		1,000
90	5.	Apartment	DU	--	--	408.00	2,815	408.00	2,815
	11.	Commercial Center(10-30a)	TSF	--	--	135.00	7,298	135.00	7,298
	30.	Industrial Park	TSF	63.88	383	1,328.65	7,972	1,264.77	7,589
	40.	Commercial Office	TSF	--	--	388.25	4,488	388.25	4,488
		SUB-TOTAL			383		22,573		22,190
91	11.	Commercial Center(10-30a)	TSF	43.38	2,345	247.38	13,373	204.00	11,028
		SUB-TOTAL			2,345		13,373		11,028
92	4.	Condominium/Townhouse	DU	--	--	1,000.00	8,000	1,000.00	8,000
	10.	Commercial Center (>30ac)	TSF	--	--	800.00	32,048	800.00	32,048
	14.	Hotel	ROOM	--	--	300.00	2,469	300.00	2,469

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
92	40.	Commercial Office	TSF	--	--	400.00	4,624	400.00	4,624
		SUB-TOTAL			--		47,141		47,141
93	13.	Commercial Shops	TSF	11.00	408	20.00	741	9.00	333
	14.	Hotel	ROOM	169.00	1,391	169.00	1,391	0.00	0
		SUB-TOTAL			1,799		2,132		333
94	54.	Six Flags Magic Mtn	SG	160.00	16,000	240.00	24,000	80.00	8,000
		SUB-TOTAL			16,000		24,000		8,000
95	11.	Commercial Center(10-30a)	TSF	--	--	115.21	6,228	115.21	6,228
		SUB-TOTAL			--		6,228		6,228
96	1.	Single Family (<1du/ac)	DU	--	--	73.00	723	73.00	723
	2.	Single Family (1-5du/ac)	DU	--	--	73.00	723	73.00	723
	4.	Condominium/Townhouse	DU	--	--	1,574.00	12,592	1,574.00	12,592
	5.	Apartment	DU	--	--	370.00	2,553	370.00	2,553
	11.	Commercial Center(10-30a)	TSF	--	--	133.65	7,225	133.65	7,225
	13.	Commercial Shops	TSF	--	--	41.00	1,519	41.00	1,519
	20.	Elementary/Middle School	STU	--	--	900.00	1,305	900.00	1,305
	40.	Commercial Office	TSF	--	--	75.00	867	75.00	867
		SUB-TOTAL			--		27,507		27,507
97	55.	Travel Village	SG	26.20	2,620	26.20	2,620	0.00	0
		SUB-TOTAL			2,620		2,620		0
98	12.	Commercial Center (<10ac)	TSF	--	--	6.20	527	6.20	527
	31.	Business Park	TSF	--	--	691.50	7,053	691.50	7,053
		SUB-TOTAL			--		7,580		7,580
99	4.	Condominium/Townhouse	DU	--	--	193.00	1,544	193.00	1,544
	5.	Apartment	DU	--	--	292.00	2,015	292.00	2,015
	51.	Developed Park	AC	--	--	25.00	65	25.00	65
		SUB-TOTAL			--		3,624		3,624
100	12.	Commercial Center (<10ac)	TSF	--	--	18.00	1,531	18.00	1,531
	40.	Commercial Office	TSF	--	--	225.00	2,601	225.00	2,601
		SUB-TOTAL			--		4,132		4,132
101	10.	Commercial Center (>30ac)	TSF	--	--	388.30	15,555	388.30	15,555
		SUB-TOTAL			--		15,555		15,555
102	3.	Single Family (6-10du/ac)	DU	--	--	168.00	1,663	168.00	1,663
	4.	Condominium/Townhouse	DU	--	--	434.00	3,472	434.00	3,472
	5.	Apartment	DU	--	--	159.00	1,097	159.00	1,097
	12.	Commercial Center (<10ac)	TSF	--	--	49.00	4,168	49.00	4,168
	13.	Commercial Shops	TSF	--	--	9.50	352	9.50	352
	20.	Elementary/Middle School	STU	--	--	750.00	1,088	750.00	1,088
	40.	Commercial Office	TSF	--	--	9.50	110	9.50	110
	51.	Developed Park	AC	--	--	20.90	54	20.90	54
		SUB-TOTAL			--		12,004		12,004

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
103	3.	Single Family (6-10du/ac)	DU	--	--	140.00	1,386	140.00	1,386
	4.	Condominium/Townhouse	DU	--	--	251.00	2,008	251.00	2,008
	5.	Apartment	DU	--	--	148.00	1,021	148.00	1,021
		SUB-TOTAL			--		4,415		4,415
104	11.	Commercial Center(10-30a)	TSF	--	--	252.00	13,623	252.00	13,623
	40.	Commercial Office	TSF	--	--	370.00	4,277	370.00	4,277
		SUB-TOTAL			--		17,900		17,900
105	5.	Apartment	DU	--	--	144.00	994	144.00	994
	12.	Commercial Center (<10ac)	TSF	--	--	27.10	2,305	27.10	2,305
	40.	Commercial Office	TSF	--	--	315.90	3,652	315.90	3,652
		SUB-TOTAL			--		6,951		6,951
106	12.	Commercial Center (<10ac)	TSF	--	--	90.00	7,655	90.00	7,655
		SUB-TOTAL			--		7,655		7,655
107	2.	Single Family (1-5du/ac)	DU	--	--	240.00	2,376	240.00	2,376
	3.	Single Family (6-10du/ac)	DU	--	--	993.00	9,831	993.00	9,831
	20.	Elementary/Middle School	STU	--	--	1,200.00	1,740	1,200.00	1,740
	21.	High School	STU	--	--	2,230.00	3,992	2,230.00	3,992
		SUB-TOTAL			--		17,939		17,939
108	3.	Single Family (6-10du/ac)	DU	--	--	840.00	8,316	840.00	8,316
	4.	Condominium/Townhouse	DU	--	--	710.00	5,680	710.00	5,680
	12.	Commercial Center (<10ac)	TSF	--	--	50.00	4,253	50.00	4,253
	20.	Elementary/Middle School	STU	--	--	800.00	1,160	800.00	1,160
	51.	Developed Park	AC	--	--	5.00	13	5.00	13
		SUB-TOTAL			--		19,422		19,422
109	3.	Single Family (6-10du/ac)	DU	--	--	60.00	594	60.00	594
		SUB-TOTAL			--		594		594
110	2.	Single Family (1-5du/ac)	DU	--	--	40.00	396	40.00	396
	3.	Single Family (6-10du/ac)	DU	--	--	610.00	6,039	610.00	6,039
	20.	Elementary/Middle School	STU	--	--	800.00	1,160	800.00	1,160
	51.	Developed Park	AC	--	--	15.30	40	15.30	40
		SUB-TOTAL			--		7,635		7,635
111	12.	Commercial Center (<10ac)	TSF	--	--	70.00	5,954	70.00	5,954
	31.	Business Park	TSF	--	--	630.00	6,426	630.00	6,426
		SUB-TOTAL			--		12,380		12,380
113	2.	Single Family (1-5du/ac)	DU	--	--	70.00	693	70.00	693
	3.	Single Family (6-10du/ac)	DU	--	--	450.00	4,455	450.00	4,455
	51.	Developed Park	AC	--	--	28.00	73	28.00	73
		SUB-TOTAL			--		5,221		5,221
114	2.	Single Family (1-5du/ac)	DU	--	--	40.00	396	40.00	396
	3.	Single Family (6-10du/ac)	DU	--	--	370.00	3,663	370.00	3,663
		SUB-TOTAL			--		4,059		4,059

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
115	2.	Single Family (1-5du/ac)	DU	--	--	240.00	2,376	240.00	2,376
	3.	Single Family (6-10du/ac)	DU	--	--	750.00	7,425	750.00	7,425
	51.	Developed Park	AC	--	--	5.00	13	5.00	13
		SUB-TOTAL			--		9,814		9,814
116	3.	Single Family (6-10du/ac)	DU	--	--	1,167.00	11,553	1,167.00	11,553
	4.	Condominium/Townhouse	DU	--	--	1,780.00	14,240	1,780.00	14,240
	11.	Commercial Center(10-30a)	TSF	--	--	650.00	35,139	650.00	35,139
	40.	Commercial Office	TSF	--	--	312.35	3,611	312.35	3,611
	50.	Golf Course	AC	--	--	180.00	1,433	180.00	1,433
		SUB-TOTAL			--		65,976		65,976
117	3.	Single Family (6-10du/ac)	DU	--	--	220.00	2,178	220.00	2,178
	51.	Developed Park	AC	--	--	20.00	52	20.00	52
		SUB-TOTAL			--		2,230		2,230
118	3.	Single Family (6-10du/ac)	DU	--	--	330.00	3,267	330.00	3,267
		SUB-TOTAL			--		3,267		3,267
119	3.	Single Family (6-10du/ac)	DU	--	--	200.00	1,980	200.00	1,980
	4.	Condominium/Townhouse	DU	--	--	2,640.00	21,120	2,640.00	21,120
	12.	Commercial Center (<10ac)	TSF	--	--	60.00	5,104	60.00	5,104
	51.	Developed Park	AC	--	--	5.00	13	5.00	13
		SUB-TOTAL			--		28,217		28,217
120	3.	Single Family (6-10du/ac)	DU	--	--	217.00	2,148	217.00	2,148
	4.	Condominium/Townhouse	DU	--	--	1,574.00	12,592	1,574.00	12,592
	5.	Apartment	DU	--	--	369.00	2,546	369.00	2,546
	11.	Commercial Center(10-30a)	TSF	--	--	133.65	7,225	133.65	7,225
		SUB-TOTAL			--		24,511		24,511
122	2.	Single Family (1-5du/ac)	DU	--	--	143.00	1,416	143.00	1,416
		SUB-TOTAL			--		1,416		1,416
123	3.	Single Family (6-10du/ac)	DU	--	--	440.00	4,356	440.00	4,356
		SUB-TOTAL			--		4,356		4,356
124	7.	Senior (Active)	DU	--	--	1,000.00	3,710	1,000.00	3,710
		SUB-TOTAL			--		3,710		3,710
125	20.	Elementary/Middle School	STU	--	--	1,200.00	1,740	1,200.00	1,740
	21.	High School	STU	--	--	2,400.00	4,296	2,400.00	4,296
		SUB-TOTAL			--		6,036		6,036
126	4.	Condominium/Townhouse	DU	--	--	200.00	1,600	200.00	1,600
	11.	Commercial Center(10-30a)	TSF	--	--	150.00	8,109	150.00	8,109
	40.	Commercial Office	TSF	--	--	225.00	2,601	225.00	2,601
		SUB-TOTAL			--		12,310		12,310
127	3.	Single Family (6-10du/ac)	DU	--	--	450.00	4,455	450.00	4,455

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
127	20.	Elementary/Middle School	STU	--	--	800.00	1,160	800.00	1,160
		SUB-TOTAL			--		5,615		5,615
128	2.	Single Family (1-5du/ac)	DU	--	--	10.00	99	10.00	99
		SUB-TOTAL			--		99		99
129	3.	Single Family (6-10du/ac)	DU	--	--	330.00	3,267	330.00	3,267
		SUB-TOTAL			--		3,267		3,267
130	2.	Single Family (1-5du/ac)	DU	708.00	7,009	708.00	7,009	0.00	0
		SUB-TOTAL			7,009		7,009		0
131	4.	Condominium/Townhouse	DU	--	--	1,400.00	11,200	1,400.00	11,200
	20.	Elementary/Middle School	STU	--	--	900.00	1,305	900.00	1,305
		SUB-TOTAL			--		12,505		12,505
132	2.	Single Family (1-5du/ac)	DU	436.00	4,316	436.00	4,316	0.00	0
	20.	Elementary/Middle School	STU	900.00	1,305	900.00	1,305	0.00	0
	51.	Developed Park	AC	16.00	42	16.00	42	0.00	0
		SUB-TOTAL			5,663		5,663		0
133	11.	Commercial Center(10-30a)	TSF	27.00	1,460	27.00	1,460	0.00	0
		SUB-TOTAL			1,460		1,460		0
134	2.	Single Family (1-5du/ac)	DU	482.00	4,772	482.00	4,772	0.00	0
		SUB-TOTAL			4,772		4,772		0
135	2.	Single Family (1-5du/ac)	DU	20.00	198	174.00	1,723	154.00	1,525
	4.	Condominium/Townhouse	DU	172.00	1,376	172.00	1,376	0.00	0
	50.	Golf Course	AC	208.00	1,656	208.00	1,656	0.00	0
		SUB-TOTAL			3,230		4,755		1,525
137	40.	Commercial Office	TSF	--	--	72.00	832	72.00	832
		SUB-TOTAL			--		832		832
138	11.	Commercial Center(10-30a)	TSF	100.00	5,406	120.00	6,487	20.00	1,081
		SUB-TOTAL			5,406		6,487		1,081
139	5.	Apartment	DU	96.00	662	474.00	3,271	378.00	2,609
		SUB-TOTAL			662		3,271		2,609
140	3.	Single Family (6-10du/ac)	DU	--	--	572.00	5,663	572.00	5,663
	4.	Condominium/Townhouse	DU	--	--	1,250.00	10,000	1,250.00	10,000
	12.	Commercial Center (<10ac)	TSF	--	--	28.48	2,422	28.48	2,422
		SUB-TOTAL			--		18,085		18,085
141	15.	Sit-Down Restaurant	TSF	20.30	2,646	20.30	2,646	0.00	0
	16.	Fast Food Restaurant	TSF	10.10	5,011	10.10	5,011	0.00	0
		SUB-TOTAL			7,657		7,657		0

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
142	3.	Single Family (6-10du/ac)	DU	--	--	72.00	713	72.00	713
	4.	Condominium/Townhouse	DU	--	--	381.00	3,048	381.00	3,048
		SUB-TOTAL			--		3,761		3,761
143	2.	Single Family (1-5du/ac)	DU	77.00	762	96.00	950	19.00	188
	3.	Single Family (6-10du/ac)	DU	407.00	4,029	482.00	4,772	75.00	743
	4.	Condominium/Townhouse	DU	80.00	640	160.00	1,280	80.00	640
	20.	Elementary/Middle School	STU	--	--	850.00	1,233	850.00	1,233
	51.	Developed Park	AC	--	--	7.00	18	7.00	18
		SUB-TOTAL			5,431		8,253		2,822
144	2.	Single Family (1-5du/ac)	DU	--	--	6.00	59	6.00	59
		SUB-TOTAL			--		59		59
145	10.	Commercial Center (>30ac)	TSF	778.00	31,167	778.00	31,167	0.00	0
	12.	Commercial Center (<10ac)	TSF	36.00	3,062	36.00	3,062	0.00	0
	13.	Commercial Shops	TSF	45.74	1,695	45.74	1,695	0.00	0
	15.	Sit-Down Restaurant	TSF	7.80	1,017	7.80	1,017	0.00	0
	16.	Fast Food Restaurant	TSF	6.68	3,314	6.68	3,314	0.00	0
	32.	Manufacturing/Warehouse	TSF	74.50	380	74.50	380	0.00	0
		SUB-TOTAL			40,635		40,635		0
146	2.	Single Family (1-5du/ac)	DU	314.00	3,109	314.00	3,109	0.00	0
	4.	Condominium/Townhouse	DU	296.00	2,368	296.00	2,368	0.00	0
		SUB-TOTAL			5,477		5,477		0
147	3.	Single Family (6-10du/ac)	DU	46.00	455	140.00	1,386	94.00	931
	4.	Condominium/Townhouse	DU	--	--	100.00	800	100.00	800
	5.	Apartment	DU	--	--	567.00	3,912	567.00	3,912
	20.	Elementary/Middle School	STU	850.00	1,233	850.00	1,233	0.00	0
	51.	Developed Park	AC	--	--	5.00	13	5.00	13
		SUB-TOTAL			1,688		7,344		5,656
148	11.	Commercial Center(10-30a)	TSF	183.88	9,941	183.88	9,941	0.00	0
	15.	Sit-Down Restaurant	TSF	7.70	1,004	7.70	1,004	0.00	0
	16.	Fast Food Restaurant	TSF	5.00	2,481	5.00	2,481	0.00	0
		SUB-TOTAL			13,426		13,426		0
149	2.	Single Family (1-5du/ac)	DU	535.00	5,297	535.00	5,297	0.00	0
	4.	Condominium/Townhouse	DU	500.00	4,000	500.00	4,000	0.00	0
	12.	Commercial Center (<10ac)	TSF	34.85	2,964	34.85	2,964	0.00	0
		SUB-TOTAL			12,261		12,261		0
150	2.	Single Family (1-5du/ac)	DU	114.00	1,129	114.00	1,129	0.00	0
		SUB-TOTAL			1,129		1,129		0
151	2.	Single Family (1-5du/ac)	DU	--	--	75.00	743	75.00	743
		SUB-TOTAL			--		743		743
152	2.	Single Family (1-5du/ac)	DU	279.00	2,762	279.00	2,762	0.00	0

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
152	51.	Developed Park	AC	--	--	18.00	47	18.00	47
		SUB-TOTAL			2,762		2,809		47
153	2.	Single Family (1-5du/ac)	DU	--	--	30.00	297	30.00	297
	51.	Developed Park	AC	--	--	5.00	13	5.00	13
		SUB-TOTAL			--		310		310
158	2.	Single Family (1-5du/ac)	DU	--	--	100.00	990	100.00	990
		SUB-TOTAL			--		990		990
159	2.	Single Family (1-5du/ac)	DU	4.00	40	4.00	40	0.00	0
		SUB-TOTAL			40		40		0
160	3.	Single Family (6-10du/ac)	DU	--	--	416.00	4,118	416.00	4,118
	4.	Condominium/Townhouse	DU	--	--	216.00	1,728	216.00	1,728
	7.	Senior (Active)	DU	--	--	203.00	753	203.00	753
	12.	Commercial Center (<10ac)	TSF	--	--	25.50	2,169	25.50	2,169
	15.	Sit-Down Restaurant	TSF	--	--	7.00	912	7.00	912
	16.	Fast Food Restaurant	TSF	--	--	7.00	3,473	7.00	3,473
	51.	Developed Park	AC	--	--	17.50	46	17.50	46
		SUB-TOTAL			--		13,199		13,199
161	1.	Single Family (<1du/ac)	DU	--	--	60.00	594	60.00	594
	2.	Single Family (1-5du/ac)	DU	533.00	5,277	607.00	6,009	74.00	732
	4.	Condominium/Townhouse	DU	531.00	4,248	650.00	5,200	119.00	952
	11.	Commercial Center(10-30a)	TSF	--	--	48.00	2,595	48.00	2,595
	12.	Commercial Center (<10ac)	TSF	5.26	447	54.22	4,612	48.96	4,165
	13.	Commercial Shops	TSF	12.50	463	12.50	463	0.00	0
	14.	Hotel	ROOM	283.00	2,329	283.00	2,329	0.00	0
	15.	Sit-Down Restaurant	TSF	21.10	2,750	21.10	2,750	0.00	0
	16.	Fast Food Restaurant	TSF	16.00	7,938	16.00	7,938	0.00	0
	40.	Commercial Office	TSF	61.66	713	282.41	3,265	220.75	2,552
	56.	CHP Office	SG	55.74	5,574	55.74	5,574	0.00	0
		SUB-TOTAL			29,739		41,329		11,590
162	2.	Single Family (1-5du/ac)	DU	83.00	822	248.00	2,455	165.00	1,633
	11.	Commercial Center(10-30a)	TSF	--	--	102.42	5,537	102.42	5,537
	30.	Industrial Park	TSF	--	--	240.00	1,440	240.00	1,440
		SUB-TOTAL			822		9,432		8,610
163	30.	Industrial Park	TSF	--	--	2,567.08	15,402	2,567.08	15,402
		SUB-TOTAL			--		15,402		15,402
164	2.	Single Family (1-5du/ac)	DU	100.00	990	204.00	2,020	104.00	1,030
	50.	Golf Course	AC	145.00	1,154	145.00	1,154	0.00	0
		SUB-TOTAL			2,144		3,174		1,030
165	2.	Single Family (1-5du/ac)	DU	36.00	356	36.00	356	0.00	0
	4.	Condominium/Townhouse	DU	80.00	640	80.00	640	0.00	0
	12.	Commercial Center (<10ac)	TSF	30.23	2,571	30.23	2,571	0.00	0

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
165	13.	Commercial Shops	TSF	7.60	282	7.60	282	0.00	0
	15.	Sit-Down Restaurant	TSF	23.95	3,122	23.95	3,122	0.00	0
	23.	Hospital	TSF	24.66	414	24.66	414	0.00	0
	30.	Industrial Park	TSF	12.24	73	1,890.89	11,345	1,878.65	11,272
	32.	Manufacturing/Warehouse	TSF	2.47	13	2.47	13	0.00	0
	40.	Commercial Office	TSF	13.81	160	13.81	160	0.00	0
		SUB-TOTAL			7,631		18,903		11,272
166	2.	Single Family (1-5du/ac)	DU	431.00	4,267	431.00	4,267	0.00	0
	4.	Condominium/Townhouse	DU	217.00	1,736	217.00	1,736	0.00	0
	12.	Commercial Center (<10ac)	TSF	48.64	4,137	48.64	4,137	0.00	0
	13.	Commercial Shops	TSF	1.38	51	1.38	51	0.00	0
	15.	Sit-Down Restaurant	TSF	4.34	566	4.34	566	0.00	0
	23.	Hospital	TSF	38.58	648	38.58	648	0.00	0
	32.	Manufacturing/Warehouse	TSF	11.00	56	11.00	56	0.00	0
	40.	Commercial Office	TSF	30.10	348	30.10	348	0.00	0
		SUB-TOTAL			11,809		11,809		0
167	2.	Single Family (1-5du/ac)	DU	180.00	1,782	327.00	3,237	147.00	1,455
		SUB-TOTAL			1,782		3,237		1,455
168	2.	Single Family (1-5du/ac)	DU	247.00	2,445	247.00	2,445	0.00	0
		SUB-TOTAL			2,445		2,445		0
169	2.	Single Family (1-5du/ac)	DU	127.00	1,257	127.00	1,257	0.00	0
	4.	Condominium/Townhouse	DU	94.00	752	94.00	752	0.00	0
	10.	Commercial Center (>30ac)	TSF	200.00	8,012	200.00	8,012	0.00	0
		SUB-TOTAL			10,021		10,021		0
170	2.	Single Family (1-5du/ac)	DU	163.00	1,614	163.00	1,614	0.00	0
		SUB-TOTAL			1,614		1,614		0
171	2.	Single Family (1-5du/ac)	DU	32.00	317	32.00	317	0.00	0
	20.	Elementary/Middle School	STU	675.00	979	675.00	979	0.00	0
		SUB-TOTAL			1,296		1,296		0
172	2.	Single Family (1-5du/ac)	DU	185.00	1,831	185.00	1,831	0.00	0
		SUB-TOTAL			1,831		1,831		0
173	2.	Single Family (1-5du/ac)	DU	336.00	3,326	386.00	3,821	50.00	495
		SUB-TOTAL			3,326		3,821		495
174	11.	Commercial Center(10-30a)	TSF	35.00	1,892	337.20	18,229	302.20	16,337
		SUB-TOTAL			1,892		18,229		16,337
175	2.	Single Family (1-5du/ac)	DU	162.00	1,604	162.00	1,604	0.00	0
	4.	Condominium/Townhouse	DU	160.00	1,280	160.00	1,280	0.00	0
	11.	Commercial Center(10-30a)	TSF	98.01	5,298	98.01	5,298	0.00	0
	20.	Elementary/Middle School	STU	800.00	1,160	800.00	1,160	0.00	0
	34.	Utilities	TSF	87.12	207	87.12	207	0.00	0
		SUB-TOTAL			9,549		9,549		0

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
176	2.	Single Family (1-5du/ac)	DU	686.00	6,791	762.00	7,544	76.00	753
	4.	Condominium/Townhouse	DU	135.00	1,080	135.00	1,080	0.00	0
	10.	Commercial Center (>30ac)	TSF	196.02	7,853	196.02	7,853	0.00	0
	13.	Commercial Shops	TSF	141.57	5,247	141.57	5,247	0.00	0
		SUB-TOTAL			20,971		21,724		753
177	2.	Single Family (1-5du/ac)	DU	477.00	4,722	477.00	4,722	0.00	0
	3.	Single Family (6-10du/ac)	DU	--	--	65.00	644	65.00	644
	4.	Condominium/Townhouse	DU	264.00	2,112	264.00	2,112	0.00	0
	11.	Commercial Center(10-30a)	TSF	97.57	5,275	97.57	5,275	0.00	0
	20.	Elementary/Middle School	STU	535.00	776	535.00	776	0.00	0
		SUB-TOTAL			12,885		13,529		644
178	2.	Single Family (1-5du/ac)	DU	333.00	3,297	333.00	3,297	0.00	0
	11.	Commercial Center(10-30a)	TSF	21.78	1,177	21.78	1,177	0.00	0
	13.	Commercial Shops	TSF	6.53	242	6.53	242	0.00	0
	40.	Commercial Office	TSF	14.81	171	50.81	587	36.00	416
		SUB-TOTAL			4,887		5,303		416
179	2.	Single Family (1-5du/ac)	DU	167.00	1,653	167.00	1,653	0.00	0
	11.	Commercial Center(10-30a)	TSF	--	--	24.47	1,323	24.47	1,323
	13.	Commercial Shops	TSF	21.78	807	21.78	807	0.00	0
	34.	Utilities	TSF	87.12	207	87.12	207	0.00	0
	42.	Medical Office	TSF	24.83	849	24.83	849	0.00	0
		SUB-TOTAL			3,516		4,839		1,323
180	2.	Single Family (1-5du/ac)	DU	428.00	4,237	428.00	4,237	0.00	0
		SUB-TOTAL			4,237		4,237		0
181	3.	Single Family (6-10du/ac)	DU	282.00	2,792	282.00	2,792	0.00	0
	20.	Elementary/Middle School	STU	775.00	1,124	775.00	1,124	0.00	0
		SUB-TOTAL			3,916		3,916		0
182	3.	Single Family (6-10du/ac)	DU	276.00	2,732	276.00	2,732	0.00	0
	4.	Condominium/Townhouse	DU	229.00	1,832	229.00	1,832	0.00	0
	6.	Mobile Home	DU	238.00	1,642	238.00	1,642	0.00	0
	11.	Commercial Center(10-30a)	TSF	76.23	4,121	76.23	4,121	0.00	0
	20.	Elementary/Middle School	STU	83.00	120	83.00	120	0.00	0
	25.	Church	TSF	17.25	160	17.25	160	0.00	0
		SUB-TOTAL			10,607		10,607		0
183	4.	Condominium/Townhouse	DU	634.00	5,072	634.00	5,072	0.00	0
	12.	Commercial Center (<10ac)	TSF	--	--	3.50	298	3.50	298
	22.	College	STU	3,274.00	5,042	3,274.00	5,042	0.00	0
	50.	Golf Course	AC	100.00	796	100.00	796	0.00	0
		SUB-TOTAL			10,910		11,208		298
184	40.	Commercial Office	TSF	--	--	250.00	2,890	250.00	2,890
		SUB-TOTAL			--		2,890		2,890

LAND USE AND TRIP GENERATION COMPARISON

Zone	Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
185	2. Single Family (1-5du/ac)	DU	133.00	1,317	133.00	1,317	0.00	0
	3. Single Family (6-10du/ac)	DU	211.00	2,089	211.00	2,089	0.00	0
	SUB-TOTAL			3,406		3,406		0
186	3. Single Family (6-10du/ac)	DU	150.00	1,485	150.00	1,485	0.00	0
	23. Hospital	TSF	125.24	2,104	125.24	2,104	0.00	0
	42. Medical Office	TSF	108.90	3,724	108.90	3,724	0.00	0
	SUB-TOTAL			7,313		7,313		0
187	2. Single Family (1-5du/ac)	DU	111.00	1,099	111.00	1,099	0.00	0
	4. Condominium/Townhouse	DU	307.00	2,456	307.00	2,456	0.00	0
	34. Utilities	TSF	217.80	518	217.80	518	0.00	0
	51. Developed Park	AC	14.00	36	14.00	36	0.00	0
	SUB-TOTAL			4,109		4,109		0
188	2. Single Family (1-5du/ac)	DU	72.00	713	72.00	713	0.00	0
	4. Condominium/Townhouse	DU	216.00	1,728	216.00	1,728	0.00	0
	SUB-TOTAL			2,441		2,441		0
189	22. College	STU	13,543.00	20,856	20,000.00	30,800	6,457.00	9,944
	40. Commercial Office	TSF	--	--	28.44	329	28.44	329
	SUB-TOTAL			20,856		31,129		10,273
190	2. Single Family (1-5du/ac)	DU	171.00	1,693	171.00	1,693	0.00	0
	SUB-TOTAL			1,693		1,693		0
191	42. Medical Office	TSF	--	--	78.56	2,687	78.56	2,687
	SUB-TOTAL			--		2,687		2,687
192	2. Single Family (1-5du/ac)	DU	164.00	1,624	164.00	1,624	0.00	0
	4. Condominium/Townhouse	DU	660.00	5,280	660.00	5,280	0.00	0
	SUB-TOTAL			6,904		6,904		0
193	31. Business Park	TSF	250.00	2,550	250.00	2,550	0.00	0
	SUB-TOTAL			2,550		2,550		0
194	50. Golf Course	AC	100.00	796	100.00	796	0.00	0
	SUB-TOTAL			796		796		0
195	3. Single Family (6-10du/ac)	DU	76.00	752	76.00	752	0.00	0
	SUB-TOTAL			752		752		0
196	13. Commercial Shops	TSF	--	--	16.00	593	16.00	593
	SUB-TOTAL			--		593		593
197	31. Business Park	TSF	--	--	400.00	4,080	400.00	4,080
	SUB-TOTAL			--		4,080		4,080
198	2. Single Family (1-5du/ac)	DU	179.00	1,772	179.00	1,772	0.00	0
	3. Single Family (6-10du/ac)	DU	152.00	1,505	152.00	1,505	0.00	0
	SUB-TOTAL			3,277		3,277		0

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
199	14.	Hotel	ROOM	237.00	1,951	237.00	1,951	0.00	0
	15.	Sit-Down Restaurant	TSF	5.00	652	5.00	652	0.00	0
		SUB-TOTAL			2,603		2,603		0
200	31.	Business Park	TSF	385.10	3,928	578.00	5,896	192.90	1,968
		SUB-TOTAL			3,928		5,896		1,968
201	31.	Business Park	TSF	--	--	250.00	2,550	250.00	2,550
		SUB-TOTAL			--		2,550		2,550
202	5.	Apartment	DU	50.00	345	560.00	3,864	510.00	3,519
	13.	Commercial Shops	TSF	13.00	482	22.00	815	9.00	333
	14.	Hotel	ROOM	250.00	2,058	250.00	2,058	0.00	0
	18.	Health Club	TSF	54.00	2,160	54.00	2,160	0.00	0
	40.	Commercial Office	TSF	13.00	150	13.00	150	0.00	0
		SUB-TOTAL			5,195		9,047		3,852
203	10.	Commercial Center (>30ac)	TSF	742.00	29,725	1,539.00	61,652	797.00	31,927
	40.	Commercial Office	TSF	--	--	90.00	1,040	90.00	1,040
		SUB-TOTAL			29,725		62,692		32,967
204	13.	Commercial Shops	TSF	62.00	2,298	62.00	2,298	0.00	0
	17.	Movie Theater	SEAT	3,300.00	5,808	3,300.00	5,808	0.00	0
	40.	Commercial Office	TSF	400.00	4,624	400.00	4,624	0.00	0
		SUB-TOTAL			12,730		12,730		0
205	11.	Commercial Center(10-30a)	TSF	47.30	2,557	47.30	2,557	0.00	0
	24.	Library	TSF	20.00	1,700	20.00	1,700	0.00	0
	40.	Commercial Office	TSF	198.89	2,299	198.89	2,299	0.00	0
		SUB-TOTAL			6,556		6,556		0
206	11.	Commercial Center(10-30a)	TSF	126.26	6,826	166.11	8,980	39.85	2,154
	15.	Sit-Down Restaurant	TSF	15.73	2,050	21.50	2,802	5.77	752
		SUB-TOTAL			8,876		11,782		2,906
207	40.	Commercial Office	TSF	230.00	2,659	230.00	2,659	0.00	0
		SUB-TOTAL			2,659		2,659		0
208	4.	Condominium/Townhouse	DU	234.00	1,872	234.00	1,872	0.00	0
		SUB-TOTAL			1,872		1,872		0
209	2.	Single Family (1-5du/ac)	DU	414.00	4,099	414.00	4,099	0.00	0
	4.	Condominium/Townhouse	DU	352.00	2,816	352.00	2,816	0.00	0
	20.	Elementary/Middle School	STU	800.00	1,160	800.00	1,160	0.00	0
		SUB-TOTAL			8,075		8,075		0
210	2.	Single Family (1-5du/ac)	DU	205.00	2,029	205.00	2,029	0.00	0
	4.	Condominium/Townhouse	DU	208.00	1,664	208.00	1,664	0.00	0
	11.	Commercial Center(10-30a)	TSF	148.10	8,006	148.10	8,006	0.00	0
		SUB-TOTAL			11,699		11,699		0

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
211	2.	Single Family (1-5du/ac)	DU	167.00	1,653	167.00	1,653	0.00	0
		SUB-TOTAL			1,653		1,653		0
212	2.	Single Family (1-5du/ac)	DU	252.00	2,495	252.00	2,495	0.00	0
	4.	Condominium/Townhouse	DU	272.00	2,176	272.00	2,176	0.00	0
	25.	Church	TSF	18.03	168	18.03	168	0.00	0
	51.	Developed Park	AC	4.20	11	4.20	11	0.00	0
		SUB-TOTAL			4,850		4,850		0
213	2.	Single Family (1-5du/ac)	DU	275.00	2,723	275.00	2,723	0.00	0
	25.	Church	TSF	25.09	233	25.09	233	0.00	0
		SUB-TOTAL			2,956		2,956		0
214	5.	Apartment	DU	107.00	738	307.00	2,118	200.00	1,380
		SUB-TOTAL			738		2,118		1,380
215	2.	Single Family (1-5du/ac)	DU	105.00	1,040	105.00	1,040	0.00	0
	4.	Condominium/Townhouse	DU	52.00	416	52.00	416	0.00	0
	11.	Commercial Center(10-30a)	TSF	100.00	5,406	100.00	5,406	0.00	0
	13.	Commercial Shops	TSF	43.56	1,614	43.56	1,614	0.00	0
	21.	High School	STU	2,928.00	5,241	2,928.00	5,241	0.00	0
	25.	Church	TSF	50.18	467	50.18	467	0.00	0
	34.	Utilities	TSF	47.92	114	47.92	114	0.00	0
		SUB-TOTAL			14,298		14,298		0
216	3.	Single Family (6-10du/ac)	DU	22.00	218	22.00	218	0.00	0
	4.	Condominium/Townhouse	DU	128.00	1,024	128.00	1,024	0.00	0
	11.	Commercial Center(10-30a)	TSF	149.96	8,107	149.96	8,107	0.00	0
	40.	Commercial Office	TSF	10.45	121	10.45	121	0.00	0
		SUB-TOTAL			9,470		9,470		0
217	2.	Single Family (1-5du/ac)	DU	202.00	2,000	202.00	2,000	0.00	0
	4.	Condominium/Townhouse	DU	16.00	128	28.00	224	12.00	96
	11.	Commercial Center(10-30a)	TSF	65.75	3,554	65.75	3,554	0.00	0
	13.	Commercial Shops	TSF	--	--	3.27	121	3.27	121
	14.	Hotel	ROOM	10.00	82	10.00	82	0.00	0
	30.	Industrial Park	TSF	22.44	135	22.44	135	0.00	0
	40.	Commercial Office	TSF	22.44	259	22.44	259	0.00	0
		SUB-TOTAL			6,158		6,375		217
218	2.	Single Family (1-5du/ac)	DU	307.00	3,039	360.00	3,564	53.00	525
	4.	Condominium/Townhouse	DU	641.00	5,128	641.00	5,128	0.00	0
	6.	Mobile Home	DU	151.00	1,042	151.00	1,042	0.00	0
	10.	Commercial Center (>30ac)	TSF	--	--	327.00	13,100	327.00	13,100
	11.	Commercial Center(10-30a)	TSF	--	--	166.62	9,007	166.62	9,007
	13.	Commercial Shops	TSF	64.25	2,381	64.25	2,381	0.00	0
	25.	Church	TSF	9.41	88	9.41	88	0.00	0
		SUB-TOTAL			11,678		34,310		22,632
219	2.	Single Family (1-5du/ac)	DU	40.00	396	160.00	1,584	120.00	1,188
		SUB-TOTAL			396		1,584		1,188

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
220	2.	Single Family (1-5du/ac)	DU	2.00	20	8.00	79	6.00	59
	34.	Utilities	TSF	566.28	1,348	566.28	1,348	0.00	0
		SUB-TOTAL			1,368		1,427		59
221	2.	Single Family (1-5du/ac)	DU	279.00	2,762	408.00	4,039	129.00	1,277
	4.	Condominium/Townhouse	DU	6.00	48	6.00	48	0.00	0
	6.	Mobile Home	DU	30.00	207	30.00	207	0.00	0
	22.	College	STU	362.00	557	362.00	557	0.00	0
	25.	Church	TSF	92.52	860	92.52	860	0.00	0
	30.	Industrial Park	TSF	144.40	866	144.40	866	0.00	0
		SUB-TOTAL			5,300		6,577		1,277
222	2.	Single Family (1-5du/ac)	DU	33.00	327	105.00	1,040	72.00	713
	4.	Condominium/Townhouse	DU	--	--	112.00	896	112.00	896
	20.	Elementary/Middle School	STU	750.00	1,088	750.00	1,088	0.00	0
	22.	College	STU	1,200.00	1,848	1,600.00	2,464	400.00	616
	25.	Church	TSF	16.70	155	16.70	155	0.00	0
	30.	Industrial Park	TSF	--	--	124.15	745	124.15	745
		SUB-TOTAL			3,418		6,388		2,970
223	2.	Single Family (1-5du/ac)	DU	19.00	188	29.00	287	10.00	99
	11.	Commercial Center(10-30a)	TSF	43.38	2,345	43.38	2,345	0.00	0
	23.	Hospital	TSF	4.32	73	4.32	73	0.00	0
	30.	Industrial Park	TSF	70.36	422	70.36	422	0.00	0
	31.	Business Park	TSF	--	--	437.12	4,459	437.12	4,459
	40.	Commercial Office	TSF	0.36	4	0.36	4	0.00	0
		SUB-TOTAL			3,032		7,590		4,558
224	2.	Single Family (1-5du/ac)	DU	230.00	2,277	326.00	3,227	96.00	950
	4.	Condominium/Townhouse	DU	500.00	4,000	500.00	4,000	0.00	0
	6.	Mobile Home	DU	30.00	207	30.00	207	0.00	0
	13.	Commercial Shops	TSF	81.68	3,027	81.68	3,027	0.00	0
	20.	Elementary/Middle School	STU	722.00	1,047	722.00	1,047	0.00	0
	24.	Library	TSF	16.73	1,422	34.40	2,923	17.67	1,501
		SUB-TOTAL			11,980		14,431		2,451
225	2.	Single Family (1-5du/ac)	DU	156.00	1,544	156.00	1,544	0.00	0
	4.	Condominium/Townhouse	DU	151.00	1,208	151.00	1,208	0.00	0
	20.	Elementary/Middle School	STU	1,608.00	2,332	1,608.00	2,332	0.00	0
	51.	Developed Park	AC	14.00	36	14.00	36	0.00	0
		SUB-TOTAL			5,120		5,120		0
226	2.	Single Family (1-5du/ac)	DU	300.00	2,970	300.00	2,970	0.00	0
	4.	Condominium/Townhouse	DU	292.00	2,336	292.00	2,336	0.00	0
	11.	Commercial Center(10-30a)	TSF	--	--	15.68	848	15.68	848
	13.	Commercial Shops	TSF	69.70	2,583	69.70	2,583	0.00	0
	25.	Church	TSF	--	--	8.00	74	8.00	74
		SUB-TOTAL			7,889		8,811		922
227	2.	Single Family (1-5du/ac)	DU	172.00	1,703	172.00	1,703	0.00	0

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
227	4.	Condominium/Townhouse	DU	184.00	1,472	184.00	1,472	0.00	0
	31.	Business Park	TSF	--	--	563.56	5,748	563.56	5,748
		SUB-TOTAL			3,175		8,923		5,748
228	2.	Single Family (1-5du/ac)	DU	358.00	3,544	358.00	3,544	0.00	0
		SUB-TOTAL			3,544		3,544		0
229	1.	Single Family (<1du/ac)	DU	74.00	733	74.00	733	0.00	0
	2.	Single Family (1-5du/ac)	DU	--	--	104.00	1,030	104.00	1,030
		SUB-TOTAL			733		1,763		1,030
230	1.	Single Family (<1du/ac)	DU	1.00	10	10.00	99	9.00	89
		SUB-TOTAL			10		99		89
231	2.	Single Family (1-5du/ac)	DU	--	--	5.00	50	5.00	50
	4.	Condominium/Townhouse	DU	--	--	51.00	408	51.00	408
	34.	Utilities	TSF	--	--	29.00	69	29.00	69
		SUB-TOTAL			--		527		527
232	1.	Single Family (<1du/ac)	DU	--	--	10.00	99	10.00	99
		SUB-TOTAL			--		99		99
233	31.	Business Park	TSF	--	--	569.47	5,809	569.47	5,809
		SUB-TOTAL			--		5,809		5,809
234	11.	Commercial Center(10-30a)	TSF	--	--	100.00	5,406	100.00	5,406
	31.	Business Park	TSF	--	--	470.24	4,796	470.24	4,796
		SUB-TOTAL			--		10,202		10,202
235	11.	Commercial Center(10-30a)	TSF	60.20	3,254	20.00	1,081	-40.20	-2,173
	31.	Business Park	TSF	24.00	245	130.00	1,326	106.00	1,081
		SUB-TOTAL			3,499		2,407		-1,092
236	2.	Single Family (1-5du/ac)	DU	--	--	204.00	2,020	204.00	2,020
	3.	Single Family (6-10du/ac)	DU	--	--	200.00	1,980	200.00	1,980
	20.	Elementary/Middle School	STU	--	--	647.00	938	647.00	938
	51.	Developed Park	AC	--	--	5.00	13	5.00	13
		SUB-TOTAL			--		4,951		4,951
237	2.	Single Family (1-5du/ac)	DU	--	--	225.00	2,228	225.00	2,228
	5.	Apartment	DU	--	--	570.00	3,933	570.00	3,933
	40.	Commercial Office	TSF	--	--	99.00	1,144	99.00	1,144
	51.	Developed Park	AC	--	--	24.40	63	24.40	63
		SUB-TOTAL			--		7,368		7,368
238	2.	Single Family (1-5du/ac)	DU	--	--	163.00	1,614	163.00	1,614
	3.	Single Family (6-10du/ac)	DU	--	--	236.00	2,336	236.00	2,336
	4.	Condominium/Townhouse	DU	--	--	124.00	992	124.00	992
	10.	Commercial Center (>30ac)	TSF	--	--	32.00	1,282	32.00	1,282
	11.	Commercial Center(10-30a)	TSF	--	--	54.45	2,944	54.45	2,944

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
238	12.	Commercial Center (<10ac)	TSF	--	--	50.00	4,253	50.00	4,253
	15.	Sit-Down Restaurant	TSF	--	--	20.00	2,607	20.00	2,607
	30.	Industrial Park	TSF	--	--	175.00	1,050	175.00	1,050
	31.	Business Park	TSF	--	--	227.00	2,315	227.00	2,315
	40.	Commercial Office	TSF	--	--	86.16	996	86.16	996
	51.	Developed Park	AC	--	--	25.90	67	25.90	67
		SUB-TOTAL			--		20,456		20,456
239	13.	Commercial Shops	TSF	87.12	3,229	337.29	12,500	250.17	9,271
	21.	High School	STU	500.00	895	500.00	895	0.00	0
	30.	Industrial Park	TSF	110.00	660	387.07	2,322	277.07	1,662
	32.	Manufacturing/Warehouse	TSF	352.84	1,799	1,552.60	7,918	1,199.76	6,119
	40.	Commercial Office	TSF	17.42	201	262.87	3,039	245.45	2,838
		SUB-TOTAL			6,784		26,674		19,890
240	10.	Commercial Center (>30ac)	TSF	--	--	126.00	5,048	126.00	5,048
	12.	Commercial Center (<10ac)	TSF	--	--	40.00	3,402	40.00	3,402
	15.	Sit-Down Restaurant	TSF	--	--	9.50	1,238	9.50	1,238
	16.	Fast Food Restaurant	TSF	--	--	5.50	2,729	5.50	2,729
		SUB-TOTAL			--		12,417		12,417
241	10.	Commercial Center (>30ac)	TSF	--	--	34.00	1,362	34.00	1,362
	15.	Sit-Down Restaurant	TSF	--	--	10.00	1,303	10.00	1,303
		SUB-TOTAL			--		2,665		2,665
242	40.	Commercial Office	TSF	--	--	115.00	1,329	115.00	1,329
		SUB-TOTAL			--		1,329		1,329
243	2.	Single Family (1-5du/ac)	DU	--	--	211.00	2,089	211.00	2,089
	4.	Condominium/Townhouse	DU	--	--	426.00	3,408	426.00	3,408
	5.	Apartment	DU	--	--	496.00	3,422	496.00	3,422
	10.	Commercial Center (>30ac)	TSF	--	--	75.00	3,005	75.00	3,005
	12.	Commercial Center (<10ac)	TSF	--	--	20.00	1,701	20.00	1,701
	15.	Sit-Down Restaurant	TSF	--	--	34.00	4,432	34.00	4,432
	40.	Commercial Office	TSF	--	--	164.00	1,896	164.00	1,896
		SUB-TOTAL			--		19,953		19,953
244	1.	Single Family (<1du/ac)	DU	95.00	940	95.00	940	0.00	0
	2.	Single Family (1-5du/ac)	DU	322.00	3,188	322.00	3,188	0.00	0
	3.	Single Family (6-10du/ac)	DU	95.00	940	95.00	940	0.00	0
	4.	Condominium/Townhouse	DU	157.00	1,256	157.00	1,256	0.00	0
		SUB-TOTAL			6,324		6,324		0
245	4.	Condominium/Townhouse	DU	148.00	1,184	148.00	1,184	0.00	0
	30.	Industrial Park	TSF	--	--	345.58	2,073	345.58	2,073
	32.	Manufacturing/Warehouse	TSF	61.16	312	61.16	312	0.00	0
		SUB-TOTAL			1,496		3,569		2,073
246	12.	Commercial Center (<10ac)	TSF	--	--	36.00	3,062	36.00	3,062
	32.	Manufacturing/Warehouse	TSF	58.81	300	58.81	300	0.00	0
		SUB-TOTAL			300		3,362		3,062

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
247	11.	Commercial Center(10-30a)	TSF	71.37	3,858	71.37	3,858	0.00	0
		SUB-TOTAL			3,858		3,858		0
248	2.	Single Family (1-5du/ac)	DU	2.00	20	2.00	20	0.00	0
	4.	Condominium/Townhouse	DU	4.00	32	4.00	32	0.00	0
	30.	Industrial Park	TSF	882.09	5,293	882.09	5,293	0.00	0
		SUB-TOTAL			5,345		5,345		0
249	32.	Manufacturing/Warehouse	TSF	291.68	1,488	291.68	1,488	0.00	0
	40.	Commercial Office	TSF	--	--	150.00	1,734	150.00	1,734
		SUB-TOTAL			1,488		3,222		1,734
250	11.	Commercial Center(10-30a)	TSF	--	--	90.66	4,901	90.66	4,901
	13.	Commercial Shops	TSF	58.00	2,149	58.00	2,149	0.00	0
		SUB-TOTAL			2,149		7,050		4,901
252	31.	Business Park	TSF	--	--	858.00	8,752	858.00	8,752
		SUB-TOTAL			--		8,752		8,752
253	1.	Single Family (<1du/ac)	DU	--	--	84.00	832	84.00	832
		SUB-TOTAL			--		832		832
254	11.	Commercial Center(10-30a)	TSF	--	--	107.50	5,811	107.50	5,811
	13.	Commercial Shops	TSF	8.71	323	8.71	323	0.00	0
		SUB-TOTAL			323		6,134		5,811
255	1.	Single Family (<1du/ac)	DU	2.00	20	69.00	683	67.00	663
		SUB-TOTAL			20		683		663
256	2.	Single Family (1-5du/ac)	DU	20.00	198	20.00	198	0.00	0
		SUB-TOTAL			198		198		0
257	2.	Single Family (1-5du/ac)	DU	103.00	1,020	266.00	2,633	163.00	1,613
	3.	Single Family (6-10du/ac)	DU	--	--	38.00	376	38.00	376
	4.	Condominium/Townhouse	DU	11.00	88	11.00	88	0.00	0
		SUB-TOTAL			1,108		3,097		1,989
258	2.	Single Family (1-5du/ac)	DU	54.00	535	97.00	960	43.00	425
	32.	Manufacturing/Warehouse	TSF	--	--	125.00	638	125.00	638
		SUB-TOTAL			535		1,598		1,063
259	3.	Single Family (6-10du/ac)	DU	--	--	14.00	139	14.00	139
	4.	Condominium/Townhouse	DU	--	--	237.00	1,896	237.00	1,896
		SUB-TOTAL			--		2,035		2,035
260	2.	Single Family (1-5du/ac)	DU	27.00	267	402.00	3,980	375.00	3,713
		SUB-TOTAL			267		3,980		3,713
261	2.	Single Family (1-5du/ac)	DU	10.00	99	295.00	2,921	285.00	2,822
		SUB-TOTAL			99		2,921		2,822

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
262	2.	Single Family (1-5du/ac)	DU	220.00	2,178	596.00	5,900	376.00	3,722
	3.	Single Family (6-10du/ac)	DU	126.00	1,247	194.00	1,921	68.00	674
	20.	Elementary/Middle School	STU	750.00	1,088	750.00	1,088	0.00	0
		SUB-TOTAL			4,513		8,909		4,396
263	4.	Condominium/Townhouse	DU	--	--	140.00	1,120	140.00	1,120
		SUB-TOTAL			--		1,120		1,120
264	3.	Single Family (6-10du/ac)	DU	63.00	624	63.00	624	0.00	0
		SUB-TOTAL			624		624		0
265	4.	Condominium/Townhouse	DU	1,338.00	10,704	1,338.00	10,704	0.00	0
		SUB-TOTAL			10,704		10,704		0
266	11.	Commercial Center(10-30a)	TSF	101.04	5,462	101.04	5,462	0.00	0
		SUB-TOTAL			5,462		5,462		0
267	11.	Commercial Center(10-30a)	TSF	100.00	5,406	100.00	5,406	0.00	0
		SUB-TOTAL			5,406		5,406		0
268	4.	Condominium/Townhouse	DU	400.00	3,200	400.00	3,200	0.00	0
	11.	Commercial Center(10-30a)	TSF	182.33	9,857	182.33	9,857	0.00	0
	32.	Manufacturing/Warehouse	TSF	75.00	383	75.00	383	0.00	0
		SUB-TOTAL			13,440		13,440		0
269	2.	Single Family (1-5du/ac)	DU	173.00	1,713	671.00	6,643	498.00	4,930
	3.	Single Family (6-10du/ac)	DU	--	--	16.00	158	16.00	158
	20.	Elementary/Middle School	STU	--	--	500.00	725	500.00	725
	21.	High School	STU	--	--	1,116.00	1,998	1,116.00	1,998
	51.	Developed Park	AC	3.00	8	4.50	12	1.50	4
		SUB-TOTAL			1,721		9,536		7,815
270	1.	Single Family (<1du/ac)	DU	8.00	79	8.00	79	0.00	0
		SUB-TOTAL			79		79		0
271	5.	Apartment	DU	--	--	155.00	1,070	155.00	1,070
	10.	Commercial Center (>30ac)	TSF	--	--	690.66	27,668	690.66	27,668
		SUB-TOTAL			--		28,738		28,738
272	2.	Single Family (1-5du/ac)	DU	665.00	6,583	665.00	6,583	0.00	0
	3.	Single Family (6-10du/ac)	DU	154.00	1,525	302.00	2,990	148.00	1,465
	4.	Condominium/Townhouse	DU	823.00	6,584	823.00	6,584	0.00	0
	12.	Commercial Center (<10ac)	TSF	8.12	691	8.12	691	0.00	0
	20.	Elementary/Middle School	STU	750.00	1,088	750.00	1,088	0.00	0
		SUB-TOTAL			16,471		17,936		1,465
273	2.	Single Family (1-5du/ac)	DU	6.00	59	101.00	1,000	95.00	941
		SUB-TOTAL			59		1,000		941
274	2.	Single Family (1-5du/ac)	DU	--	--	362.00	3,584	362.00	3,584

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
274	31.	Business Park	TSF	--	--	110.06	1,123	110.06	1,123
		SUB-TOTAL			--		4,707		4,707
275	2.	Single Family (1-5du/ac)	DU	225.00	2,228	225.00	2,228	0.00	0
		SUB-TOTAL			2,228		2,228		0
276	3.	Single Family (6-10du/ac)	DU	75.00	743	75.00	743	0.00	0
	4.	Condominium/Townhouse	DU	539.00	4,312	539.00	4,312	0.00	0
	12.	Commercial Center (<10ac)	TSF	98.01	8,337	98.01	8,337	0.00	0
	25.	Church	TSF	7.84	73	7.84	73	0.00	0
		SUB-TOTAL			13,465		13,465		0
277	12.	Commercial Center (<10ac)	TSF	4.91	418	4.91	418	0.00	0
	15.	Sit-Down Restaurant	TSF	3.00	391	3.00	391	0.00	0
		SUB-TOTAL			809		809		0
278	4.	Condominium/Townhouse	DU	757.00	6,056	757.00	6,056	0.00	0
	12.	Commercial Center (<10ac)	TSF	81.89	6,966	81.89	6,966	0.00	0
	50.	Golf Course	AC	50.00	398	50.00	398	0.00	0
		SUB-TOTAL			13,420		13,420		0
279	6.	Mobile Home	DU	313.00	2,160	313.00	2,160	0.00	0
	12.	Commercial Center (<10ac)	TSF	19.33	1,644	26.33	2,240	7.00	596
	30.	Industrial Park	TSF	--	--	58.00	348	58.00	348
	40.	Commercial Office	TSF	0.20	2	0.20	2	0.00	0
		SUB-TOTAL			3,806		4,750		944
280	31.	Business Park	TSF	--	--	38.18	389	38.18	389
		SUB-TOTAL			--		389		389
281	31.	Business Park	TSF	--	--	215.62	2,199	215.62	2,199
		SUB-TOTAL			--		2,199		2,199
282	4.	Condominium/Townhouse	DU	486.00	3,888	486.00	3,888	0.00	0
	11.	Commercial Center(10-30a)	TSF	17.90	968	17.90	968	0.00	0
		SUB-TOTAL			4,856		4,856		0
283	2.	Single Family (1-5du/ac)	DU	161.00	1,594	161.00	1,594	0.00	0
	4.	Condominium/Townhouse	DU	400.00	3,200	400.00	3,200	0.00	0
	20.	Elementary/Middle School	STU	1,116.00	1,618	1,116.00	1,618	0.00	0
		SUB-TOTAL			6,412		6,412		0
284	2.	Single Family (1-5du/ac)	DU	2.00	20	46.00	455	44.00	435
	6.	Mobile Home	DU	346.00	2,387	346.00	2,387	0.00	0
		SUB-TOTAL			2,407		2,842		435
285	2.	Single Family (1-5du/ac)	DU	--	--	80.00	792	80.00	792
	10.	Commercial Center (>30ac)	TSF	--	--	246.99	9,894	246.99	9,894
		SUB-TOTAL			--		10,686		10,686

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
286	2.	Single Family (1-5du/ac)	DU	--	--	82.00	812	82.00	812
		SUB-TOTAL			--		812		812
287	3.	Single Family (6-10du/ac)	DU	--	--	111.00	1,099	111.00	1,099
		SUB-TOTAL			--		1,099		1,099
288	21.	High School	STU	--	--	2,500.00	4,475	2,500.00	4,475
		SUB-TOTAL			--		4,475		4,475
289	2.	Single Family (1-5du/ac)	DU	--	--	55.00	545	55.00	545
	31.	Business Park	TSF	--	--	57.17	583	57.17	583
		SUB-TOTAL			--		1,128		1,128
290	2.	Single Family (1-5du/ac)	DU	64.00	634	64.00	634	0.00	0
	4.	Condominium/Townhouse	DU	93.00	744	93.00	744	0.00	0
		SUB-TOTAL			1,378		1,378		0
291	2.	Single Family (1-5du/ac)	DU	--	--	74.00	733	74.00	733
	31.	Business Park	TSF	8.60	88	181.63	1,853	173.03	1,765
		SUB-TOTAL			88		2,586		2,498
292	2.	Single Family (1-5du/ac)	DU	161.00	1,594	161.00	1,594	0.00	0
		SUB-TOTAL			1,594		1,594		0
293	2.	Single Family (1-5du/ac)	DU	133.00	1,317	133.00	1,317	0.00	0
	4.	Condominium/Townhouse	DU	368.00	2,944	368.00	2,944	0.00	0
		SUB-TOTAL			4,261		4,261		0
294	5.	Apartment	DU	--	--	191.00	1,318	191.00	1,318
	11.	Commercial Center(10-30a)	TSF	124.35	6,722	364.00	19,678	239.65	12,956
	30.	Industrial Park	TSF	210.00	1,260	210.00	1,260	0.00	0
	31.	Business Park	TSF	294.22	3,001	349.98	3,570	55.76	569
	51.	Developed Park	AC	--	--	38.00	99	38.00	99
		SUB-TOTAL			10,983		25,925		14,942
295	32.	Manufacturing/Warehouse	TSF	372.45	1,899	1,020.58	5,205	648.13	3,306
	40.	Commercial Office	TSF	--	--	56.00	647	56.00	647
	51.	Developed Park	AC	21.50	56	21.50	56	0.00	0
		SUB-TOTAL			1,955		5,908		3,953
298	5.	Apartment	DU	830.00	5,727	830.00	5,727	0.00	0
		SUB-TOTAL			5,727		5,727		0
299	11.	Commercial Center(10-30a)	TSF	184.00	9,947	184.00	9,947	0.00	0
		SUB-TOTAL			9,947		9,947		0
300	10.	Commercial Center (>30ac)	TSF	272.00	10,896	272.00	10,896	0.00	0
		SUB-TOTAL			10,896		10,896		0
301	13.	Commercial Shops	TSF	49.24	1,825	49.24	1,825	0.00	0

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
301	19.	Car Dealership	TSF	66.50	2,494	66.50	2,494	0.00	0
	43.	Post Office	TSF	50.00	5,410	50.00	5,410	0.00	0
		SUB-TOTAL			9,729		9,729		0
302	10.	Commercial Center (>30ac)	TSF	384.42	15,400	384.42	15,400	0.00	0
	12.	Commercial Center (<10ac)	TSF	--	--	30.00	2,552	30.00	2,552
	19.	Car Dealership	TSF	31.00	1,163	31.00	1,163	0.00	0
		SUB-TOTAL			16,563		19,115		2,552
303	19.	Car Dealership	TSF	150.00	5,625	150.00	5,625	0.00	0
		SUB-TOTAL			5,625		5,625		0
304	11.	Commercial Center(10-30a)	TSF	33.00	1,784	33.00	1,784	0.00	0
	15.	Sit-Down Restaurant	TSF	15.00	1,955	15.00	1,955	0.00	0
	19.	Car Dealership	TSF	83.00	3,113	83.00	3,113	0.00	0
		SUB-TOTAL			6,852		6,852		0
305	11.	Commercial Center(10-30a)	TSF	197.29	10,665	197.29	10,665	0.00	0
	15.	Sit-Down Restaurant	TSF	5.36	699	5.36	699	0.00	0
	32.	Manufacturing/Warehouse	TSF	--	--	100.00	510	100.00	510
		SUB-TOTAL			11,364		11,874		510
306	11.	Commercial Center(10-30a)	TSF	80.50	4,352	143.90	7,779	63.40	3,427
	25.	Church	TSF	36.10	336	36.10	336	0.00	0
		SUB-TOTAL			4,688		8,115		3,427
307	11.	Commercial Center(10-30a)	TSF	128.00	6,920	128.00	6,920	0.00	0
	16.	Fast Food Restaurant	TSF	4.80	2,381	4.80	2,381	0.00	0
		SUB-TOTAL			9,301		9,301		0
308	5.	Apartment	DU	245.00	1,691	245.00	1,691	0.00	0
	12.	Commercial Center (<10ac)	TSF	175.11	14,895	175.11	14,895	0.00	0
	15.	Sit-Down Restaurant	TSF	5.40	704	5.40	704	0.00	0
	32.	Manufacturing/Warehouse	TSF	29.40	150	29.40	150	0.00	0
		SUB-TOTAL			17,440		17,440		0
309	13.	Commercial Shops	TSF	3.00	111	3.00	111	0.00	0
		SUB-TOTAL			111		111		0
310	19.	Car Dealership	TSF	--	--	111.00	4,163	111.00	4,163
	51.	Developed Park	AC	17.20	45	17.20	45	0.00	0
		SUB-TOTAL			45		4,208		4,163
311	3.	Single Family (6-10du/ac)	DU	132.00	1,307	132.00	1,307	0.00	0
	4.	Condominium/Townhouse	DU	63.00	504	63.00	504	0.00	0
		SUB-TOTAL			1,811		1,811		0
312	11.	Commercial Center(10-30a)	TSF	164.40	8,887	180.00	9,731	15.60	844
	34.	Utilities	TSF	84.00	200	84.00	200	0.00	0
		SUB-TOTAL			9,087		9,931		844

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
313	4.	Condominium/Townhouse	DU	264.00	2,112	264.00	2,112	0.00	0
		SUB-TOTAL			2,112		2,112		0
314	11.	Commercial Center(10-30a)	TSF	178.00	9,623	178.00	9,623	0.00	0
		SUB-TOTAL			9,623		9,623		0
315	4.	Condominium/Townhouse	DU	582.00	4,656	582.00	4,656	0.00	0
		SUB-TOTAL			4,656		4,656		0
316	2.	Single Family (1-5du/ac)	DU	121.00	1,198	121.00	1,198	0.00	0
		SUB-TOTAL			1,198		1,198		0
317	20.	Elementary/Middle School	STU	924.00	1,340	924.00	1,340	0.00	0
	51.	Developed Park	AC	18.00	47	18.00	47	0.00	0
		SUB-TOTAL			1,387		1,387		0
318	2.	Single Family (1-5du/ac)	DU	21.00	208	21.00	208	0.00	0
	4.	Condominium/Townhouse	DU	252.00	2,016	252.00	2,016	0.00	0
		SUB-TOTAL			2,224		2,224		0
319	13.	Commercial Shops	TSF	--	--	2.00	74	2.00	74
	20.	Elementary/Middle School	STU	--	--	250.00	363	250.00	363
	25.	Church	TSF	--	--	80.00	744	80.00	744
	40.	Commercial Office	TSF	--	--	240.00	2,774	240.00	2,774
		SUB-TOTAL			--		3,955		3,955
320	2.	Single Family (1-5du/ac)	DU	125.00	1,238	125.00	1,238	0.00	0
		SUB-TOTAL			1,238		1,238		0
321	3.	Single Family (6-10du/ac)	DU	155.00	1,535	155.00	1,535	0.00	0
	4.	Condominium/Townhouse	DU	66.00	528	66.00	528	0.00	0
		SUB-TOTAL			2,063		2,063		0
322	3.	Single Family (6-10du/ac)	DU	87.00	861	87.00	861	0.00	0
		SUB-TOTAL			861		861		0
323	3.	Single Family (6-10du/ac)	DU	161.00	1,594	161.00	1,594	0.00	0
	4.	Condominium/Townhouse	DU	132.00	1,056	132.00	1,056	0.00	0
		SUB-TOTAL			2,650		2,650		0
325	3.	Single Family (6-10du/ac)	DU	--	--	205.00	2,029	205.00	2,029
		SUB-TOTAL			--		2,029		2,029
326	2.	Single Family (1-5du/ac)	DU	101.00	1,000	101.00	1,000	0.00	0
		SUB-TOTAL			1,000		1,000		0
327	2.	Single Family (1-5du/ac)	DU	105.00	1,040	105.00	1,040	0.00	0
		SUB-TOTAL			1,040		1,040		0
328	2.	Single Family (1-5du/ac)	DU	110.00	1,089	110.00	1,089	0.00	0
		SUB-TOTAL			1,089		1,089		0

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
329	2.	Single Family (1-5du/ac)	DU	50.00	495	50.00	495	0.00	0
	20.	Elementary/Middle School	STU	924.00	1,340	924.00	1,340	0.00	0
		SUB-TOTAL			1,835		1,835		0
330	2.	Single Family (1-5du/ac)	DU	143.00	1,416	143.00	1,416	0.00	0
		SUB-TOTAL			1,416		1,416		0
331	2.	Single Family (1-5du/ac)	DU	167.00	1,653	167.00	1,653	0.00	0
		SUB-TOTAL			1,653		1,653		0
332	2.	Single Family (1-5du/ac)	DU	114.00	1,129	114.00	1,129	0.00	0
	4.	Condominium/Townhouse	DU	102.00	816	102.00	816	0.00	0
		SUB-TOTAL			1,945		1,945		0
333	2.	Single Family (1-5du/ac)	DU	803.00	7,950	803.00	7,950	0.00	0
	4.	Condominium/Townhouse	DU	360.00	2,880	360.00	2,880	0.00	0
	13.	Commercial Shops	TSF	25.05	928	25.05	928	0.00	0
	20.	Elementary/Middle School	STU	924.00	1,340	924.00	1,340	0.00	0
		SUB-TOTAL			13,098		13,098		0
334	2.	Single Family (1-5du/ac)	DU	164.00	1,624	164.00	1,624	0.00	0
		SUB-TOTAL			1,624		1,624		0
335	2.	Single Family (1-5du/ac)	DU	194.00	1,921	194.00	1,921	0.00	0
		SUB-TOTAL			1,921		1,921		0
336	2.	Single Family (1-5du/ac)	DU	589.00	5,831	589.00	5,831	0.00	0
	20.	Elementary/Middle School	STU	924.00	1,340	924.00	1,340	0.00	0
	51.	Developed Park	AC	7.30	19	7.30	19	0.00	0
		SUB-TOTAL			7,190		7,190		0
337	2.	Single Family (1-5du/ac)	DU	390.00	3,861	390.00	3,861	0.00	0
		SUB-TOTAL			3,861		3,861		0
338	11.	Commercial Center(10-30a)	TSF	92.00	4,974	92.00	4,974	0.00	0
		SUB-TOTAL			4,974		4,974		0
339	2.	Single Family (1-5du/ac)	DU	128.00	1,267	128.00	1,267	0.00	0
	3.	Single Family (6-10du/ac)	DU	161.00	1,594	161.00	1,594	0.00	0
	20.	Elementary/Middle School	STU	924.00	1,340	924.00	1,340	0.00	0
	51.	Developed Park	AC	7.00	18	7.00	18	0.00	0
		SUB-TOTAL			4,219		4,219		0
340	2.	Single Family (1-5du/ac)	DU	270.00	2,673	270.00	2,673	0.00	0
	3.	Single Family (6-10du/ac)	DU	124.00	1,228	124.00	1,228	0.00	0
	4.	Condominium/Townhouse	DU	264.00	2,112	264.00	2,112	0.00	0
		SUB-TOTAL			6,013		6,013		0
341	5.	Apartment	DU	325.00	2,243	325.00	2,243	0.00	0
	26.	Day Care	STU	260.00	1,175	260.00	1,175	0.00	0
		SUB-TOTAL			3,418		3,418		0

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
342	4.	Condominium/Townhouse	DU	168.00	1,344	168.00	1,344	0.00	0
		SUB-TOTAL			1,344		1,344		0
343	2.	Single Family (1-5du/ac)	DU	90.00	891	90.00	891	0.00	0
	3.	Single Family (6-10du/ac)	DU	89.00	881	89.00	881	0.00	0
	4.	Condominium/Townhouse	DU	132.00	1,056	132.00	1,056	0.00	0
		SUB-TOTAL			2,828		2,828		0
344	2.	Single Family (1-5du/ac)	DU	415.00	4,109	415.00	4,109	0.00	0
	11.	Commercial Center(10-30a)	TSF	--	--	40.00	2,162	40.00	2,162
		SUB-TOTAL			4,109		6,271		2,162
345	2.	Single Family (1-5du/ac)	DU	23.00	228	23.00	228	0.00	0
		SUB-TOTAL			228		228		0
347	2.	Single Family (1-5du/ac)	DU	313.00	3,099	313.00	3,099	0.00	0
		SUB-TOTAL			3,099		3,099		0
348	2.	Single Family (1-5du/ac)	DU	517.00	5,118	517.00	5,118	0.00	0
		SUB-TOTAL			5,118		5,118		0
349	4.	Condominium/Townhouse	DU	83.00	664	83.00	664	0.00	0
	12.	Commercial Center (<10ac)	TSF	8.00	680	8.00	680	0.00	0
	26.	Day Care	STU	50.00	226	50.00	226	0.00	0
		SUB-TOTAL			1,570		1,570		0
350	25.	Church	TSF	108.61	1,010	108.61	1,010	0.00	0
		SUB-TOTAL			1,010		1,010		0
352	2.	Single Family (1-5du/ac)	DU	440.00	4,356	592.00	5,861	152.00	1,505
		SUB-TOTAL			4,356		5,861		1,505
353	2.	Single Family (1-5du/ac)	DU	259.00	2,564	259.00	2,564	0.00	0
		SUB-TOTAL			2,564		2,564		0
355	2.	Single Family (1-5du/ac)	DU	--	--	500.00	4,950	500.00	4,950
	20.	Elementary/Middle School	STU	--	--	750.00	1,088	750.00	1,088
	51.	Developed Park	AC	--	--	5.00	13	5.00	13
		SUB-TOTAL			--		6,051		6,051
356	2.	Single Family (1-5du/ac)	DU	385.00	3,811	385.00	3,811	0.00	0
		SUB-TOTAL			3,811		3,811		0
357	2.	Single Family (1-5du/ac)	DU	--	--	90.00	891	90.00	891
		SUB-TOTAL			--		891		891
358	2.	Single Family (1-5du/ac)	DU	105.00	1,040	421.00	4,168	316.00	3,128
	4.	Condominium/Townhouse	DU	140.00	1,120	255.00	2,040	115.00	920
	20.	Elementary/Middle School	STU	650.00	943	650.00	943	0.00	0
	51.	Developed Park	AC	10.50	27	19.20	50	8.70	23
		SUB-TOTAL			3,130		7,201		4,071

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
359	2.	Single Family (1-5du/ac)	DU	570.00	5,643	570.00	5,643	0.00	0
	4.	Condominium/Townhouse	DU	192.00	1,536	192.00	1,536	0.00	0
		SUB-TOTAL			7,179		7,179		0
360	2.	Single Family (1-5du/ac)	DU	538.00	5,326	538.00	5,326	0.00	0
	4.	Condominium/Townhouse	DU	248.00	1,984	248.00	1,984	0.00	0
	12.	Commercial Center (<10ac)	TSF	119.00	10,122	119.00	10,122	0.00	0
	20.	Elementary/Middle School	STU	647.00	938	647.00	938	0.00	0
		SUB-TOTAL			18,370		18,370		0
361	2.	Single Family (1-5du/ac)	DU	188.00	1,861	376.00	3,722	188.00	1,861
		SUB-TOTAL			1,861		3,722		1,861
362	2.	Single Family (1-5du/ac)	DU	173.00	1,713	173.00	1,713	0.00	0
	11.	Commercial Center(10-30a)	TSF	--	--	68.28	3,691	68.28	3,691
		SUB-TOTAL			1,713		5,404		3,691
363	2.	Single Family (1-5du/ac)	DU	6.00	59	44.00	436	38.00	377
		SUB-TOTAL			59		436		377
364	3.	Single Family (6-10du/ac)	DU	199.00	1,970	199.00	1,970	0.00	0
		SUB-TOTAL			1,970		1,970		0
365	2.	Single Family (1-5du/ac)	DU	201.00	1,990	201.00	1,990	0.00	0
	4.	Condominium/Townhouse	DU	102.00	816	102.00	816	0.00	0
	12.	Commercial Center (<10ac)	TSF	40.28	3,426	40.28	3,426	0.00	0
		SUB-TOTAL			6,232		6,232		0
366	2.	Single Family (1-5du/ac)	DU	600.00	5,940	600.00	5,940	0.00	0
		SUB-TOTAL			5,940		5,940		0
367	3.	Single Family (6-10du/ac)	DU	437.00	4,326	437.00	4,326	0.00	0
		SUB-TOTAL			4,326		4,326		0
368	2.	Single Family (1-5du/ac)	DU	1,070.00	10,593	1,070.00	10,593	0.00	0
	20.	Elementary/Middle School	STU	675.00	979	675.00	979	0.00	0
	25.	Church	TSF	21.00	195	56.00	521	35.00	326
		SUB-TOTAL			11,767		12,093		326
369	2.	Single Family (1-5du/ac)	DU	202.00	2,000	202.00	2,000	0.00	0
		SUB-TOTAL			2,000		2,000		0
370	2.	Single Family (1-5du/ac)	DU	1,080.00	10,692	1,080.00	10,692	0.00	0
	21.	High School	STU	2,800.00	5,012	2,800.00	5,012	0.00	0
		SUB-TOTAL			15,704		15,704		0
371	2.	Single Family (1-5du/ac)	DU	673.00	6,663	673.00	6,663	0.00	0
	20.	Elementary/Middle School	STU	687.00	996	687.00	996	0.00	0
		SUB-TOTAL			7,659		7,659		0

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
372	2.	Single Family (1-5du/ac)	DU	287.00	2,841	287.00	2,841	0.00	0
	4.	Condominium/Townhouse	DU	230.00	1,840	230.00	1,840	0.00	0
	11.	Commercial Center(10-30a)	TSF	153.55	8,301	153.55	8,301	0.00	0
		SUB-TOTAL			12,982		12,982		0
373	2.	Single Family (1-5du/ac)	DU	236.00	2,336	236.00	2,336	0.00	0
	20.	Elementary/Middle School	STU	462.00	670	462.00	670	0.00	0
	25.	Church	TSF	23.52	219	23.52	219	0.00	0
		SUB-TOTAL			3,225		3,225		0
374	5.	Apartment	DU	--	--	324.00	2,236	324.00	2,236
	11.	Commercial Center(10-30a)	TSF	150.00	8,109	150.00	8,109	0.00	0
		SUB-TOTAL			8,109		10,345		2,236
375	12.	Commercial Center (<10ac)	TSF	--	--	40.00	3,402	40.00	3,402
	16.	Fast Food Restaurant	TSF	5.00	2,481	5.00	2,481	0.00	0
		SUB-TOTAL			2,481		5,883		3,402
376	3.	Single Family (6-10du/ac)	DU	--	--	225.00	2,228	225.00	2,228
	51.	Developed Park	AC	--	--	5.00	13	5.00	13
		SUB-TOTAL			--		2,241		2,241
377	13.	Commercial Shops	TSF	57.50	2,131	57.50	2,131	0.00	0
		SUB-TOTAL			2,131		2,131		0
378	4.	Condominium/Townhouse	DU	--	--	420.00	3,360	420.00	3,360
	6.	Mobile Home	DU	332.00	2,291	332.00	2,291	0.00	0
	13.	Commercial Shops	TSF	41.00	1,519	56.00	2,075	15.00	556
	31.	Business Park	TSF	56.00	571	56.00	571	0.00	0
	40.	Commercial Office	TSF	--	--	110.00	1,272	110.00	1,272
		SUB-TOTAL			4,381		9,569		5,188
379	3.	Single Family (6-10du/ac)	DU	--	--	214.00	2,119	214.00	2,119
		SUB-TOTAL			--		2,119		2,119
380	5.	Apartment	DU	--	--	420.00	2,898	420.00	2,898
		SUB-TOTAL			--		2,898		2,898
381	51.	Developed Park	AC	50.00	130	50.00	130	0.00	0
		SUB-TOTAL			130		130		0
382	34.	Utilities	TSF	21.00	50	21.00	50	0.00	0
	51.	Developed Park	AC	50.00	130	50.00	130	0.00	0
		SUB-TOTAL			180		180		0
383	2.	Single Family (1-5du/ac)	DU	231.00	2,287	257.00	2,544	26.00	257
	13.	Commercial Shops	TSF	8.71	323	8.71	323	0.00	0
		SUB-TOTAL			2,610		2,867		257
384	2.	Single Family (1-5du/ac)	DU	354.00	3,505	354.00	3,505	0.00	0

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
384	12.	Commercial Center (<10ac)	TSF	23.07	1,962	23.07	1,962	0.00	0
		SUB-TOTAL			5,467		5,467		0
385	2.	Single Family (1-5du/ac)	DU	--	--	75.00	743	75.00	743
		SUB-TOTAL			--		743		743
386	2.	Single Family (1-5du/ac)	DU	162.00	1,604	162.00	1,604	0.00	0
		SUB-TOTAL			1,604		1,604		0
387	2.	Single Family (1-5du/ac)	DU	142.00	1,406	1,015.00	10,049	873.00	8,643
	4.	Condominium/Townhouse	DU	180.00	1,440	954.00	7,632	774.00	6,192
		SUB-TOTAL			2,846		17,681		14,835
388	2.	Single Family (1-5du/ac)	DU	--	--	95.00	940	95.00	940
	4.	Condominium/Townhouse	DU	--	--	221.00	1,768	221.00	1,768
	5.	Apartment	DU	--	--	695.00	4,796	695.00	4,796
	20.	Elementary/Middle School	STU	--	--	1,000.00	1,450	1,000.00	1,450
		SUB-TOTAL			--		8,954		8,954
389	2.	Single Family (1-5du/ac)	DU	1,061.00	10,504	1,078.00	10,672	17.00	168
	3.	Single Family (6-10du/ac)	DU	126.00	1,247	126.00	1,247	0.00	0
	20.	Elementary/Middle School	STU	528.00	766	528.00	766	0.00	0
		SUB-TOTAL			12,517		12,685		168
390	2.	Single Family (1-5du/ac)	DU	150.00	1,485	150.00	1,485	0.00	0
		SUB-TOTAL			1,485		1,485		0
391	13.	Commercial Shops	TSF	16.33	605	16.33	605	0.00	0
	30.	Industrial Park	TSF	--	--	70.00	420	70.00	420
	32.	Manufacturing/Warehouse	TSF	376.36	1,919	376.36	1,919	0.00	0
		SUB-TOTAL			2,524		2,944		420
392	2.	Single Family (1-5du/ac)	DU	323.00	3,198	323.00	3,198	0.00	0
	6.	Mobile Home	DU	400.00	2,760	400.00	2,760	0.00	0
	11.	Commercial Center(10-30a)	TSF	--	--	81.68	4,416	81.68	4,416
	13.	Commercial Shops	TSF	20.80	771	20.80	771	0.00	0
	20.	Elementary/Middle School	STU	1,000.00	1,450	1,000.00	1,450	0.00	0
		SUB-TOTAL			8,179		12,595		4,416
393	3.	Single Family (6-10du/ac)	DU	162.00	1,604	162.00	1,604	0.00	0
	4.	Condominium/Townhouse	DU	100.00	800	100.00	800	0.00	0
	12.	Commercial Center (<10ac)	TSF	52.27	4,446	52.27	4,446	0.00	0
	25.	Church	TSF	37.64	350	37.64	350	0.00	0
		SUB-TOTAL			7,200		7,200		0
394	2.	Single Family (1-5du/ac)	DU	325.00	3,217	325.00	3,217	0.00	0
	20.	Elementary/Middle School	STU	720.00	1,044	720.00	1,044	0.00	0
	21.	High School	STU	3,500.00	6,265	3,500.00	6,265	0.00	0
	51.	Developed Park	AC	3.20	8	3.20	8	0.00	0
		SUB-TOTAL			10,534		10,534		0

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
395	3.	Single Family (6-10du/ac)	DU	185.00	1,831	185.00	1,831	0.00	0
	11.	Commercial Center(10-30a)	TSF	165.53	8,949	165.53	8,949	0.00	0
	20.	Elementary/Middle School	STU	1,505.00	2,182	1,505.00	2,182	0.00	0
		SUB-TOTAL			12,962		12,962		0
396	12.	Commercial Center (<10ac)	TSF	76.23	6,484	76.23	6,484	0.00	0
		SUB-TOTAL			6,484		6,484		0
397	3.	Single Family (6-10du/ac)	DU	49.00	485	49.00	485	0.00	0
	4.	Condominium/Townhouse	DU	512.00	4,096	512.00	4,096	0.00	0
	5.	Apartment	DU	67.00	462	67.00	462	0.00	0
	6.	Mobile Home	DU	171.00	1,180	171.00	1,180	0.00	0
	11.	Commercial Center(10-30a)	TSF	310.98	16,812	310.98	16,812	0.00	0
	12.	Commercial Center (<10ac)	TSF	--	--	74.00	6,294	74.00	6,294
		SUB-TOTAL			23,035		29,329		6,294
398	2.	Single Family (1-5du/ac)	DU	1,120.00	11,088	1,120.00	11,088	0.00	0
	4.	Condominium/Townhouse	DU	120.00	960	120.00	960	0.00	0
	12.	Commercial Center (<10ac)	TSF	250.00	21,265	250.00	21,265	0.00	0
	13.	Commercial Shops	TSF	2.68	99	2.68	99	0.00	0
	15.	Sit-Down Restaurant	TSF	8.45	1,101	8.45	1,101	0.00	0
	20.	Elementary/Middle School	STU	820.00	1,189	820.00	1,189	0.00	0
	24.	Library	TSF	17.00	1,445	17.00	1,445	0.00	0
		SUB-TOTAL			37,147		37,147		0
399	2.	Single Family (1-5du/ac)	DU	779.00	7,712	779.00	7,712	0.00	0
	3.	Single Family (6-10du/ac)	DU	80.00	792	80.00	792	0.00	0
	20.	Elementary/Middle School	STU	545.00	790	545.00	790	0.00	0
		SUB-TOTAL			9,294		9,294		0
400	2.	Single Family (1-5du/ac)	DU	--	--	12.00	119	12.00	119
		SUB-TOTAL			--		119		119
401	2.	Single Family (1-5du/ac)	DU	--	--	835.00	8,267	835.00	8,267
	4.	Condominium/Townhouse	DU	--	--	482.00	3,856	482.00	3,856
		SUB-TOTAL			--		12,123		12,123
402	2.	Single Family (1-5du/ac)	DU	300.00	2,970	1,129.00	11,177	829.00	8,207
	11.	Commercial Center(10-30a)	TSF	--	--	150.00	8,109	150.00	8,109
	20.	Elementary/Middle School	STU	656.00	951	656.00	951	0.00	0
		SUB-TOTAL			3,921		20,237		16,316
403	2.	Single Family (1-5du/ac)	DU	111.00	1,099	111.00	1,099	0.00	0
	12.	Commercial Center (<10ac)	TSF	12.00	1,021	46.00	3,913	34.00	2,892
		SUB-TOTAL			2,120		5,012		2,892
404	2.	Single Family (1-5du/ac)	DU	10.00	99	170.00	1,683	160.00	1,584
		SUB-TOTAL			99		1,683		1,584
405	2.	Single Family (1-5du/ac)	DU	24.00	238	296.00	2,930	272.00	2,692
		SUB-TOTAL			238		2,930		2,692

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
406	2.	Single Family (1-5du/ac)	DU	38.00	376	353.00	3,495	315.00	3,119
		SUB-TOTAL			376		3,495		3,119
407	2.	Single Family (1-5du/ac)	DU	--	--	47.00	465	47.00	465
		SUB-TOTAL			--		465		465
408	2.	Single Family (1-5du/ac)	DU	47.00	465	648.00	6,415	601.00	5,950
		SUB-TOTAL			465		6,415		5,950
409	2.	Single Family (1-5du/ac)	DU	--	--	154.00	1,525	154.00	1,525
		SUB-TOTAL			--		1,525		1,525
410	2.	Single Family (1-5du/ac)	DU	25.00	247	248.00	2,455	223.00	2,208
	6.	Mobile Home	DU	--	--	101.00	697	101.00	697
	30.	Industrial Park	TSF	--	--	44.00	264	44.00	264
		SUB-TOTAL			247		3,416		3,169
411	2.	Single Family (1-5du/ac)	DU	--	--	675.00	6,682	675.00	6,682
	20.	Elementary/Middle School	STU	--	--	800.00	1,160	800.00	1,160
		SUB-TOTAL			--		7,842		7,842
412	1.	Single Family (<1du/ac)	DU	120.00	1,188	120.00	1,188	0.00	0
		SUB-TOTAL			1,188		1,188		0
413	2.	Single Family (1-5du/ac)	DU	29.00	287	106.00	1,049	77.00	762
	4.	Condominium/Townhouse	DU	246.00	1,968	614.00	4,912	368.00	2,944
	12.	Commercial Center (<10ac)	TSF	26.94	2,292	44.60	3,794	17.66	1,502
	30.	Industrial Park	TSF	--	--	48.54	291	48.54	291
	32.	Manufacturing/Warehouse	TSF	45.21	231	45.21	231	0.00	0
	40.	Commercial Office	TSF	36.59	423	36.59	423	0.00	0
		SUB-TOTAL			5,201		10,700		5,499
414	2.	Single Family (1-5du/ac)	DU	15.00	149	40.00	396	25.00	247
	4.	Condominium/Townhouse	DU	1,358.00	10,864	1,358.00	10,864	0.00	0
	6.	Mobile Home	DU	250.00	1,725	250.00	1,725	0.00	0
	13.	Commercial Shops	TSF	95.83	3,551	95.83	3,551	0.00	0
	40.	Commercial Office	TSF	--	--	125.00	1,445	125.00	1,445
		SUB-TOTAL			16,289		17,981		1,692
415	2.	Single Family (1-5du/ac)	DU	206.00	2,039	211.00	2,089	5.00	50
	11.	Commercial Center(10-30a)	TSF	--	--	63.71	3,444	63.71	3,444
	30.	Industrial Park	TSF	--	--	125.45	753	125.45	753
	32.	Manufacturing/Warehouse	TSF	27.80	142	27.80	142	0.00	0
		SUB-TOTAL			2,181		6,428		4,247
416	2.	Single Family (1-5du/ac)	DU	579.00	5,732	579.00	5,732	0.00	0
	4.	Condominium/Townhouse	DU	148.00	1,184	148.00	1,184	0.00	0
	13.	Commercial Shops	TSF	15.00	556	15.00	556	0.00	0
	51.	Developed Park	AC	15.00	39	15.00	39	0.00	0
		SUB-TOTAL			7,511		7,511		0

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
417	2.	Single Family (1-5du/ac)	DU	579.00	5,732	579.00	5,732	0.00	0
	4.	Condominium/Townhouse	DU	149.00	1,192	149.00	1,192	0.00	0
	20.	Elementary/Middle School	STU	760.00	1,102	760.00	1,102	0.00	0
		SUB-TOTAL			8,026		8,026		0
418	4.	Condominium/Townhouse	DU	474.00	3,792	474.00	3,792	0.00	0
	5.	Apartment	DU	232.00	1,601	232.00	1,601	0.00	0
	6.	Mobile Home	DU	90.00	621	90.00	621	0.00	0
	11.	Commercial Center(10-30a)	TSF	128.43	6,943	128.43	6,943	0.00	0
		SUB-TOTAL			12,957		12,957		0
419	2.	Single Family (1-5du/ac)	DU	--	--	1,018.00	10,078	1,018.00	10,078
	4.	Condominium/Townhouse	DU	1,834.00	14,672	1,834.00	14,672	0.00	0
		SUB-TOTAL			14,672		24,750		10,078
420	4.	Condominium/Townhouse	DU	40.00	320	40.00	320	0.00	0
		SUB-TOTAL			320		320		0
421	4.	Condominium/Townhouse	DU	752.00	6,016	752.00	6,016	0.00	0
	30.	Industrial Park	TSF	--	--	300.00	1,800	300.00	1,800
	31.	Business Park	TSF	--	--	300.00	3,060	300.00	3,060
		SUB-TOTAL			6,016		10,876		4,860
422	2.	Single Family (1-5du/ac)	DU	74.00	733	76.00	752	2.00	19
	4.	Condominium/Townhouse	DU	80.00	640	80.00	640	0.00	0
	11.	Commercial Center(10-30a)	TSF	--	--	132.00	7,136	132.00	7,136
	12.	Commercial Center (<10ac)	TSF	4.00	340	4.00	340	0.00	0
	20.	Elementary/Middle School	STU	817.00	1,185	817.00	1,185	0.00	0
		SUB-TOTAL			2,898		10,053		7,155
423	2.	Single Family (1-5du/ac)	DU	353.00	3,495	353.00	3,495	0.00	0
	3.	Single Family (6-10du/ac)	DU	--	--	21.00	208	21.00	208
	12.	Commercial Center (<10ac)	TSF	98.01	8,337	98.01	8,337	0.00	0
	40.	Commercial Office	TSF	10.89	126	10.89	126	0.00	0
		SUB-TOTAL			11,958		12,166		208
424	2.	Single Family (1-5du/ac)	DU	2.00	20	189.00	1,871	187.00	1,851
	4.	Condominium/Townhouse	DU	84.00	672	194.00	1,552	110.00	880
		SUB-TOTAL			692		3,423		2,731
425	2.	Single Family (1-5du/ac)	DU	39.00	386	241.00	2,386	202.00	2,000
	4.	Condominium/Townhouse	DU	--	--	80.00	640	80.00	640
	51.	Developed Park	AC	--	--	31.00	81	31.00	81
		SUB-TOTAL			386		3,107		2,721
426	2.	Single Family (1-5du/ac)	DU	30.00	297	560.00	5,544	530.00	5,247
	3.	Single Family (6-10du/ac)	DU	70.00	693	70.00	693	0.00	0
	32.	Manufacturing/Warehouse	TSF	39.60	202	39.60	202	0.00	0
		SUB-TOTAL			1,192		6,439		5,247

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
427	2.	Single Family (1-5du/ac)	DU	249.00	2,465	249.00	2,465	0.00	0
		SUB-TOTAL			2,465		2,465		0
428	2.	Single Family (1-5du/ac)	DU	540.00	5,346	2,124.00	21,028	1,584.00	15,682
	11.	Commercial Center(10-30a)	TSF	--	--	47.40	2,562	47.40	2,562
	12.	Commercial Center (<10ac)	TSF	--	--	39.20	3,334	39.20	3,334
		SUB-TOTAL			5,346		26,924		21,578
429	2.	Single Family (1-5du/ac)	DU	42.00	416	55.00	545	13.00	129
		SUB-TOTAL			416		545		129
430	2.	Single Family (1-5du/ac)	DU	2.00	20	2.00	20	0.00	0
		SUB-TOTAL			20		20		0
431	2.	Single Family (1-5du/ac)	DU	3.00	30	3.00	30	0.00	0
		SUB-TOTAL			30		30		0
433	2.	Single Family (1-5du/ac)	DU	8.00	79	55.00	545	47.00	466
		SUB-TOTAL			79		545		466
434	2.	Single Family (1-5du/ac)	DU	25.00	247	25.00	247	0.00	0
		SUB-TOTAL			247		247		0
437	2.	Single Family (1-5du/ac)	DU	6.00	59	250.00	2,475	244.00	2,416
	4.	Condominium/Townhouse	DU	--	--	13.00	104	13.00	104
	59.	Cemex	SG	--	--	12.84	1,284	12.84	1,284
		SUB-TOTAL			59		3,863		3,804
438	3.	Single Family (6-10du/ac)	DU	--	--	568.00	5,623	568.00	5,623
	4.	Condominium/Townhouse	DU	--	--	13.00	104	13.00	104
		SUB-TOTAL			--		5,727		5,727
439	2.	Single Family (1-5du/ac)	DU	164.00	1,624	170.00	1,683	6.00	59
	3.	Single Family (6-10du/ac)	DU	660.00	6,534	660.00	6,534	0.00	0
	11.	Commercial Center(10-30a)	TSF	--	--	41.65	2,252	41.65	2,252
		SUB-TOTAL			8,158		10,469		2,311
440	2.	Single Family (1-5du/ac)	DU	--	--	568.00	5,623	568.00	5,623
		SUB-TOTAL			--		5,623		5,623
441	2.	Single Family (1-5du/ac)	DU	150.00	1,485	284.00	2,812	134.00	1,327
	20.	Elementary/Middle School	STU	360.00	522	360.00	522	0.00	0
		SUB-TOTAL			2,007		3,334		1,327
442	2.	Single Family (1-5du/ac)	DU	72.00	713	336.00	3,326	264.00	2,613
	3.	Single Family (6-10du/ac)	DU	216.00	2,138	216.00	2,138	0.00	0
		SUB-TOTAL			2,851		5,464		2,613
443	2.	Single Family (1-5du/ac)	DU	499.00	4,940	763.00	7,554	264.00	2,614
	20.	Elementary/Middle School	STU	985.00	1,428	985.00	1,428	0.00	0

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
443	23.	Hospital	TSF	30.00	504	30.00	504	0.00	0
	40.	Commercial Office	TSF	108.90	1,259	108.90	1,259	0.00	0
		SUB-TOTAL			8,131		10,745		2,614
444	2.	Single Family (1-5du/ac)	DU	775.00	7,672	775.00	7,672	0.00	0
	4.	Condominium/Townhouse	DU	19.00	152	19.00	152	0.00	0
	11.	Commercial Center(10-30a)	TSF	--	--	298.95	16,161	298.95	16,161
	25.	Church	TSF	4.00	37	4.00	37	0.00	0
		SUB-TOTAL			7,861		24,022		16,161
445	2.	Single Family (1-5du/ac)	DU	29.00	287	41.00	406	12.00	119
		SUB-TOTAL			287		406		119
446	2.	Single Family (1-5du/ac)	DU	231.00	2,287	231.00	2,287	0.00	0
		SUB-TOTAL			2,287		2,287		0
447	50.	Golf Course	AC	150.00	1,194	150.00	1,194	0.00	0
		SUB-TOTAL			1,194		1,194		0
448	2.	Single Family (1-5du/ac)	DU	395.00	3,910	691.00	6,841	296.00	2,931
		SUB-TOTAL			3,910		6,841		2,931
449	2.	Single Family (1-5du/ac)	DU	20.00	198	20.00	198	0.00	0
		SUB-TOTAL			198		198		0
450	2.	Single Family (1-5du/ac)	DU	--	--	27.00	267	27.00	267
		SUB-TOTAL			--		267		267
451	2.	Single Family (1-5du/ac)	DU	40.00	396	67.00	663	27.00	267
	30.	Industrial Park	TSF	--	--	47.00	282	47.00	282
		SUB-TOTAL			396		945		549
452	2.	Single Family (1-5du/ac)	DU	6.00	59	38.00	376	32.00	317
		SUB-TOTAL			59		376		317
453	2.	Single Family (1-5du/ac)	DU	172.00	1,703	225.00	2,228	53.00	525
	10.	Commercial Center (>30ac)	TSF	--	--	16.00	641	16.00	641
	20.	Elementary/Middle School	STU	490.00	711	490.00	711	0.00	0
		SUB-TOTAL			2,414		3,580		1,166
454	2.	Single Family (1-5du/ac)	DU	116.00	1,148	125.00	1,238	9.00	90
	11.	Commercial Center(10-30a)	TSF	--	--	34.14	1,846	34.14	1,846
	13.	Commercial Shops	TSF	6.14	228	6.14	228	0.00	0
	52.	Undeveloped Park	AC	745.00	373	745.00	373	0.00	0
	57.	Agua Dulce Airport	SG	34.06	3,406	51.09	5,109	17.03	1,703
		SUB-TOTAL			5,155		8,794		3,639
455	2.	Single Family (1-5du/ac)	DU	80.00	792	80.00	792	0.00	0
		SUB-TOTAL			792		792		0

LAND USE AND TRIP GENERATION COMPARISON

Zone		Land Use Category	Units	- Base Yr (2004) - Amount	ADT	- LR Cumulative -- Amount	ADT	--- Difference --- Amount	ADT
TOTAL	1.	Single Family (<1du/ac)	DU	300.00	2,970	853.00	8,445	553.00	5,475
	2.	Single Family (1-5du/ac)	DU	42,731.00	423,044	68,752.00	680,657	26,021.00	257,613
	3.	Single Family (6-10du/ac)	DU	5,812.00	57,538	19,625.00	194,289	13,813.00	136,751
	4.	Condominium/Townhouse	DU	23,519.00	188,152	44,325.00	354,600	20,806.00	166,448
	5.	Apartment	DU	2,108.00	14,545	9,613.00	66,331	7,505.00	51,786
	6.	Mobile Home	DU	2,464.00	17,002	2,565.00	17,699	101.00	697
	7.	Senior (Active)	DU	--	--	1,203.00	4,463	1,203.00	4,463
	10.	Commercial Center (>30ac)	TSF	2,675.04	107,163	6,446.34	258,241	3,771.30	151,078
	11.	Commercial Center(10-30a)	TSF	4,203.47	227,240	8,783.66	474,844	4,580.19	247,604
	12.	Commercial Center (<10ac)	TSF	1,307.47	111,212	2,654.47	225,789	1,347.00	114,577
	13.	Commercial Shops	TSF	1,168.87	43,318	1,656.71	61,396	487.84	18,078
	14.	Hotel	ROOM	985.00	8,107	1,406.00	11,572	421.00	3,465
	15.	Sit-Down Restaurant	TSF	210.92	27,493	297.19	38,737	86.27	11,244
	16.	Fast Food Restaurant	TSF	47.58	23,606	60.08	29,808	12.50	6,202
	17.	Movie Theater	SEAT	3,300.00	5,808	3,300.00	5,808	0.00	0
	18.	Health Club	TSF	125.00	5,000	125.00	5,000	0.00	0
	19.	Car Dealership	TSF	330.50	12,395	441.50	16,558	111.00	4,163
	20.	Elementary/Middle School	STU	32,506.00	47,140	50,491.00	73,220	17,985.00	26,080
	21.	High School	STU	13,228.00	23,678	23,274.00	41,661	10,046.00	17,983
	22.	College	STU	18,379.00	28,303	25,236.00	38,863	6,857.00	10,560
	23.	Hospital	TSF	222.80	3,743	222.80	3,743	0.00	0
	24.	Library	TSF	53.73	4,567	71.40	6,068	17.67	1,501
	25.	Church	TSF	512.89	4,770	635.89	5,914	123.00	1,144
	26.	Day Care	STU	460.00	2,079	540.00	2,441	80.00	362
	30.	Industrial Park	TSF	15,517.43	93,103	40,016.00	240,096	24,498.57	146,993
	31.	Business Park	TSF	1,017.92	10,383	8,580.24	87,518	7,562.32	77,135
	32.	Manufacturing/Warehouse	TSF	1,970.77	10,052	4,043.66	20,625	2,072.89	10,573
	34.	Utilities	TSF	1,121.24	2,668	1,150.24	2,737	29.00	69
	35.	Regional Post Office	TSF	764.00	3,820	764.00	3,820	0.00	0
	40.	Commercial Office	TSF	1,170.75	13,533	5,781.37	66,831	4,610.62	53,298
	42.	Medical Office	TSF	133.73	4,573	212.29	7,260	78.56	2,687
	43.	Post Office	TSF	50.00	5,410	50.00	5,410	0.00	0
	50.	Golf Course	AC	753.00	5,994	1,233.00	9,815	480.00	3,821
	51.	Developed Park	AC	250.90	652	596.10	1,550	345.20	898
	52.	Undeveloped Park	AC	745.00	373	762.50	382	17.50	9
	53.	Wayside Honor Ranch	SG	20.00	2,000	30.00	3,000	10.00	1,000
	54.	Six Flags Magic Mtn	SG	160.00	16,000	240.00	24,000	80.00	8,000
	55.	Travel Village	SG	26.20	2,620	26.20	2,620	0.00	0
	56.	CHP Office	SG	55.74	5,574	55.74	5,574	0.00	0
	57.	Agua Dulce Airport	SG	34.06	3,406	51.09	5,109	17.03	1,703
	58.	Landfill	SG	10.00	1,000	20.00	2,000	10.00	1,000
	59.	Cemex	SG	--	--	12.84	1,284	12.84	1,284
		TOTAL			1,570,034		3,115,778		1,545,744

APPENDIX 4.8

Noise

APPENDIX 4.9
Air Quality

Localized Significance Threshold Analysis
for
Landmark Village

Prepared for:

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May 2006

SUMMARY

The Newhall Land and Farming Company has proposed to build single-family residences, apartment buildings, condominiums, commercial buildings, and recreational areas in the portion of Newhall Ranch called Landmark Village. The Landmark Village project (proposed project) would result in the generation of air pollutants during construction and operational activities. The construction of the utility corridor that provides the infrastructure components, such as potable water, reclaimed water, sewer, and natural gas, is also considered part of the proposed project. This study analyzes the impacts of the construction emissions (fugitive dust and motor vehicle and equipment exhaust) on ambient air quality concentrations in the vicinity of the construction site. The ambient air quality impacts are compared to thresholds established by the South Coast Air Quality Management District (SCAQMD). The significance threshold for respirable particulate matter (PM_{10}) represents compliance with Rule 403 (Fugitive Dust). The thresholds for nitrogen dioxide (NO_2) and carbon monoxide (CO) represent the allowable increase in concentrations above background levels in the vicinity of the project that would not cause or contribute to an exceedance of the relevant ambient air quality standards.

Localized significance threshold analysis shows that maximum 24-hour PM_{10} would exceed the threshold of significance established by SCAQMD at the nearest residential, workplace, and sensitive receptors to the project site. Also, 1-hour NO_2 concentrations would exceed the threshold of significance established by SCAQMD at the nearest workplace receptors to the project site.

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1.0 GENERAL

1.1 Project Description

The proposed development at Landmark Village is within the South Coast Air Basin (SCAB), which is under the jurisdiction of SCAQMD. The proposed Landmark Village project consists of 308 single-family residential units; 685 condominiums; 451 apartments; 337,600 square feet (sq. ft.) of retail area; 695,400 sq. ft. of office space; 70,000 sq. ft. of school buildings; and 16.1 acres of park area. The construction of the utility corridor that provides the infrastructure components, such as potable water, reclaimed water, sewer, and natural gas, is also considered part of the proposed project. Total development is anticipated to occur over a 251-week period. The construction schedule is mainly divided into three phases (1) grading, (2) asphalt paving, and (3) building construction. Grading and asphalt paving are anticipated to occur during first 75 weeks and the building construction phase is anticipated to occur from week 76 to week 251. The construction of the utility corridor will occur over 52-week period starting in week one along with grading and asphalt paving. The construction of the utility corridor is also divided in three different phases (1) grading, (2) grading and water tanks construction, and (3) grading and water tanks welding and coating. These three phases are anticipated to occur over the first 30 weeks, week 31 to week 48, and week 49 to week 52, respectively. Currently, the project site is either used for agricultural crop production or is vacant, and no demolition is required. The project site is bounded by State Route 126 (SR-126) on the northern boundary and by the Santa Clara River on the southern boundary. Two soil borrow areas are proposed in the vicinity of the northern and southern boundary of the project site.

1.2 Regional Air Quality

The project is located in the SCAB portion of Los Angeles County, which is a severe-17 nonattainment area for the federal 8-hour ozone standard and an extreme nonattainment area for the state 1-hour ozone standard. It has also been designated as a serious nonattainment area for federal 1-hour and 8-hour CO standards and as an attainment area for state 1-hour standard and 8-hour CO standards. Also, it has been designated as a serious nonattainment area for the federal 24-hour and annual PM_{10} standards and a nonattainment area for the state 24-hour PM_{10} standard and the state annual fine particulate matter ($PM_{2.5}$) standard.[1,2]

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1 California Air Resources Board. "Area Designations (Activities and Maps)." [Online] [February 3, 2006]. http://www.arb.ca.gov/desig/desig.htm.

2 U.S. Environmental Protection Agency. "Region 9: Air Programs, Air Quality Maps." [Online] [March 17, 2006]. http://www.epa.gov/region9/air/maps/maps_top.html.

1.3 Thresholds of Significance

Table 1, Peak Background Concentrations for SRA 13 for the Period of 2003 to 2005, shows the peak background concentrations of NO_2 and CO in Source Receptor Area (SRA) 13 (Santa Clarita Valley) in which the proposed project is located. These are the values on which LST criteria for NO_x and CO are based.

Table 1
Peak Background Concentrations for SRA 13 for the Period of 2003 to 2005

Pollutant	Averaging Period	Unit	2003	2004	2005	Peak Concentration
Nitrogen Dioxide (NO_2)	1 hour	ppm	0.12	0.09	0.08	0.12
Carbon Monoxide (CO)	1 hour	ppm	3	5	2	5
	8 hours	ppm	1.7	3.7	1.3	3.7

Source: 1.South Coast Air Quality Management District "Historical Data by Year." [Online] [March 30, 2005], http://www.aqmd.gov/smog/historicaldata.htm.
2. U.S. Environmental Protection Agency, AirData: Access to Air Pollution Data [Online] [March 2, 2006], http://www.epa.gov/air/data/index.html.

Table 2, Localized Significance Criteria, shows the threshold criteria recommended by the SCAQMD for determining whether the emissions resulting from construction of a development project have the potential to generate significant adverse local impacts on ambient air quality. The SCAQMD's concentration-based PM_{10} threshold from its *Localized Significance Threshold Methodology* (*LST Methodology*)[3] is a 24-hour average concentration of 10.4 micrograms per cubic meter ($\mu g/m^3$) based on compliance with Rule 403. The thresholds for NO_2 and CO were based on the maximum concentrations that occurred during the last three years (2003 to 2005) as shown in **Table 1**. These thresholds represent the allowable increase in NO_2 and CO ambient concentrations above current levels that could occur in SRA 13 without causing or contributing to exceedances of the California Ambient Air Quality Standards (CAAQS). For reference, the applicable CAAQS are also shown in **Table 2, Localized Significance Criteria**.

3 South Coast Air Quality Management District, *Final Localized Significance Threshold Methodology*, June 2003.

Table 2
Localized Significance Criteria

Pollutant	Averaging Period	CAAQS $\mu g/m^3$	CAAQS ppm	Peak Conc. in ppm	LST Criteria[1]	
Respirable Particulate Matter (PM_{10})	24 hours	50	NA	NA	10.4	NA
Nitrogen Dioxide (NO_2)	1 hour	470	0.25	0.12	244	0.13
Carbon Monoxide (CO)	1 hour	23,000	20	5	17,165	15
	8 hours	10,000	9.0	3.7	6,065	5.3

Source: *South Coast Air Quality Management District,* Final Localized Significance Threshold Methodology, *June 2003.*
[1] *LST Criteria is the difference between CAAQS and the Peak Concentration.*

2.0 EMISSION ESTIMATION METHODOLOGY

Unmitigated construction emissions were estimated based on the information provided in the Software Users' Guide: URBEMIS2002 for Windows with Enhanced Construction Module, Version 8.7.0 (April 2005). URBEMIS2002 is a land use and transportation based air quality model developed in cooperation with the Air Resource Board (ARB) and designed to estimate air emissions from new development projects, including construction emissions. The emissions are estimated based on the information provided by the client. The key emission estimation assumptions are as follows:

Landmark Village

- Anticipated starting year: 2007
- Anticipated development duration: 251 weeks
- Anticipated grading and asphalt paving schedule: week 1 to week 75
- Anticipated construction schedule: week 76 to week 251
- Total number of acres of land to be graded: 291 acres
- Maximum acres graded per day: 28 acres
- Dust control measures: As required by SCAQMD Rule 403

The Utility Corridor

- Anticipated starting year: 2007
- Anticipated development duration: 52 weeks
- Anticipated grading schedule: week 1 to week 30
- Anticipated grading and water tanks construction schedule: week 31 to week 48

- Anticipated grading and water tanks welding and coating schedule: week 49 to week 52
- Total number of acres of land to be graded: 32 acres
- Maximum acres graded per day: 0.12 acres
- Dust control measures: As required by SCAQMD Rule 403

The maximum daily emissions that could occur on the project site from any construction phase were selected for the Localized Significance Thresholds (LST) analysis. The maximum daily emissions for each pollutant may occur during a different subphase (e.g., grading, building construction). **Table 3, Estimated Construction Emissions Associated with the Proposed Project**, shows the estimated construction emissions associated with each proposed project that would occur on the project site.

Table 3
Estimated Construction Emissions Associated with the Proposed Project

Pollutant	Maximum Daily Emissions (pounds per day)	
	Fugitive Dust	Mobile Sources
PM_{10} [1]	1,253.84	41.20
NO_x [2]	—	2,524.30
CO [2]	—	3,184.13

Source: Construction emissions were estimated based on the information provided in the User's Guide [for] URBEMIS2002 for Windows with Enhanced Construction Module (May 2002). Emissions reflect the worst-case scenario (i.e., highest daily emissions associated with the project). The worst-case daily emissions may occur in different project subphases.
[1] Maximum daily PM_{10} emissions are expected to occur during week 45 to week 48.
[2] Maximum daily CO and NO_x emissions are expected to occur during week 128.

3.0 LOCALIZED SIGNIFICANCE THRESHOLD ANALYSIS

Per the recommendation of the SCAQMD, ambient PM_{10}, NO_2, and CO concentrations due to the construction of the proposed project were analyzed using methods described in its *LST Methodology*.[4] The United States Environmental Protection Agency (USEPA)-approved dispersion model Industrial Source Complex – Short Term, ISCST3[5], was used for the analysis to model the dispersion of the pollutants of concern.

4 South Coast Air Quality Management District, *Final Localized Significance Threshold Methodology*, June 2003.
5 Lakes Environmental Software, ISC-AERMOD View (Version 5.1).

3.1 Modeling Approach

The modeling approach is as follows:

- Sources: The proposed project site was divided into five, roughly equal-sized areas. This approach was based on the assumption that grading or construction activity would occur on a portion of the overall project site on the day with the worst-case emissions and that the grading or construction activity was equally likely to occur in any of these portions. In order to take maximum area to be graded in one day into account, subareas of 28 acres (the maximum daily acreage in which construction activities would occur, according to the applicant) were created inside each of the main areas in the maximum frequency wind direction (e.g., northwest direction in this case).[6] Similarly, in order to take construction emissions associated with the utility corridor into account, five areas of 0.12 acres representing the maximum daily emissions associated with the construction of the utility corridor were placed at the closest possible distance from the existing receptors (residential, workplace, or sensitive). Fugitive dust emissions were treated as area sources distributed over the project site. Per the LST methodology, the area sources were given a ground level release height and a 1 meter initial vertical dimension to represent the initial vertical spread of the emissions. Equipment and motor vehicle exhaust emissions of PM_{10}, NO_2, and CO were also modeled as area sources, as the project site is too large to model as a series of volume sources, with a 1 meter initial vertical dimension to represent the initial vertical spread of the emissions and a release height of 5 meters to represent the mid-range of the expected plume rise from frequently used construction equipment during daytime atmospheric conditions.[7] To simulate the exhaust emissions, elevated area sources with a 5 meter release height and one-meter initial vertical dimension were distributed throughout the five portions of Landmark Village project site.

- Receptors: The fenceline receptors were used to determine air quality impacts in the vicinity of the project site. The fenceline receptors were placed at 100 meter intervals from the construction site boundaries to 2000 meters. Also, intermediate receptors were placed at 100 meter intervals throughout the boundary.

- Meteorology: Newhall was identified as the nearest meteorological monitoring station for the proposed project. Data were obtained from SCAQMD website.[8]

- Model Options: SCAQMD model options were selected (NOCALM, URBAN).

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6 Maximum frequency wind direction is obtained from windrose diagram for Newhall monitoring station.

7 South Coast Air Quality Management District, *Final Localized Significance Threshold Methodology*, June 2003, p. 2-2.

8 Source: South Coast Air Quality Management District Meteorological Data for Dispersion Modeling http://www.aqmd.gov/smog/metdata/MetDataTable1.html.

3.2 Modeling Results

3.2.1 Adjustment of NO_2 Impacts

The SCAQMD's *LST Methodology* discusses an adjustment of the NO_2 impacts due to the fact that most of NO_x in the combustion exhaust will occur in the form of nitric oxide (NO), rather than as NO_2. Nitric oxide is converted in the atmosphere through chemical reactions to NO_2. The LST methodology discusses this adjustment as follows:

> *NO_X emissions are simulated in the air quality dispersion model and the NO_2 conversion rate is treated by a NO_2-to-NO_X ratio, which is a function of downwind distance. Initially, it is assumed that only 5 percent of the emitted NO_x is NO_2. At 5,000 meters downwind, 100 percent conversion of NO-to-NO_2 is assumed.*[9]

The following table from the *LST Methodology* demonstrates how the NO_2-to-NO_X ratio varies with distance from the source.

Table 4
NO_2-to-NO_X Ratio as a Function of Downwind Distance

Downwind Distance	NO_2/NO_x Ratio
20	0.053
50	0.059
70	0.064
100	0.074
200	0.114
500	0.258
1000	0.467
2000	0.75
3000	0.9
4000	0.978
5000	1.0

Source: *South Coast Air Quality Management District,* Final Localized Significance Threshold Methodology, *June 2003, Table 2-4, p. 2-9.*

For this analysis, the distance from the boundary of the project site to the receptor with the highest impact was determined. A NO_x-to-NO_2 ratio was determined from the values in Table 4. Ratios at distances between the values in **Table 4** were interpolated. For the proposed project site, the distances between the centers of the sources to the receptors, where the maximum NO_2 concentration was observed

9 South Coast Air Quality Management District, *Final Localized Significance Threshold Methodology*, June 2003, p. 2-8. The NO_2 conversion rates are adapted by the SCAQMD from Arellano, J.V., A.M. Talmon, and P.J.H. Builtjes, "A Chemically Reactive Plume Model for the NO-NO_2-O_3 System," Atmospheric Environment 24A, 2237-2246.

were approximately 450 meters, 1,800 meters, and 1,300 meters, respectively. Therefore, a NO_x-to-NO_2 ratio of 0.75, 0.341, and 0.665 (multiplying factor) were applied to the modeled results for the residential, the workplace, and the sensitive receptors, respectively.

3.2.2 Project-Specific Impacts

Table 5, Modeling Results – Maximum Impacts at Residential Receptors, **Table 6, Modeling Results – Maximum Impacts at Workplace Receptors**, **Table 7, Modeling Results – Maximum Impacts at Sensitive Receptors**, show the maximum PM_{10}, NO_2, and CO concentrations associated with the proposed project at residential, workplace, and sensitive receptors, respectively. The nearest residential community to the project site is the community of Val Verde located approximately 1.9 kilometers to the north, across SR-126. Other residences are scattered throughout the area, primarily to the north of the site across SR-126. A recreational vehicle park is located to the east of the project site; however, occupants are limited to a 30-day stay. The nearest potential off-site workplace receptors are located to the northeast in the Valencia Commerce Center located approximately 700 meters to the northeast. The nearest sensitive receptors are located approximately 1.7 kilometers to the northeast in the Live Oak Elementary School.

As stated in **Section 3.1**, the project site was divided into five areas. The values shown in these tables are the maximum results associated with the area producing the highest impacts because the activity could occur in any of the areas on any given day.

Table 5
Modeling Results
Maximum Impacts at Residential Receptors

Pollutant	Averaging Period	Modeling Results		LST Criteria[1]		Exceeds Threshold?
		$\mu g/m^3$	ppm	$\mu g/m^3$	ppm	
Respirable Particulate Matter (PM_{10})	24 hours	56.08	NA	10.4	NA	**YES**
Nitrogen Dioxide (NO_2)	1 hour	404.83	0.22	244	0.13	**YES**
Carbon Monoxide (CO)	1 hour	680.87	0.59	17,165	15	NO
	8 hours	97.31	0.09	6,065	5.3	NO

Source: *Impact Sciences, Inc.*
[1] *South Coast Air Quality Management District,* Final Localized Significance Threshold Methodology, *June 2003.*
The maximum impacts were observed at the community of Val Verde located approximately 1.9 kilometers to the north, across SR-126.

Table 6
Modeling Results
Maximum Impacts at Workplace Receptors

Pollutant	Averaging Period	Modeling Results		LST Criteria[1]		Exceeds Threshold?
		$\mu g/m^3$	ppm	$\mu g/m^3$	ppm	
Respirable Particulate Matter (PM_{10})	24 hours	60.90	NA	10.4	NA	**YES**
Nitrogen Dioxide (NO_2)	1 hour	483.28	0.26	244	0.13	**YES**
Carbon Monoxide (CO)	1 hour	1787.23	1.56	17,165	15	NO
	8 hours	243.5	0.21	6,065	5.3	NO

Source: *Impact Sciences, Inc.*
[1] *South Coast Air Quality Management District,* Final Localized Significance Threshold Methodology, *June 2003.*
The maximum impacts were observed at the Valencia Commerce Center located approximately 700 meters to the northeast.

Table 7
Modeling Results
Maximum Impacts at Sensitive Receptors

Pollutant	Averaging Period	Modeling Results		LST Criteria[1]		Exceeds Threshold?
		$\mu g/m^3$	ppm	$\mu g/m^3$	ppm	
Respirable Particulate Matter (PM_{10})	24 hours	14.82	NA	10.4	NA	**YES**
Nitrogen Dioxide (NO_2)	1 hour	223.90	0.12	244	0.13	NO
Carbon Monoxide (CO)	1 hour	424.65	0.37	17,165	15	NO
	8 hours	53.08	0.05	6,065	5.3	NO

Source: *Impact Sciences, Inc.*
[1] *South Coast Air Quality Management District,* Final Localized Significance Threshold Methodology, *June 2003.*
The maximum impacts were observed at the Live Oak Elementary School located approximately 1.7 kilometers to the northeast.

4.0 CONCLUSIONS

The LST analysis was conducted to estimate worst-case ambient air quality impacts during construction of the Landmark Village project. LST analysis shows that maximum 24-hour PM_{10} would exceed the threshold of significance established by SCAQMD at the nearest residential, workplace, and sensitive receptors to the project site. Also, 1-hour NO_2 concentrations would exceed the threshold of significance established by SCAQMD at the nearest residential and workplace receptors to the project site.

The impacts suggest that PM_{10} emissions could exceed the limitations in SCAQMD Rule 403. While the NO_2 concentrations exceed the LST thresholds, the CAAQS would be exceeded only if (1) the actual background concentrations were as high as those on which the LST thresholds are based during the worst-case construction day, (2) the amount of construction activity (e.g., number and types of equipment, hours of operation) assumed in this analysis actually occurred, and (3) the meteorological conditions in the data set used in the dispersion modeling analysis occurred in the vicinity of the project site on the worst-case construction day.

APPENDIX A
Landmark Village Construction Emissions

Estimated Unmitigated Utility Corridor Construction Emissions

Subphase/Emissions Source	Emissions (lbs/day)				
	CO	VOC	NO_x	SO_x	PM_{10}
Weeks 1 thru 30					
Unmitigated Emissions Total	85.90	11.38	62.83	0	296.80
SCAQMD Thresholds	550	75	100	150	150
Exceeds Thresholds?	NO	NO	NO	NO	**YES**
Notes: Grading of utility corridor					
Weeks 31 thru 48					
Unmitigated Emissions Total	110.80	14.30	80.34	0	297.42
SCAQMD Thresholds	550	75	100	150	150
Exceeds Thresholds?	NO	NO	NO	NO	**YES**
Notes: Grading of utility corridor and construction of water tanks					
Weeks 49 thru 52					
Unmitigated Emissions Total	184.25	58.96	152.37	0	300.57
SCAQMD Thresholds	550	75	100	150	150
Exceeds Thresholds?	NO	NO	**YES**	NO	**YES**
Notes: Grading of utility corridor and welding and coating of water tanks					

Source: Impact Sciences, Inc.

NEWHALL RANCH SPECIFIC PLAN FINAL EIR
AIR QUALITY MITIGATION MEASURES

The following air quality mitigation measures are from the Newhall Ranch Specific Plan Final EIR. These measures, as appropriate, are intended to apply to all future development within Newhall Ranch. Not all of the following measure are appropriate for River Village and comments on the appropriateness of each measure to the River Village project is noted in *italics*.

4.10-1. The Specific Plan will provide Commercial and Service uses in close proximity to residential subdivisions.

4.10-2. The Specific Plan will locate residential uses in close proximity to Commercial uses, Mixed-Uses, and Business Parks.

4.10-3. Bus pull-ins will be constructed throughout the Specific Plan site.

4.10-4. Pedestrian facilities, such as sidewalks, and community regional, and local trails, will be provided throughout the Specific Plan site.

4.10-5. Roads with adjacent trails for pedestrian and bicycle use will be provided throughout the Specific Plan site connecting the individual Villages and community.

4.10-6. The applicant of future subdivisions shall implement all rules and regulations adopted by the Governing Board of the SCAQMD which are applicable to the development of the subdivision (such as Rule 402 - Nuisance, Rule 403 - Fugitive Dust, Rule 1113 - Architectural Coatings) and which are in effect at the time of development. The purpose of Rule 403 is to reduce the amount of particulate matter entrained in the ambient air as a result of man-made fugitive dust sources by requiring actions to prevent, reduce, or mitigate fugitive dust emissions. Rule 403 applies to any activity or man-made condition capable of generating fugitive dust such as the mass and remedial grading associated with the project as well as weed abatement and stockpiling of construction materials (*i.e.*, rock, earth, gravel). Rule 403 requires that grading operations either (1) take actions specified in Tables 1 and 2 of the Rule for each applicable source of fugitive dust and take certain notification and record keeping actions; or (2) obtain an approved Fugitive Dust Control Plan. A complete copy of the SCAQMD's Rule 403 Implementation Handbook, which has been included in Appendix 4.10, provides guideline tables to demonstrate the typical mitigation program and record keeping required for grading operations (Tables 1 and 2 and sample record keeping chart). The record keeping is accomplished by on-site construction personnel, typically the construction superintendent.

Each future subdivision proposed in association with the Newhall Ranch Specific Plan shall implement the following if found applicable and feasible for that subdivision.

GRADING

a. Apply non-toxic soil stabilizers according to manufacturers' specification to all inactive construction areas (previously graded areas inactive for ten days or more).
b. Replace groundcover in disturbed areas as quickly as possible.
c. Enclose, cover, water twice daily, or apply non-toxic soil binders according to manufacturers' specifications, to exposed piles (*i.e.*, gravel, sand, dirt) with 5 percent or greater silt content.
d. Water active sites at least twice daily.
e. Suspend all excavating and grading operations when wind speeds (as instantaneous gusts) exceed 25 mph.
f. Monitor for particulate emissions according to District-specified procedures.
g. All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of freeboard (*i.e.*, minimum vertical distance between top of the load and the top of the trailer) in accordance with the requirements of CVC Section 23114.

The effectiveness of these measures at reducing PM10 emissions ranges from 7 to 74 percent.[1]

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[1] *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-15 and p. A11-77.*

PAVED ROADS

h. Sweep streets at the end of the day if visible soil material is carried onto adjacent public paved roads (recommend water sweepers with reclaimed water).
i. Install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash off trucks and any equipment leaving the site each trip.

The effectiveness of these measures at reducing PM10 emissions ranges from 25 to 70 percent.[2]

UNPAVED ROADS

j. Apply water three times daily, or non-toxic soil stabilizers according to manufacturers' specifications, to all unpaved parking or staging areas or unpaved road surfaces.
k. Reduce traffic speeds on all unpaved roads to 15 mph or less.
l. Pave construction roads that have a traffic volume of more than 50 daily trips by construction equipment, 150 total daily trips for all vehicles.
m. Pave all construction access roads at least 100 feet on to the site from the main road.
n. Pave construction roads that have a daily traffic volume of less than 50 vehicular trips.

The effectiveness of these measures at reducing PM10 emissions ranges from 40 to 92.5 percent.[3]

4.10-7. Prior to the approval of each future subdivision proposed in association with the Newhall Ranch Specific Plan, each of the construction emission reduction measures indicated below (and in Tables 11-2 and 11-3 of the SCAQMD's CEQA *Air Quality Handbook*, as amended) shall be implemented if found applicable and feasible for that subdivision.

ON-ROAD MOBILE SOURCE CONSTRUCTION EMISSIONS:

a. Configure construction parking to minimize traffic interference. *The effectiveness of this measure to reduce VOC emissions is not quantified by SCAQMD.*[4]
b. Provide temporary traffic controls when construction activities have the potential to disrupt traffic to maintain traffic flow (e.g., signage, flag person, detours). *The effectiveness of this measure to reduce VOC emissions is not quantified by SCAQMD.*[5]
c. Schedule construction activities that affect traffic flow to off-peak hours (*e.g.*, between 7:00 P.M. and 6:00 A.M. and between 10:00 A.M. and 3:00 P.M.). *The effectiveness of this measure to reduce VOC emissions is not quantified by SCAQMD.*[6]
d. Develop a trip reduction plan to achieve a 1.5 average vehicle ridership (AVR) for construction employees. *Mitigation not suitable for River Village because SCAQMD Rule 2202 applies to all employers who meet certain criteria for implementing trip reduction measures. The requirement to achieve a specific AVR has been ruled unlawful by the federal government and is no longer recommended.*
e. Implement a shuttle service to and from retail services and food establishments during lunch hours. *Mitigation not suitable for River Village because construction workers typically take a half-hour lunch at various times of the day and eat on-site food that was either brought by the workers (brown bag) or purchased from mobile caterers who travel to the site.*
f. Develop a construction traffic management plan that includes the following measures to address construction traffic that has the potential to affect traffic on public streets:
   - Rerouting construction traffic off congested streets *Mitigation not suitable for River Village because the only access to the site is via SR-126 and there are no other roadways on which to reroute traffic.;*
   - Consolidating truck deliveries; and
   - Providing temporary dedicated turn lanes for movement of construction trucks and equipment on and off of the site. *The effectiveness of this measure to reduce VOC emissions is not quantified by SCAQMD.*[7]

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2 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-15 and pp. A11-77 to -78.*
3 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-16 and p. A11-78.*
4 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-13.*
5 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-13.*
6 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-13.*

g. Prohibit truck idling in excess of two minutes. *Mitigation not suitable for River Village because the nature of diesel motors does not lend them to constant turning on and off. Premature wear, and increased air emissions from turning the engines on and off, are common results. It is also extremely difficult to effectively monitor the implementation of this measure on an approximately 700-acre site with contractors who would be concerned about maintaining their equipment. Furthermore, the effectiveness of this measure to reduce VOC emissions is not quantified by SCAQMD.*[8]

OFF-ROAD MOBILE SOURCE CONSTRUCTION EMISSIONS:

h. Use methanol-fueled pile drivers. *Any equipment that utilizes an alternative fuel that reduces VOC, NOx, and/or PM10 emissions is advisable. This measure is replaced in the impact analysis with another measure that considers other alternative fuels for diesel-fueled construction equipment.*
i. Suspend use of all construction equipment operations during second stage smog alerts. *The effectiveness of this measure to reduce VOC emissions is not quantified by SCAQMD.*[9]
j. Prevent trucks from idling longer than two minutes. *Mitigation not suitable for River Village because the nature of diesel motors does not lend them to constant turning on and off. Premature wear, and increased air emissions from turning the engines on and off, are common results. It is also extremely difficult to effectively monitor the implementation of this measure on an approximately 700-acre site with contractors who would be concerned about maintaining their equipment. Furthermore, the effectiveness of this measure to reduce VOC emissions is not quantified by SCAQMD.*[10]
k. Use electricity from power poles rather than temporary diesel-powered generators.
l. Use electricity from power poles rather than temporary gasoline-powered generators.
m. Use methanol- or natural gas-powered mobile equipment instead of diesel. *Any equipment that utilizes an alternative fuel that reduces VOC, NOx, and/or PM10 emissions is advisable.*
n. Use propane- or butane-powered on-site mobile equipment instead of gasoline. *Any equipment that utilizes an alternative fuel that reduces VOC, NOx, and/or PM10 emissions is advisable.*

OPERATION IMPACTS

4.10-8. The applicant of future subdivisions shall implement all rules and regulations adopted by the Governing Board of the SCAQMD which are applicable to the development of the subdivision (such as Rule 402 - Nuisance, Rule 1102 - Petroleum Solvent Dry Cleaners, Rule 1111 - NOx Emissions from Natural Gas-Fired, Fan-Type Central Furnaces, Rule 1146 - Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters) and which are in effect at the time of occupancy permit issuance.

4.10-9. Prior to the approval of each future subdivision proposed in association with the Newhall Ranch Specific Plan, each of the operational emission reduction measures indicated below (and in Tables 11-6 and 11-7 of the SCAQMD's CEQA *Air Quality Handbook*, as amended) shall be implemented if found applicable and feasible for that subdivision.

ON-ROAD MOBILE SOURCE OPERATIONAL EMISSIONS:

RESIDENTIAL USES

a. Include satellite telecommunications centers in residential subdivisions. *Mitigation not suitable for River Village because satellite telecommunications centers have been superseded by other technology.*
b. Establish a shuttle service from residential subdivisions to commercial core areas. *Mitigation not suitable for River Village because residential uses are in close proximity and within walking distance to commercial uses proposed within River Village.*
c. Construct on-site or off-site bus stops (*e.g.*, bus turnouts, passenger benches, and shelters).

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7 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-13.*
8 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-13.*
9 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-14.*
10 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-14.*

d. Construct off-site pedestrian facility improvements, such as overpasses and wider sidewalks. *Mitigation not suitable for River Village because no uses adjacent to the River Village site exist within Newhall Ranch to which pedestrian access would be warranted.*
e. Include retail services within or adjacent to residential subdivisions. *The proposed project is in conformance with this measure.*
f. Provide shuttles to major rail transit centers or multi-modal stations.
g. Contribute to regional transit systems (*e.g.*, right-of-way, capital improvements, *etc.*). *This measure does not directly contribute to reduced air emissions, emission reductions have not been quantified by SCAQMD,*[11] *and it is not given emissions reduction credit in the impact analysis.*
h. Synchronize traffic lights on streets impacted by development.
i. Construct, contribute, or dedicate land for the provision of off-site bicycle trails linking the facility to designated bicycle commuting routes.

COMMERCIAL USES

j. Provide preferential parking spaces for carpools and vanpools and provide 7'2" minimum vertical clearance in parking facilities for vanpool access.
k. Implement on-site circulation plans in parking lots to reduce vehicle queuing. *The effectiveness of this measure is not quantified by SCAQMD and is not given emission reduction credit in the impact analysis.*[12]
l. Improve traffic flow at drive-thru's by designing separate windows for different functions and by providing temporary parking for orders not immediately available for pickup. *The effectiveness of this measure is not quantified by SCAQMD and is not given emission reduction credit in the impact analysis.*[13]
m. Provide video-conference facilities. *The effectiveness of this measure is not quantified by SCAQMD and is not given emission reduction credit in the impact analysis.*[14]
n. Set up resident worker training programs to improve job/housing balance. *Mitigation not suitable for River Village because it is outside the purview of the project applicant/developer to set up such a program. Such programs are more appropriately set up by and at the discretion of future occupants of the commercial retail and office uses that will locate on the site. Furthermore, the effectiveness of this measure to reduce air emissions in the basin lies in actually achieving jobs/housing balance. The effectiveness of this measure is not quantified by SCAQMD and is not given emission reduction credit in the impact analysis.*[15]
o. Implement home dispatching system where employees receive routing schedule by phone instead of driving to work. *Mitigation not suitable for River Village because it is outside the purview of the project applicant/developer to set up such a system. Such systems are more appropriately set up by and at the discretion of future occupants of the commercial retail and office uses that will locate on the site.*
p. Develop a program to minimize the use of fleet vehicles during smog alerts (for business not subject to Regulation XV (now Rule 2202) or XII). *Mitigation not suitable for River Village because no commercial retail or office use on the site is expected to use fleet vehicles.*
q. Use low-emissions fleet vehicles:
   - TLEV
   - ULEV
   - LEV
   - ZEV

   Mitigation not suitable for River Village because no commercial retail or office use on the site is expected to use fleet vehicles.
r. Reduce employee parking spaces for those businesses subject to Regulation XV (now Rule 2202). *Rule 2202 applies to any employer who employs 250 or more employees on a full or part-time basis at a work site for a consecutive six-month period. It is conceivable that an office use employing as*

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[11] *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-18.*
[12] *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-22.*
[13] *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-19.*
[14] *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-19.*
[15] *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-19.*

many as 250 people can locate on the site; therefore, this mitigation measure applies to the River Village project. The requirement to achieve a specific AVR has been ruled unlawful by the federal government and is no longer recommended.[16]

s. Implement a lunch shuttle service from a work site(s) to food establishments. Mitigation not suitable for River Village because *Lots within River Village designated for mixed use commercial are expected to have food establishments located within walking distance, thereby not necessitating lunch shuttle service.*

t. Implement compressed work-week schedules where weekly work hours are compressed into fewer than five days.
   - 9/80
   - 4/40
   - 3/36

   Mitigation not suitable for the River Village applicant/developer because it is outside the purview of the project applicant/developer to set up such a program. Such programs are more appropriately set up by and at the discretion of future occupants of the commercial retail and office uses that will locate on the site.

u. Develop a trip reduction plan to achieve 1.5 AVR for businesses with less than 100 employees or multi-tenant work sites. *Mitigation not suitable for River Village because SCAQMD Rule 2202 applies to all employers who meet certain criteria for implementing trip reduction measures. The requirement to achieve a specific AVR has been ruled unlawful by the federal government and is no longer recommended.*

v. Utilize satellite offices rather than regular work site to reduce VMT. *Mitigation not suitable for the River Village applicant/developer because it is outside the purview of the project applicant/developer to set up such a program. Such programs are more appropriately set up by and at the discretion of future occupants of the commercial retail and office uses that will locate on the site.*

w. Establish a home-based telecommuting program. *Mitigation not suitable for the River Village applicant/developer because it is outside the purview of the project applicant/developer to set up such a program. Such programs are more appropriately set up by and at the discretion of future occupants of the commercial retail and office uses that will locate on the site.*

x. Provide on-site child care and after-school facilities or contribute to off-site development within walking distance. *Mitigation not suitable for the River Village applicant/developer because it is outside the purview of the project applicant/developer to set up such a program. Such programs are more appropriately set up by and at the discretion of future occupants of the commercial retail and office uses that will locate on the site.*

y. Require retail facilities or special event centers to offer travel incentives such as discounts on purchases for transit riders. *Mitigation not suitable for the River Village applicant/developer because it is outside the purview of the project applicant/developer to set up such a program. Such programs are more appropriately set up by and at the discretion of future occupants of the commercial retail and office uses that will locate on the site. Such a program to reduce air emissions in the Basin is not quantified by the SCAQMD and it is not given emission reduction credit in this impact analysis.*[17]

z. Provide on-site employee services such as cafeterias, banks, *etc.*

aa. Establish a shuttle service from residential core areas to the work site. *Mitigation not suitable for River Village because residential uses are proposed in close proximity and within walking distance to commercial uses proposed within River Village.*

ab. Construct on-site or off-site bus stops (*e.g.*, bus turnouts, passenger benches, and shelters).

ac. Implement a pricing structure for single-occupancy employee parking and/or provide discounts to ridesharers.

ad. Include residential units within a commercial project.

ae. Utilize parking in excess of code requirements as on-site park-n-ride lots or contribute to construction of off-site lots.

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[16] *In 1988, the SCAQMD instituted Regulation XV that required enterprises with 100 or more employees to adopt trip reduction programs. The regulation required each employer to institute a trip reduction program that would achieve an Average Vehicle Ridership (AVR) of 1.75 in Downtown Los Angeles, 1.5 in the remainder of urbanized areas, and 1.3 in rural parts of the District. AVR measures the extent to which commuters use public transit, car pooling, and other multiple-occupant-vehicle modes of transportation. Regulation XV was repealed in December, 1995 and was replaced with Rule 2202 which provides options for employers to either continue trip reduction programs or reduce mobile source emissions through other strategies. As of January 1, 1997 Rule 2202 applies only to enterprises with 250 or more employees.*

[17] *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-20.*

af. Any two of the following:
   - Construct off-site bicycle facility improvements, such as bicycle trails linking the facility to designated bicycle commuting routes, or on-site improvements, such as bicycle paths.
   - Include bicycle parking facilities, such as bicycle lockers and racks.
   - Include showers for bicycling employees' use.

ag. Any two of the following:
   - Construct off-site pedestrian facility improvements, such as overpasses, wider sidewalks.
   - Construct on-site pedestrian facility improvements, such as building access which is physically separated from street and parking lot traffic and walk paths.
   - Include showers for pedestrian employees' use.

ah. Provide shuttles to major rail transit stations and multi-modal centers.

ai. Contribute to regional transit systems (*e.g.*, right-of-way, capital improvements, *etc.*) . *This measure does not directly contribute to reduced air emissions, emission reductions have not been quantified,*[18] *and it is not given emissions reduction credit in the impact analysis.*[19]

aj. Charge visitors to park. *Mitigation not suitable for River Village because charging visitors to park at retail establishments would discourage patronage. Charging visitors to park at the office uses would encourage patrons to park in retail parking spaces or on the street. Charging visitors to pay for parking at the park site would encourage on-street parking.*

ak. Synchronize traffic lights on streets impacted by development.

al. Reschedule truck deliveries and pickups to off-peak hours. *The effectiveness of this measure is not quantified by SCAQMD and is not given emission reduction credit in the impact analysis.*[20]

am. Set up paid parking systems where drivers pay at walkup kiosk and exit via a stamped ticket to reduce emissions from queuing vehicles. *Mitigation not suitable for River Village because charging visitors to park at retail establishments would discourage patronage. Charging visitors to park at the office uses would encourage patrons to park in retail parking spaces or on the street. Charging visitors to pay for parking at the park site would encourage on-street parking. The effectiveness of this measure is not quantified by SCAQMD and is not given emission reduction credit in the impact analysis.*[21]

an. Require on-site truck loading zones. *The effectiveness of this measure is not quantified by SCAQMD and is not given emission reduction credit in the impact analysis.*[22]

ao. Implement or contribute to public outreach programs. *Mitigation not suitable for the River Village applicant/developer because it is unclear as to what type of outreach program this mitigation measure refers. Furthermore, it is outside the purview of the project applicant/developer to set up such programs. Such programs are more appropriately set up and maintained by and at the discretion of future occupants of the commercial retail and office uses that will locate on the site. Furthermore, the effectiveness of this measure is not quantified by SCAQMD and is not given emission reduction credit in the impact analysis.*[23]

ap. Require employers not subject to Regulation XV (now Rule 2202) to provide commuter information area.

BUSINESS PARK USES

No Business Park uses are proposed within the River Village project.

aq. Provide preferential parking spaces for carpools and vanpools and provide 7'2" minimum vertical clearance in parking facilities for vanpool access.

ar. Implement on-site circulation plans in parking lots to reduce vehicle queuing.

as. Set up resident worker training programs to improve job/housing balance.

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18 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-18.*

19 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-22.*

20 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-22.*

21 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-22.*

22 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-22.*

23 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-22.*

bx. Use energy-efficient low-sodium parking lot lights.

COMMERCIAL USES

by. Use lighting controls and energy-efficient lighting.
bz. Use fuel cells in residential subdivisions to produce heat and electricity.
ca. Orient buildings to the north for natural cooling and include passive solar design (*e.g.*, daylighting).
cb. Use light-colored roofing materials to reflect heat.
cc. Increase walls and attic insulation beyond Title 24 requirements.
cd. Use solar or low emission water heaters.
ce. Use central water heating systems.
cf. Provide shade trees to reduce building heating/cooling needs.
cg. Use energy-efficient and automated controls for air conditioners.
ch. Use double-paned windows.
ci. Use energy-efficient low-sodium parking lot lights.
cj. Use lighting controls and energy-efficient lighting.
ck. Use light-colored roofing materials to reflect heat.
cl. Increase walls and attic insulation beyond Title 24 requirements.
cm. Orient buildings to the north for natural cooling and include passive solar design (*e.g.*, daylighting).

BUSINESS PARK USES

No Business Park uses are proposed within the River Village project.

cn. Provide shade trees to reduce building heating/cooling needs.
co. Use energy-efficient and automated controls for air conditioning.
cp. Use double-paned windows.
cq. Use energy-efficient low-sodium parking lot lights.
cr. Use lighting controls and energy-efficient lighting.
cs. Use light-colored roofing materials to reflect heat.
ct. Orient buildings to the north for natural cooling and include passive solar design (*e.g.*, daylighting).
cu. Increase walls and attic insulation beyond Title 24 requirements.
cv. Improved storage and handling or source materials.
cw. Materials substitution (*e.g.*, use water-based paints, life-cycle analysis).
cx. Modify manufacturing processes (*e.g.*, reduce process stages, closed-loop systems, materials recycling).
cy. Resource recovery systems that redirect chemicals to new production processes.

4.10-10. All non-residential development of 25,000 gross square feet or more shall comply with the County's Transportation Demand Management (TDM) Ordinance (Ordinance No. 93-0028M) in effect at the time of subdivision. The sizes and configurations of the Specific Plan's non-residential uses are not known at this time and the Ordinance specifies different requirements based on the size of the project under review. All current provisions of the ordinance are summarized in Appendix 4.10.

4.10-11. Subdivisions and buildings shall comply with Title 24 of the California Code of Regulations which are current at the time of development.

4.10-12. Lighting for public streets, parking areas, and recreation areas shall utilize energy efficient light and mechanical, computerized or photo cell switching devices to reduce unnecessary energy usage.

4.10-13. Any on-site subterranean parking structures shall provide adequate ventilation systems to disperse pollutants and preclude the potential for a pollutant concentration to occur. *Mitigation not suitable for River Village because no subterranean parking structures are proposed within the project. Furthermore, this measure reduces indoor air pollutants, but does not effectively reduce air emissions within the Basin.*

4.10-14. The sellers of new residential units shall be required to distribute brochures and other relevant information published by the SCAQMD or similar organization to new homeowners regarding the importance of reducing vehicle miles traveled and related air quality impacts, as well as on local opportunities for public transit and ridesharing.

UNMITIGATED CONSTRUCTION EMISSIONS

Project Name	**River Village**	**Unmitigated Emissions**
Subphase	**Weeks 1 thru 19**	
Length of Subphase (weeks)		**19.00**
Year	**2006**	
Total Acreage	**120.28**	

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	19,407.42	
On-Road Diesel Exhaust	130.69	182.74	18.98	1.69	3.30	
Off-Road Diesel Exhaust	1,841.01	226.11	1,521.55	--	65.65	
Worker Commute Trips	15.58	1.71	2.90	0.02	0.11	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	9,703.71	Fugitive Dust Rule 403
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.00	--	--	--	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	--	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	No Building Construction During This Subphase
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Architectural Painting						
Off-Gas Emissions	--	0.00	--	--	--	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	**1,987.28**	**410.56**	**1,543.43**	**1.72**	**9,772.76**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**Yes**	**Yes**	**Yes**	**No**	**Yes**	

Project Name River Village **Unmitigated Emissions**
Subphase Weeks 20 thru 39
Length of Subphase (weeks) 20.00
Year 2006
Total Acreage 126.61

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	–	–	–	–	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	–	–	–	–	19,393.70	
On-Road Diesel Exhaust	130.69	182.74	18.98	1.69	3.30	
Off-Road Diesel Exhaust	1,841.01	226.11	1,521.55	–	65.65	
Worker Commute Trips	15.98	1.71	2.90	0.02	0.11	
Mitigation/Reduction						
Fugitive Dust	–	–	–	–	9,696.85	Fugitive Dust Rule 403
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	–	1.01	–	–	–	
Off-Road Diesel Exhaust Emissions	1,352.50	167.28	1,126.24	–	46.72	
On-Road Diesel Exhaust Emissions	4.44	0.65	6.21	0.06	0.11	
Worker Commute Emissions	23.98	2.86	12.29	0.11	0.28	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	No Building Construction During This Subphase
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Architectural Painting						
Off-Gas Emissions	–	0.00	–	–	–	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	**3,368.20**	**582.35**	**2,688.18**	**1.88**	**9,813.02**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**Yes**	**Yes**	**Yes**	**No**	**Yes**	

Project Name River Village **Unmitigated Emissions**
Subphase Weeks 40 thru 46
Length of Subphase (weeks) 7.00
Year 2006
Total Acreage 44.31

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	19,407.42	
On-Road Diesel Exhaust	130.69	182.74	18.98	1.69	3.30	
Off-Road Diesel Exhaust	1,841.01	226.11	1,521.55	--	65.65	
Worker Commute Trips	15.58	1.71	2.90	0.02	0.11	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	9,703.71	Fugitive Dust Rule 403
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	1.01	--	--	--	
Off-Road Diesel Exhaust Emissions	1,352.50	167.28	1,126.24	--	46.72	
On-Road Diesel Exhaust Emissions	4.44	0.65	6.21	0.06	0.11	
Worker Commute Emissions	12.27	1.35	2.28	0.02	0.09	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	1,682.38	222.74	1,654.08	--	72.90	
Worker Commute Trips	25.51	2.80	4.75	0.04	0.18	
Architectural Painting						
Off-Gas Emissions	--	151.01	--	--	--	
Worker Commute Trips	25.51	2.80	4.75	0.04	0.18	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	5,089.89	960.19	4,341.75	1.86	9,892.94	
SCAQMD Threshold:	550.00	75.00	100.00	150.00	150.00	
Exceeds Threshold?	Yes	Yes	Yes	No	Yes	

Project Name River Village Unmitigated Emissions
Subphase Weeks 47 thru 91
Length of Subphase (weeks) 45.00
Year 2006
Total Acreage

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	21.98	No Gradng During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	10.99	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	1.01	--	--	--	
Off-Road Diesel Exhaust Emissions	1,352.50	167.28	1,126.24	--	46.72	
On-Road Diesel Exhaust Emissions	4.44	0.65	6.21	0.06	0.11	
Worker Commute Emissions	12.27	1.35	2.28	0.02	0.09	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	1,682.38	222.74	1,654.08	--	72.90	
Worker Commute Trips	25.51	2.80	4.75	0.04	0.18	
Architectural Painting						
Off-Gas Emissions	--	151.01	--	--	--	
Worker Commute Trips	25.51	2.80	4.75	0.04	0.18	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	3,102.61	549.63	2,798.32	0.15	131.16	
SCAQMD Threshold:	550.00	75.00	100.00	150.00	150.00	
Exceeds Threshold?	Yes	Yes	Yes	No	No	

Project Name River Village Unmitigated Emissions
Subphase Week 92
Length of Subphase (weeks) 1.00
Year 2007
Total Acreage

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Gradng During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	1.01	--	--	--	
Off-Road Diesel Exhaust Emissions	1,373.05	167.28	1,085.87	--	41.93	
On-Road Diesel Exhaust Emissions	4.05	0.61	5.80	0.01	0.10	
Worker Commute Emissions	11.29	1.25	2.11	0.01	0.08	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	2,159.16	275.61	1,931.00	--	79.99	
Worker Commute Trips	28.13	3.11	5.26	0.02	0.21	
Architectural Painting						
Off-Gas Emissions	--	151.50	--	--	--	
Worker Commute Trips	28.13	3.11	5.26	0.02	0.21	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	**3,603.81**	**603.46**	**3,035.29**	**0.06**	**122.52**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	Yes	Yes	Yes	No	No	

Project Name River Village Unmitigated Emissions
Subphase Weeks 93 thru 144
Length of Subphase (weeks) 52.00
Year 2007
Total Acreage

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Gradng During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.02	--	--	--	
Off-Road Diesel Exhaust Emissions	1,373.05	167.28	1,085.87	--	41.93	
On-Road Diesel Exhaust Emissions	0.08	0.01	0.11	0.00	0.00	
Worker Commute Emissions	11.29	1.25	2.11	0.01	0.08	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	1,872.07	240.07	1,693.55	--	70.48	
Worker Commute Trips	24.90	2.75	4.65	0.02	0.18	
Architectural Painting						
Off-Gas Emissions	--	141.73	--	--	--	
Worker Commute Trips	24.90	2.75	4.65	0.02	0.18	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	**3,306.30**	**555.86**	**2,790.95**	**0.05**	**112.86**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	Yes	Yes	Yes	No	No	

Project Name River Village Unmitigated Emissions
Subphase Weeks 145 thru 158
Length of Subphase (weeks) 14.00
Year 2008
Total Acreage

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Gradng During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	1.01	--	--	--	
Off-Road Diesel Exhaust Emissions	1,385.56	167.28	1,058.35	--	38.46	
On-Road Diesel Exhaust Emissions	3.70	0.57	5.39	0.01	0.10	
Worker Commute Emissions	10.38	1.15	1.94	0.01	0.08	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	1,685.60	212.51	1,453.80	--	58.55	
Worker Commute Trips	20.77	2.30	3.89	0.02	0.17	
Architectural Painting						
Off-Gas Emissions	--	141.66	--	--	--	
Worker Commute Trips	20.77	2.30	3.89	0.02	0.17	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	**3,126.78**	**528.79**	**2,527.25**	**0.05**	**97.52**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**Yes**	**Yes**	**Yes**	**No**	**No**	

Project Name River Village Unmitigated Emissions
Subphase Weeks 159 thru 178
Length of Subphase (weeks) 21.00
Year 2009
Total Acreage

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Gradng During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.00	--	--	--	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	--	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	1,726.62	212.51	1,394.91	--	53.47	
Worker Commute Trips	19.09	2.13	3.58	0.02	0.17	
Architectural Painting						
Off-Gas Emissions	--	141.66	--	--	--	
Worker Commute Trips	19.09	2.13	3.58	0.02	0.17	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	**1,764.79**	**358.43**	**1,402.06**	**0.03**	**53.80**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**Yes**	**Yes**	**Yes**	**No**	**No**	

Project Name River Village Unmitigated Emissions
Subphase Weeks 179 thru 196
Length of Subphase (weeks) 18.00
Year 2009
Total Acreage

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Gradng During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.00	--	--	--	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	--	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	1,515.09	187.20	1,239.14	--	48.23	
Worker Commute Trips	17.12	1.91	3.21	0.02	0.15	
Architectural Painting						
Off-Gas Emissions	--	141.24	--	--	--	
Worker Commute Trips	17.12	1.91	3.21	0.02	0.15	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	**1,549.32**	**332.26**	**1,245.55**	**0.03**	**48.53**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**Yes**	**Yes**	**Yes**	**No**	**No**	

Project Name River Village Unmitigated Emissions
Subphase Weeks 197 thru 210
Length of Subphase (weeks) 13.00
Year 2009
Total Acreage

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Gradng During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.00	--	--	--	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	--	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	1,041.33	128.61	850.48	--	33.06	
Worker Commute Trips	11.51	1.29	2.16	0.01	0.10	
Architectural Painting						
Off-Gas Emissions	--	87.64	--	--	--	
Worker Commute Trips	11.51	1.29	2.16	0.01	0.10	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	1,064.36	218.82	854.79	0.02	33.26	
SCAQMD Threshold:	550.00	75.00	100.00	150.00	150.00	
Exceeds Threshold?	Yes	Yes	Yes	No	No	

Project Name River Village Unmitigated Emissions
Subphase Weeks 211 thru 220
Length of Subphase (weeks) 10.00
Year 2010
Total Acreage

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Gradng During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.00	--	--	--	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	--	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	779.57	93.89	593.66	--	21.89	
Worker Commute Trips	7.50	0.84	1.39	0.01	0.07	
Architectural Painting						
Off-Gas Emissions	--	39.26	--	--	--	
Worker Commute Trips	7.50	0.84	1.39	0.01	0.07	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	794.57	134.83	596.44	0.01	22.03	
SCAQMD Threshold:	550.00	75.00	100.00	150.00	150.00	
Exceeds Threshold?	Yes	Yes	Yes	No	No	

Project Name River Village Unmitigated Emissions
Subphase Weeks 221 thru 235
Length of Subphase (weeks) 15.00
Year 2010
Total Acreage

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Gradng During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.00	--	--	--	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	--	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	491.65	59.17	372.96	--	13.64	
Worker Commute Trips	4.44	0.50	0.82	0.00	0.04	
Architectural Painting						
Off-Gas Emissions	--	11.78	--	--	--	
Worker Commute Trips	4.44	0.50	0.82	0.00	0.04	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	**500.54**	**71.95**	**374.61**	**0.01**	**13.72**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	No	No	Yes	No	No	

River Village Office Construction Only Unmitigated Emissions

Weeks of Construction: 140

Year Constr. Begins: 2015

Calculated Emissions

Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	0.00	0.00	0.00	0.00	0.00	No Grading During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	884.12	106.21	665.11	--	23.88	
Worker Commute Trips	10.90	1.20	2.03	0.02	0.08	
Architectural Painting						
Off-Gas Emissions	--	38.48	--	--	--	
Worker Commute Trips	10.90	1.20	2.03	0.02	0.08	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	**905.93**	**147.09**	**669.17**	**0.03**	**24.03**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**Yes**	**Yes**	**Yes**	**No**	**No**	

MITIGATED CONSTRUCTION EMISSIONS

Project Name River Village **Mitigated Emissions**
Subphase Weeks 1 thru 19
Length of Subphase (weeks) 19.00
Year 2006

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	19,407.42	
On-Road Diesel Exhaust	130.69	182.74	18.98	1.69	3.30	
Off-Road Diesel Exhaust	1,841.01	226.11	1,521.55	--	65.65	
Worker Commute Trips	15.58	1.71	2.90	0.02	0.11	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	9,703.71	Water Exposed Surfaces Three Times Daily
On-Road Diesel Exhaust	0.00	0.00	0.00	1.69	2.64	Assumes Use of Aqueous Fuel, Cooled Exhaust Gas Recirculation
Off-Road Diesel Exhaust	1,656.91	203.50	821.64	n/a	97.16	Assumes Use of Aqueous Fuel, Cooled Exhaust Gas Recirculation
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.00	--	--	--	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	--	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	No Building Construction During This Subphase
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Architectural Painting						
Off-Gas Emissions	--	0.00	--	--	--	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	--	n/a	--	--	--	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	**330.37**	**207.06**	**721.79**	**0.02**	**9,672.96**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**No**	**Yes**	**Yes**	**No**	**Yes**	

Project Name River Village **Mitigated Emissions**
Subphase Weeks 20 thru 39
Length of Subphase (weeks) 20.00
Year 2006

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	19,393.70	
On-Road Diesel Exhaust	130.69	182.74	18.98	1.69	3.30	
Off-Road Diesel Exhaust	1,841.01	226.11	1,521.55	--	65.65	
Worker Commute Trips	15.58	1.71	2.90	0.02	0.11	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	9,696.85	Water Exposed Surfaces Three Times Daily
On-Road Diesel Exhaust	0.00	0.00	0.00	1.69	2.64	Aqueous Fuel, Cooled Exhaust Gas Recirculation
Off-Road Diesel Exhaust	1,656.91	203.50	821.64	n/a	97.16	Aqueous Fuel, Cooled Exhaust Gas Recirculation
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	1.01	--	--	--	
Off-Road Diesel Exhaust Emissions	1,352.50	167.28	1,126.24	--	46.72	
On-Road Diesel Exhaust Emissions	4.44	0.65	6.21	0.06	0.11	
Worker Commute Emissions	23.98	2.86	12.29	0.11	0.28	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	None Available
On-Road Diesel Exhaust	4.00	0.58	3.35	0.06	0.09	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Road Diesel Exhaust	1,217.25	150.55	608.17	n/a	69.15	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	No Building Construction During This Subphase
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Architectural Painting						
Off-Gas Emissions	--	0.00	--	--	--	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	--	n/a	--	--	--	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	**490.05**	**227.72**	**1,255.02**	**0.13**	**9,643.99**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**No**	**Yes**	**Yes**	**No**	**Yes**	

Project Name **River Village** **Mitigated Emissions**
Subphase **Weeks 40 thru 46**
Length of Subphase (weeks) **7.00**
Year **2006**

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	19,407.42	
On-Road Diesel Exhaust	130.69	182.74	18.98	1.69	3.30	
Off-Road Diesel Exhaust	1,841.01	226.11	1,521.55	--	65.65	
Worker Commute Trips	15.58	1.71	2.90	0.02	0.11	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	9,703.71	Water Exposed Surfaces Three Times Daily
On-Road Diesel Exhaust	0.00	0.00	0.00	1.69	2.64	Aqueous Fuel, Cooled Exhaust Gas Recirculation
Off-Road Diesel Exhaust	1,656.91	203.50	821.64	n/a	97.16	Aqueous Fuel, Cooled Exhaust Gas Recirculation
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	1.01	--	--	--	
Off-Road Diesel Exhaust Emissions	1,352.50	167.28	1,126.24	--	46.72	
On-Road Diesel Exhaust Emissions	4.44	0.65	6.21	0.06	0.11	
Worker Commute Emissions	12.27	1.35	2.28	0.02	0.09	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	None Available
On-Road Diesel Exhaust	4.00	0.58	3.35	0.06	0.09	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Road Diesel Exhaust	1,217.25	150.55	608.17	n/a	69.15	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	1,682.38	222.74	1,654.08	--	72.90	
Worker Commute Trips	25.51	2.80	4.75	0.04	0.18	
Architectural Painting						
Off-Gas Emissions	--	151.01	--	--	--	
Worker Commute Trips	25.51	2.80	4.75	0.04	0.18	
Mitigation/Reduction						
Off-Road Diesel Exhaust	1,514.14	200.47	893.20	0.00	107.89	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Gas Emissions	--	n/a	--	--	--	No Mitigation Available
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Net Emission Totals:	**697.59**	**405.10**	**2,015.39**	**0.11**	**9,616.01**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**Yes**	**Yes**	**Yes**	**No**	**Yes**	

Project Name River Village **Mitigated Emissions**
Subphase Weeks 47 thru 91
Length of Subphase (weeks) 45.00
Year 2006

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	21.98	No Grading During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	10.99	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	1.01	--	--	--	
Off-Road Diesel Exhaust Emissions	1,352.50	167.28	1,126.24	--	46.72	
On-Road Diesel Exhaust Emissions	4.44	0.65	6.21	0.06	0.11	
Worker Commute Emissions	12.27	1.35	2.28	0.02	0.09	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	None Available
On-Road Diesel Exhaust	4.00	0.58	3.35	0.06	0.09	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Road Diesel Exhaust	1,217.25	150.55	608.17	n/a	69.15	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	1,682.38	222.74	1,654.08	--	72.90	
Worker Commute Trips	25.51	2.80	4.75	0.04	0.18	
Architectural Painting						
Off-Gas Emissions	--	151.01	--	--	--	
Worker Commute Trips	25.51	2.80	4.75	0.04	0.18	
Mitigation/Reduction						
Off-Road Diesel Exhaust	1,514.14	200.47	893.20	0.00	107.89	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Gas Emissions	--	n/a	--	--	--	No Mitigation Available
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Net Emission Totals:	**367.22**	**198.03**	**1,293.59**	**0.09**	**-45.97**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**No**	**Yes**	**Yes**	**No**	**No**	

Project Name **River Village** **Mitigated Emissions**
Subphase **Week 92**
Length of Subphase (weeks) **1.00**
Year **2007**

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Grading During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	1.01	--	--	--	
Off-Road Diesel Exhaust Emissions	1,373.05	167.28	1,085.87	--	41.93	
On-Road Diesel Exhaust Emissions	4.05	0.61	5.80	0.01	0.10	
Worker Commute Emissions	11.29	1.25	2.11	0.01	0.08	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	None Available
On-Road Diesel Exhaust	3.65	0.54	3.13	0.01	0.08	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Road Diesel Exhaust	1,235.75	150.55	586.37	n/a	62.06	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	2,159.16	275.61	1,931.00	--	79.99	
Worker Commute Trips	28.13	3.11	5.26	0.02	0.21	
Architectural Painting	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	--	151.50	--	--	--	
Worker Commute Trips	28.13	3.11	5.26	0.02	0.21	
Mitigation/Reduction	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	1,943.24	248.05	1,042.74	0.00	118.39	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Gas Emissions	--	n/a	--	--	--	No Mitigation Available
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Net Emission Totals:	**421.17**	**204.32**	**1,403.05**	**0.05**	**-58.00**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**No**	**Yes**	**Yes**	**No**	**No**	

Project Name **River Village** **Mitigated Emissions**
Subphase **Weeks 93 thru 144**
Length of Subphase (weeks) **52.00**
Year **2007**

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Grading During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.02	--	--	--	
Off-Road Diesel Exhaust Emissions	1,373.05	167.28	1,085.87	--	41.93	
On-Road Diesel Exhaust Emissions	0.08	0.01	0.11	0.00	0.00	
Worker Commute Emissions	11.29	1.25	2.11	0.01	0.08	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	None Available
On-Road Diesel Exhaust	0.07	0.01	0.06	0.00	0.00	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Road Diesel Exhaust	1,235.75	150.55	586.37	n/a	62.06	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	1,872.07	240.07	1,693.55	--	70.48	
Worker Commute Trips	24.90	2.75	4.65	0.02	0.18	
Architectural Painting						
Off-Gas Emissions	--	141.73	--	--	--	
Worker Commute Trips	24.90	2.75	4.65	0.02	0.18	
Mitigation/Reduction						
Off-Road Diesel Exhaust	1,684.86	216.06	914.52	0.00	104.31	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Gas Emissions	--	n/a	--	--	--	No Mitigation Available
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Net Emission Totals:	**385.62**	**189.23**	**1,290.00**	**0.05**	**-53.50**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**No**	**Yes**	**Yes**	**No**	**No**	

Project Name **River Village** **Mitigated Emissions**
Subphase **Weeks 145 thru 158**
Length of Subphase (weeks) **14.00**
Year **2008**

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Grading During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	1.01	--	--	--	
Off-Road Diesel Exhaust Emissions	1,385.56	167.28	1,058.35	--	38.46	
On-Road Diesel Exhaust Emissions	3.70	0.57	5.39	0.01	0.10	
Worker Commute Emissions	10.38	1.15	1.94	0.01	0.08	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	None Available
On-Road Diesel Exhaust	3.33	0.51	2.91	0.01	0.08	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Road Diesel Exhaust	1,247.00	150.55	571.51	n/a	56.92	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	1,685.60	212.51	1,453.80	--	58.55	
Worker Commute Trips	20.77	2.30	3.89	0.02	0.17	
Architectural Painting						
Off-Gas Emissions	--	141.66	--	--	--	
Worker Commute Trips	20.77	2.30	3.89	0.02	0.17	
Mitigation/Reduction						
Off-Road Diesel Exhaust	1,517.04	191.26	785.05	0.00	86.65	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Gas Emissions	--	n/a	--	--	--	No Mitigation Available
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Net Emission Totals:	**359.40**	**186.46**	**1,167.78**	**0.04**	**-46.13**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**No**	**Yes**	**Yes**	**No**	**No**	

Project Name **River Village** **Mitigated Emissions**
Subphase **Weeks 159 thru 178**
Length of Subphase (weeks) **21.00**
Year **2009**

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Grading During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.00	--	--	--	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	--	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	1,726.62	212.51	1,394.91	--	53.47	
Worker Commute Trips	19.09	2.13	3.58	0.02	0.17	
Architectural Painting						
Off-Gas Emissions	--	141.66	--	--	--	
Worker Commute Trips	19.09	2.13	3.58	0.02	0.17	
Mitigation/Reduction						
Off-Road Diesel Exhaust	1,553.96	191.26	753.25	0.00	79.14	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Gas Emissions	--	n/a	--	--	--	No Mitigation Available
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Net Emission Totals:	**210.84**	**167.17**	**648.81**	**0.03**	**-25.33**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**No**	**Yes**	**Yes**	**No**	**No**	

Project Name River Village **Mitigated Emissions**
Subphase Weeks 179 thru 196
Length of Subphase (weeks) 18.00
Year 2009

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Gradng During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.00	--	--	--	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	--	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	1,515.09	187.20	1,239.14	--	48.23	
Worker Commute Trips	17.12	1.91	3.21	0.02	0.15	
Architectural Painting						
Off-Gas Emissions	--	141.24	--	--	--	
Worker Commute Trips	17.12	1.91	3.21	0.02	0.15	
Mitigation/Reduction						
Off-Road Diesel Exhaust	1,363.58	168.48	669.14	0.00	71.38	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Gas Emissions	--	n/a	--	--	--	No Mitigation Available
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Net Emission Totals:	**185.74**	**163.78**	**576.42**	**0.03**	**-22.85**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**No**	**Yes**	**Yes**	**No**	**No**	

Project Name **River Village** **Mitigated Emissions**
Subphase **Weeks 197 thru 210**
Length of Subphase (weeks) **13.00**
Year **2009**

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Grading During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.00	--	--	--	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	--	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	11.51	1.29	2.16	0.01	0.10	
Architectural Painting						
Off-Gas Emissions	--	87.64	--	--	--	
Worker Commute Trips	11.51	1.29	2.16	0.01	0.10	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Gas Emissions	--	n/a	--	--	--	No Mitigation Available
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Net Emission Totals:	**23.03**	**90.21**	**4.31**	**0.02**	**0.20**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**No**	**Yes**	**No**	**No**	**No**	

Project Name **River Village** **Mitigated Emissions**
Subphase **Weeks 211 thru 220**
Length of Subphase (weeks) **10.00**
Year **2010**

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.00	--	--	--	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	--	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	7.50	0.84	1.39	0.01	0.07	
Architectural Painting						
Off-Gas Emissions	--	39.26	--	--	--	
Worker Commute Trips	7.50	0.84	1.39	0.01	0.07	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Gas Emissions	--	n/a	--	--	--	No Mitigation Available
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Net Emission Totals:	**15.00**	**40.94**	**2.78**	**0.01**	**0.14**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	

Project Name **River Village** **Mitigated Emissions**
Subphase **Weeks 221 thru 235**
Length of Subphase (weeks) **15.00**
Year **2010**

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Grading During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.00	--	--	--	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	--	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	491.65	59.17	372.96	--	13.64	
Worker Commute Trips	4.44	0.50	0.82	0.00	0.04	
Architectural Painting						
Off-Gas Emissions	--	11.78	--	--	--	
Worker Commute Trips	4.44	0.50	0.82	0.00	0.04	
Mitigation/Reduction						
Off-Road Diesel Exhaust	442.49	53.25	201.40	0.00	20.19	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Gas Emissions	--	n/a	--	--	--	No Mitigation Available
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Net Emission Totals:	**58.05**	**18.70**	**173.21**	**0.01**	**-6.46**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**No**	**No**	**Yes**	**No**	**No**	

River Village Office Construction Only Mitigated Emissions

Weeks of Construction: 140

Year Constr. Begins: 2015

Calculated Emissions

Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	0.00	0.00	0.00	0.00	0.00	No Grading During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	884.12	106.21	665.11	--	23.88	
Worker Commute Trips	10.90	1.20	2.03	0.02	0.08	
Architectural Painting						
Off-Gas Emissions	--	38.48	--	--	--	
Worker Commute Trips	10.90	1.20	2.03	0.02	0.08	
Mitigation/Reduction						
Off-Road Diesel Exhaust	795.71	95.59	359.16	0.00	35.34	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Gas Emissions	--	n/a	--	--	--	No Mitigation Available
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Net Emission Totals:	**110.22**	**51.50**	**310.01**	**0.03**	**-11.31**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**No**	**No**	**Yes**	**No**	**No**	

URBEMIS2002
UNMITIGATED OPERATIONAL EMISSIONS
SUMMERTIME

URBEMIS 2002 For Windows 7.5.0

File Name: C:\URBEMIS2002\URBEMIS River Village\River Village Operational Emissions.urb
Project Name: River Village Operational Emissions
Project Location: South Coast Air Basin (Los Angeles area)
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	78.83	31.65	21.52	0.17	0.08
TOTALS (lbs/day, mitigated)	77.29	26.13	10.61	0.00	0.05

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	342.42	391.84	4,155.89	2.47	377.33
TOTALS (lbs/day, mitigated)	342.41	391.82	4,155.68	2.47	377.31

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	421.25	423.49	4,177.40	2.65	377.40
TOTALS (lbs/day, mitigated)	419.69	417.94	4,166.29	2.47	377.36

URBEMIS 2002 For Windows 7.5.0

File Name: C:\URBEMIS2002\URBEMIS River Village\River Village Operational Emissions.urb
Project Name: River Village Operational Emissions
Project Location: South Coast Air Basin (Los Angeles area)
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	2.40	31.52	13.20	-	0.06
Wood Stoves - No summer emissions					
Fireplaces - No summer emissions					
Landscaping	0.97	0.13	8.32	0.17	0.02
Consumer Prdcts	75.46	-	-	-	-
TOTALS(lbs/day,unmitigated)	78.83	31.65	21.52	0.17	0.08

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Single family housing	56.31	60.90	669.83	0.39	59.43
Apartments low rise	32.54	32.68	359.42	0.21	31.89
Condo/townhouse general	31.93	33.14	364.51	0.21	32.34
Elementary school	20.51	10.98	116.55	0.07	10.66
City park	0.71	0.49	5.16	0.00	0.47
Comercial Center 10-30 ac	91.46	120.96	1,259.13	0.76	115.66
Commercial Center <10 ac.	42.72	57.47	598.28	0.36	54.96
Commercial Shops	2.41	3.13	32.54	0.02	2.99
Commercial Office	63.82	72.09	750.48	0.45	68.94
TOTAL EMISSIONS (lbs/day)	342.42	391.84	4,155.89	2.47	377.33

Does not include correction for passby trips.
Includes a double counting reduction for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2007 Temperature (F): 90 Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Trip Rate	Size	Total Trips
Single family housing	9.90 trips / dwelling units	591.00	5,850.90
Apartments low rise	6.90 trips / dwelling units	455.00	3,139.50
Condo/townhouse general	8.00 trips / dwelling units	398.00	3,184.00
Elementary school	1.45 trips / students	750.00	1,087.50
City park	2.60 trips / acres	20.90	54.34
Comercial Center 10-30 ac	54.06 trips / 1000 sq. ft.	252.00	13,623.12
Commercial Center <10 ac.	85.06 trips / 1000 sq. ft.	76.10	6,473.07
Commercial Shops	37.06 trips / 1000 sq. ft.	9.50	352.07
Commercial Office	11.56 trips / 1000 sq. ft.	702.40	8,119.74

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	55.20	1.80	97.80	0.40
Light Truck < 3,750 lbs	15.10	3.30	94.00	2.70
Light Truck 3,751- 5,750	16.10	1.90	96.90	1.20
Med Truck 5,751- 8,500	7.10	1.40	95.80	2.80
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.40	0.00	50.00	50.00
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.10	0.00	0.00	100.00
Motorcycle	1.70	82.40	17.60	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.20	8.30	83.30	8.40

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.5	4.9	6.0	10.3	5.5	5.5
Rural Trip Length (miles)	11.5	4.9	6.0	10.3	5.5	5.5
Trip Speeds (mph)	35.0	40.0	40.0	40.0	40.0	40.0
% of Trips - Residential	20.0	37.0	43.0			
% of Trips - Commercial (by land use)						
Elementary school				20.0	10.0	70.0
City park				5.0	2.5	92.5
Comercial Center 10-30 ac.				2.0	1.0	97.0
Commercial Center <10 ac.				2.0	1.0	97.0
Commercial Shops				2.0	1.0	97.0
Commercial Office				2.0	1.0	97.0

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Area

The area souce mitigation measure option switch changed from off to on.
The natural gas residential percentage changed from 60 to 100.
The percentage of wood stoves changed from 35 to 0.
The landscape length of the summer period (in days) changed from 180 to 365.
The landscape year changed from 2004 to 2007.
The consumer product persons per residential unit changed from 2.861 to 3.056.
Mitigation measure Orient Buildings North/South: Rsdntl Space Heat.
has been changed from off to on.
Mitigation measure Increase Insulation Beyond Title 24: Rsdntl Space Heat.
has been changed from off to on.
Mitigation measure All Electric Landscape Maintenance Equipment: Rsdntl Lndscp Maint.
has been changed from off to on.
Mitigation measure Central Water Heater: Cmrcl Space Heat.
has been changed from off to on.
Mitigation measure Orient Buildings North/South: Cmrcl Space Heat.
has been changed from off to on.
Mitigation measure Increase Insulation Beyond Title 24: Cmrcl Space Heat.
has been changed from off to on.
Mitigation measure All Electric Landscape Maintenance Equipment: Cmrcl Lndscp Maint.
has been changed from off to on.

Changes made to the default values for Operations

The operational emission year changed from 2004 to 2007.
The double counting internal work trip limit changed from to 791.577.
The double counting shopping trip limit changed from to 395.7885.
The double counting other trip limit changed from to 5234.992.
The travel mode environment settings changed from both to: both
Mitigation measure Mixed Use Project (Residential Oriented):3
has been changed from off to on.
Mitigation measure Provide Sidewalks and/or Pedestrian Paths:1
has been changed from off to on.
Mitigation measure Provide Direct Pedestrian Connections:1
has been changed from off to on.
Mitigation measure Provide Pedestrian Safety:0.5
has been changed from off to on.
Mitigation measure Provide Street Furniture:0.5
has been changed from off to on.
Mitigation measure Provide Street Lighting:0.5
has been changed from off to on.
Mitigation measure Provide Pedestrian Signalization and Signage:0.5
has been changed from off to on.
Mitigation measure Mixed Use Project (Commercial Oriented):1
has been changed from off to on.
Mitigation measure Floor Area Ratio 0.75 or Greater:1
has been changed from off to on.
Mitigation measure Provide Wide Sidewalks and Onsite Pedestrian Facilities:1
has been changed from off to on.
Mitigation measure Provide Street Lighting:0.5
has been changed from off to on.
Mitigation measure Project Provides Shade Trees to Shade Sidewalks:0.5
has been changed from off to on.
Mitigation measure Project Provides Street Art and/or Street Furniture:0.5
has been changed from off to on.
Mitigation measure Provide Pedestrian Safety Designs/Infrastructure at Crossings:0.5
has been changed from off to on.
Mitigation measure Articulated Storefront(s) Display Windows with Visual Interest:0.25
has been changed from off to on.
Mitigation measure No Long Uninterrupted Walls Along Pedestrian Walkways:0.25
has been changed from off to on.
Mitigation measure Provide Bike Lanes/Paths Connecting to Bikeway System:2
has been changed from off to on.
Mitigation measure Provide Bike Lanes/Paths Connecting to Bikeway System:2
has been changed from off to on.
Mitigation measure Provide Securre Bicycle Parking:1
has been changed from off to on.
Mitigation measure Provide Employee Lockers and Showers:1
has been changed from off to on.
Mitigation measure Shuttle Bus Service to Transit/Multi-Modal Center:2
has been changed from off to on.
Mitigation measure Preferential Carpool/Vanpool Parking:1.5
has been changed from off to on.
Mitigation measure Many Frequently Needed Services Provided:5

has been changed from off to on.
Mitigation measuremitop5: Park and Ride Lots
has been changed from on to off.

URBEMIS2002
UNMITIGATED OPERATIONAL EMISSIONS
WINTERTIME

URBEMIS 2002 For Windows 7.5.0

File Name: C:\URBEMIS2002\URBEMIS River Village\River Village Operational Emissions.urb
Project Name: River Village Operational Emissions
Project Location: South Coast Air Basin (Los Angeles area)
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Winter)

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	1,695.26	49.89	1,797.29	2.83	244.44
TOTALS (lbs/day, mitigated)	1,694.70	44.49	1,794.71	2.83	244.43

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	330.01	566.89	4,005.67	2.01	377.33
TOTALS (lbs/day, mitigated)	330.00	566.86	4,005.48	2.01	377.31

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	2,025.28	616.78	5,802.96	4.83	621.77
TOTALS (lbs/day, mitigated)	2,024.69	611.36	5,800.19	4.83	621.74

URBEMIS 2002 For Windows 7.5.0

ile Name: C:\URBEMIS2002\URBEMIS River Village\River Village Operational Emissions.urb
roject Name: River Village Operational Emissions
roject Location: South Coast Air Basin (Los Angeles area)
n-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Winter)

REA SOURCE EMISSION ESTIMATES (Winter Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	2.40	31.52	13.20	-	0.06
Wood Stoves	0.00	0.00	0.00	0.00	0.00
Fireplaces	1,617.41	18.36	1,784.09	2.83	244.38
Landscaping - No winter emissions					
Consumer Prdcts	75.46	-	-	-	-
TOTALS(lbs/day,unmitigated)	1,695.26	49.89	1,797.29	2.83	244.44

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
ingle family housing	52.80	88.27	633.57	0.32	59.43
partments low rise	28.40	47.36	339.97	0.17	31.89
ondo/townhouse general	28.77	48.03	344.78	0.18	32.34
lementary school	9.34	15.91	110.82	0.06	10.66
ity park	0.42	0.71	5.00	0.00	0.47
omercial Center 10-30 ac	100.15	174.82	1,226.28	0.61	115.66
ommercial Center <10 ac.	47.56	83.07	582.67	0.29	54.96
ommercial Shops	2.59	4.52	31.69	0.02	2.99
ommercial Office	59.98	104.20	730.89	0.36	68.94
OTAL EMISSIONS (lbs/day)	330.01	566.89	4,005.67	2.01	377.33

oes not include correction for passby trips.
ncludes a double counting reduction for internal trips.

PERATIONAL (Vehicle) EMISSION ESTIMATES

nalysis Year: 2007 Temperature (F): 50 Season: Winter

MFAC Version: EMFAC2002 (9/2002)

ummary of Land Uses:

nit Type	Trip Rate	Size	Total Trips
ingle family housing	9.90 trips / dwelling units	591.00	5,850.90
partments low rise	6.90 trips / dwelling units	455.00	3,139.50
ondo/townhouse general	8.00 trips / dwelling units	398.00	3,184.00
lementary school	1.45 trips / students	750.00	1,087.50
ity park	2.60 trips / acres	20.90	54.34
omercial Center 10-30 ac	54.06 trips / 1000 sq. ft.	252.00	13,623.12
ommercial Center <10 ac.	85.06 trips / 1000 sq. ft.	76.10	6,473.07
ommercial Shops	37.06 trips / 1000 sq. ft.	9.50	352.07
ommercial Office	11.56 trips / 1000 sq. ft.	702.40	8,119.74

ehicle Assumptions:

leet Mix:

ehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
ight Auto	55.20	1.80	97.80	0.40
ight Truck < 3,750 lbs	15.10	3.30	94.00	2.70
ight Truck 3,751- 5,750	16.10	1.90	96.90	1.20
ed Truck 5,751- 8,500	7.10	1.40	95.80	2.80
ite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
ite-Heavy 10,001-14,000	0.40	0.00	50.00	50.00
ed-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
eavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
ine Haul > 60,000 lbs	0.00	0.00	0.00	100.00
rban Bus	0.10	0.00	0.00	100.00
otorcycle	1.70	82.40	17.60	0.00
School Bus	0.10	0.00	0.00	100.00
otor Home	1.20	8.30	83.30	8.40

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.5	4.9	6.0	10.3	5.5	5.5
Rural Trip Length (miles)	11.5	4.9	6.0	10.3	5.5	5.5
Trip Speeds (mph)	35.0	40.0	40.0	40.0	40.0	40.0
% of Trips - Residential	20.0	37.0	43.0			
% of Trips - Commercial (by land use)						
Elementary school				20.0	10.0	70.0
City park				5.0	2.5	92.5
Comercial Center 10-30 ac.				2.0	1.0	97.0
Commercial Center <10 ac.				2.0	1.0	97.0
Commercial Shops				2.0	1.0	97.0
Commercial Office				2.0	1.0	97.0

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Area

The area souce mitigation measure option switch changed from off to on.
The natural gas residential percentage changed from 60 to 100.
The percentage of wood stoves changed from 35 to 0.
The landscape length of the summer period (in days) changed from 180 to 365.
The landscape year changed from 2004 to 2007.
The consumer product persons per residential unit changed from 2.861 to 3.056.
Mitigation measure Orient Buildings North/South: Rsdntl Space Heat.
has been changed from off to on.
Mitigation measure Increase Insulation Beyond Title 24: Rsdntl Space Heat.
has been changed from off to on.
Mitigation measure All Electric Landscape Maintenance Equipment: Rsdntl Lndscp Maint.
has been changed from off to on.
Mitigation measure Central Water Heater: Cmrcl Space Heat.
has been changed from off to on.
Mitigation measure Orient Buildings North/South: Cmrcl Space Heat.
has been changed from off to on.
Mitigation measure Increase Insulation Beyond Title 24: Cmrcl Space Heat.
has been changed from off to on.
Mitigation measure All Electric Landscape Maintenance Equipment: Cmrcl Lndscp Maint.
has been changed from off to on.

Changes made to the default values for Operations

The operational emission year changed from 2004 to 2007.
The double counting internal work trip limit changed from to 791.577.
The double counting shopping trip limit changed from to 395.7885.
The double counting other trip limit changed from to 5234.992.
The travel mode environment settings changed from both to: both
Mitigation measure Mixed Use Project (Residential Oriented):3
has been changed from off to on.
Mitigation measure Provide Sidewalks and/or Pedestrian Paths:1
has been changed from off to on.
Mitigation measure Provide Direct Pedestrian Connections:1
has been changed from off to on.
Mitigation measure Provide Pedestrian Safety:0.5
has been changed from off to on.
Mitigation measure Provide Street Furniture:0.5
has been changed from off to on.
Mitigation measure Provide Street Lighting:0.5
has been changed from off to on.
Mitigation measure Provide Pedestrian Signalization and Signage:0.5
has been changed from off to on.
Mitigation measure Mixed Use Project (Commercial Oriented):1
has been changed from off to on.
Mitigation measure Floor Area Ratio 0.75 or Greater:1
has been changed from off to on.
Mitigation measure Provide Wide Sidewalks and Onsite Pedestrian Facilities:1
has been changed from off to on.
Mitigation measure Provide Street Lighting:0.5
has been changed from off to on.
Mitigation measure Project Provides Shade Trees to Shade Sidewalks:0.5
has been changed from off to on.
Mitigation measure Project Provides Street Art and/or Street Furniture:0.5
has been changed from off to on.
Mitigation measure Provide Pedestrian Safety Designs/Infrastructure at Crossings:0.5
has been changed from off to on.
Mitigation measure Articulated Storefront(s) Display Windows with Visual Interest:0.25
has been changed from off to on.
Mitigation measure No Long Uninterrupted Walls Along Pedestrian Walkways:0.25
has been changed from off to on.
Mitigation measure Provide Bike Lanes/Paths Connecting to Bikeway System:2
has been changed from off to on.
Mitigation measure Provide Bike Lanes/Paths Connecting to Bikeway System:2
has been changed from off to on.
Mitigation measure Provide Securre Bicycle Parking:1
has been changed from off to on.
Mitigation measure Provide Employee Lockers and Showers:1
has been changed from off to on.
Mitigation measure Shuttle Bus Service to Transit/Multi-Modal Center:2
has been changed from off to on.
Mitigation measure Preferential Carpool/Vanpool Parking:1.5
has been changed from off to on.
Mitigation measure Many Frequently Needed Services Provided:5

has been changed from off to on.
Litigation measuremitop5: Park and Ride Lots
has been changed from on to off.

SUMMERTIME EMISSIONS REDUCTIONS

ESTIMATED SUMMERTIME EMISSIONS REDUCTIONS EFFICIENCIES
River Village Emissions With Implementation of Newhall Ranch Specific Plan FEIR Air Quality Mitigation Measures and Without Wood Burning Stoves or Fire Places

Input Fields

LAND USE		Unmitigated Emissions in Pounds per Day CO	VOC	NO_x	PM_{10}
Single Family Residential Uses	Vehicular Sources	669.93	56.31	60.96	59.43
	Area Sources	9.36	39.22	13.67	0.04
Multi-Family Residential Uses	Vehicular Sources	723.93	64.47	65.82	64.23
	Area Sources	7.36	38.82	8.25	0.03
Commercial/Office/Institutional Uses	Vehicular Sources	2,762.13	221.64	265.32	253.67
	Area Sources	4.10	0.20	9.76	0.02
Wood-Burning Fire Place Emissions	Vehicular Sources	0.00	0.00	0.00	0.00
	Area Sources	0.00	0.00	0.00	0.00
Total Emissions	Vehicular Sources	4,155.39	342.42	391.84	377.33
	Area Sources	21.52	78.84	31.68	0.09
	Total Non-Reduced Emissions	4,177.41	421.26	423.48	377.42

Recommended (Measures already incorporated into Project are marked "No." Yes	No	MEASURES, EFFICIENCIES, AND REDUCTIONS	Emission Reduction Efficiency CO	VOC	NO_x	PM_{10}	Reduced Emissions in Pounds per Day CO	VOC	NO_x	PM_{10}	REASONS FOR REJECTING MITIGATION MEASURES
Stationary Sources											
All Residential Uses											
X		Use solar or low emission water heaters	10.0%	11.0%	9.5%	4.5%	1.74	8.58	2.08	0.00	
X		Use built-in energy-efficient appliances	3.0%	2.5%	3.0%	6.5%	0.52	1.95	0.64	0.00	
X		Provide shade trees to reduce heating/cooling needs	0.0%	0.0%	0.0%	0.5%	0.00	0.00	0.00	0.00	
X		Use energy-efficient and automated controls for air conditioners	0.0%	0.0%	0.0%	0.5%	0.00	0.00	0.00	0.00	
X		Use double-glass paned windows	4.5%	4.5%	4.0%	2.5%	0.78	3.51	0.88	0.00	
	X	Provide ventilation systems for enclosed parking facilities	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	Parking structures are not proposed within the project.
X		Use lighting controls and energy efficient lighting	0.0%	0.0%	0.0%	0.5%	0.00	0.00	0.00	0.00	
X		Use fuel cells in residential subdivisions to produce heat and elec.	1.0%	0.0%	1.5%	7.0%	0.17	0.00	0.33	0.00	
X		Orient buildings to the north	13.5%	14.0%	13.0%	10.5%	2.35	10.93	2.85	0.01	
X		Use light-colored roof materials to reflect heat	1.5%	1.5%	1.5%	1.5%	0.26	1.17	0.33	0.00	
X		Comply with Title 24	13.0%	14.0%	13.0%	7.5%	2.26	10.93	2.85	0.01	
Multi-Family Residential Uses											
	X	Use central water heating systems	8.5%	9.0%	8.0%	4.0%	0.00	0.00	0.00	0.00	Central heating systems are not desired by the average multi-family resident.
Commercial, Office, Institutional Uses											
X		Use solar or low emission water heaters	0.5%	0.5%	0.5%	0.3%	0.02	0.00	0.05	0.00	
X		Use central water heating systems	0.5%	0.5%	0.5%	0.3%	0.02	0.00	0.05	0.00	
X		Provide shade trees to reduce heating/cooling needs	0.5%	0.5%	0.5%	1.0%	0.02	0.00	0.05	0.00	
X		Use energy-efficient and automated controls for air conditioners	1.0%	1.0%	1.0%	1.5%	0.04	0.01	0.10	0.00	
X		Use double-glass paned windows	3.0%	3.5%	3.0%	2.5%	0.12	0.03	0.25	0.00	
X		Use energy-efficient low-sodium parking lights	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Provide ventilation systems for enclosed parking facilities	0.0%	0.0%	0.0%	0.3%	0.00	0.00	0.00	0.00	Parking structures are not proposed within the project.
X		Use lighting controls and energy efficient lighting	7.0%	3.0%	8.5%	19.5%	0.29	0.02	0.82	0.00	
X		Use light-colored roof materials to reflect heat	1.0%	1.0%	1.0%	0.3%	0.04	0.01	0.10	0.00	
X		Comply with Title 24	9.5%	10.0%	9.0%	7.0%	0.39	0.08	0.87	0.00	
X		Orient buildings to the north	12.5%	11.0%	13.5%	17.5%	0.51	0.09	1.31	0.00	
Industrial Uses											
	X	Provide shade trees to reduce heating/cooling needs	0.0%	0.0%	0.0%	0.5%	0.00	0.00	0.00	0.00	No industrial uses are proposed within the project.
	X	Use energy-efficient and automated controls for air conditioners	0.0%	0.0%	0.0%	1.0%	0.00	0.00	0.00	0.00	
	X	Use double-glass paned windows	0.0%	0.0%	0.5%	1.0%	0.00	0.00	0.00	0.00	
	X	Use energy-efficient low-sodium parking lights	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Provide ventilation systems for enclosed parking facilities	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Use lighting controls and energy efficient lighting	0.5%	0.0%	1.0%	2.5%	0.00	0.00	0.00	0.00	
	X	Use light-colored roof materials to reflect heat	0.0%	0.0%	0.0%	0.5%	0.00	0.00	0.00	0.00	
	X	Orient buildings to the north	2.5%	2.0%	3.0%	5.5%	0.00	0.00	0.00	0.00	
	X	Comply with Title 24	0.5%	0.0%	1.0%	3.0%	0.00	0.00	0.00	0.00	
	X	Improved storage and handling of source materials	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Materials substitution (e.g., use water-based paints, life cycle analysis)	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Utilize efficient manufacturing processes	1.5%	0.5%	2.0%	6.0%	0.00	0.00	0.00	0.00	
	X	Resource recovery systems	3.0%	3.5%	3.0%	1.5%	0.00	0.00	0.00	0.00	

Impact Sciences, Inc.
Prepared by R. Mamaghani
2/12/04

Based on SCAQMD
CEQA Air Quality Handbook
Table 11-6

ESTIMATED SUMMERTIME EMISSIONS REDUCTIONS EFFICIENCIES
River Village Emissions With Implementation of Newhall Ranch Specific Plan FEIR Air Quality Mitigation Measures and Without Wood Burning Stoves or Fire Places

Recommended (Measures already incorporated into Project are marked "No."			Emission Reduction Efficiency				Reduced Emissions in Pounds per Day				
Yes	No	MEASURES, EFFICIENCIES, AND REDUCTIONS	CO	VOC	NO_x	PM_{10}	CO	VOC	NO_x	PM_{10}	REASONS FOR REJECTING MITIGATION MEASURES
Mobile Sources											
Residential Uses											
	X	Allow satellite telecommunications centers in residential subdivisions	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	Satellite telecommunications centers are superseded by other technology.
	X	Shuttle service from res. subdivisions to commercial core areas	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	Residences are proposed in walking distance to proposed commercial areas.
X		Construct bus passenger benches and shelters	0.2%	0.2%	0.2%	0.2%	2.79	0.24	0.25	0.25	
X		Construct pedestrian facility improvements	0.1%	0.1%	0.1%	0.1%	1.39	0.12	0.13	0.12	
X		Retail services within or adjacent to residential subdivisions	1.3%	1.0%	1.3%	1.3%	18.12	1.21	1.65	1.61	
X		Shuttles to major rail transit centers or multi-modal stations	0.1%	0.1%	0.1%	0.1%	1.39	0.12	0.13	0.12	
X		Contribute to regional transit systems	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
X		Synchronize traffic lights on streets impacted by development	4.0%	4.0%	4.0%	4.0%	55.75	4.83	5.07	4.95	
X		Construct bicycle trails	0.1%	0.1%	0.1%	0.1%	1.39	0.12	0.13	0.12	
Commercial, Office and Institutional Uses											
X		Preferential parking spaces for carpools and vanpools	0.1%	0.1%	0.1%	0.1%	2.76	0.22	0.27	0.25	
X		Implement on-site circulation plan in parking lots	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
X		Provide separate windows for fast-food restaurants	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
X		Provide video-conference facilities	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Set up resident worker training programs to improve job/housing balance	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	Such programs are set up by and at the discretion of future occupants of the commercial uses.
	X	Implement home dispatching system for employees	0.1%	0.0%	0.1%	0.1%	0.00	0.00	0.00	0.00	Such programs are set up by and at the discretion of future occupants of the commercial uses.
	X	Minimize use of fleet vehicles during smog alerts	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	No commercial retail or office use on the site is expected to use fleet vehicles.
	X	Use low emission fleet vehicles	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	No commercial retail or office use on the site is expected to use fleet vehicles.
	X	Reduce employee parking spaces for those business not under Rule 2202	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	There is potential for employees to park in areas designated for retail customers, thereby negating the intent of this measure.
	X	Lunch shuttle service from a worksite to food establishments	0.5%	0.4%	0.5%	0.5%	0.00	0.00	0.00	0.00	Mixed use lots are expected to have food establishments located within walking distance for employees.
	X	Implement compressed work-week schedules	1.0%	0.8%	1.0%	1.0%	0.00	0.00	0.00	0.00	Such programs are set up by and at the discretion of future occupants of the commercial uses.
	X	Trip reduction plan to achieve 1.5 AVR for businesses	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	The requirement to achieve a specific AVR has been ruled unlawful by the federal government.
	X	Utilize satellite offices rather than regular worksite to reduce VMT	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	Such programs are set up by and at the discretion of future occupants of the commercial uses.
	X	Establish a home-based telecommuting program	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	Such programs are set up by and at the discretion of future occupants of the commercial uses.
X		Provide or contribute to child care and after school facilities	0.1%	0.1%	0.1%	0.1%	2.76	0.22	0.27	0.25	
	X	Offer travel incentives such as discounts on purchases for transit riders	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	Such programs are set up by and at the discretion of future occupants of the commercial uses.
X		Provide on-site employee services such as cafeteria, banks, etc.	0.3%	0.2%	0.3%	0.3%	8.29	0.44	0.80	0.76	
	X	Shuttle service from residential core area to the worksite	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	Residential uses are in close proximity and within walking distance to proposed commercial uses.
X		Construct bus passenger benches and shelters	0.1%	0.1%	0.1%	0.1%	2.76	0.22	0.27	0.25	
	X	Pricing structure for single-occupancy employee parking	2.0%	1.5%	2.0%	2.0%	0.00	0.00	0.00	0.00	There is potential for employees to park in areas designated for retail customers, thereby negating the intent of this measure.
X		Residential units within or adjacent to commercial developments	4.0%	3.1%	4.0%	4.0%	110.49	6.87	10.60	10.15	
X		Utilize excess parking as park-n-ride or contribute to park-n-ride	0.1%	0.1%	0.1%	0.1%	2.76	0.22	0.27	0.25	
X		Construct bicycle facility improvements	0.3%	0.2%	0.3%	0.3%	8.29	0.44	0.80	0.76	
X		Construct pedestrian facility improvements	0.2%	0.2%	0.2%	0.2%	5.52	0.44	0.53	0.51	
X		Shuttles to major rail transit centers or multi-modal stations	0.1%	0.1%	0.1%	0.1%	2.76	0.22	0.27	0.25	
X		Contribute to regional transit systems	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
X		Charge visitors to park	2.0%	1.5%	2.0%	2.0%	55.24	3.32	5.30	5.07	
X		Synchronize traffic lights on streets impacted by development	4.0%	4.0%	4.0%	4.0%	110.49	8.87	10.60	10.15	
X		Reschedule truck deliveries and pickups for off-peak hours	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Paid parking at walkup kiosks	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	There is potential for employees to park in areas designated for retail customers, thereby negating the intent of this measure.
X		On-site truck loading zones	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Implement or contribute to public outreach programs	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
X		Provide commuter information areas	0.1%	0.1%	0.1%	0.1%	2.76	0.22	0.27	0.25	Such programs are set up by and at the discretion of future occupants of the commercial uses.

ESTIMATED SUMMERTIME EMISSIONS REDUCTIONS EFFICIENCIES
River Village Emissions With Implementation of Newhall Ranch Specific Plan FEIR Air Quality Mitigation Measures and Without Wood Burning Stoves or Fire Places

Recommended (Measures already incorporated into Project are marked "No."			Emission Reduction Efficiency				Reduced Emissions in Pounds per Day				
Yes	No	MEASURES, EFFICIENCIES, AND REDUCTIONS	CO	VOC	NO_x	PM_{10}	CO	VOC	NO_x	PM_{10}	REASONS FOR REJECTING MITIGATION MEASURES
Industrial Uses											
	X	Preferential parking spaces for carpools and vanpools	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	No industrial uses are proposed within the project.
	X	Implement on-site circulation plan in parking lots	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Set up resident worker training programs to improve job/housing balance	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Implement home dispatching system for employees	0.1%	0.0%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Minimize use of fleet vehicles during smog alerts	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Use low emission fleet vehicles	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Provide commuter information areas	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Reduce employee parking spaces for those business not under Rule 2202	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Implement compressed work-week schedules	1.0%	0.8%	1.0%	1.0%	0.00	0.00	0.00	0.00	
	X	Offer loans or other incentives to employees who move locally	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Trip reduction plan to achieve 1.5 AVR for businesses	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Provide or contribute to child care and after school facilities	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Provide on-site employee services such as cafeteria, banks, etc.	0.3%	0.2%	0.3%	0.3%	0.00	0.00	0.00	0.00	
	X	Shuttle service from residential core area to the worksite	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Construct bus passenger benches and shelters	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Pricing structure for single-occupancy employee parking	2.0%	1.5%	2.0%	2.0%	0.00	0.00	0.00	0.00	
	X	Utilize excess parking as park-n-ride or contribute to park-n-ride	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Construct bicycle facility improvements	0.3%	0.2%	0.3%	0.3%	0.00	0.00	0.00	0.00	
	X	Construct pedestrian facility improvements	0.2%	0.2%	0.2%	0.2%	0.00	0.00	0.00	0.00	
	X	Shuttles to major rail transit centers or multi-modal stations	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Contribute to regional transit systems	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Synchronize traffic lights on streets impacted by development	4.0%	4.0%	4.0%	4.0%	0.00	0.00	0.00	0.00	
	X	Reschedule truck deliveries and pickups for off-peak hours	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Lunch shuttle system from worksite to food establishments	0.5%	0.4%	0.5%	0.5%	0.00	0.00	0.00	0.00	
	X	On-site truck loading zones	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Install aerodynamic add-on devices to heavy-duty trucks	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Implement or contribute to public outreach programs	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Reduce ship cruising speeds in the inner harbor	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Use low-emission fuels or electrify airport ground service vehicles	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Engine tuning for marine vessels	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Reduce number of aircraft engines used during idling	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Install monitoring system to control airport shuttles	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Use centralized ground power systems for airport service vehicles	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
		Reduction in Stationary Sources Emissions (Pounds per day)					-9.56	-37.32	-13.62	-0.04	
		Reduction in Mobile Sources Emissions (Pounds per day)					-395.72	-28.36	-37.57	-36.09	
		Total Reduction in Emissions Based on Newhall Ranch FEIR Measures (Pounds per day)					-405.28	-65.68	-51.19	-36.13	
		Percentage Reduced Based on Newhall Ranch FEIR Measures					-9.70%	-15.59%	-12.09%	-9.57%	
		No Wood Burning Fire Places or Stoves in Residential Units					0.00	0.00	0.00	0.00	
		Total Percent Reduction Based on Implementation of All Recommended Measures					-9.70%	-15.59%	-12.09%	-9.57%	
		Total Reduced Stationary Source Emissions					**11.96**	**41.52**	**18.02**	**0.05**	
		Total Reduced Mobile Source Emissions					**3,760.17**	**314.06**	**354.27**	**341.24**	
		TOTAL REDUCED EMISSIONS					**3,772.13**	**355.58**	**372.29**	**341.29**	
		SCAQMD Thresholds					**550.00**	**55.00**	**55.00**	**150.00**	
		ProjectAir Quality Impacts Significant?					YES	YES	YES	YES	

WINTERTIME EMISSIONS REDUCTIONS

ESTIMATED WINTERTIME EMISSIONS REDUCTIONS EFFICIENCIES
River Village Emissions With Implementation of Newhall Ranch Specific Plan FEIR Air Quality Mitigation Measures and Without Wood Burning Stoves or Fire Places

Input Fields

LAND USE		Unmitigated Emissions in Pounds per Day CO	VOC	NO_x	PM_{10}
Single Family Residential Uses	Vehicular Sources	633.57	52.80	88.27	59.43
	Area Sources	9.86	39.22	13.67	0.04
Multi-Family Residential Uses	Vehicular Sources	684.75	57.17	95.39	64.23
	Area Sources	7.56	38.82	8.27	0.03
Commercial/Office/Institutional Uses	Vehicular Sources	2,687.35	220.04	383.23	253.67
	Area Sources	4.10	0.80	9.70	0.02
Wood-Burning Fire Place Emissions	Vehicular Sources	0.00	0.00	0.00	0.00
	Area Sources	1,784.09	1,617.41	18.36	244.38
Total Emissions	Vehicular Sources	4,005.67	330.01	566.89	377.33
	Area Sources	1,805.61	1,696.25	50.00	244.47
	Total Non-Reduced Emissions	5,811.28	2,026.26	616.89	621.80

Recommended (Measures already incorporated into Project are marked "No." Yes	No	MEASURES, EFFICIENCIES, AND REDUCTIONS	Emission Reduction Efficiency CO	VOC	NO_x	PM_{10}	Reduced Emissions in Pounds per Day CO	VOC	NO_x	PM_{10}	REASONS FOR REJECTING MITIGATION MEASURES
Stationary Sources											
All Residential Uses											
X		Use solar or low emission water heaters	10.0%	11.0%	9.5%	4.5%	1.74	8.58	2.08	0.00	
X		Use built-in energy-efficient appliances	3.0%	2.5%	3.0%	6.5%	0.52	1.95	0.66	0.00	
X		Provide shade trees to reduce heating/cooling needs	0.0%	0.0%	0.0%	0.5%	0.00	0.00	0.00	0.00	
X		Use energy-efficient and automated controls for air conditioners	0.0%	0.0%	0.0%	0.5%	0.00	0.00	0.00	0.00	
X		Use double-glass paned windows	4.5%	4.5%	4.0%	2.5%	0.78	3.51	0.88	0.00	
	X	Provide ventilation systems for enclosed parking facilities	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	Parking structures are not proposed within the project.
X		Use lighting controls and energy efficient lighting	0.0%	0.0%	0.0%	0.5%	0.00	0.00	0.00	0.00	
X		Use fuel cells in residential subdivisions to produce heat and elec.	1.0%	0.0%	1.5%	7.0%	0.17	0.00	0.33	0.00	
X		Orient buildings to the north	13.5%	14.0%	13.0%	10.5%	2.35	10.93	2.85	0.01	
X		Use light-colored roof materials to reflect heat	1.5%	1.5%	1.5%	1.5%	0.26	1.17	0.33	0.00	
X		Comply with Title 24	13.0%	14.0%	13.0%	7.5%	2.26	10.93	2.85	0.01	
Multi-Family Residential Uses											
	X	Use central water heating systems	8.5%	9.0%	8.0%	4.0%	0.00	0.00	0.00	0.00	Central heating systems are not desired by the average multi-family resident.
Commercial, Office, Institutional Uses											
X		Use solar or low emission water heaters	0.5%	0.5%	0.5%	0.5%	0.02	0.00	0.05	0.00	
X		Use central water heating systems	0.5%	0.5%	0.5%	0.5%	0.02	0.00	0.05	0.00	
X		Provide shade trees to reduce heating/cooling needs	0.5%	0.5%	0.5%	1.0%	0.02	0.00	0.05	0.00	
X		Use energy-efficient and automated controls for air conditioners	1.0%	1.0%	1.0%	1.5%	0.04	0.01	0.10	0.00	
X		Use double-glass paned windows	3.0%	3.5%	3.0%	2.5%	0.12	0.03	0.29	0.00	
X		Use energy-efficient low-sodium parking lights	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Provide ventilation systems for enclosed parking facilities	0.0%	0.0%	0.0%	0.5%	0.00	0.00	0.00	0.00	Parking structures are not proposed within the project.
X		Use lighting controls and energy efficient lighting	7.0%	3.0%	8.5%	19.5%	0.29	0.02	0.82	0.00	
X		Use light-colored roof materials to reflect heat	1.0%	1.0%	1.0%	0.5%	0.04	0.01	0.10	0.00	
X		Comply with Title 24	9.5%	10.0%	9.0%	7.0%	0.39	0.08	0.87	0.00	
X		Orient buildings to the north	12.5%	11.0%	13.5%	17.5%	0.51	0.09	1.31	0.00	
Industrial Uses											
	X	Provide shade trees to reduce heating/cooling needs	0.0%	0.0%	0.0%	0.5%	0.00	0.00	0.00	0.00	No industrial uses are proposed within the project.
	X	Use energy-efficient and automated controls for air conditioners	0.0%	0.0%	0.0%	1.0%	0.00	0.00	0.00	0.00	
	X	Use double-glass paned windows	0.0%	0.0%	0.5%	1.0%	0.00	0.00	0.00	0.00	
	X	Use energy-efficient low-sodium parking lights	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Provide ventilation systems for enclosed parking facilities	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Use lighting controls and energy efficient lighting	0.5%	0.0%	1.0%	2.5%	0.00	0.00	0.00	0.00	
	X	Use light-colored roof materials to reflect heat	0.0%	0.0%	0.0%	0.5%	0.00	0.00	0.00	0.00	
	X	Orient buildings to the north	2.5%	2.0%	3.0%	5.5%	0.00	0.00	0.00	0.00	
	X	Comply with Title 24	0.5%	0.0%	1.0%	3.0%	0.00	0.00	0.00	0.00	
	X	Improved storage and handling of source materials	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Materials substitution (e.g., use water-based paints, life cycle analysis)	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Utilize efficient manufacturing processes	1.5%	0.5%	2.0%	6.0%	0.00	0.00	0.00	0.00	
	X	Resource recovery systems	3.0%	3.5%	3.0%	1.5%	0.00	0.00	0.00	0.00	

Impact Sciences, Inc.
Prepared by R. Mamaghani
2/13/04

Based on SCAQMD
CEQA Air Quality Handbook
Table 11-6

ESTIMATED WINTERTIME EMISSIONS REDUCTIONS EFFICIENCIES
River Village Emissions With Implementation of Newhall Ranch Specific Plan FEIR Air Quality Mitigation Measures and Without Wood Burning Stoves or Fire Places

Recommended (Measures already incorporated into Project are marked "No."			Emission Reduction Efficiency				Reduced Emissions in Pounds per Day				
Yes	No	MEASURES, EFFICIENCIES, AND REDUCTIONS	CO	VOC	NO_x	PM_{10}	CO	VOC	NO_x	PM_{10}	REASONS FOR REJECTING MITIGATION MEASURES
Mobile Sources											
Residential Uses											
	X	Allow satellite telecommunications centers in residential subdivisions	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	Satellite telecommunications centers are superseded by other technology.
	X	Shuttle service from res. subdivisions to commercial core areas	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	Residences are proposed in walking distance to proposed commercial areas.
X		Construct bus passenger benches and shelters	0.2%	0.2%	0.2%	0.2%	2.64	0.22	0.37	0.25	
X		Construct pedestrian facility improvements	0.1%	0.1%	0.1%	0.1%	1.32	0.11	0.18	0.12	
X		Retail services within or adjacent to residential subdivisions	1.3%	1.0%	1.3%	1.3%	17.14	1.10	2.39	1.61	
X		Shuttles to major rail transit centers or multi-modal stations	0.1%	0.1%	0.1%	0.1%	1.32	0.11	0.18	0.12	
X		Contribute to regional transit systems	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
X		Synchronize traffic lights on streets impacted by development	4.0%	4.0%	4.0%	4.0%	52.73	4.40	7.35	4.95	
X		Construct bicycle trails	0.1%	0.1%	0.1%	0.1%	1.32	0.11	0.18	0.12	
Commercial, Office and Institutional Uses											
X		Preferential parking spaces for carpools and vanpools	0.1%	0.1%	0.1%	0.1%	2.69	0.22	0.38	0.25	
X		Implement on-site circulation plan in parking lots	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
X		Provide separate windows for fast-food restaurants	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
X		Provide video-conference facilities	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Set up resident worker training programs to improve job/housing balance	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	Such programs are set up by and at the discretion of future occupants of the commercial uses.
	X	Implement home dispatching system for employees	0.1%	0.0%	0.1%	0.1%	0.00	0.00	0.00	0.00	Such programs are set up by and at the discretion of future occupants of the commercial uses.
	X	Minimize use of fleet vehicles during smog alerts	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	No commercial retail or office use on the site is expected to use fleet vehicles.
	X	Use low emission fleet vehicles	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	No commercial retail or office use on the site is expected to use fleet vehicles.
	X	Reduce employee parking spaces for those business not under Rule 2202	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	There is potential for employees to park in areas designated for retail customers, thereby negating the intent of this measure.
	X	Lunch shuttle service from a worksite to food establishments	0.5%	0.4%	0.5%	0.5%	0.00	0.00	0.00	0.00	Mixed use lots are expected to have food establishments located within walking distance for employees.
	X	Implement compressed work-week schedules	1.0%	0.8%	1.0%	1.0%	0.00	0.00	0.00	0.00	Such programs are set up by and at the discretion of future occupants of the commercial uses.
	X	Trip reduction plan to achieve 1.5 AVR for businesses	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	The requirement to achieve a specific AVR has been ruled unlawful by the federal government.
	X	Utilize satellite offices rather than regular worksite to reduce VMT	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	Such programs are set up by and at the discretion of future occupants of the commercial uses.
	X	Establish a home-based telecommuting program	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	Such programs are set up by and at the discretion of future occupants of the commercial uses.
X		Provide or contribute to child care and after school facilities	0.1%	0.1%	0.1%	0.1%	2.69	0.22	0.38	0.25	
	X	Offer travel incentives such as discounts on purchases for transit riders	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	Such programs are set up by and at the discretion of future occupants of the commercial uses.
X		Provide on-site employee services such as cafeteria, banks, etc.	0.3%	0.2%	0.3%	0.3%	8.06	0.44	1.15	0.76	
	X	Shuttle service from residential core area to the worksite	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	Residential uses are in close proximity and within walking distance to proposed commercial uses.
X		Construct bus passenger benches and shelters	0.1%	0.1%	0.1%	0.1%	2.69	0.22	0.38	0.25	
	X	Pricing structure for single-occupancy employee parking	2.0%	1.5%	2.0%	2.0%	0.00	0.00	0.00	0.00	There is potential for employees to park in areas designated for retail customers, thereby negating the intent of this measure.
X		Residential units within or adjacent to commercial developments	4.0%	3.1%	4.0%	4.0%	107.49	6.82	15.33	10.15	
X		Utilize excess parking as park-n-ride or contribute to park-n-ride	0.1%	0.1%	0.1%	0.1%	2.69	0.22	0.38	0.25	
X		Construct bicycle facility improvements	0.3%	0.2%	0.3%	0.3%	8.06	0.44	1.15	0.76	
X		Construct pedestrian facility improvements	0.2%	0.2%	0.2%	0.2%	5.37	0.44	0.77	0.51	
X		Shuttles to major rail transit centers or multi-modal stations	0.1%	0.1%	0.1%	0.1%	2.69	0.22	0.38	0.25	
X		Contribute to regional transit systems	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
X		Charge visitors to park	2.0%	1.5%	2.0%	2.0%	53.75	3.30	7.66	5.07	
X		Synchronize traffic lights on streets impacted by development	4.0%	4.0%	4.0%	4.0%	107.49	8.80	15.33	10.15	
X		Reschedule truck deliveries and pickups for off-peak hours	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Paid parking at walkup kiosks	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	There is potential for employees to park in areas designated for retail customers, thereby negating the intent of this measure.
X		On-site truck loading zones	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Implement or contribute to public outreach programs	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
X		Provide commuter information areas	0.1%	0.1%	0.1%	0.1%	2.69	0.22	0.38	0.25	Such programs are set up by and at the discretion of future occupants of the commercial uses.

ESTIMATED WINTERTIME EMISSIONS REDUCTIONS EFFICIENCIES
River Village Emissions With Implementation of Newhall Ranch Specific Plan FEIR Air Quality Mitigation Measures and Without Wood Burning Stoves or Fire Places

Recommended (Measures already incorporated into Project are marked "No."			Emission Reduction Efficiency				Reduced Emissions in Pounds per Day				
Yes	No	MEASURES, EFFICIENCIES, AND REDUCTIONS	CO	VOC	NO_x	PM_{10}	CO	VOC	NO_x	PM_{10}	REASONS FOR REJECTING MITIGATION MEASURES
Industrial Uses											
	X	Preferential parking spaces for carpools and vanpools	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	No industrial uses are proposed within the project.
	X	Implement on-site circulation plan in parking lots	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Set up resident worker training programs to improve job/housing balance	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Implement home dispatching system for employees	0.1%	0.0%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Minimize use of fleet vehicles during smog alerts	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Use low emission fleet vehicles	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Provide commuter information areas	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Reduce employee parking spaces for those business not under Rule 2202	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Implement compressed work-week schedules	1.0%	0.8%	1.0%	1.0%	0.00	0.00	0.00	0.00	
	X	Offer loans or other incentives to employees who move locally	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Trip reduction plan to achieve 1.5 AVR for businesses	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Provide or contribute to child care and after school facilities	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Provide on-site employee services such as cafeteria, banks, etc.	0.3%	0.2%	0.3%	0.3%	0.00	0.00	0.00	0.00	
	X	Shuttle service from residential core area to the worksite	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Construct bus passenger benches and shelters	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Pricing structure for single-occupancy employee parking	2.0%	1.5%	2.0%	2.0%	0.00	0.00	0.00	0.00	
	X	Utilize excess parking as park-n-ride or contribute to park-n-ride	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Construct bicycle facility improvements	0.3%	0.2%	0.3%	0.3%	0.00	0.00	0.00	0.00	
	X	Construct pedestrian facility improvements	0.2%	0.2%	0.2%	0.2%	0.00	0.00	0.00	0.00	
	X	Shuttles to major rail transit centers or multi-modal stations	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Contribute to regional transit systems	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Synchronize traffic lights on streets impacted by development	4.0%	4.0%	4.0%	4.0%	0.00	0.00	0.00	0.00	
	X	Reschedule truck deliveries and pickups for off-peak hours	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Lunch shuttle system from worksite to food establishments	0.5%	0.4%	0.5%	0.5%	0.00	0.00	0.00	0.00	
	X	On-site truck loading zones	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Install aerodynamic add-on devices to heavy-duty trucks	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Implement or contribute to public outreach programs	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Reduce ship cruising speeds in the inner harbor	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Use low-emission fuels or electrify airport ground service vehicles	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Engine tuning for marine vessels	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Reduce number of aircraft engines used during idling	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Install monitoring system to control airport shuttles	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Use centralized ground power systems for airport service vehicles	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
		Reduction in Stationary Sources Emissions (Pounds per day)					-9.56	-37.32	-13.62	-0.04	
		Reduction in Mobile Sources Emissions (Pounds per day)					-382.82	-27.61	-54.34	-36.09	
		Total Reduction in Emissions Based on Newhall Ranch FEIR Measures (Pounds per day)					-392.38	-64.93	-67.96	-36.13	
		Percentage Reduced Based on Newhall Ranch FEIR Measures					-6.75%	-3.20%	-11.02%	-5.81%	
		No Wood Burning Fire Places or Stoves in Residential Units					-1,784.09	-1,617.41	-18.36	-244.38	
		Total Percent Reduction Based on Implementation of All Recommended Measures					-37.45%	-83.03%	-13.99%	-45.11%	
		Total Reduced Stationary Source Emissions					**11.96**	**41.52**	**18.02**	**0.05**	
		Total Reduced Mobile Source Emissions					**3,622.85**	**302.40**	**512.55**	**341.24**	
		TOTAL REDUCED EMISSIONS					**3,634.81**	**343.92**	**530.57**	**341.29**	
		SCAQMD Thresholds					**550.00**	**55.00**	**55.00**	**150.00**	
		ProjectAir Quality Impacts Significant?					YES	YES	YES	YES	

Impact Sciences, Inc.
Prepared by R. Mamaghani
2/13/04

Based on SCAQMD
CEQA Air Quality Handbook
Table 11-6

APPENDIX B
Selected ISCST3 Modeling Output

CONC URBAN ELEV FLGPOL NOCALM

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): AREA1 , AREA2 , MMAX4 , FDUST ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PARMAT10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
347626.66	3811654.75	53.60405	(81112224)	347785.38	3811716.25	58.68578	(81112224)
347875.16	3811740.25	63.51659	(81121824)	347964.91	3811764.00	64.42241	(81121824)
347593.97	3811747.75	52.44645	(81112224)	347442.22	3811665.00	43.32656	(81112224)
347759.63	3811812.75	57.42127	(81121824)	347849.38	3811836.75	60.39397	(81121824)
347939.16	3811860.75	58.42091	(81121824)	347573.13	3811847.00	50.80134	(81112224)
347431.22	3811769.75	45.30037	(81112224)	347289.31	3811692.50	38.43340	(81011824)
347733.88	3811909.50	55.86644	(81121824)	347823.63	3811933.50	56.08175	(81121824)
347913.38	3811957.25	54.49918	(81120624)	347541.47	3811940.25	48.21144	(81112224)
347387.72	3811856.75	44.48390	(81112224)	347234.00	3811773.00	37.65595	(81011824)
347708.09	3812006.00	53.05607	(81121824)	347797.88	3812030.00	51.13541	(81121824)
347887.63	3812054.00	50.85184	(81120624)	347520.13	3812039.25	47.15760	(81121824)
347375.28	3811960.50	44.29606	(81112224)	347230.41	3811881.75	38.36937	(81112224)
347682.34	3812102.75	49.38742	(81121824)	347772.09	3812126.75	48.18049	(81120624)
347861.88	3812150.50	46.84777	(81120624)	347489.19	3812133.25	46.29985	(81121824)
347333.97	3812048.75	42.66306	(81112224)	347178.78	3811964.25	37.72142	(81112224)
347656.56	3812199.25	45.24806	(81121824)	347746.34	3812223.25	45.25813	(81120624)
347836.09	3812247.25	42.66294	(81120624)	347467.44	3812232.00	44.83062	(81121824)
347320.28	3812152.00	40.97287	(81112224)	347173.13	3812071.75	38.47504	(81112224)
347630.81	3812296.00	43.03686	(81120624)	347720.56	3812320.00	41.99494	(81120624)
347810.31	3812343.75	38.49388	(81120624)	347437.09	3812326.00	42.60232	(81121824)
347280.72	3812241.00	39.21150	(81121824)	347124.38	3812156.00	37.33471	(81112224)
347605.03	3812392.50	40.65857	(81120624)	347694.78	3812416.50	38.55555	(81120624)
347784.56	3812440.50	34.73270	(81050924)	347415.00	3812424.75	39.79543	(81121824)
347266.00	3812343.75	39.55707	(81121824)	347117.00	3812262.50	36.74624	(81112224)
347579.25	3812489.25	37.97455	(81120624)	347669.03	3812513.25	35.05600	(81120624)
347758.78	3812537.00	31.99891	(81050924)	347385.09	3812519.00	36.88037	(81121824)
347227.81	3812433.50	38.49865	(81121824)	347070.53	3812348.00	35.31704	(81112024)
346913.25	3812262.25	32.54592	(81112224)	346755.97	3812176.75	28.81101	(81011824)
346627.03	3812059.75	24.52489	(81011824)	347553.50	3812585.75	35.10942	(81120624)
347643.25	3812609.75	31.63450	(81120624)	347733.03	3812633.75	29.29911	(81050924)
347362.72	3812617.50	35.53994	(81120624)	347212.19	3812535.75	37.28145	(81121824)
347061.69	3812453.75	33.91905	(81121824)	346911.19	3812371.75	32.69254	(81112224)
346760.69	3812290.00	29.07115	(81112224)	346562.03	3812137.00	24.56384	(81011824)
346465.75	3811995.25	17.07502	(81011824)	346369.47	3811853.50	17.02971	(81011324)
346273.19	3811711.75	17.69606	(81122624)	347527.72	3812682.50	32.15587	(81120624)
347617.50	3812706.50	29.38421	(81050924)	347707.25	3812730.25	26.69842	(81050924)
348296.06	3810865.75	87.60471	(81011824)	348357.63	3810799.00	93.65473	(81011824)
348419.16	3810732.25	101.03284	(81011824)	348480.72	3810665.75	109.90335	(81011824)
348542.25	3810599.00	125.96651	(81120324)	348603.81	3810532.25	149.75354	(81120324)
348665.38	3810465.50	175.10747	(81120324)	348323.94	3810961.75	102.41319	(81112224)

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): MMAX3 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF CO IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
347626.66	3811654.75	808.32837	(81121818)	347785.38	3811716.25	581.99390	(81121818)
347875.16	3811740.25	658.35077	(81102818)	347964.91	3811764.00	814.79193	(81102818)
347593.97	3811747.75	752.07849	(81121818)	347442.22	3811665.00	755.02588	(81122518)
347759.63	3811812.75	475.31009	(81102818)	347849.38	3811836.75	675.83588	(81102818)
347939.16	3811860.75	785.15045	(81102818)	347573.13	3811847.00	666.94531	(81121818)
347431.22	3811769.75	703.05566	(81122518)	347289.31	3811692.50	709.24420	(81102318)
347733.88	3811909.50	513.41754	(81102818)	347823.63	3811933.50	680.87543	(81102818)
347913.38	3811957.25	747.35675	(81092918)	347541.47	3811940.25	586.17554	(81121818)
347387.72	3811856.75	668.15302	(81121818)	347234.00	3811773.00	676.29230	(81102318)
347708.09	3812006.00	541.41748	(81102818)	347797.88	3812030.00	674.89441	(81102818)
347887.63	3812054.00	704.84613	(81092918)	347520.13	3812039.25	485.82324	(81121818)
347375.28	3811960.50	654.39392	(81121818)	347230.41	3811881.75	644.32751	(81122518)
347682.34	3812102.75	559.86823	(81102818)	347772.09	3812126.75	659.74762	(81102818)
347861.88	3812150.50	669.73975	(81123017)	347489.19	3812133.25	407.61212	(81121818)
347333.97	3812048.75	618.07056	(81121818)	347178.78	3811964.25	618.39600	(81122518)
347656.56	3812199.25	568.99744	(81102818)	347746.34	3812223.25	637.34680	(81102818)
347836.09	3812247.25	642.29883	(81123017)	347467.44	3812232.00	334.68301	(81091418)
347320.28	3812152.00	553.43719	(81121818)	347173.13	3812071.75	569.31421	(81122518)
347630.81	3812296.00	569.83221	(81102818)	347720.56	3812320.00	609.58148	(81092918)
347810.31	3812343.75	611.62738	(81123017)	347437.09	3812326.00	346.65747	(81102818)
347280.72	3812241.00	504.58502	(81121818)	347124.38	3812156.00	552.42657	(81121818)
347605.03	3812392.50	563.25238	(81102818)	347694.78	3812416.50	578.54663	(81092918)
347784.56	3812440.50	578.78516	(81123017)	347415.00	3812424.75	379.53522	(81102818)
347266.00	3812343.75	422.07892	(81121818)	347117.00	3812262.50	546.87970	(81121818)
347579.25	3812489.25	550.51605	(81102818)	347669.03	3812513.25	553.79919	(81123017)
347758.78	3812537.00	544.82910	(81123017)	347385.09	3812519.00	394.73944	(81102818)
347227.81	3812433.50	373.31073	(81121818)	347070.53	3812348.00	522.40344	(81121818)
346913.25	3812262.25	519.70337	(81122518)	346755.97	3812176.75	505.07880	(81102318)
346627.03	3812059.75	377.25546	(81010918)	347553.50	3812585.75	532.75238	(81102818)
347643.25	3812609.75	535.48071	(81123017)	347733.03	3812633.75	510.37131	(81123017)
347362.72	3812617.50	415.42752	(81102818)	347212.19	3812535.75	296.40744	(81121818)
347061.69	3812453.75	475.16074	(81121818)	346911.19	3812371.75	477.10440	(81121818)
346760.69	3812290.00	488.39807	(81102318)	346562.03	3812137.00	350.13171	(81102318)
346465.75	3811995.25	488.89725	(81010918)	346369.47	3811853.50	433.68945	(81010918)
346273.19	3811711.75	308.62662	(81011318)	347527.72	3812682.50	511.50516	(81092918)
347617.50	3812706.50	514.45856	(81123017)	347707.25	3812730.25	476.25677	(81123017)
348296.06	3810865.75	1774.54285	(81121818)	348357.63	3810799.00	1942.94189	(81121818)
348419.16	3810732.25	2136.71802	(81121818)	348480.72	3810665.75	2362.74341	(81121818)
348542.25	3810599.00	2638.12231	(81121818)	348603.81	3810532.25	2988.43115	(81121818)
348665.38	3810465.50	3469.03589	(81121818)	348323.94	3810961.75	1384.93542	(81121818)

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): MMAX3 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF CO IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
347626.66	3811654.75	101.04105	(81121824)	347785.38	3811716.25	72.74924	(81121824)
347875.16	3811740.25	94.70206	(81102824)	347964.91	3811764.00	117.05524	(81102824)
347593.97	3811747.75	94.00981	(81121824)	347442.22	3811665.00	94.37823	(81122524)
347759.63	3811812.75	68.79130	(81102824)	347849.38	3811836.75	96.85225	(81102824)
347939.16	3811860.75	112.71533	(81102824)	347573.13	3811847.00	83.36816	(81121824)
347431.22	3811769.75	87.88196	(81122524)	347289.31	3811692.50	88.65553	(81102324)
347733.88	3811909.50	73.82770	(81102824)	347823.63	3811933.50	97.31720	(81102824)
347913.38	3811957.25	107.28569	(81102824)	347541.47	3811940.25	73.27194	(81121824)
347387.72	3811856.75	83.51913	(81121824)	347234.00	3811773.00	84.53654	(81102324)
347708.09	3812006.00	77.47472	(81102824)	347797.88	3812030.00	96.30384	(81102824)
347887.63	3812054.00	101.09027	(81102824)	347520.13	3812039.25	60.72791	(81121824)
347375.28	3811960.50	81.79924	(81121824)	347230.41	3811881.75	80.54094	(81122524)
347682.34	3812102.75	79.82590	(81102824)	347772.09	3812126.75	94.06554	(81102824)
347861.88	3812150.50	94.45025	(81102824)	347489.19	3812133.25	50.95152	(81121824)
347333.97	3812048.75	77.25882	(81121824)	347178.78	3811964.25	77.29950	(81122524)
347656.56	3812199.25	80.91814	(81102824)	347746.34	3812223.25	90.86413	(81102824)
347836.09	3812247.25	87.58324	(81102824)	347467.44	3812232.00	46.73273	(81120316)
347320.28	3812152.00	69.17965	(81121824)	347173.13	3812071.75	71.16428	(81122524)
347630.81	3812296.00	80.89837	(81102824)	347720.56	3812320.00	86.90910	(81102824)
347810.31	3812343.75	80.71815	(81102824)	347437.09	3812326.00	49.73038	(81102824)
347280.72	3812241.00	63.07313	(81121824)	347124.38	3812156.00	69.05332	(81121824)
347605.03	3812392.50	79.89156	(81102824)	347694.78	3812416.50	82.43983	(81102824)
347784.56	3812440.50	75.06859	(81123024)	347415.00	3812424.75	54.11604	(81102824)
347266.00	3812343.75	52.75986	(81121824)	347117.00	3812262.50	68.35996	(81121824)
347579.25	3812489.25	78.06677	(81102824)	347669.03	3812513.25	77.60870	(81102824)
347758.78	3812537.00	71.03560	(81123024)	347385.09	3812519.00	56.07526	(81102824)
347227.81	3812433.50	46.66384	(81121824)	347070.53	3812348.00	65.30043	(81121824)
346913.25	3812262.25	64.96292	(81122524)	346755.97	3812176.75	63.13485	(81102324)
346627.03	3812059.75	64.17401	(81120924)	347553.50	3812585.75	75.57715	(81102824)
347643.25	3812609.75	72.60713	(81102824)	347733.03	3812633.75	66.93452	(81123024)
347362.72	3812617.50	58.80449	(81102824)	347212.19	3812535.75	43.33515	(81120316)
347061.69	3812453.75	59.39509	(81121824)	346911.19	3812371.75	59.63805	(81121824)
346760.69	3812290.00	61.04976	(81102324)	346562.03	3812137.00	58.18017	(81120924)
346465.75	3811995.25	80.14063	(81120924)	346369.47	3811853.50	68.30914	(81120924)
346273.19	3811711.75	38.57833	(81011324)	347527.72	3812682.50	72.56000	(81102824)
347617.50	3812706.50	67.52472	(81102824)	347707.25	3812730.25	62.86865	(81123024)
348296.06	3810865.75	221.81786	(81121824)	348357.63	3810799.00	242.86774	(81121824)
348419.16	3810732.25	267.08975	(81121824)	348480.72	3810665.75	301.87183	(81060216)
348542.25	3810599.00	362.08951	(81060216)	348603.81	3810532.25	449.23532	(81102824)
348665.38	3810465.50	706.92236	(81123024)	348323.94	3810961.75	187.11827	(81102824)

CONC URBAN FLAT FLGPOL NOCALM

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): MMAX3 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF NOX IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
347626.66	3811654.75	640.82043	(81121818)	347785.38	3811716.25	461.38873	(81121818)
347875.16	3811740.25	521.92236	(81102818)	347964.91	3811764.00	645.94458	(81102818)
347593.97	3811747.75	596.22711	(81121818)	347442.22	3811665.00	598.56372	(81122518)
347759.63	3811812.75	376.81274	(81102818)	347849.38	3811836.75	535.78406	(81102818)
347939.16	3811860.75	622.44568	(81102818)	347573.13	3811847.00	528.73584	(81121818)
347431.22	3811769.75	557.36316	(81122518)	347289.31	3811692.50	562.26923	(81102318)
347733.88	3811909.50	407.02325	(81102818)	347823.63	3811933.50	539.77930	(81102818)
347913.38	3811957.25	592.48383	(81092918)	347541.47	3811940.25	464.70380	(81121818)
347387.72	3811856.75	529.69330	(81121818)	347234.00	3811773.00	536.14594	(81102318)
347708.09	3812006.00	429.22086	(81102818)	347797.88	3812030.00	535.03772	(81102818)
347887.63	3812054.00	558.78259	(81092918)	347520.13	3812039.25	385.14728	(81121818)
347375.28	3811960.50	518.78546	(81121818)	347230.41	3811881.75	510.80511	(81122518)
347682.34	3812102.75	443.84811	(81102818)	347772.09	3812126.75	523.02972	(81102818)
347861.88	3812150.50	530.95117	(81123017)	347489.19	3812133.25	323.14365	(81121818)
347333.97	3812048.75	489.98929	(81121818)	347178.78	3811964.25	490.24728	(81122518)
347656.56	3812199.25	451.08548	(81102818)	347746.34	3812223.25	505.27097	(81102818)
347836.09	3812247.25	509.19681	(81123017)	347467.44	3812232.00	265.32745	(81091418)
347320.28	3812152.00	438.74976	(81121818)	347173.13	3812071.75	451.33664	(81122518)
347630.81	3812296.00	451.74728	(81102818)	347720.56	3812320.00	483.25940	(81092918)
347810.31	3812343.75	484.88135	(81123017)	347437.09	3812326.00	274.82050	(81102818)
347280.72	3812241.00	400.02112	(81121818)	347124.38	3812156.00	437.94858	(81121818)
347605.03	3812392.50	446.53094	(81102818)	347694.78	3812416.50	458.65582	(81092918)
347784.56	3812440.50	458.84491	(81123017)	347415.00	3812424.75	300.88507	(81102818)
347266.00	3812343.75	334.61255	(81121818)	347117.00	3812262.50	433.55115	(81121818)
347579.25	3812489.25	436.43396	(81102818)	347669.03	3812513.25	439.03671	(81123017)
347758.78	3812537.00	431.92548	(81123017)	347385.09	3812519.00	312.93854	(81102818)
347227.81	3812433.50	295.95047	(81121818)	347070.53	3812348.00	414.14706	(81121818)
346913.25	3812262.25	412.00650	(81122518)	346755.97	3812176.75	400.41254	(81102318)
346627.03	3812059.75	299.07773	(81010918)	347553.50	3812585.75	422.35141	(81102818)
347643.25	3812609.75	424.51434	(81123017)	347733.03	3812633.75	404.60831	(81123017)
347362.72	3812617.50	329.33948	(81102818)	347212.19	3812535.75	234.98366	(81121818)
347061.69	3812453.75	376.69434	(81121818)	346911.19	3812371.75	378.23520	(81121818)
346760.69	3812290.00	387.18854	(81102318)	346562.03	3812137.00	277.57477	(81102318)
346465.75	3811995.25	387.58426	(81010918)	346369.47	3811853.50	343.81705	(81010918)
346273.19	3811711.75	244.67067	(81011318)	347527.72	3812682.50	405.50720	(81092918)
347617.50	3812706.50	407.84857	(81123017)	347707.25	3812730.25	377.56326	(81123017)
348296.06	3810865.75	1406.80872	(81121818)	348357.63	3810799.00	1540.31079	(81121818)
348419.16	3810732.25	1693.93127	(81121818)	348480.72	3810665.75	1873.11780	(81121818)
348542.25	3810599.00	2091.43066	(81121818)	348603.81	3810532.25	2369.14600	(81121818)
348665.38	3810465.50	2750.15601	(81121818)	348323.94	3810961.75	1097.93860	(81121818)

CONC URBAN ELEV FLGPOL NOCALM

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): AREA1 , AREA2 , MMAX4 , FDUST ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PARMAT10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
350105.56	3811049.50	73.19915	(81052024)	350196.59	3811075.25	56.25045	(81052024)
349714.28	3811043.25	82.48074	(81110324)	349805.31	3811068.75	56.14944	(81100824)
349896.38	3811094.50	60.13795	(81052024)	349987.41	3811120.25	69.52186	(81052024)
350078.44	3811145.75	71.28237	(81052024)	350169.50	3811171.50	64.83031	(81052024)
349869.25	3811190.75	47.29948	(81100824)	349960.28	3811216.50	49.48959	(81052024)
350051.34	3811242.00	58.05243	(81052024)	350142.38	3811267.75	60.90403	(81052024)
349842.13	3811287.00	44.88306	(81040124)	349933.16	3811312.75	40.89391	(81100824)
350024.22	3811338.25	41.57552	(81052024)	350115.25	3811364.00	49.12851	(81052024)
349997.09	3811434.50	35.94719	(81100824)	350088.16	3811460.25	36.21637	(81100824)
349780.19	3812204.50	37.26223	(81110324)	349871.25	3812230.25	34.03411	(81110324)
349753.09	3812300.75	35.29784	(81110324)	349844.13	3812326.50	33.38798	(81110324)
349543.88	3812345.75	33.04190	(81110324)	349634.91	3812371.50	33.29230	(81110324)
349725.97	3812397.00	33.07277	(81110324)	349817.00	3812422.75	32.11946	(81110324)
349425.72	3812416.50	29.36454	(81110324)	349516.75	3812442.00	30.47916	(81110324)
349607.81	3812467.75	30.79165	(81110324)	349698.84	3812493.25	30.80611	(81110324)
349789.91	3812519.00	30.45559	(81110324)	349307.56	3812487.00	24.70627	(81110324)
349398.59	3812512.75	27.11057	(81110324)	349489.66	3812538.25	28.25809	(81110324)
349580.69	3812564.00	28.55874	(81110324)	349671.75	3812589.50	28.62547	(81110324)
349762.78	3812615.25	28.60136	(81110324)	350400.69	3810881.75	39.55521	(81121524)
350477.63	3810936.75	35.56195	(81121524)	350554.56	3810992.00	32.19162	(81121524)
350631.50	3811047.25	29.33380	(81121524)	350708.44	3811102.25	26.88220	(81121524)
350785.38	3811157.50	24.75102	(81121524)	350862.31	3811212.50	22.91977	(81022424)
350939.25	3811267.75	21.52954	(81022424)	351016.19	3811322.75	20.29826	(81022424)
351093.13	3811378.00	19.18467	(81022424)	351170.06	3811433.00	18.18595	(81022424)
351247.00	3811488.25	17.28269	(81022424)	351323.94	3811543.50	16.46073	(81022424)
350342.44	3810963.00	37.67170	(81040824)	350419.38	3811018.25	33.57656	(81040824)
350496.31	3811073.25	30.02429	(81040824)	350573.25	3811128.50	26.96075	(81040824)
350650.19	3811183.50	24.29241	(81040824)	350727.13	3811238.75	22.49215	(81121524)
350804.06	3811293.75	21.10041	(81121524)	350881.00	3811349.00	19.83674	(81121524)
350957.94	3811404.00	18.69555	(81121524)	351034.88	3811459.25	17.65428	(81121524)
351111.81	3811514.50	16.70120	(81121524)	351188.75	3811569.50	15.83048	(81121524)
351265.69	3811624.75	15.03088	(81121524)	350361.13	3811099.50	37.92879	(81091124)
350438.06	3811154.50	34.07727	(81091124)	350515.00	3811209.75	30.60025	(81091124)
350591.94	3811264.75	27.48832	(81091124)	350668.88	3811320.00	25.12169	(81040824)
350745.81	3811375.00	23.35481	(81040824)	350822.75	3811430.25	21.71552	(81040824)
350899.69	3811485.50	20.20191	(81040824)	350976.63	3811540.50	18.80738	(81040824)
351053.56	3811595.75	17.52861	(81040824)	351130.50	3811650.75	16.35262	(81040824)
351207.44	3811706.00	15.27787	(81040824)	350302.88	3811180.75	44.21440	(81052024)
350379.81	3811235.75	35.64573	(81052024)	350456.75	3811291.00	30.45369	(81091124)
350533.69	3811346.25	28.56319	(81091124)	350610.63	3811401.25	26.65526	(81091124)

CONC URBAN FLAT FLGPOL NOCALM

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): MMAX5 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF CO IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
350687.56	3811456.50	1367.22534	(81010817)	350764.50	3811511.50	1223.98291	(81110617)
350841.44	3811566.75	1221.18518	(81110617)	350918.38	3811621.75	1173.43823	(81110617)
350995.31	3811677.00	1092.06323	(81110617)	351072.25	3811732.00	1011.66119	(81111217)
351149.19	3811787.25	969.51654	(81111217)	350244.63	3811262.00	1787.23413	(81110418)
350321.56	3811317.25	1473.44080	(81110418)	350398.50	3811372.25	1225.33618	(81012818)
350475.44	3811427.50	1140.93750	(81010817)	350552.38	3811482.50	1278.15039	(81010817)
350629.31	3811537.75	1326.03552	(81010817)	350706.25	3811592.75	1283.90076	(81010817)
350783.19	3811648.00	1168.36182	(81010817)	350860.13	3811703.00	1008.04376	(81010817)
350937.06	3811758.25	964.06335	(81110617)	351014.00	3811813.50	967.21027	(81110617)
351090.94	3811868.50	940.93762	(81110617)	350263.31	3811398.50	1570.14453	(81110418)
350340.25	3811453.50	1335.80859	(81110418)	350417.19	3811508.75	1073.09863	(81010117)
350494.13	3811563.75	1014.68610	(81012818)	350571.06	3811619.00	930.33380	(81010817)
350648.00	3811674.00	1046.62744	(81010817)	350724.94	3811729.25	1097.80090	(81010817)
350801.88	3811784.50	1082.31091	(81010817)	350878.81	3811839.50	1011.10028	(81010817)
350955.75	3811894.75	901.01947	(81010817)	351032.69	3811949.75	771.10065	(81010817)
350205.06	3811479.75	1393.22119	(81110418)	350282.00	3811534.75	1394.91003	(81110418)
350358.91	3811590.00	1222.03870	(81110418)	350435.88	3811645.00	934.14532	(81010117)
350512.81	3811700.25	901.52496	(81012818)	350589.75	3811755.50	844.75116	(81012818)
350666.69	3811810.50	777.77820	(81010817)	350743.63	3811865.75	875.82159	(81010817)
350820.56	3811920.75	926.59192	(81010817)	350897.50	3811976.00	927.27893	(81010817)
350974.44	3812031.00	884.30731	(81010817)	350146.81	3811561.00	1342.13550	(81010109)
350223.72	3811616.00	1221.21008	(81110418)	350300.66	3811671.25	1247.92896	(81110418)
350377.63	3811726.50	1123.79114	(81110418)	350454.56	3811781.50	884.05243	(81110418)
350531.50	3811836.75	814.29761	(81010117)	350608.44	3811891.75	777.38092	(81012818)
350685.38	3811947.00	709.33527	(81012818)	350762.31	3812002.00	663.15424	(81010817)
350839.25	3812057.25	746.44739	(81010817)	350916.19	3812112.25	794.72375	(81010817)
350319.38	3811807.75	1122.09973	(81110418)	350396.31	3811862.75	1036.90247	(81110418)
350473.25	3811918.00	848.13971	(81110418)	350550.16	3811973.00	724.62286	(81010117)
350627.13	3812028.25	704.53070	(81010117)	350704.06	3812083.25	671.98431	(81012818)
350781.00	3812138.50	601.87750	(81012818)	350857.94	3812193.75	573.77454	(81010817)
350338.03	3811944.00	1013.17438	(81110418)	350414.97	3811999.25	958.56580	(81110418)
350491.91	3812054.25	810.86859	(81110418)	350568.88	3812109.50	636.31366	(81010117)
350645.81	3812164.75	646.41766	(81010117)	350722.75	3812219.75	620.07166	(81012818)
350799.69	3812275.00	583.78870	(81012818)	350279.78	3812025.50	871.63977	(81010109)
350356.72	3812080.50	918.08612	(81110418)	350433.66	3812135.75	887.49609	(81110418)
350510.63	3812190.75	773.26172	(81110418)	350587.56	3812246.00	609.65509	(81110418)
350664.50	3812301.00	584.34564	(81010117)	350741.41	3812356.25	572.76257	(81010117)
350221.53	3812106.75	909.80627	(81010109)	350298.47	3812161.75	797.10107	(81010109)
350375.41	3812217.00	834.58722	(81110418)	350452.38	3812272.00	822.73932	(81110418)
350529.28	3812327.25	735.63708	(81110418)	350606.22	3812382.25	599.58759	(81110418)

CONC URBAN FLAT FLGPOL NOCALM

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): MMAX5 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF CO IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
350687.56	3811456.50	170.90317	(81010824)	350764.50	3811511.50	152.99786	(81110624)
350841.44	3811566.75	152.64815	(81110624)	350918.38	3811621.75	146.67978	(81110624)
350995.31	3811677.00	136.50790	(81110624)	351072.25	3811732.00	126.90885	(81111224)
351149.19	3811787.25	121.76389	(81111224)	350244.63	3811262.00	243.49524	(81010116)
350321.56	3811317.25	185.08791	(81040116)	350398.50	3811372.25	182.03152	(81040116)
350475.44	3811427.50	168.59827	(81040116)	350552.38	3811482.50	159.76880	(81010824)
350629.31	3811537.75	165.75444	(81010824)	350706.25	3811592.75	160.48759	(81010824)
350783.19	3811648.00	146.04523	(81010824)	350860.13	3811703.00	126.00547	(81010824)
350937.06	3811758.25	120.50792	(81110624)	351014.00	3811813.50	120.90128	(81110624)
351090.94	3811868.50	117.61720	(81110624)	350263.31	3811398.50	205.92622	(81010116)
350340.25	3811453.50	166.97607	(81110424)	350417.19	3811508.75	142.98212	(81040116)
350494.13	3811563.75	137.74451	(81040116)	350571.06	3811619.00	127.30431	(81040116)
350648.00	3811674.00	130.82843	(81010824)	350724.94	3811729.25	137.22511	(81010824)
350801.88	3811784.50	135.28886	(81010824)	350878.81	3811839.50	126.38754	(81010824)
350955.75	3811894.75	112.62743	(81010824)	351032.69	3811949.75	96.38758	(81010824)
350205.06	3811479.75	232.80600	(81010116)	350282.00	3811534.75	178.61185	(81010116)
350358.91	3811590.00	152.75484	(81110424)	350435.88	3811645.00	116.76817	(81010124)
350512.81	3811700.25	112.95525	(81040116)	350589.75	3811755.50	107.74803	(81040116)
350666.69	3811810.50	99.83820	(81040116)	350743.63	3811865.75	109.47770	(81010824)
350820.56	3811920.75	115.82399	(81010824)	350897.50	3811976.00	115.90987	(81010824)
350974.44	3812031.00	110.53841	(81010824)	350146.81	3811561.00	225.99571	(81010116)
350223.72	3811616.00	203.88036	(81010116)	350300.66	3811671.25	158.02663	(81010116)
350377.63	3811726.50	140.47389	(81110424)	350454.56	3811781.50	110.50655	(81110424)
350531.50	3811836.75	101.78720	(81010124)	350608.44	3811891.75	97.18406	(81012824)
350685.38	3811947.00	88.68815	(81012824)	350762.31	3812002.00	82.89428	(81010824)
350839.25	3812057.25	93.30592	(81010824)	350916.19	3812112.25	99.34047	(81010824)
350319.38	3811807.75	142.03850	(81010116)	350396.31	3811862.75	129.61281	(81110424)
350473.25	3811918.00	106.01746	(81110424)	350550.16	3811973.00	90.57786	(81010124)
350627.13	3812028.25	88.06634	(81010124)	350704.06	3812083.25	84.00467	(81012824)
350781.00	3812138.50	75.24727	(81012824)	350857.94	3812193.75	71.72182	(81010824)
350338.03	3811944.00	129.38583	(81010116)	350414.97	3811999.25	119.82072	(81110424)
350491.91	3812054.25	101.35857	(81110424)	350568.88	3812109.50	79.53921	(81010124)
350645.81	3812164.75	80.80221	(81010124)	350722.75	3812219.75	77.51096	(81012824)
350799.69	3812275.00	72.97752	(81012824)	350279.78	3812025.50	148.19556	(81010116)
350356.72	3812080.50	119.10957	(81010116)	350433.66	3812135.75	110.93701	(81110424)
350510.63	3812190.75	96.65771	(81110424)	350587.56	3812246.00	76.20689	(81110424)
350664.50	3812301.00	73.04321	(81010124)	350741.41	3812356.25	71.59532	(81010124)
350221.53	3812106.75	150.49057	(81010116)	350298.47	3812161.75	136.00629	(81010116)
350375.41	3812217.00	110.59169	(81010116)	350452.38	3812272.00	102.84241	(81110424)
350529.28	3812327.25	91.95464	(81110424)	350606.22	3812382.25	74.94845	(81110424)

CONC URBAN FLAT FLGPOL NOCALM

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): MMAX5 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF NOX IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
350687.56	3811456.50	1084.20471	(81010817)	350764.50	3811511.50	970.61389	(81110617)
350841.44	3811566.75	968.39539	(81110617)	350918.38	3811621.75	930.53217	(81110617)
350995.31	3811677.00	866.00214	(81110617)	351072.25	3811732.00	802.24359	(81111217)
351149.19	3811787.25	768.82306	(81111217)	350244.63	3811262.00	1417.27014	(81110418)
350321.56	3811317.25	1168.43311	(81110418)	350398.50	3811372.25	971.68707	(81012818)
350475.44	3811427.50	904.75922	(81010817)	350552.38	3811482.50	1013.56860	(81010817)
350629.31	3811537.75	1051.54138	(81010817)	350706.25	3811592.75	1018.12854	(81010817)
350783.19	3811648.00	926.50665	(81010817)	350860.13	3811703.00	799.37500	(81010817)
350937.06	3811758.25	764.49866	(81110617)	351014.00	3811813.50	766.99414	(81110617)
351090.94	3811868.50	746.16010	(81110617)	350263.31	3811398.50	1245.11877	(81110418)
350340.25	3811453.50	1059.29126	(81110418)	350417.19	3811508.75	850.96326	(81010117)
350494.13	3811563.75	804.64233	(81012818)	350571.06	3811619.00	737.75128	(81010817)
350648.00	3811674.00	829.97168	(81010817)	350724.94	3811729.25	870.55212	(81010817)
350801.88	3811784.50	858.26855	(81010817)	350878.81	3811839.50	801.79877	(81010817)
350955.75	3811894.75	714.50513	(81010817)	351032.69	3811949.75	611.47998	(81010817)
350205.06	3811479.75	1104.81934	(81110418)	350282.00	3811534.75	1106.15857	(81110418)
350358.91	3811590.00	969.07227	(81110418)	350435.88	3811645.00	740.77380	(81010117)
350512.81	3811700.25	714.90594	(81012818)	350589.75	3811755.50	669.88458	(81012818)
350666.69	3811810.50	616.77527	(81010817)	350743.63	3811865.75	694.52332	(81010817)
350820.56	3811920.75	734.78400	(81010817)	350897.50	3811976.00	735.32880	(81010817)
350974.44	3812031.00	701.25244	(81010817)	350146.81	3811561.00	1064.30859	(81010109)
350223.72	3811616.00	968.41510	(81110418)	350300.66	3811671.25	989.60309	(81110418)
350377.63	3811726.50	891.16223	(81110418)	350454.56	3811781.50	701.05029	(81110418)
350531.50	3811836.75	645.73499	(81010117)	350608.44	3811891.75	616.46021	(81012818)
350685.38	3811947.00	562.50031	(81012818)	350762.31	3812002.00	525.87891	(81010817)
350839.25	3812057.25	591.93005	(81010817)	350916.19	3812112.25	630.21301	(81010817)
350319.38	3811807.75	889.82098	(81110418)	350396.31	3811862.75	822.25989	(81110418)
350473.25	3811918.00	672.57166	(81110418)	350550.16	3811973.00	574.62323	(81010117)
350627.13	3812028.25	558.69025	(81010117)	350704.06	3812083.25	532.88110	(81012818)
350781.00	3812138.50	477.28665	(81012818)	350857.94	3812193.75	455.00110	(81010817)
350338.03	3811944.00	803.44354	(81110418)	350414.97	3811999.25	760.13916	(81110418)
350491.91	3812054.25	643.01581	(81110418)	350568.88	3812109.50	504.59442	(81010117)
350645.81	3812164.75	512.60681	(81010117)	350722.75	3812219.75	491.71451	(81012818)
350799.69	3812275.00	462.94229	(81012818)	350279.78	3812025.50	691.20715	(81010109)
350356.72	3812080.50	728.03888	(81110418)	350433.66	3812135.75	703.78113	(81110418)
350510.63	3812190.75	613.19373	(81110418)	350587.56	3812246.00	483.45425	(81110418)
350664.50	3812301.00	463.38394	(81010117)	350741.41	3812356.25	454.19861	(81010117)
350221.53	3812106.75	721.47302	(81010109)	350298.47	3812161.75	632.09821	(81010109)
350375.41	3812217.00	661.82458	(81110418)	350452.38	3812272.00	652.42926	(81110418)
350529.28	3812327.25	583.35748	(81110418)	350606.22	3812382.25	475.47076	(81110418)

CONC URBAN ELEV FLGPOL NOCALM

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): AREA1 , AREA2 , MMAX4 , FDUST ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PARMAT10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
351137.25	3812921.25	16.14313	(81052024)	351221.50	3812967.00	16.34660	(81052024)
351305.72	3813012.50	16.35024	(81052024)	351389.97	3813058.00	16.16867	(81052024)
351474.19	3813103.75	15.81066	(81052024)	351558.44	3813149.25	15.29916	(81052024)
351642.69	3813194.75	14.64612	(81052024)	351726.91	3813240.25	13.88247	(81052024)
351811.16	3813286.00	13.02132	(81052024)	350588.44	3812731.50	13.67566	(81100824)
350668.47	3812781.50	13.54616	(81100824)	350752.72	3812827.00	13.10821	(81100824)
350836.94	3812872.50	12.41710	(81100824)	350921.19	3812918.25	12.30259	(81052024)
351005.44	3812963.75	13.22211	(81052024)	351089.66	3813009.25	13.95037	(81052024)
351173.91	3813054.75	14.47810	(81052024)	351258.13	3813100.50	14.82160	(81052024)
351342.38	3813146.00	14.99209	(81052024)	351426.63	3813191.50	15.00355	(81052024)
351510.88	3813237.25	14.86106	(81052024)	351595.09	3813282.75	14.57701	(81052024)
351679.34	3813328.25	14.16154	(81052024)	351763.56	3813373.75	13.62739	(81052024)
350563.97	3812833.75	12.24389	(81100824)	350705.13	3812915.00	12.59879	(81100824)
350789.38	3812960.50	12.32517	(81100824)	350873.63	3813006.00	11.78564	(81100824)
350957.84	3813051.75	11.08601	(81100824)	351042.09	3813097.25	11.61481	(81052024)
351126.31	3813142.75	12.36989	(81052024)	351210.56	3813188.50	12.95627	(81052024)
351294.81	3813234.00	13.38850	(81052024)	351379.03	3813279.50	13.67218	(81052024)
351463.28	3813325.00	13.81575	(81052024)	351547.50	3813370.75	13.83074	(81052024)
351631.75	3813416.25	13.72072	(81052024)	351716.00	3813461.75	13.49699	(81052024)
350512.84	3812919.50	11.41281	(81091924)	350657.56	3813003.00	11.50303	(81100824)
350741.78	3813048.50	11.71999	(81100824)	350826.03	3813094.00	11.58576	(81100824)
350910.25	3813139.75	11.18084	(81100824)	350994.50	3813185.25	10.60059	(81100824)
351078.75	3813230.75	10.21298	(81052024)	351162.97	3813276.25	10.96671	(81052024)
351247.22	3813322.00	11.58457	(81052024)	351331.47	3813367.50	12.06911	(81052024)
351415.69	3813413.00	12.42342	(81052024)	351499.94	3813458.75	12.65887	(81052024)
351584.16	3813504.25	12.78368	(81052024)	351668.41	3813549.75	12.80352	(81052024)
350461.69	3813005.25	11.78056	(81012824)	350609.97	3813090.75	10.78012	(81091924)
350694.19	3813136.50	10.68447	(81091924)	350778.44	3813182.00	10.90687	(81100824)
350862.69	3813227.50	10.89114	(81100824)	350946.91	3813273.25	10.60623	(81100824)
351031.16	3813318.75	10.13522	(81100824)	351115.41	3813364.25	9.55598	(81100824)
351199.63	3813409.75	9.73474	(81052024)	351283.88	3813455.50	10.35720	(81052024)
351368.13	3813501.00	10.87235	(81052024)	351452.34	3813546.50	11.27095	(81052024)
351536.59	3813592.25	11.56583	(81052024)	351620.84	3813637.75	11.76579	(81052024)
350410.56	3813091.00	11.96780	(81102424)	350562.38	3813178.75	10.56862	(81012824)
350646.63	3813224.50	10.08630	(81091924)	350730.88	3813270.00	10.13109	(81091924)
350815.09	3813315.50	10.15265	(81100824)	350899.34	3813361.00	10.23567	(81100824)
350983.59	3813406.75	10.05719	(81100824)	351067.81	3813452.25	9.68692	(81100824)
351152.06	3813497.75	9.19163	(81100824)	351236.28	3813543.50	8.64065	(81052024)
351320.53	3813589.00	9.26912	(81052024)	351404.78	3813634.50	9.79267	(81052024)
351489.00	3813680.00	10.21904	(81052024)	351573.25	3813725.75	10.55204	(81052024)

CONC URBAN FLAT FLGPOL NOCALM

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): MMAX4 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF CO IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
351137.25	3812921.25	423.62610	(81010817)	351221.50	3812967.00	373.24118	(81010817)
351305.72	3813012.50	342.15247	(81110617)	351389.97	3813058.00	367.84460	(81110617)
351474.19	3813103.75	384.63330	(81110617)	351558.44	3813149.25	392.42184	(81110617)
351642.69	3813194.75	391.28409	(81110617)	351726.91	3813240.25	381.95496	(81110617)
351811.16	3813286.00	365.64822	(81110617)	350588.44	3812731.50	347.02457	(81012818)
350668.47	3812781.50	341.88116	(81010817)	350752.72	3812827.00	397.03619	(81010817)
350836.94	3812872.50	438.14774	(81010817)	350921.19	3812918.25	461.65338	(81010817)
351005.44	3812963.75	466.31885	(81010817)	351089.66	3813009.25	453.05017	(81010817)
351173.91	3813054.75	424.64697	(81010817)	351258.13	3813100.50	385.15796	(81010817)
351342.38	3813146.00	338.87552	(81010817)	351426.63	3813191.50	315.96207	(81110617)
351510.88	3813237.25	339.52402	(81110617)	351595.09	3813282.75	355.82449	(81110617)
351679.34	3813328.25	364.29514	(81110617)	351763.56	3813373.75	364.96829	(81110617)
350563.97	3812833.75	373.37595	(81012818)	350705.13	3812915.00	291.54099	(81012818)
350789.38	3812960.50	343.49207	(81010817)	350873.63	3813006.00	388.37595	(81010817)
350957.84	3813051.75	419.64648	(81010817)	351042.09	3813097.25	434.91269	(81010817)
351126.31	3813142.75	433.75156	(81010817)	351210.56	3813188.50	417.53217	(81010817)
351294.81	3813234.00	388.95920	(81010817)	351379.03	3813279.50	351.58255	(81010817)
351463.28	3813325.00	309.02472	(81010817)	351547.50	3813370.75	292.92621	(81110617)
351631.75	3813416.25	314.86697	(81110617)	351716.00	3813461.75	330.52850	(81110617)
350512.84	3812919.50	380.39960	(81012818)	350657.56	3813003.00	336.30090	(81012818)
350741.78	3813048.50	290.92624	(81012818)	350826.03	3813094.00	295.19458	(81010817)
350910.25	3813139.75	341.16617	(81010817)	350994.50	3813185.25	377.34412	(81010817)
351078.75	3813230.75	400.51984	(81010817)	351162.97	3813276.25	409.29248	(81010817)
351247.22	3813322.00	403.82745	(81010817)	351331.47	3813367.50	385.78046	(81010817)
351415.69	3813413.00	357.52222	(81010817)	351499.94	3813458.75	322.30270	(81010817)
351584.16	3813504.25	283.12585	(81010817)	351668.41	3813549.75	272.76169	(81110617)
350461.69	3813005.25	370.49197	(81010117)	350609.97	3813090.75	352.05743	(81012818)
350694.19	3813136.50	327.22067	(81012818)	350778.44	3813182.00	288.67938	(81012818)
350862.69	3813227.50	252.34503	(81010817)	350946.91	3813273.25	297.64441	(81010817)
351031.16	3813318.75	336.25220	(81010817)	351115.41	3813364.25	364.87125	(81010817)
351199.63	3813409.75	381.35046	(81010817)	351283.88	3813455.50	384.98792	(81010817)
351368.13	3813501.00	376.41788	(81010817)	351452.34	3813546.50	357.16141	(81010817)
351536.59	3813592.25	329.66708	(81010817)	351620.84	3813637.75	296.51086	(81010817)
350410.56	3813091.00	343.21326	(81010117)	350562.38	3813178.75	342.06357	(81010117)
350646.63	3813224.50	335.93979	(81012818)	350730.88	3813270.00	317.30060	(81012818)
350815.09	3813315.50	285.03610	(81012818)	350899.34	3813361.00	244.31369	(81012818)
350983.59	3813406.75	258.16174	(81010817)	351067.81	3813452.25	297.40900	(81010817)
351152.06	3813497.75	329.31052	(81010817)	351236.28	3813543.50	351.38632	(81010817)
351320.53	3813589.00	362.47391	(81010817)	351404.78	3813634.50	362.21384	(81010817)
351489.00	3813680.00	351.34836	(81010817)	351573.25	3813725.75	331.52121	(81010817)

CONC URBAN FLAT FLGPOL NOCALM

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): MMAX4 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF CO IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
351137.25	3812921.25	52.95326	(81010824)	351221.50	3812967.00	46.65515	(81010824)
351305.72	3813012.50	42.76906	(81110624)	351389.97	3813058.00	45.98058	(81110624)
351474.19	3813103.75	48.07916	(81110624)	351558.44	3813149.25	49.05273	(81110624)
351642.69	3813194.75	48.91051	(81110624)	351726.91	3813240.25	47.74437	(81110624)
351811.16	3813286.00	45.70603	(81110624)	350588.44	3812731.50	43.37958	(81012824)
350668.47	3812781.50	42.73515	(81010824)	350752.72	3812827.00	49.62952	(81010824)
350836.94	3812872.50	54.76847	(81010824)	350921.19	3812918.25	57.70667	(81010824)
351005.44	3812963.75	58.28986	(81010824)	351089.66	3813009.25	56.63127	(81010824)
351173.91	3813054.75	53.08087	(81010824)	351258.13	3813100.50	48.14474	(81010824)
351342.38	3813146.00	42.35944	(81010824)	351426.63	3813191.50	39.49526	(81110624)
351510.88	3813237.25	42.44050	(81110624)	351595.09	3813282.75	44.47806	(81110624)
351679.34	3813328.25	45.53689	(81110624)	351763.56	3813373.75	45.62104	(81110624)
350563.97	3812833.75	46.67206	(81012824)	350705.13	3812915.00	36.44388	(81012824)
350789.38	3812960.50	42.93651	(81010824)	350873.63	3813006.00	48.54699	(81010824)
350957.84	3813051.75	52.45581	(81010824)	351042.09	3813097.25	54.36409	(81010824)
351126.31	3813142.75	54.21894	(81010824)	351210.56	3813188.50	52.19152	(81010824)
351294.81	3813234.00	48.61990	(81010824)	351379.03	3813279.50	43.94782	(81010824)
351463.28	3813325.00	38.62809	(81010824)	351547.50	3813370.75	36.61578	(81110624)
351631.75	3813416.25	39.35837	(81110624)	351716.00	3813461.75	41.31606	(81110624)
350512.84	3812919.50	47.54995	(81012824)	350657.56	3813003.00	42.03761	(81012824)
350741.78	3813048.50	36.36619	(81012824)	350826.03	3813094.00	36.89932	(81010824)
350910.25	3813139.75	42.64577	(81010824)	350994.50	3813185.25	47.16801	(81010824)
351078.75	3813230.75	50.06498	(81010824)	351162.97	3813276.25	51.16156	(81010824)
351247.22	3813322.00	50.47843	(81010824)	351331.47	3813367.50	48.22256	(81010824)
351415.69	3813413.00	44.69028	(81010824)	351499.94	3813458.75	40.28784	(81010824)
351584.16	3813504.25	35.39073	(81010824)	351668.41	3813549.75	34.09521	(81110624)
350461.69	3813005.25	46.31150	(81010124)	350609.97	3813090.75	44.00718	(81012824)
350694.19	3813136.50	40.90258	(81012824)	350778.44	3813182.00	36.08492	(81012824)
350862.69	3813227.50	31.54313	(81010824)	350946.91	3813273.25	37.20555	(81010824)
351031.16	3813318.75	42.03152	(81010824)	351115.41	3813364.25	45.60891	(81010824)
351199.63	3813409.75	47.66881	(81010824)	351283.88	3813455.50	48.12349	(81010824)
351368.13	3813501.00	47.05223	(81010824)	351452.34	3813546.50	44.64518	(81010824)
351536.59	3813592.25	41.20839	(81010824)	351620.84	3813637.75	37.06386	(81010824)
350410.56	3813091.00	42.90166	(81010124)	350562.38	3813178.75	42.75795	(81010124)
350646.63	3813224.50	41.99247	(81012824)	350730.88	3813270.00	39.66257	(81012824)
350815.09	3813315.50	35.62951	(81012824)	350899.34	3813361.00	30.53921	(81012824)
350983.59	3813406.75	32.27022	(81010824)	351067.81	3813452.25	37.17612	(81010824)
351152.06	3813497.75	41.16381	(81010824)	351236.28	3813543.50	43.92329	(81010824)
351320.53	3813589.00	45.30924	(81010824)	351404.78	3813634.50	45.27673	(81010824)
351489.00	3813680.00	43.91854	(81010824)	351573.25	3813725.75	41.44015	(81010824)

CONC URBAN FLAT FLGPOL NOCALM

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): MMAX4 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF NOX IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
351137.25	3812921.25	335.88861	(81010817)	351221.50	3812967.00	295.93896	(81010817)
351305.72	3813012.50	271.28906	(81110617)	351389.97	3813058.00	291.66010	(81110617)
351474.19	3813103.75	304.97165	(81110617)	351558.44	3813149.25	311.14709	(81110617)
351642.69	3813194.75	310.24503	(81110617)	351726.91	3813240.25	302.84802	(81110617)
351811.16	3813286.00	289.91861	(81110617)	350588.44	3812731.50	275.15210	(81012818)
350668.47	3812781.50	271.07394	(81010817)	350752.72	3812827.00	314.80579	(81010817)
350836.94	3812872.50	347.40268	(81010817)	350921.19	3812918.25	366.04007	(81010817)
351005.44	3812963.75	369.73926	(81010817)	351089.66	3813009.25	359.21869	(81010817)
351173.91	3813054.75	336.69806	(81010817)	351258.13	3813100.50	305.38766	(81010817)
351342.38	3813146.00	268.69080	(81010817)	351426.63	3813191.50	250.52296	(81110617)
351510.88	3813237.25	269.20499	(81110617)	351595.09	3813282.75	282.12946	(81110617)
351679.34	3813328.25	288.84573	(81110617)	351763.56	3813373.75	289.37949	(81110617)
350563.97	3812833.75	296.04584	(81012818)	350705.13	3812915.00	231.15974	(81012818)
350789.38	3812960.50	272.35123	(81010817)	350873.63	3813006.00	307.93915	(81010817)
350957.84	3813051.75	332.73325	(81010817)	351042.09	3813097.25	344.83768	(81010817)
351126.31	3813142.75	343.91702	(81010817)	351210.56	3813188.50	331.05682	(81010817)
351294.81	3813234.00	308.40164	(81010817)	351379.03	3813279.50	278.76608	(81010817)
351463.28	3813325.00	245.02242	(81010817)	351547.50	3813370.75	232.25809	(81110617)
351631.75	3813416.25	249.65468	(81110617)	351716.00	3813461.75	262.07254	(81110617)
350512.84	3812919.50	301.61481	(81012818)	350657.56	3813003.00	266.64941	(81012818)
350741.78	3813048.50	230.67233	(81012818)	350826.03	3813094.00	234.05666	(81010817)
350910.25	3813139.75	270.50702	(81010817)	350994.50	3813185.25	299.19214	(81010817)
351078.75	3813230.75	317.56793	(81010817)	351162.97	3813276.25	324.52365	(81010817)
351247.22	3813322.00	320.19052	(81010817)	351331.47	3813367.50	305.88123	(81010817)
351415.69	3813413.00	283.47556	(81010817)	351499.94	3813458.75	255.55038	(81010817)
351584.16	3813504.25	224.48749	(81010817)	351668.41	3813549.75	216.26985	(81110617)
350461.69	3813005.25	293.75916	(81010117)	350609.97	3813090.75	279.14261	(81012818)
350694.19	3813136.50	259.44980	(81012818)	350778.44	3813182.00	228.89082	(81012818)
350862.69	3813227.50	200.08170	(81010817)	350946.91	3813273.25	235.99908	(81010817)
351031.16	3813318.75	266.61081	(81010817)	351115.41	3813364.25	289.30255	(81010817)
351199.63	3813409.75	302.36874	(81010817)	351283.88	3813455.50	305.25284	(81010817)
351368.13	3813501.00	298.45773	(81010817)	351452.34	3813546.50	283.18951	(81010817)
351536.59	3813592.25	261.38953	(81010817)	351620.84	3813637.75	235.10031	(81010817)
350410.56	3813091.00	272.13016	(81010117)	350562.38	3813178.75	271.21857	(81010117)
350646.63	3813224.50	266.36310	(81012818)	350730.88	3813270.00	251.58429	(81012818)
350815.09	3813315.50	226.00211	(81012818)	350899.34	3813361.00	193.71373	(81012818)
350983.59	3813406.75	204.69371	(81010817)	351067.81	3813452.25	235.81244	(81010817)
351152.06	3813497.75	261.10681	(81010817)	351236.28	3813543.50	278.61047	(81010817)
351320.53	3813589.00	287.40170	(81010817)	351404.78	3813634.50	287.19550	(81010817)
351489.00	3813680.00	278.58038	(81010817)	351573.25	3813725.75	262.85965	(81010817)

Construction Health Risk Assessment
for
Landmark Village

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May 2006

SUMMARY

This assessment evaluates the health impacts due to diesel exhaust particulate matter (DPM) emitted by diesel trucks and equipment associated with construction of the Landmark Village project (proposed project). The proposed project site is bounded by State Route 126 (SR-126) on the northern boundary and by the Santa Clara River on the southern boundary. The proposed project will consist of 308 single-family residential units; 685 condominiums; 451 apartments; 337,600 square feet (sq. ft.) of retail area; 695,400 sq. ft. of office space; 70,000 sq. ft. of school buildings; and 16.1 acres of park area. Total development is anticipated to occur over a 251-week period. Also, a utility corridor extending approximately 39,800 feet in length and 35 feet wide was considered as a part of the proposed project. The utility corridor includes the infrastructure components for potable water, sewer, reclaimed water, and natural gas. The sources of DPM include on-road trucks and diesel-powered construction equipment like front-end loaders, bulldozers, and scrappers.

The South Coast Air Quality Management District (SCAQMD) recommends the following significance criteria for health risk assessments:

- Criterion 1: a greater than 10 in 1 million (10×10^{-6}) lifetime probability of contracting cancer; and
- Criterion 2: a health hazard index of 1.0 for evaluating the non-carcinogenic effects of toxic air contaminants.

Using SCAQMD's thresholds of significance, the health risk assessment finds that the maximum anticipated cancer risks associated with the construction of the proposed project are 1.2, 1.7, and 0.3 in 1 million at workplace, residential, and sensitive receptors, respectively. The assessment also finds that the chronic hazard indices for non-cancer health impacts are well below 1.0 at the maximally exposed receptors under this construction scenario. The health impacts associated with the construction of the proposed project are below the significance criteria and are, therefore, less than significant.

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1.0 GENERAL

On August 27, 1998, the California Air Resources Board (CARB) designated particulate emissions from diesel-fueled engines or DPM as a toxic air contaminant. The proposed construction of the proposed project will involve diesel trucks and diesel-powered mobile equipment. This health risk assessment evaluates the risk from DPM to determine if it is significant under CEQA.

The SCAQMD *California Environmental Quality Act (CEQA) Air Quality Handbook*[1] recommends a lifetime probability of contracting cancer greater than 10 in 1 million (10×10^{-6}) as a significance threshold for evaluating health impacts from toxic air contaminants. The *CEQA Air Quality Handbook* further identifies a health hazard index of 1.0 as an additional significance threshold for evaluating non-carcinogenic effects of toxic air contaminants.

1.1 Project Description

The proposed development at Landmark Village is within the South Coast Air Basin, which is under the jurisdiction of SCAQMD. The proposed project consists of 308 single-family residential units; 685 condominiums; 451 apartments; 337,600 sq. ft. of retail area; 695,400 sq. ft. of office space; 70,000 sq. ft. of school buildings; and 16.1 acres of park area. The construction of the utility corridor that provides the infrastructure components such as potable water, reclaimed water, sewer, and natural gas is also considered part of the proposed project. Total development is anticipated to occur over a 251-week period. The construction schedule is mainly divided into three phases: grading, asphalt paving, and building construction. Grading and asphalt paving are anticipated to occur during the first 75 weeks, and the building construction phase is anticipated to occur from week 76 to week 251. The construction of the utility corridor will occur over 52-week period starting in week one along with grading and asphalt paving. The construction of the utility corridor is also divided in three different phases: grading, grading and water tanks construction, and grading and water tanks welding and coating. These three phases are anticipated to occur over the first 30 weeks, week 31 to week 48, and week 49 to week 52, respectively. Currently, the project site is either used for agricultural crop production or is vacant, and no demolition is required. The project site is bounded by SR-126 on the northern boundary and by the Santa Clara River on the southern boundary. Two soil borrow areas are proposed in the vicinity of the northern and southern boundary of the project site.

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1 *CEQA Air Quality Handbook*, South Coast Air Quality Management District, April 1993.

2.0 SOURCE DESCRIPTION

Figure 1, Conceptual Site Plan, shows the site plan for the proposed project. For this analysis, the whole site is modeled as an area source consisting of DPM emissions from truck and construction equipment.

The on- and off-road vehicles and equipment that emit DPM and are associated with construction of the proposed project include:

- Diesel-fueled construction equipment (e.g., scrapers, tractors, backhoes, rollers);
- Heavy-duty diesel trucks (e.g., haul trucks and on-site water trucks)

These sources will travel through the proposed development area depending on the construction phases which include grading, building construction, application of architectural coatings, and asphalt paving. For modeling purposes, the whole site is divided into five parts. Every part is considered as a separate area source, and it is assumed that the diesel trucks and construction equipment will operate throughout the whole area. Similarly, the utility corridor is divided into 10 different parts to facilitate modeling. Also, every part of the utility corridor is considered as a separate area source, and it is assumed that the diesel trucks and construction equipment will operate throughout the utility corridor. **Table 1**, below, provides information about the area sources.

Table 1
Source Description

Area Source ID	No. of Vertices	Area in sq. m.
I	20	218,351.3
II	13	222,649.6
III	20	204,169.9
IV	13	286,594.2
V	18	286,522.8
UCHRA1	12	278,253.3
UCHRA2	20	289,227.3
UCHRA3	10	455,337.6
UCHRA4	11	95,374.2
UCHRA5	4	173,353.3
UCHRA6	4	311,792.2
UCHRA7	4	216,796.2
UCHRA8	8	89,050.6
UCHRA9	9	82,513.9
UCHRA10	10	74,962.8

Source: Impact Sciences, Inc., 2006.

In the site-grading phase, the trucks will haul earth material from the borrow site and will dump their loads on site. The typical on-site round-trip travel distance was estimated to be 4 miles. The typical workday was estimated to be 10 hours (i.e., from 8 AM to 6 PM).

3.0 CALCULATION OF EMISSIONS

Unmitigated construction emissions were estimated based on the information provided in the *Software Users' Guide: URBEMIS2002 for Windows with Enhanced Construction Module* (April 2005)[2] (Guide) (the assumptions are available for review in **Appendix 4.9** of the EIR). URBEMIS2002 is a land-use and transportation-based air quality model developed in cooperation with the CARB and designed to estimate air emissions from new development projects, including construction emissions. The model is designed to calculate emissions for specific air basins; for this project, the model was run using model inputs designed specifically for the South Coast Air Basin.

The information regarding different construction activities (site clearing, grading, asphalt paving, and application of architectural coatings) was provided by the project applicant. Also, the applicant provided details about the types and numbers of construction equipment that would be on the site during grading operations, the acreages graded, the amount of material that would be graded, and the timing and duration of the grading and construction operations. Additional details regarding these calculations are provided in **Section 4.9, Air Quality**, in the Landmark Village Draft Environmental Impact Report (DEIR). The number of working days in a particular phase was calculated assuming 5 working days each week, with a 10-hour working day (i.e., 8 AM to 6 PM). DPM emissions for each phase were calculated by multiplying total working days by the worst-case daily emissions. Finally, DPM emissions from all the phases were added to get total DPM emissions over the entire construction period. For the purpose of this assessment, the overall emissions during the six-year construction period were averaged to generate one annual average emission rate to be used as an input for the dispersion modeling. A similar approach is used to calculate the emissions from the construction of the utility corridor. DPM emissions from all the phases associated with the utility corridor construction were added to get the annual DPM emissions.

The estimated emissions for each phase and for the overall project are shown in **Table 2, Estimated Diesel Particulate Matter Emissions from Construction**. As shown in **Table 2**, the emissions vary from year to year depending on the area of development and the phase of the construction activity.

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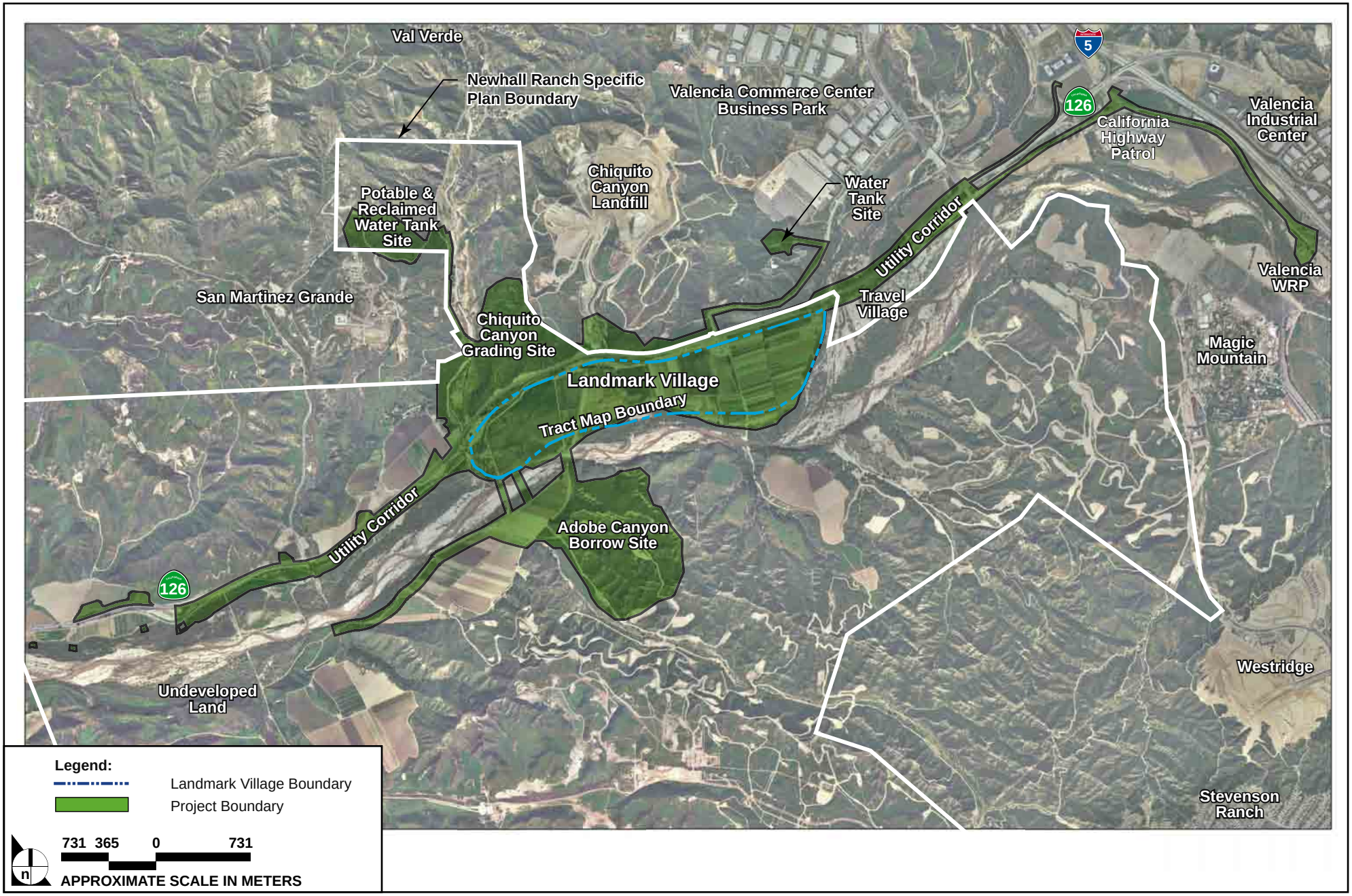
2 Jones and Stokes. *Software Users' Guide: URBEMIS2002 for Windows with Enhanced Construction Module* (Sacramento, California: Jones and Stokes, April 2005).



SOURCE: Impact Sciences, Inc. – May 2006

FIGURE **1**

Conceptual Site Plan

Table 2
Estimated Diesel Particulate Matter Emissions
from Construction Operations

Phase	Source	Schedule (weeks)	Duration (weeks)	Emissions	
				On Worst-Day (lbs/day)	Per Phase (lbs)
A	On-Road Diesel Exhaust	1 to 44	44	2.13	468.60
	Off-Road Diesel Exhaust			36.17	7,957.40
B	On-Road Diesel Exhaust	45 to 48	4	2.13	53.25
	Off-Road Diesel Exhaust			36.25	906.25
C	On-Road Diesel Exhaust	49 to 58	10	0	0
	Off-Road Diesel Exhaust			6.36	318.00
D	On-Road Diesel Exhaust	59 to 62	4	0.28	5.60
	Off-Road Diesel Exhaust			10.90	218.00
E	On-Road Diesel Exhaust	63 to 75	13	0.28	18.20
	Off-Road Diesel Exhaust			4.67	303.55
F	On-Road Diesel Exhaust	76 to 127	52	0	0
	Off-Road Diesel Exhaust			89.66	23,311.60
G	On-Road Diesel Exhaust	128	1	0	0
	Off-Road Diesel Exhaust			94.45	472.25
H	On-Road Diesel Exhaust	129 to 179	51	0	0
	Off-Road Diesel Exhaust			74.15	18,908.25
I	On-Road Diesel Exhaust	180 to 214	45	0	0
	Off-Road Diesel Exhaust			65.77	14,798.25
J	On-Road Diesel Exhaust	215 to 232	18	0	0
	Off-Road Diesel Exhaust			61.01	5,490.90
K	On-Road Diesel Exhaust	233 to 238	6	0	0
	Off-Road Diesel Exhaust			40.14	1,204.20
L	On-Road Diesel Exhaust	239 to 240	2	0	0
	Off-Road Diesel Exhaust			31.89	318.90
M	On-Road Diesel Exhaust	241 to 251	11	0	0
	Off-Road Diesel Exhaust			23.64	1,300.20
Total					76,053.40
UC1	On-Road Diesel Exhaust	1 to 30	30	0.02	0.60
	Off-Road Diesel Exhaust			2.18	65.40
UC2	On-Road Diesel Exhaust	31 to 48	18	0.02	0.36
	Off-Road Diesel Exhaust			2.80	50.40
UC3	On-Road Diesel Exhaust	49 to 52	4	0.02	0.08
	Off-Road Diesel Exhaust			5.94	23.76
Total					140.60

Source: Impact Sciences, Inc., 2006.

4.0 MODELING METHODOLOGY

4.1 Modeling Approach

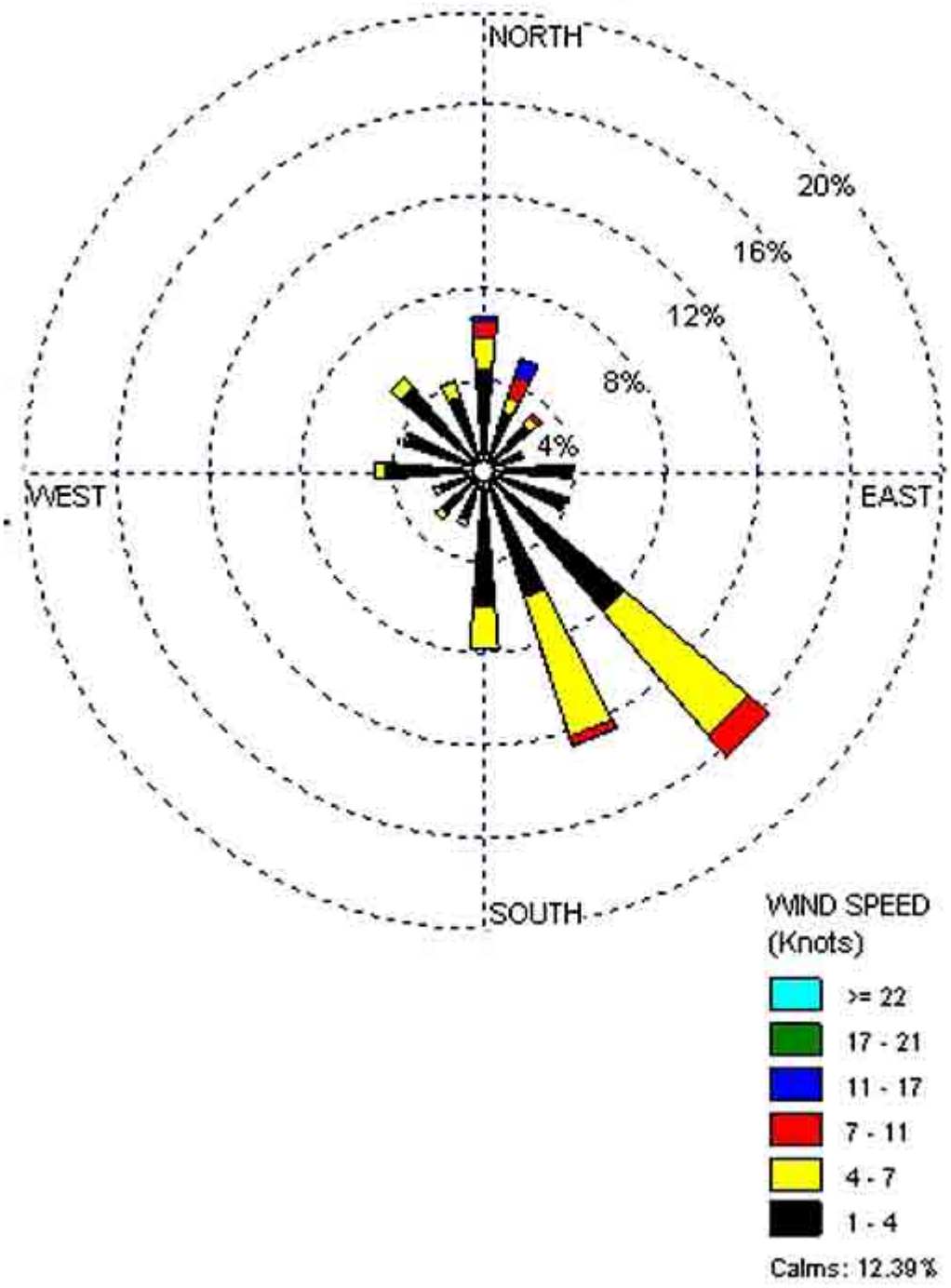
The U.S. Environmental Protection Agency (U.S. EPA) approved Industrial Source Complex model, ISCST3[3], was used to model the air quality impacts of DPM emissions during construction of the proposed project and construction of the utility corridor. This model can estimate the air quality impacts of single or multiple sources using actual meteorological conditions.

The model was configured with the following control parameters:

- Modeling switches: regulatory default (except calms processing was turned off per SCAQMD guidelines);
- Averaging period: annual; and
- Choice of dispersion coefficients based upon land-use type: urban (per SCAQMD health risk assessment guidelines).

The 1981 meteorological data used in the modeling analysis was obtained from the SCAQMD website for the Newhall monitoring station. The Newhall meteorological monitoring site is about 7.5 kilometers east-southeast of the project site and is the closest meteorological monitoring station to the proposed project site. A wind rose illustrating prevailing wind speeds and directions is shown in **Figure 2, Wind Rose for the Newhall Monitoring Station**.

Sources of emissions from trucks and construction equipment were modeled as five area sources over the proposed project site. (These five areas were selected for purposes of the Localized Significance Thresholds Analysis, which was also performed for this project, but they are not intended to represent phasing of the construction over the project site.) The annual emission rate over the six-year construction period was converted to grams per second (g/sec) by dividing the annual emission rate by the annual operating hours and 3,600 seconds per hour, and by multiplying the result by 453.6 grams per pound. The overall emissions were distributed over the five area sources proportional to their areas. The corresponding emission rate for each area source in g/sec was divided by the area of each of the area sources as measured in square meters to calculate the emission rate in grams per second per square meter ($g/sec\text{-}m^2$). Thus, the emissions from the trucks and construction equipment were assumed to be distributed equally throughout these areas, as is the convention for area source emissions. Similarly, the sources of emissions associated with construction of the utility corridor were modeled as 10 area sources distributed over the utility corridor site. (These area sources were selected to facilitate the model



SOURCE: Impact Sciences, Inc. – May 2006

FIGURE **2**

Wind Rose for the Newhall Monitoring Station

simulation and are not intended to represent the phasing of the construction over the project site.) Also, the overall emissions associated with construction of the utility corridor were distributed over the utility corridor site, and the emission rate was calculated in g/sec-m^2 using the same method described earlier.

The emissions from the trucks and equipment were given an initial height of 4.15 meters to account for the height of the exhaust stack and initial plume rise of the heated exhaust. This value is used by the CARB to characterize the health impacts of a variety of scenarios involving diesel vehicles.

4.2 Receptors Used for Evaluating Modeled Impacts

The nearest residential community to the project site is the community of Val Verde located approximately 1.6 kilometers (1 mile) to the north, across SR-126. Other residences are scattered throughout the area, primarily to the north of the site across SR-126. A recreational vehicle park is located to the east of the project site; however, occupants are limited to a 30-day stay. The nearest potential off-site workplace receptors are located to the northeast in the Valencia Commerce Center.

The SCAQMD *CEQA Air Quality Handbook* recommends that sensitive receptors be evaluated in an air quality impact analysis. Sensitive receptors are generally considered to be facilities where children, the elderly, or ill people may reside. The *CEQA Air Quality Handbook* lists the following land uses that should be considered as sensitive receptors:

- Long-term health care facilities
- Rehabilitation centers
- Convalescent centers
- Retirement homes
- Residences
- Schools
- Playgrounds
- Child care centers
- Athletic facilities

For the purpose of this assessment, potential sensitive receptors included schools, childcare centers, and hospitals.

One elementary school is located within 2 kilometers (1.25 miles) of the project site. Its name, location, and distance from the project site are shown in **Table 3, Sensitive Receptors within Two Kilometers of**

the Landmark Village Project Site and its location is depicted in **Figure 3, Sensitive Receptors Near the Project Site**. No childcare centers or hospitals were identified within 2 kilometers of the project site. The school was treated as a discrete receptor in this analysis, and it was located within the modeled area within a Cartesian grid that was spaced at 100-meter intervals up to 2,000 meters (2.0 kilometers) from the project site boundary. The overall receptor grid was designed to cover areas of existing and future off-site residential exposure, areas of commercial/industrial development, to allow assessment of potential workplace exposure, and potential exposure to other sensitive receptors listed in the SCAQMD *CEQA Air Quality Handbook*.

Table 3
Sensitive Receptors within Two Kilometers of Landmark Village Project Site

Name of Receptor	Distance from Landmark Village (km)	Direction
Live Oak Elementary School	1.68	North

Source: Impact Sciences, 2006.

5.0 ESTIMATION OF EXPOSURE THROUGH INHALATION

This assessment considers exposure via inhalation only. The potential exposure through other pathways (e.g., ingestion) requires substance and site-specific data, and the specific parameters for DPM are not known for these pathways.[4] This assessment also assumes that a person is exposed continuously for 70 years. This approach is intended to result in conservative (i.e., health protective) estimates of health impacts. The SCAQMD follows the recommendation in the Office of Environmental Health Hazard Assessment (OEHHA) *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*[5] (OEHHA Guidance) with respect to the evaluation of cancer risk calculations for short-term exposures (i.e., less than a maximum theoretical project life of 70 years). The OEHHA Guidance states:

> *"[A]s the exposure duration decreases the uncertainties introduced by applying cancer potency factors derived from very long term studies increases. Short-term high exposures are not necessarily equivalent to longer-term lower exposures even when the total dose is the same. OEHHA therefore does not support the use of current cancer potency factor to evaluate cancer risk for exposures of less than 9 years. If such risk must be evaluated, we recommend assuming that average daily dose for short-term exposure is assumed to last for a minimum of 9 years."*

4 "Report to the Air Resources Board on the Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant, Part A Exposure Assessment," Approved by the Scientific Review Panel, April 1998.

5 "Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments,"California Environmental Protection Agency Office of Environmental Health Hazard Assessment, August 2003.

SOURCE: Impact Sciences, Inc. – May 2006

FIGURE 3

Sensitive Receptors Near the Project Site

Exposure through inhalation is a function of the respiration rate and the concentration of a substance in the air and is calculated by using the following formulas:[6]

$$\text{Risk} = \text{Dose-inhalation} * \text{Inhalation cancer potency factor (Equation 1)}$$

where:

$$\text{Inhalation cancer potency factor (CPF)} = 1.1 \text{ (milligram per kilogram per day)}^{-1} \text{ (for DPM)}$$

$$\text{Dose Inhalation} = C_{air} * DBR * A * EF * ED * 10^{-6} / AT \text{ (Equation 2)}$$

where:

C_{air} = concentration in microgram per cubic meter
DBR = breathing rate in liter per kilogram of body weight per day
A = inhalation absorption factor (1 for DPM)
EF = exposure frequency in days per year
ED = exposure duration in years
AT = averaging time period over which exposure is averaged in days (25,550 days for 70 years)

For modeling purpose, the default values suggested by the manual were used for the dose inhalation calculation except for daily breathing rate. The default values used in the model are as follows:

EF = 350 days/year
ED = 9 years
AT = 25,550 days
A = 1

In accordance with CARB policy[7], a breathing rate equal to the 80th percentile should be used in single-point risk management decisions, such as those subject to a threshold or standard, for which the cancer risk is entirely associated with inhalation and residential cancer risk is being evaluated. These two criteria are met for this assessment. Thus, a breathing rate of 302 liter per kilogram of body weight per day was used for the residential cancer risk calculations.

The risk is calculated by multiplying the dose by the inhalation potency factor. The inhalation potency factor for DPM is 1.1.[8] In order to directly calculate risk as a modeling output, a multiplying factor was derived based on the information discussed above. This multiplying factor, when multiplied by the

6 Ibid.

7 California Air Resources Board and Office of Environmental Health Hazard Assessment, *Recommended Interim Risk Management Policy for Inhalation-Based Residential Cancer Risk*, October 9, 2003.

8 "Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments," California Environmental Protection Agency Office of Environmental Health Hazard Assessment, pp. 7-4, August 2003.

concentration that the dispersion model calculates, results in risk in 1 million at a particular receptor. The multiplying factor was calculated as follows:

$$\text{Multiplying factor} = CPF * (DBR * A * EF * ED * 10^{-6}/AT) * 10^{6}$$

$$= 1.1 * (302\ L/kg\ body\ weight\text{-}day * 1 * 350\ day/yr * 9\ yr * 10^{-6}/25{,}550\ days) * 10^{6} = 40.96\ (\mu g/m^3)^{-1}$$

Table 4, Summary of Maximum Modeled Cancer Risks of Diesel Particulate Matter from Construction, provides the model output. **Figure 4, Modeled Impacts of Diesel Particulate Matter**, illustrates the potential risks due to DPM from the construction of the proposed development. **Figure 4** shows the isopleths (lines of constant modeled excess cancer risk) that represent estimated cancer risks of 5 and 10 in 1 million for residential and sensitive receptors. These isopleths reflect the cancer risk at residential receptors; no adjustment has been made to the isopleths for workplace exposures, which would be lower.

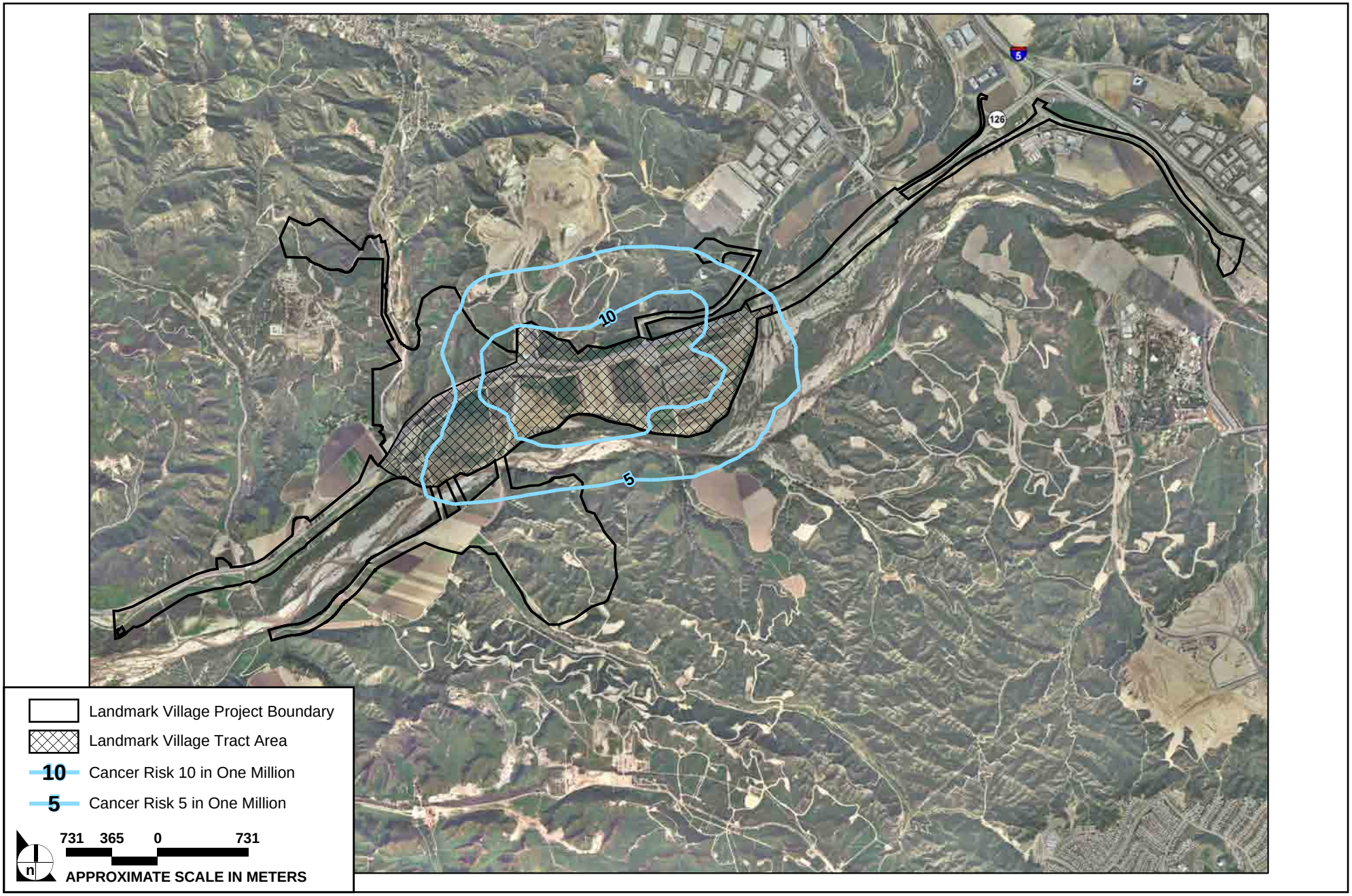
Table 4
Summary of Maximum Modeled
Cancer Risks of Diesel Particulate Matter
from Construction

Receptor	Cancer Risk
Residence[1]	1.7×10^{-6}
Sensitive[2]	0.3×10^{-6}
Workplace[3]	1.2×10^{-6}

Source: Impact Sciences, Inc., 2006.
[1] *Maximum impact occurred at Val Verde;*
[2] *Maximum impact occurred at Live Oak Elementary School;*
[3] *Maximum impact occurred at Commerce Center Commercial.*

In addition to the potential cancer risk, DPM has chronic (i.e., long-term) noncancer health impacts. The chronic noncancer inhalation hazard indices for the proposed project were calculated by dividing the modeled annual average concentrations of the DPM by the Reference Exposure Level (REL). The OEHHA has recommended an ambient concentration of 5 micrograms per cubic meter ($\mu g/m^3$) as the chronic inhalation REL for DPM. The REL is the concentration at or below which no adverse health effects are anticipated. No inhalation REL for acute (i.e., short-term) effects has been determined by the OEHHA.

While calculating cancer risks associated with DPM from construction, the multiplying factor was used to generate the results directly in terms of cancer risk in 1 million. Therefore, the model did not calculate



SOURCE: Impact Sciences, Inc. – May 2006

FIGURE **4**

Model Impacts of Diesel Particulate Matter

the concentrations separately. However, the concentrations are required to calculate the chronic non-cancer inhalation hazard indices. Therefore, the concentrations were calculated by dividing the risk values by the multiplying factor. These concentrations were then further divided by RELs to calculate chronic non-cancer inhalation hazard indices.

The maximum chronic hazard indices at selected receptors are shown in **Table 5, Summary of Maximum Modeled Noncancer Health Impacts of Diesel Exhaust Particulate Matter from Construction**. The net chronic hazard indices at the points of maximum impact are much less than the SCAQMD significance threshold of 1.0 for noncancer health impacts. The areas of maximum non-cancer impact occurred in the same locations as those described above for the cancer risks.

Table 5
Summary of Maximum Modeled Noncancer Health Impacts of Diesel Particulate Matter from Construction

Receptor	Chronic Hazard Index
Residential[1]	0.0008
Sensitive[2]	0.0001
Workplace[3]	0.0006

Source: Impact Sciences, Inc., 2006.
[1] *Maximum impact occurred at Val Verde;*
[2] *Maximum impact occurred at Live Oak Elementary School;*
[3] *Maximum impact occurred at Commerce Center Commercial.*

6.0 CONCLUSIONS

Based on this analysis, construction of the proposed project would not exceed the SCAQMD significance threshold of a cancer risk of 10 in 1 million since the maximum net anticipated cancer risks are 1.2, 1.7, and 0.3 in 1 million at workplace, residential, and sensitive receptors, respectively. The chronic hazard indices for non-cancer health impacts are also well below the significance threshold of 1.0 at the maximally exposed receptors. It should be noted that these health impacts do not reflect the reductions in diesel emissions from trucks and mobile equipment that will occur during the construction period as a result of increasingly stringent emission standards, many of which will take effect in the next few years. Furthermore, the activity levels (e.g., types and numbers of construction equipment) used in this assessment represent the highest *daily* levels anticipated during each phase of the construction of the project; the actual levels are likely to be lower. Accordingly, the actual health impacts due to construction of the proposed project would be less than those presented in this assessment.

APPENDIX A
Landmark Village Construction Emissions

Estimated Unmitigated Utility Corridor Construction Emissions

Subphase/Emissions Source	Emissions (lbs/day)				
	CO	VOC	NO_x	SO_x	PM_{10}
Weeks 1 thru 30					
Unmitigated Emissions Total	85.90	11.38	62.83	0	296.80
SCAQMD Thresholds	550	75	100	150	150
Exceeds Thresholds?	NO	NO	NO	NO	**YES**
Notes: Grading of utility corridor					
Weeks 31 thru 48					
Unmitigated Emissions Total	110.80	14.30	80.34	0	297.42
SCAQMD Thresholds	550	75	100	150	150
Exceeds Thresholds?	NO	NO	NO	NO	**YES**
Notes: Grading of utility corridor and construction of water tanks					
Weeks 49 thru 52					
Unmitigated Emissions Total	184.25	58.96	152.37	0	300.57
SCAQMD Thresholds	550	75	100	150	150
Exceeds Thresholds?	NO	NO	**YES**	NO	**YES**
Notes: Grading of utility corridor and welding and coating of water tanks					

Source: Impact Sciences, Inc.

NEWHALL RANCH SPECIFIC PLAN FINAL EIR
AIR QUALITY MITIGATION MEASURES

The following air quality mitigation measures are from the Newhall Ranch Specific Plan Final EIR. These measures, as appropriate, are intended to apply to all future development within Newhall Ranch. Not all of the following measure are appropriate for River Village and comments on the appropriateness of each measure to the River Village project is noted in *italics*.

4.10-1. The Specific Plan will provide Commercial and Service uses in close proximity to residential subdivisions.

4.10-2. The Specific Plan will locate residential uses in close proximity to Commercial uses, Mixed-Uses, and Business Parks.

4.10-3. Bus pull-ins will be constructed throughout the Specific Plan site.

4.10-4. Pedestrian facilities, such as sidewalks, and community regional, and local trails, will be provided throughout the Specific Plan site.

4.10-5. Roads with adjacent trails for pedestrian and bicycle use will be provided throughout the Specific Plan site connecting the individual Villages and community.

4.10-6. The applicant of future subdivisions shall implement all rules and regulations adopted by the Governing Board of the SCAQMD which are applicable to the development of the subdivision (such as Rule 402 - Nuisance, Rule 403 - Fugitive Dust, Rule 1113 - Architectural Coatings) and which are in effect at the time of development. The purpose of Rule 403 is to reduce the amount of particulate matter entrained in the ambient air as a result of man-made fugitive dust sources by requiring actions to prevent, reduce, or mitigate fugitive dust emissions. Rule 403 applies to any activity or man-made condition capable of generating fugitive dust such as the mass and remedial grading associated with the project as well as weed abatement and stockpiling of construction materials (*i.e.*, rock, earth, gravel). Rule 403 requires that grading operations either (1) take actions specified in Tables 1 and 2 of the Rule for each applicable source of fugitive dust and take certain notification and record keeping actions; or (2) obtain an approved Fugitive Dust Control Plan. A complete copy of the SCAQMD's Rule 403 Implementation Handbook, which has been included in Appendix 4.10, provides guideline tables to demonstrate the typical mitigation program and record keeping required for grading operations (Tables 1 and 2 and sample record keeping chart). The record keeping is accomplished by on-site construction personnel, typically the construction superintendent.

Each future subdivision proposed in association with the Newhall Ranch Specific Plan shall implement the following if found applicable and feasible for that subdivision.

GRADING

a. Apply non-toxic soil stabilizers according to manufacturers' specification to all inactive construction areas (previously graded areas inactive for ten days or more).
b. Replace groundcover in disturbed areas as quickly as possible.
c. Enclose, cover, water twice daily, or apply non-toxic soil binders according to manufacturers' specifications, to exposed piles (*i.e.*, gravel, sand, dirt) with 5 percent or greater silt content.
d. Water active sites at least twice daily.
e. Suspend all excavating and grading operations when wind speeds (as instantaneous gusts) exceed 25 mph.
f. Monitor for particulate emissions according to District-specified procedures.
g. All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of freeboard (*i.e.*, minimum vertical distance between top of the load and the top of the trailer) in accordance with the requirements of CVC Section 23114.

The effectiveness of these measures at reducing PM10 emissions ranges from 7 to 74 percent.[1]

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[1] *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-15 and p. A11-77.*

PAVED ROADS

h. Sweep streets at the end of the day if visible soil material is carried onto adjacent public paved roads (recommend water sweepers with reclaimed water).
i. Install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash off trucks and any equipment leaving the site each trip.

The effectiveness of these measures at reducing PM10 emissions ranges from 25 to 70 percent.[2]

UNPAVED ROADS

j. Apply water three times daily, or non-toxic soil stabilizers according to manufacturers' specifications, to all unpaved parking or staging areas or unpaved road surfaces.
k. Reduce traffic speeds on all unpaved roads to 15 mph or less.
l. Pave construction roads that have a traffic volume of more than 50 daily trips by construction equipment, 150 total daily trips for all vehicles.
m. Pave all construction access roads at least 100 feet on to the site from the main road.
n. Pave construction roads that have a daily traffic volume of less than 50 vehicular trips.

The effectiveness of these measures at reducing PM10 emissions ranges from 40 to 92.5 percent.[3]

4.10-7. Prior to the approval of each future subdivision proposed in association with the Newhall Ranch Specific Plan, each of the construction emission reduction measures indicated below (and in Tables 11-2 and 11-3 of the SCAQMD's CEQA *Air Quality Handbook*, as amended) shall be implemented if found applicable and feasible for that subdivision.

ON-ROAD MOBILE SOURCE CONSTRUCTION EMISSIONS:

a. Configure construction parking to minimize traffic interference. *The effectiveness of this measure to reduce VOC emissions is not quantified by SCAQMD.*[4]
b. Provide temporary traffic controls when construction activities have the potential to disrupt traffic to maintain traffic flow (e.g., signage, flag person, detours). *The effectiveness of this measure to reduce VOC emissions is not quantified by SCAQMD.*[5]
c. Schedule construction activities that affect traffic flow to off-peak hours (*e.g.*, between 7:00 P.M. and 6:00 A.M. and between 10:00 A.M. and 3:00 P.M.). *The effectiveness of this measure to reduce VOC emissions is not quantified by SCAQMD.*[6]
d. Develop a trip reduction plan to achieve a 1.5 average vehicle ridership (AVR) for construction employees. *Mitigation not suitable for River Village because SCAQMD Rule 2202 applies to all employers who meet certain criteria for implementing trip reduction measures. The requirement to achieve a specific AVR has been ruled unlawful by the federal government and is no longer recommended.*
e. Implement a shuttle service to and from retail services and food establishments during lunch hours. *Mitigation not suitable for River Village because construction workers typically take a half-hour lunch at various times of the day and eat on-site food that was either brought by the workers (brown bag) or purchased from mobile caterers who travel to the site.*
f. Develop a construction traffic management plan that includes the following measures to address construction traffic that has the potential to affect traffic on public streets:
   - Rerouting construction traffic off congested streets *Mitigation not suitable for River Village because the only access to the site is via SR-126 and there are no other roadways on which to reroute traffic.;*
   - Consolidating truck deliveries; and
   - Providing temporary dedicated turn lanes for movement of construction trucks and equipment on and off of the site. *The effectiveness of this measure to reduce VOC emissions is not quantified by SCAQMD.*[7]

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2 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-15 and pp. A11-77 to -78.*
3 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-16 and p. A11-78.*
4 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-13.*
5 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-13.*
6 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-13.*

g. Prohibit truck idling in excess of two minutes. *Mitigation not suitable for River Village because the nature of diesel motors does not lend them to constant turning on and off. Premature wear, and increased air emissions from turning the engines on and off, are common results. It is also extremely difficult to effectively monitor the implementation of this measure on an approximately 700-acre site with contractors who would be concerned about maintaining their equipment. Furthermore, the effectiveness of this measure to reduce VOC emissions is not quantified by SCAQMD.*[8]

OFF-ROAD MOBILE SOURCE CONSTRUCTION EMISSIONS:

h. Use methanol-fueled pile drivers. *Any equipment that utilizes an alternative fuel that reduces VOC, NOx, and/or PM10 emissions is advisable. This measure is replaced in the impact analysis with another measure that considers other alternative fuels for diesel-fueled construction equipment.*
i. Suspend use of all construction equipment operations during second stage smog alerts. *The effectiveness of this measure to reduce VOC emissions is not quantified by SCAQMD.*[9]
j. Prevent trucks from idling longer than two minutes. *Mitigation not suitable for River Village because the nature of diesel motors does not lend them to constant turning on and off. Premature wear, and increased air emissions from turning the engines on and off, are common results. It is also extremely difficult to effectively monitor the implementation of this measure on an approximately 700-acre site with contractors who would be concerned about maintaining their equipment. Furthermore, the effectiveness of this measure to reduce VOC emissions is not quantified by SCAQMD.*[10]
k. Use electricity from power poles rather than temporary diesel-powered generators.
l. Use electricity from power poles rather than temporary gasoline-powered generators.
m. Use methanol- or natural gas-powered mobile equipment instead of diesel. *Any equipment that utilizes an alternative fuel that reduces VOC, NOx, and/or PM10 emissions is advisable.*
n. Use propane- or butane-powered on-site mobile equipment instead of gasoline. *Any equipment that utilizes an alternative fuel that reduces VOC, NOx, and/or PM10 emissions is advisable.*

OPERATION IMPACTS

4.10-8. The applicant of future subdivisions shall implement all rules and regulations adopted by the Governing Board of the SCAQMD which are applicable to the development of the subdivision (such as Rule 402 - Nuisance, Rule 1102 - Petroleum Solvent Dry Cleaners, Rule 1111 - NOx Emissions from Natural Gas-Fired, Fan-Type Central Furnaces, Rule 1146 - Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters) and which are in effect at the time of occupancy permit issuance.

4.10-9. Prior to the approval of each future subdivision proposed in association with the Newhall Ranch Specific Plan, each of the operational emission reduction measures indicated below (and in Tables 11-6 and 11-7 of the SCAQMD's CEQA *Air Quality Handbook*, as amended) shall be implemented if found applicable and feasible for that subdivision.

ON-ROAD MOBILE SOURCE OPERATIONAL EMISSIONS:

RESIDENTIAL USES

a. Include satellite telecommunications centers in residential subdivisions. *Mitigation not suitable for River Village because satellite telecommunications centers have been superseded by other technology.*
b. Establish a shuttle service from residential subdivisions to commercial core areas. *Mitigation not suitable for River Village because residential uses are in close proximity and within walking distance to commercial uses proposed within River Village.*
c. Construct on-site or off-site bus stops (*e.g.*, bus turnouts, passenger benches, and shelters).

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7 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-13.*
8 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-13.*
9 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-14.*
10 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-14.*

d. Construct off-site pedestrian facility improvements, such as overpasses and wider sidewalks. *Mitigation not suitable for River Village because no uses adjacent to the River Village site exist within Newhall Ranch to which pedestrian access would be warranted.*
e. Include retail services within or adjacent to residential subdivisions. *The proposed project is in conformance with this measure.*
f. Provide shuttles to major rail transit centers or multi-modal stations.
g. Contribute to regional transit systems (*e.g.*, right-of-way, capital improvements, *etc.*). *This measure does not directly contribute to reduced air emissions, emission reductions have not been quantified by SCAQMD,*[11] *and it is not given emissions reduction credit in the impact analysis.*
h. Synchronize traffic lights on streets impacted by development.
i. Construct, contribute, or dedicate land for the provision of off-site bicycle trails linking the facility to designated bicycle commuting routes.

COMMERCIAL USES

j. Provide preferential parking spaces for carpools and vanpools and provide 7'2" minimum vertical clearance in parking facilities for vanpool access.
k. Implement on-site circulation plans in parking lots to reduce vehicle queuing. *The effectiveness of this measure is not quantified by SCAQMD and is not given emission reduction credit in the impact analysis.*[12]
l. Improve traffic flow at drive-thru's by designing separate windows for different functions and by providing temporary parking for orders not immediately available for pickup. *The effectiveness of this measure is not quantified by SCAQMD and is not given emission reduction credit in the impact analysis.*[13]
m. Provide video-conference facilities. *The effectiveness of this measure is not quantified by SCAQMD and is not given emission reduction credit in the impact analysis.*[14]
n. Set up resident worker training programs to improve job/housing balance. *Mitigation not suitable for River Village because it is outside the purview of the project applicant/developer to set up such a program. Such programs are more appropriately set up by and at the discretion of future occupants of the commercial retail and office uses that will locate on the site. Furthermore, the effectiveness of this measure to reduce air emissions in the basin lies in actually achieving jobs/housing balance. The effectiveness of this measure is not quantified by SCAQMD and is not given emission reduction credit in the impact analysis.*[15]
o. Implement home dispatching system where employees receive routing schedule by phone instead of driving to work. *Mitigation not suitable for River Village because it is outside the purview of the project applicant/developer to set up such a system. Such systems are more appropriately set up by and at the discretion of future occupants of the commercial retail and office uses that will locate on the site.*
p. Develop a program to minimize the use of fleet vehicles during smog alerts (for business not subject to Regulation XV (now Rule 2202) or XII). *Mitigation not suitable for River Village because no commercial retail or office use on the site is expected to use fleet vehicles.*
q. Use low-emissions fleet vehicles:
   - TLEV
   - ULEV
   - LEV
   - ZEV

   Mitigation not suitable for River Village because no commercial retail or office use on the site is expected to use fleet vehicles.
r. Reduce employee parking spaces for those businesses subject to Regulation XV (now Rule 2202). *Rule 2202 applies to any employer who employs 250 or more employees on a full or part-time basis at a work site for a consecutive six-month period. It is conceivable that an office use employing as*

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[11] *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-18.*
[12] *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-22.*
[13] *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-19.*
[14] *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-19.*
[15] *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-19.*

many as 250 people can locate on the site; therefore, this mitigation measure applies to the River Village project. The requirement to achieve a specific AVR has been ruled unlawful by the federal government and is no longer recommended.[16]

s. Implement a lunch shuttle service from a work site(s) to food establishments. Mitigation not suitable for River Village because *Lots within River Village designated for mixed use commercial are expected to have food establishments located within walking distance, thereby not necessitating lunch shuttle service.*

t. Implement compressed work-week schedules where weekly work hours are compressed into fewer than five days.
   - 9/80
   - 4/40
   - 3/36

   Mitigation not suitable for the River Village applicant/developer because it is outside the purview of the project applicant/developer to set up such a program. Such programs are more appropriately set up by and at the discretion of future occupants of the commercial retail and office uses that will locate on the site.

u. Develop a trip reduction plan to achieve 1.5 AVR for businesses with less than 100 employees or multi-tenant work sites. *Mitigation not suitable for River Village because SCAQMD Rule 2202 applies to all employers who meet certain criteria for implementing trip reduction measures. The requirement to achieve a specific AVR has been ruled unlawful by the federal government and is no longer recommended.*

v. Utilize satellite offices rather than regular work site to reduce VMT. *Mitigation not suitable for the River Village applicant/developer because it is outside the purview of the project applicant/developer to set up such a program. Such programs are more appropriately set up by and at the discretion of future occupants of the commercial retail and office uses that will locate on the site.*

w. Establish a home-based telecommuting program. *Mitigation not suitable for the River Village applicant/developer because it is outside the purview of the project applicant/developer to set up such a program. Such programs are more appropriately set up by and at the discretion of future occupants of the commercial retail and office uses that will locate on the site.*

x. Provide on-site child care and after-school facilities or contribute to off-site development within walking distance. *Mitigation not suitable for the River Village applicant/developer because it is outside the purview of the project applicant/developer to set up such a program. Such programs are more appropriately set up by and at the discretion of future occupants of the commercial retail and office uses that will locate on the site.*

y. Require retail facilities or special event centers to offer travel incentives such as discounts on purchases for transit riders. *Mitigation not suitable for the River Village applicant/developer because it is outside the purview of the project applicant/developer to set up such a program. Such programs are more appropriately set up by and at the discretion of future occupants of the commercial retail and office uses that will locate on the site. Such a program to reduce air emissions in the Basin is not quantified by the SCAQMD and it is not given emission reduction credit in this impact analysis.*[17]

z. Provide on-site employee services such as cafeterias, banks, *etc.*

aa. Establish a shuttle service from residential core areas to the work site. *Mitigation not suitable for River Village because residential uses are proposed in close proximity and within walking distance to commercial uses proposed within River Village.*

ab. Construct on-site or off-site bus stops (*e.g.*, bus turnouts, passenger benches, and shelters).

ac. Implement a pricing structure for single-occupancy employee parking and/or provide discounts to ridesharers.

ad. Include residential units within a commercial project.

ae. Utilize parking in excess of code requirements as on-site park-n-ride lots or contribute to construction of off-site lots.

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[16] *In 1988, the SCAQMD instituted Regulation XV that required enterprises with 100 or more employees to adopt trip reduction programs. The regulation required each employer to institute a trip reduction program that would achieve an Average Vehicle Ridership (AVR) of 1.75 in Downtown Los Angeles, 1.5 in the remainder of urbanized areas, and 1.3 in rural parts of the District. AVR measures the extent to which commuters use public transit, car pooling, and other multiple-occupant-vehicle modes of transportation. Regulation XV was repealed in December, 1995 and was replaced with Rule 2202 which provides options for employers to either continue trip reduction programs or reduce mobile source emissions through other strategies. As of January 1, 1997 Rule 2202 applies only to enterprises with 250 or more employees.*

[17] *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-20.*

af. Any two of the following:
   - Construct off-site bicycle facility improvements, such as bicycle trails linking the facility to designated bicycle commuting routes, or on-site improvements, such as bicycle paths.
   - Include bicycle parking facilities, such as bicycle lockers and racks.
   - Include showers for bicycling employees' use.

ag. Any two of the following:
   - Construct off-site pedestrian facility improvements, such as overpasses, wider sidewalks.
   - Construct on-site pedestrian facility improvements, such as building access which is physically separated from street and parking lot traffic and walk paths.
   - Include showers for pedestrian employees' use.

ah. Provide shuttles to major rail transit stations and multi-modal centers.

ai. Contribute to regional transit systems (*e.g.*, right-of-way, capital improvements, *etc.*) . *This measure does not directly contribute to reduced air emissions, emission reductions have not been quantified,*[18] *and it is not given emissions reduction credit in the impact analysis.*[19]

aj. Charge visitors to park. *Mitigation not suitable for River Village because charging visitors to park at retail establishments would discourage patronage. Charging visitors to park at the office uses would encourage patrons to park in retail parking spaces or on the street. Charging visitors to pay for parking at the park site would encourage on-street parking.*

ak. Synchronize traffic lights on streets impacted by development.

al. Reschedule truck deliveries and pickups to off-peak hours. *The effectiveness of this measure is not quantified by SCAQMD and is not given emission reduction credit in the impact analysis.*[20]

am. Set up paid parking systems where drivers pay at walkup kiosk and exit via a stamped ticket to reduce emissions from queuing vehicles. *Mitigation not suitable for River Village because charging visitors to park at retail establishments would discourage patronage. Charging visitors to park at the office uses would encourage patrons to park in retail parking spaces or on the street. Charging visitors to pay for parking at the park site would encourage on-street parking. The effectiveness of this measure is not quantified by SCAQMD and is not given emission reduction credit in the impact analysis.*[21]

an. Require on-site truck loading zones. *The effectiveness of this measure is not quantified by SCAQMD and is not given emission reduction credit in the impact analysis.*[22]

ao. Implement or contribute to public outreach programs. *Mitigation not suitable for the River Village applicant/developer because it is unclear as to what type of outreach program this mitigation measure refers. Furthermore, it is outside the purview of the project applicant/developer to set up such programs. Such programs are more appropriately set up and maintained by and at the discretion of future occupants of the commercial retail and office uses that will locate on the site. Furthermore, the effectiveness of this measure is not quantified by SCAQMD and is not given emission reduction credit in the impact analysis.*[23]

ap. Require employers not subject to Regulation XV (now Rule 2202) to provide commuter information area.

BUSINESS PARK USES

No Business Park uses are proposed within the River Village project.

aq. Provide preferential parking spaces for carpools and vanpools and provide 7'2" minimum vertical clearance in parking facilities for vanpool access.

ar. Implement on-site circulation plans in parking lots to reduce vehicle queuing.

as. Set up resident worker training programs to improve job/housing balance.

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18 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-18.*

19 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-22.*

20 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-22.*

21 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-22.*

22 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-22.*

23 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-22.*

bx. Use energy-efficient low-sodium parking lot lights.

COMMERCIAL USES

by. Use lighting controls and energy-efficient lighting.
bz. Use fuel cells in residential subdivisions to produce heat and electricity.
ca. Orient buildings to the north for natural cooling and include passive solar design (*e.g.*, daylighting).
cb. Use light-colored roofing materials to reflect heat.
cc. Increase walls and attic insulation beyond Title 24 requirements.
cd. Use solar or low emission water heaters.
ce. Use central water heating systems.
cf. Provide shade trees to reduce building heating/cooling needs.
cg. Use energy-efficient and automated controls for air conditioners.
ch. Use double-paned windows.
ci. Use energy-efficient low-sodium parking lot lights.
cj. Use lighting controls and energy-efficient lighting.
ck. Use light-colored roofing materials to reflect heat.
cl. Increase walls and attic insulation beyond Title 24 requirements.
cm. Orient buildings to the north for natural cooling and include passive solar design (*e.g.*, daylighting).

BUSINESS PARK USES

No Business Park uses are proposed within the River Village project.

cn. Provide shade trees to reduce building heating/cooling needs.
co. Use energy-efficient and automated controls for air conditioning.
cp. Use double-paned windows.
cq. Use energy-efficient low-sodium parking lot lights.
cr. Use lighting controls and energy-efficient lighting.
cs. Use light-colored roofing materials to reflect heat.
ct. Orient buildings to the north for natural cooling and include passive solar design (*e.g.*, daylighting).
cu. Increase walls and attic insulation beyond Title 24 requirements.
cv. Improved storage and handling or source materials.
cw. Materials substitution (*e.g.*, use water-based paints, life-cycle analysis).
cx. Modify manufacturing processes (*e.g.*, reduce process stages, closed-loop systems, materials recycling).
cy. Resource recovery systems that redirect chemicals to new production processes.

4.10-10. All non-residential development of 25,000 gross square feet or more shall comply with the County's Transportation Demand Management (TDM) Ordinance (Ordinance No. 93-0028M) in effect at the time of subdivision. The sizes and configurations of the Specific Plan's non-residential uses are not known at this time and the Ordinance specifies different requirements based on the size of the project under review. All current provisions of the ordinance are summarized in Appendix 4.10.

4.10-11. Subdivisions and buildings shall comply with Title 24 of the California Code of Regulations which are current at the time of development.

4.10-12. Lighting for public streets, parking areas, and recreation areas shall utilize energy efficient light and mechanical, computerized or photo cell switching devices to reduce unnecessary energy usage.

4.10-13. Any on-site subterranean parking structures shall provide adequate ventilation systems to disperse pollutants and preclude the potential for a pollutant concentration to occur. *Mitigation not suitable for River Village because no subterranean parking structures are proposed within the project. Furthermore, this measure reduces indoor air pollutants, but does not effectively reduce air emissions within the Basin.*

4.10-14. The sellers of new residential units shall be required to distribute brochures and other relevant information published by the SCAQMD or similar organization to new homeowners regarding the importance of reducing vehicle miles traveled and related air quality impacts, as well as on local opportunities for public transit and ridesharing.

UNMITIGATED CONSTRUCTION EMISSIONS

Project Name	**River Village**	**Unmitigated Emissions**
Subphase	**Weeks 1 thru 19**	
Length of Subphase (weeks)		**19.00**
Year	**2006**	
Total Acreage	**120.28**	

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	19,407.42	
On-Road Diesel Exhaust	130.69	182.74	18.98	1.69	3.30	
Off-Road Diesel Exhaust	1,841.01	226.11	1,521.55	--	65.65	
Worker Commute Trips	15.58	1.71	2.90	0.02	0.11	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	9,703.71	Fugitive Dust Rule 403
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.00	--	--	--	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	--	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	No Building Construction During This Subphase
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Architectural Painting						
Off-Gas Emissions	--	0.00	--	--	--	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	**1,987.28**	**410.56**	**1,543.43**	**1.72**	**9,772.76**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**Yes**	**Yes**	**Yes**	**No**	**Yes**	

Project Name River Village **Unmitigated Emissions**
Subphase Weeks 20 thru 39
Length of Subphase (weeks) 20.00
Year 2006
Total Acreage 126.61

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	–	–	–	–	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	–	–	–	–	19,393.70	
On-Road Diesel Exhaust	130.69	182.74	18.98	1.69	3.30	
Off-Road Diesel Exhaust	1,841.01	226.11	1,521.55	–	65.65	
Worker Commute Trips	15.98	1.71	2.90	0.02	0.11	
Mitigation/Reduction						
Fugitive Dust	–	–	–	–	9,696.85	Fugitive Dust Rule 403
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	–	1.01	–	–	–	
Off-Road Diesel Exhaust Emissions	1,352.50	167.28	1,126.24	–	46.72	
On-Road Diesel Exhaust Emissions	4.44	0.65	6.21	0.06	0.11	
Worker Commute Emissions	23.98	2.86	12.29	0.11	0.28	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	No Building Construction During This Subphase
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Architectural Painting						
Off-Gas Emissions	–	0.00	–	–	–	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	**3,368.20**	**582.35**	**2,688.18**	**1.88**	**9,813.02**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**Yes**	**Yes**	**Yes**	**No**	**Yes**	

Project Name River Village **Unmitigated Emissions**
Subphase Weeks 40 thru 46
Length of Subphase (weeks) 7.00
Year 2006
Total Acreage 44.31

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	19,407.42	
On-Road Diesel Exhaust	130.69	182.74	18.98	1.69	3.30	
Off-Road Diesel Exhaust	1,841.01	226.11	1,521.55	--	65.65	
Worker Commute Trips	15.58	1.71	2.90	0.02	0.11	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	9,703.71	Fugitive Dust Rule 403
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	1.01	--	--	--	
Off-Road Diesel Exhaust Emissions	1,352.50	167.28	1,126.24	--	46.72	
On-Road Diesel Exhaust Emissions	4.44	0.65	6.21	0.06	0.11	
Worker Commute Emissions	12.27	1.35	2.28	0.02	0.09	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	1,682.38	222.74	1,654.08	--	72.90	
Worker Commute Trips	25.51	2.80	4.75	0.04	0.18	
Architectural Painting						
Off-Gas Emissions	--	151.01	--	--	--	
Worker Commute Trips	25.51	2.80	4.75	0.04	0.18	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	5,089.89	960.19	4,341.75	1.86	9,892.94	
SCAQMD Threshold:	550.00	75.00	100.00	150.00	150.00	
Exceeds Threshold?	Yes	Yes	Yes	No	Yes	

Project Name River Village Unmitigated Emissions
Subphase Weeks 47 thru 91
Length of Subphase (weeks) 45.00
Year 2006
Total Acreage

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	21.98	No Gradng During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	10.99	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	1.01	--	--	--	
Off-Road Diesel Exhaust Emissions	1,352.50	167.28	1,126.24	--	46.72	
On-Road Diesel Exhaust Emissions	4.44	0.65	6.21	0.06	0.11	
Worker Commute Emissions	12.27	1.35	2.28	0.02	0.09	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	1,682.38	222.74	1,654.08	--	72.90	
Worker Commute Trips	25.51	2.80	4.75	0.04	0.18	
Architectural Painting						
Off-Gas Emissions	--	151.01	--	--	--	
Worker Commute Trips	25.51	2.80	4.75	0.04	0.18	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	3,102.61	549.63	2,798.32	0.15	131.16	
SCAQMD Threshold:	550.00	75.00	100.00	150.00	150.00	
Exceeds Threshold?	Yes	Yes	Yes	No	No	

Project Name River Village Unmitigated Emissions
Subphase Week 92
Length of Subphase (weeks) 1.00
Year 2007
Total Acreage

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Gradng During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	1.01	--	--	--	
Off-Road Diesel Exhaust Emissions	1,373.05	167.28	1,085.87	--	41.93	
On-Road Diesel Exhaust Emissions	4.05	0.61	5.80	0.01	0.10	
Worker Commute Emissions	11.29	1.25	2.11	0.01	0.08	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	2,159.16	275.61	1,931.00	--	79.99	
Worker Commute Trips	28.13	3.11	5.26	0.02	0.21	
Architectural Painting						
Off-Gas Emissions	--	151.50	--	--	--	
Worker Commute Trips	28.13	3.11	5.26	0.02	0.21	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	**3,603.81**	**603.46**	**3,035.29**	**0.06**	**122.52**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	Yes	Yes	Yes	No	No	

Project Name River Village Unmitigated Emissions
Subphase Weeks 93 thru 144
Length of Subphase (weeks) 52.00
Year 2007
Total Acreage

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Gradng During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.02	--	--	--	
Off-Road Diesel Exhaust Emissions	1,373.05	167.28	1,085.87	--	41.93	
On-Road Diesel Exhaust Emissions	0.08	0.01	0.11	0.00	0.00	
Worker Commute Emissions	11.29	1.25	2.11	0.01	0.08	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	1,872.07	240.07	1,693.55	--	70.48	
Worker Commute Trips	24.90	2.75	4.65	0.02	0.18	
Architectural Painting						
Off-Gas Emissions	--	141.73	--	--	--	
Worker Commute Trips	24.90	2.75	4.65	0.02	0.18	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	**3,306.30**	**555.86**	**2,790.95**	**0.05**	**112.86**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	Yes	Yes	Yes	No	No	

Project Name River Village Unmitigated Emissions
Subphase Weeks 145 thru 158
Length of Subphase (weeks) 14.00
Year 2008
Total Acreage

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Gradng During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	1.01	--	--	--	
Off-Road Diesel Exhaust Emissions	1,385.56	167.28	1,058.35	--	38.46	
On-Road Diesel Exhaust Emissions	3.70	0.57	5.39	0.01	0.10	
Worker Commute Emissions	10.38	1.15	1.94	0.01	0.08	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	1,685.60	212.51	1,453.80	--	58.55	
Worker Commute Trips	20.77	2.30	3.89	0.02	0.17	
Architectural Painting						
Off-Gas Emissions	--	141.66	--	--	--	
Worker Commute Trips	20.77	2.30	3.89	0.02	0.17	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	**3,126.78**	**528.79**	**2,527.25**	**0.05**	**97.52**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**Yes**	**Yes**	**Yes**	**No**	**No**	

Project Name River Village Unmitigated Emissions
Subphase Weeks 159 thru 178
Length of Subphase (weeks) 21.00
Year 2009
Total Acreage

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Gradng During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.00	--	--	--	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	--	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	1,726.62	212.51	1,394.91	--	53.47	
Worker Commute Trips	19.09	2.13	3.58	0.02	0.17	
Architectural Painting						
Off-Gas Emissions	--	141.66	--	--	--	
Worker Commute Trips	19.09	2.13	3.58	0.02	0.17	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	**1,764.79**	**358.43**	**1,402.06**	**0.03**	**53.80**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**Yes**	**Yes**	**Yes**	**No**	**No**	

Project Name River Village Unmitigated Emissions
Subphase Weeks 179 thru 196
Length of Subphase (weeks) 18.00
Year 2009
Total Acreage

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Gradng During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.00	--	--	--	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	--	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	1,515.09	187.20	1,239.14	--	48.23	
Worker Commute Trips	17.12	1.91	3.21	0.02	0.15	
Architectural Painting						
Off-Gas Emissions	--	141.24	--	--	--	
Worker Commute Trips	17.12	1.91	3.21	0.02	0.15	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	**1,549.32**	**332.26**	**1,245.55**	**0.03**	**48.53**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**Yes**	**Yes**	**Yes**	**No**	**No**	

Project Name River Village Unmitigated Emissions
Subphase Weeks 197 thru 210
Length of Subphase (weeks) 13.00
Year 2009
Total Acreage

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Gradng During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.00	--	--	--	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	--	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	1,041.33	128.61	850.48	--	33.06	
Worker Commute Trips	11.51	1.29	2.16	0.01	0.10	
Architectural Painting						
Off-Gas Emissions	--	87.64	--	--	--	
Worker Commute Trips	11.51	1.29	2.16	0.01	0.10	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	1,064.36	218.82	854.79	0.02	33.26	
SCAQMD Threshold:	550.00	75.00	100.00	150.00	150.00	
Exceeds Threshold?	Yes	Yes	Yes	No	No	

Project Name River Village Unmitigated Emissions
Subphase Weeks 211 thru 220
Length of Subphase (weeks) 10.00
Year 2010
Total Acreage

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Gradng During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.00	--	--	--	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	--	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	779.57	93.89	593.66	--	21.89	
Worker Commute Trips	7.50	0.84	1.39	0.01	0.07	
Architectural Painting						
Off-Gas Emissions	--	39.26	--	--	--	
Worker Commute Trips	7.50	0.84	1.39	0.01	0.07	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	794.57	134.83	596.44	0.01	22.03	
SCAQMD Threshold:	550.00	75.00	100.00	150.00	150.00	
Exceeds Threshold?	Yes	Yes	Yes	No	No	

Project Name River Village Unmitigated Emissions
Subphase Weeks 221 thru 235
Length of Subphase (weeks) 15.00
Year 2010
Total Acreage

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Gradng During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.00	--	--	--	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	--	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	491.65	59.17	372.96	--	13.64	
Worker Commute Trips	4.44	0.50	0.82	0.00	0.04	
Architectural Painting						
Off-Gas Emissions	--	11.78	--	--	--	
Worker Commute Trips	4.44	0.50	0.82	0.00	0.04	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	**500.54**	**71.95**	**374.61**	**0.01**	**13.72**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	No	No	Yes	No	No	

River Village Office Construction Only Unmitigated Emissions

Weeks of Construction: 140

Year Constr. Begins: 2015

Calculated Emissions

Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	0.00	0.00	0.00	0.00	0.00	No Grading During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	884.12	106.21	665.11	--	23.88	
Worker Commute Trips	10.90	1.20	2.03	0.02	0.08	
Architectural Painting						
Off-Gas Emissions	--	38.48	--	--	--	
Worker Commute Trips	10.90	1.20	2.03	0.02	0.08	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	**905.93**	**147.09**	**669.17**	**0.03**	**24.03**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**Yes**	**Yes**	**Yes**	**No**	**No**	

MITIGATED CONSTRUCTION EMISSIONS

Project Name River Village **Mitigated Emissions**
Subphase Weeks 1 thru 19
Length of Subphase (weeks) 19.00
Year 2006

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	19,407.42	
On-Road Diesel Exhaust	130.69	182.74	18.98	1.69	3.30	
Off-Road Diesel Exhaust	1,841.01	226.11	1,521.55	--	65.65	
Worker Commute Trips	15.58	1.71	2.90	0.02	0.11	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	9,703.71	Water Exposed Surfaces Three Times Daily
On-Road Diesel Exhaust	0.00	0.00	0.00	1.69	2.64	Assumes Use of Aqueous Fuel, Cooled Exhaust Gas Recirculation
Off-Road Diesel Exhaust	1,656.91	203.50	821.64	n/a	97.16	Assumes Use of Aqueous Fuel, Cooled Exhaust Gas Recirculation
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.00	--	--	--	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	--	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	No Building Construction During This Subphase
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Architectural Painting						
Off-Gas Emissions	--	0.00	--	--	--	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	--	n/a	--	--	--	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	**330.37**	**207.06**	**721.79**	**0.02**	**9,672.96**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**No**	**Yes**	**Yes**	**No**	**Yes**	

Project Name River Village **Mitigated Emissions**
Subphase Weeks 20 thru 39
Length of Subphase (weeks) 20.00
Year 2006

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	19,393.70	
On-Road Diesel Exhaust	130.69	182.74	18.98	1.69	3.30	
Off-Road Diesel Exhaust	1,841.01	226.11	1,521.55	--	65.65	
Worker Commute Trips	15.58	1.71	2.90	0.02	0.11	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	9,696.85	Water Exposed Surfaces Three Times Daily
On-Road Diesel Exhaust	0.00	0.00	0.00	1.69	2.64	Aqueous Fuel, Cooled Exhaust Gas Recirculation
Off-Road Diesel Exhaust	1,656.91	203.50	821.64	n/a	97.16	Aqueous Fuel, Cooled Exhaust Gas Recirculation
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	1.01	--	--	--	
Off-Road Diesel Exhaust Emissions	1,352.50	167.28	1,126.24	--	46.72	
On-Road Diesel Exhaust Emissions	4.44	0.65	6.21	0.06	0.11	
Worker Commute Emissions	23.98	2.86	12.29	0.11	0.28	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	None Available
On-Road Diesel Exhaust	4.00	0.58	3.35	0.06	0.09	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Road Diesel Exhaust	1,217.25	150.55	608.17	n/a	69.15	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	No Building Construction During This Subphase
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Architectural Painting						
Off-Gas Emissions	--	0.00	--	--	--	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	--	n/a	--	--	--	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	**490.05**	**227.72**	**1,255.02**	**0.13**	**9,643.99**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**No**	**Yes**	**Yes**	**No**	**Yes**	

Project Name **River Village** **Mitigated Emissions**
Subphase **Weeks 40 thru 46**
Length of Subphase (weeks) **7.00**
Year **2006**

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	19,407.42	
On-Road Diesel Exhaust	130.69	182.74	18.98	1.69	3.30	
Off-Road Diesel Exhaust	1,841.01	226.11	1,521.55	--	65.65	
Worker Commute Trips	15.58	1.71	2.90	0.02	0.11	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	9,703.71	Water Exposed Surfaces Three Times Daily
On-Road Diesel Exhaust	0.00	0.00	0.00	1.69	2.64	Aqueous Fuel, Cooled Exhaust Gas Recirculation
Off-Road Diesel Exhaust	1,656.91	203.50	821.64	n/a	97.16	Aqueous Fuel, Cooled Exhaust Gas Recirculation
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	1.01	--	--	--	
Off-Road Diesel Exhaust Emissions	1,352.50	167.28	1,126.24	--	46.72	
On-Road Diesel Exhaust Emissions	4.44	0.65	6.21	0.06	0.11	
Worker Commute Emissions	12.27	1.35	2.28	0.02	0.09	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	None Available
On-Road Diesel Exhaust	4.00	0.58	3.35	0.06	0.09	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Road Diesel Exhaust	1,217.25	150.55	608.17	n/a	69.15	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	1,682.38	222.74	1,654.08	--	72.90	
Worker Commute Trips	25.51	2.80	4.75	0.04	0.18	
Architectural Painting						
Off-Gas Emissions	--	151.01	--	--	--	
Worker Commute Trips	25.51	2.80	4.75	0.04	0.18	
Mitigation/Reduction						
Off-Road Diesel Exhaust	1,514.14	200.47	893.20	0.00	107.89	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Gas Emissions	--	n/a	--	--	--	No Mitigation Available
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Net Emission Totals:	**697.59**	**405.10**	**2,015.39**	**0.11**	**9,616.01**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**Yes**	**Yes**	**Yes**	**No**	**Yes**	

Project Name River Village **Mitigated Emissions**
Subphase Weeks 47 thru 91
Length of Subphase (weeks) 45.00
Year 2006

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	21.98	No Grading During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	10.99	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	1.01	--	--	--	
Off-Road Diesel Exhaust Emissions	1,352.50	167.28	1,126.24	--	46.72	
On-Road Diesel Exhaust Emissions	4.44	0.65	6.21	0.06	0.11	
Worker Commute Emissions	12.27	1.35	2.28	0.02	0.09	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	None Available
On-Road Diesel Exhaust	4.00	0.58	3.35	0.06	0.09	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Road Diesel Exhaust	1,217.25	150.55	608.17	n/a	69.15	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	1,682.38	222.74	1,654.08	--	72.90	
Worker Commute Trips	25.51	2.80	4.75	0.04	0.18	
Architectural Painting						
Off-Gas Emissions	--	151.01	--	--	--	
Worker Commute Trips	25.51	2.80	4.75	0.04	0.18	
Mitigation/Reduction						
Off-Road Diesel Exhaust	1,514.14	200.47	893.20	0.00	107.89	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Gas Emissions	--	n/a	--	--	--	No Mitigation Available
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Net Emission Totals:	**367.22**	**198.03**	**1,293.59**	**0.09**	**-45.97**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**No**	**Yes**	**Yes**	**No**	**No**	

Project Name **River Village** **Mitigated Emissions**
Subphase **Week 92**
Length of Subphase (weeks) **1.00**
Year **2007**

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Grading During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	1.01	--	--	--	
Off-Road Diesel Exhaust Emissions	1,373.05	167.28	1,085.87	--	41.93	
On-Road Diesel Exhaust Emissions	4.05	0.61	5.80	0.01	0.10	
Worker Commute Emissions	11.29	1.25	2.11	0.01	0.08	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	None Available
On-Road Diesel Exhaust	3.65	0.54	3.13	0.01	0.08	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Road Diesel Exhaust	1,235.75	150.55	586.37	n/a	62.06	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	2,159.16	275.61	1,931.00	--	79.99	
Worker Commute Trips	28.13	3.11	5.26	0.02	0.21	
Architectural Painting	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	--	151.50	--	--	--	
Worker Commute Trips	28.13	3.11	5.26	0.02	0.21	
Mitigation/Reduction	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	1,943.24	248.05	1,042.74	0.00	118.39	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Gas Emissions	--	n/a	--	--	--	No Mitigation Available
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Net Emission Totals:	**421.17**	**204.32**	**1,403.05**	**0.05**	**-58.00**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**No**	**Yes**	**Yes**	**No**	**No**	

Project Name **River Village** **Mitigated Emissions**
Subphase **Weeks 93 thru 144**
Length of Subphase (weeks) **52.00**
Year **2007**

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Grading During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.02	--	--	--	
Off-Road Diesel Exhaust Emissions	1,373.05	167.28	1,085.87	--	41.93	
On-Road Diesel Exhaust Emissions	0.08	0.01	0.11	0.00	0.00	
Worker Commute Emissions	11.29	1.25	2.11	0.01	0.08	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	None Available
On-Road Diesel Exhaust	0.07	0.01	0.06	0.00	0.00	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Road Diesel Exhaust	1,235.75	150.55	586.37	n/a	62.06	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	1,872.07	240.07	1,693.55	--	70.48	
Worker Commute Trips	24.90	2.75	4.65	0.02	0.18	
Architectural Painting						
Off-Gas Emissions	--	141.73	--	--	--	
Worker Commute Trips	24.90	2.75	4.65	0.02	0.18	
Mitigation/Reduction						
Off-Road Diesel Exhaust	1,684.86	216.06	914.52	0.00	104.31	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Gas Emissions	--	n/a	--	--	--	No Mitigation Available
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Net Emission Totals:	**385.62**	**189.23**	**1,290.00**	**0.05**	**-53.50**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**No**	**Yes**	**Yes**	**No**	**No**	

Project Name **River Village** **Mitigated Emissions**
Subphase **Weeks 145 thru 158**
Length of Subphase (weeks) **14.00**
Year **2008**

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Grading During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	1.01	--	--	--	
Off-Road Diesel Exhaust Emissions	1,385.56	167.28	1,058.35	--	38.46	
On-Road Diesel Exhaust Emissions	3.70	0.57	5.39	0.01	0.10	
Worker Commute Emissions	10.38	1.15	1.94	0.01	0.08	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	None Available
On-Road Diesel Exhaust	3.33	0.51	2.91	0.01	0.08	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Road Diesel Exhaust	1,247.00	150.55	571.51	n/a	56.92	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	1,685.60	212.51	1,453.80	--	58.55	
Worker Commute Trips	20.77	2.30	3.89	0.02	0.17	
Architectural Painting						
Off-Gas Emissions	--	141.66	--	--	--	
Worker Commute Trips	20.77	2.30	3.89	0.02	0.17	
Mitigation/Reduction						
Off-Road Diesel Exhaust	1,517.04	191.26	785.05	0.00	86.65	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Gas Emissions	--	n/a	--	--	--	No Mitigation Available
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Net Emission Totals:	**359.40**	**186.46**	**1,167.78**	**0.04**	**-46.13**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**No**	**Yes**	**Yes**	**No**	**No**	

Project Name **River Village** **Mitigated Emissions**
Subphase **Weeks 159 thru 178**
Length of Subphase (weeks) **21.00**
Year **2009**

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Grading During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.00	--	--	--	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	--	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	1,726.62	212.51	1,394.91	--	53.47	
Worker Commute Trips	19.09	2.13	3.58	0.02	0.17	
Architectural Painting						
Off-Gas Emissions	--	141.66	--	--	--	
Worker Commute Trips	19.09	2.13	3.58	0.02	0.17	
Mitigation/Reduction						
Off-Road Diesel Exhaust	1,553.96	191.26	753.25	0.00	79.14	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Gas Emissions	--	n/a	--	--	--	No Mitigation Available
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Net Emission Totals:	**210.84**	**167.17**	**648.81**	**0.03**	**-25.33**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**No**	**Yes**	**Yes**	**No**	**No**	

Project Name River Village **Mitigated Emissions**
Subphase Weeks 179 thru 196
Length of Subphase (weeks) 18.00
Year 2009

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Gradng During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.00	--	--	--	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	--	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	1,515.09	187.20	1,239.14	--	48.23	
Worker Commute Trips	17.12	1.91	3.21	0.02	0.15	
Architectural Painting						
Off-Gas Emissions	--	141.24	--	--	--	
Worker Commute Trips	17.12	1.91	3.21	0.02	0.15	
Mitigation/Reduction						
Off-Road Diesel Exhaust	1,363.58	168.48	669.14	0.00	71.38	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Gas Emissions	--	n/a	--	--	--	No Mitigation Available
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Net Emission Totals:	**185.74**	**163.78**	**576.42**	**0.03**	**-22.85**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**No**	**Yes**	**Yes**	**No**	**No**	

Project Name **River Village** **Mitigated Emissions**
Subphase **Weeks 197 thru 210**
Length of Subphase (weeks) **13.00**
Year **2009**

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Grading During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.00	--	--	--	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	--	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	11.51	1.29	2.16	0.01	0.10	
Architectural Painting						
Off-Gas Emissions	--	87.64	--	--	--	
Worker Commute Trips	11.51	1.29	2.16	0.01	0.10	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Gas Emissions	--	n/a	--	--	--	No Mitigation Available
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Net Emission Totals:	**23.03**	**90.21**	**4.31**	**0.02**	**0.20**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**No**	**Yes**	**No**	**No**	**No**	

Project Name **River Village** **Mitigated Emissions**
Subphase **Weeks 211 thru 220**
Length of Subphase (weeks) **10.00**
Year **2010**

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.00	--	--	--	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	--	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	7.50	0.84	1.39	0.01	0.07	
Architectural Painting						
Off-Gas Emissions	--	39.26	--	--	--	
Worker Commute Trips	7.50	0.84	1.39	0.01	0.07	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Gas Emissions	--	n/a	--	--	--	No Mitigation Available
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Net Emission Totals:	**15.00**	**40.94**	**2.78**	**0.01**	**0.14**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	

Project Name **River Village** **Mitigated Emissions**
Subphase **Weeks 221 thru 235**
Length of Subphase (weeks) **15.00**
Year **2010**

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Grading During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.00	--	--	--	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	--	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	491.65	59.17	372.96	--	13.64	
Worker Commute Trips	4.44	0.50	0.82	0.00	0.04	
Architectural Painting						
Off-Gas Emissions	--	11.78	--	--	--	
Worker Commute Trips	4.44	0.50	0.82	0.00	0.04	
Mitigation/Reduction						
Off-Road Diesel Exhaust	442.49	53.25	201.40	0.00	20.19	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Gas Emissions	--	n/a	--	--	--	No Mitigation Available
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Net Emission Totals:	**58.05**	**18.70**	**173.21**	**0.01**	**-6.46**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**No**	**No**	**Yes**	**No**	**No**	

River Village Office Construction Only Mitigated Emissions

Weeks of Construction: 140

Year Constr. Begins: 2015

Calculated Emissions

Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	0.00	0.00	0.00	0.00	0.00	No Grading During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	884.12	106.21	665.11	--	23.88	
Worker Commute Trips	10.90	1.20	2.03	0.02	0.08	
Architectural Painting						
Off-Gas Emissions	--	38.48	--	--	--	
Worker Commute Trips	10.90	1.20	2.03	0.02	0.08	
Mitigation/Reduction						
Off-Road Diesel Exhaust	795.71	95.59	359.16	0.00	35.34	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Gas Emissions	--	n/a	--	--	--	No Mitigation Available
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Net Emission Totals:	**110.22**	**51.50**	**310.01**	**0.03**	**-11.31**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**No**	**No**	**Yes**	**No**	**No**	

URBEMIS2002
UNMITIGATED OPERATIONAL EMISSIONS
SUMMERTIME

URBEMIS 2002 For Windows 7.5.0

File Name: C:\URBEMIS2002\URBEMIS River Village\River Village Operational Emissions.urb
Project Name: River Village Operational Emissions
Project Location: South Coast Air Basin (Los Angeles area)
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	78.83	31.65	21.52	0.17	0.08
TOTALS (lbs/day, mitigated)	77.29	26.13	10.61	0.00	0.05

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	342.42	391.84	4,155.89	2.47	377.33
TOTALS (lbs/day, mitigated)	342.41	391.82	4,155.68	2.47	377.31

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	421.25	423.49	4,177.40	2.65	377.40
TOTALS (lbs/day, mitigated)	419.69	417.94	4,166.29	2.47	377.36

URBEMIS 2002 For Windows 7.5.0

File Name: C:\URBEMIS2002\URBEMIS River Village\River Village Operational Emissions.urb
Project Name: River Village Operational Emissions
Project Location: South Coast Air Basin (Los Angeles area)
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	2.40	31.52	13.20	-	0.06
Wood Stoves - No summer emissions					
Fireplaces - No summer emissions					
Landscaping	0.97	0.13	8.32	0.17	0.02
Consumer Prdcts	75.46	-	-	-	-
TOTALS(lbs/day,unmitigated)	78.83	31.65	21.52	0.17	0.08

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Single family housing	56.31	60.90	669.83	0.39	59.43
Apartments low rise	32.54	32.68	359.42	0.21	31.89
Condo/townhouse general	31.93	33.14	364.51	0.21	32.34
Elementary school	20.51	10.98	116.55	0.07	10.66
City park	0.71	0.49	5.16	0.00	0.47
Comercial Center 10-30 ac	91.46	120.96	1,259.13	0.76	115.66
Commercial Center <10 ac.	42.72	57.47	598.28	0.36	54.96
Commercial Shops	2.41	3.13	32.54	0.02	2.99
Commercial Office	63.82	72.09	750.48	0.45	68.94
TOTAL EMISSIONS (lbs/day)	342.42	391.84	4,155.89	2.47	377.33

Does not include correction for passby trips.
Includes a double counting reduction for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2007 Temperature (F): 90 Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Trip Rate	Size	Total Trips
Single family housing	9.90 trips / dwelling units	591.00	5,850.90
Apartments low rise	6.90 trips / dwelling units	455.00	3,139.50
Condo/townhouse general	8.00 trips / dwelling units	398.00	3,184.00
Elementary school	1.45 trips / students	750.00	1,087.50
City park	2.60 trips / acres	20.90	54.34
Comercial Center 10-30 ac	54.06 trips / 1000 sq. ft.	252.00	13,623.12
Commercial Center <10 ac.	85.06 trips / 1000 sq. ft.	76.10	6,473.07
Commercial Shops	37.06 trips / 1000 sq. ft.	9.50	352.07
Commercial Office	11.56 trips / 1000 sq. ft.	702.40	8,119.74

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	55.20	1.80	97.80	0.40
Light Truck < 3,750 lbs	15.10	3.30	94.00	2.70
Light Truck 3,751- 5,750	16.10	1.90	96.90	1.20
Med Truck 5,751- 8,500	7.10	1.40	95.80	2.80
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.40	0.00	50.00	50.00
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.10	0.00	0.00	100.00
Motorcycle	1.70	82.40	17.60	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.20	8.30	83.30	8.40

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.5	4.9	6.0	10.3	5.5	5.5
Rural Trip Length (miles)	11.5	4.9	6.0	10.3	5.5	5.5
Trip Speeds (mph)	35.0	40.0	40.0	40.0	40.0	40.0
% of Trips - Residential	20.0	37.0	43.0			
% of Trips - Commercial (by land use)						
Elementary school				20.0	10.0	70.0
City park				5.0	2.5	92.5
Comercial Center 10-30 ac.				2.0	1.0	97.0
Commercial Center <10 ac.				2.0	1.0	97.0
Commercial Shops				2.0	1.0	97.0
Commercial Office				2.0	1.0	97.0

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Area

The area souce mitigation measure option switch changed from off to on.
The natural gas residential percentage changed from 60 to 100.
The percentage of wood stoves changed from 35 to 0.
The landscape length of the summer period (in days) changed from 180 to 365.
The landscape year changed from 2004 to 2007.
The consumer product persons per residential unit changed from 2.861 to 3.056.
Mitigation measure Orient Buildings North/South: Rsdntl Space Heat.
has been changed from off to on.
Mitigation measure Increase Insulation Beyond Title 24: Rsdntl Space Heat.
has been changed from off to on.
Mitigation measure All Electric Landscape Maintenance Equipment: Rsdntl Lndscp Maint.
has been changed from off to on.
Mitigation measure Central Water Heater: Cmrcl Space Heat.
has been changed from off to on.
Mitigation measure Orient Buildings North/South: Cmrcl Space Heat.
has been changed from off to on.
Mitigation measure Increase Insulation Beyond Title 24: Cmrcl Space Heat.
has been changed from off to on.
Mitigation measure All Electric Landscape Maintenance Equipment: Cmrcl Lndscp Maint.
has been changed from off to on.

Changes made to the default values for Operations

The operational emission year changed from 2004 to 2007.
The double counting internal work trip limit changed from to 791.577.
The double counting shopping trip limit changed from to 395.7885.
The double counting other trip limit changed from to 5234.992.
The travel mode environment settings changed from both to: both
Mitigation measure Mixed Use Project (Residential Oriented):3
has been changed from off to on.
Mitigation measure Provide Sidewalks and/or Pedestrian Paths:1
has been changed from off to on.
Mitigation measure Provide Direct Pedestrian Connections:1
has been changed from off to on.
Mitigation measure Provide Pedestrian Safety:0.5
has been changed from off to on.
Mitigation measure Provide Street Furniture:0.5
has been changed from off to on.
Mitigation measure Provide Street Lighting:0.5
has been changed from off to on.
Mitigation measure Provide Pedestrian Signalization and Signage:0.5
has been changed from off to on.
Mitigation measure Mixed Use Project (Commercial Oriented):1
has been changed from off to on.
Mitigation measure Floor Area Ratio 0.75 or Greater:1
has been changed from off to on.
Mitigation measure Provide Wide Sidewalks and Onsite Pedestrian Facilities:1
has been changed from off to on.
Mitigation measure Provide Street Lighting:0.5
has been changed from off to on.
Mitigation measure Project Provides Shade Trees to Shade Sidewalks:0.5
has been changed from off to on.
Mitigation measure Project Provides Street Art and/or Street Furniture:0.5
has been changed from off to on.
Mitigation measure Provide Pedestrian Safety Designs/Infrastructure at Crossings:0.5
has been changed from off to on.
Mitigation measure Articulated Storefront(s) Display Windows with Visual Interest:0.25
has been changed from off to on.
Mitigation measure No Long Uninterrupted Walls Along Pedestrian Walkways:0.25
has been changed from off to on.
Mitigation measure Provide Bike Lanes/Paths Connecting to Bikeway System:2
has been changed from off to on.
Mitigation measure Provide Bike Lanes/Paths Connecting to Bikeway System:2
has been changed from off to on.
Mitigation measure Provide Securre Bicycle Parking:1
has been changed from off to on.
Mitigation measure Provide Employee Lockers and Showers:1
has been changed from off to on.
Mitigation measure Shuttle Bus Service to Transit/Multi-Modal Center:2
has been changed from off to on.
Mitigation measure Preferential Carpool/Vanpool Parking:1.5
has been changed from off to on.
Mitigation measure Many Frequently Needed Services Provided:5

has been changed from off to on.
Mitigation measuremitop5: Park and Ride Lots
has been changed from on to off.

URBEMIS2002
UNMITIGATED OPERATIONAL EMISSIONS
WINTERTIME

URBEMIS 2002 For Windows 7.5.0

File Name: C:\URBEMIS2002\URBEMIS River Village\River Village Operational Emissions.urb
Project Name: River Village Operational Emissions
Project Location: South Coast Air Basin (Los Angeles area)
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Winter)

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	1,695.26	49.89	1,797.29	2.83	244.44
TOTALS (lbs/day, mitigated)	1,694.70	44.49	1,794.71	2.83	244.43

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	330.01	566.89	4,005.67	2.01	377.33
TOTALS (lbs/day, mitigated)	330.00	566.86	4,005.48	2.01	377.31

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	2,025.28	616.78	5,802.96	4.83	621.77
TOTALS (lbs/day, mitigated)	2,024.69	611.36	5,800.19	4.83	621.74

URBEMIS 2002 For Windows 7.5.0

ile Name: C:\URBEMIS2002\URBEMIS River Village\River Village Operational Emissions.urb
roject Name: River Village Operational Emissions
roject Location: South Coast Air Basin (Los Angeles area)
n-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Winter)

REA SOURCE EMISSION ESTIMATES (Winter Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	2.40	31.52	13.20	-	0.06
Wood Stoves	0.00	0.00	0.00	0.00	0.00
Fireplaces	1,617.41	18.36	1,784.09	2.83	244.38
Landscaping - No winter emissions					
Consumer Prdcts	75.46	-	-	-	-
TOTALS(lbs/day,unmitigated)	1,695.26	49.89	1,797.29	2.83	244.44

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
ingle family housing	52.80	88.27	633.57	0.32	59.43
partments low rise	28.40	47.36	339.97	0.17	31.89
ondo/townhouse general	28.77	48.03	344.78	0.18	32.34
lementary school	9.34	15.91	110.82	0.06	10.66
ity park	0.42	0.71	5.00	0.00	0.47
omercial Center 10-30 ac	100.15	174.82	1,226.28	0.61	115.66
ommercial Center <10 ac.	47.56	83.07	582.67	0.29	54.96
ommercial Shops	2.59	4.52	31.69	0.02	2.99
ommercial Office	59.98	104.20	730.89	0.36	68.94
OTAL EMISSIONS (lbs/day)	330.01	566.89	4,005.67	2.01	377.33

oes not include correction for passby trips.
ncludes a double counting reduction for internal trips.

PERATIONAL (Vehicle) EMISSION ESTIMATES

nalysis Year: 2007 Temperature (F): 50 Season: Winter

MFAC Version: EMFAC2002 (9/2002)

ummary of Land Uses:

nit Type	Trip Rate	Size	Total Trips
ingle family housing	9.90 trips / dwelling units	591.00	5,850.90
partments low rise	6.90 trips / dwelling units	455.00	3,139.50
ondo/townhouse general	8.00 trips / dwelling units	398.00	3,184.00
lementary school	1.45 trips / students	750.00	1,087.50
ity park	2.60 trips / acres	20.90	54.34
omercial Center 10-30 ac	54.06 trips / 1000 sq. ft.	252.00	13,623.12
ommercial Center <10 ac.	85.06 trips / 1000 sq. ft.	76.10	6,473.07
ommercial Shops	37.06 trips / 1000 sq. ft.	9.50	352.07
ommercial Office	11.56 trips / 1000 sq. ft.	702.40	8,119.74

ehicle Assumptions:

leet Mix:

ehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
ight Auto	55.20	1.80	97.80	0.40
ight Truck < 3,750 lbs	15.10	3.30	94.00	2.70
ight Truck 3,751- 5,750	16.10	1.90	96.90	1.20
ed Truck 5,751- 8,500	7.10	1.40	95.80	2.80
ite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
ite-Heavy 10,001-14,000	0.40	0.00	50.00	50.00
ed-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
eavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
ine Haul > 60,000 lbs	0.00	0.00	0.00	100.00
rban Bus	0.10	0.00	0.00	100.00
otorcycle	1.70	82.40	17.60	0.00
School Bus	0.10	0.00	0.00	100.00
otor Home	1.20	8.30	83.30	8.40

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.5	4.9	6.0	10.3	5.5	5.5
Rural Trip Length (miles)	11.5	4.9	6.0	10.3	5.5	5.5
Trip Speeds (mph)	35.0	40.0	40.0	40.0	40.0	40.0
% of Trips - Residential	20.0	37.0	43.0			
% of Trips - Commercial (by land use)						
Elementary school				20.0	10.0	70.0
City park				5.0	2.5	92.5
Comercial Center 10-30 ac.				2.0	1.0	97.0
Commercial Center <10 ac.				2.0	1.0	97.0
Commercial Shops				2.0	1.0	97.0
Commercial Office				2.0	1.0	97.0

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Area

The area souce mitigation measure option switch changed from off to on.
The natural gas residential percentage changed from 60 to 100.
The percentage of wood stoves changed from 35 to 0.
The landscape length of the summer period (in days) changed from 180 to 365.
The landscape year changed from 2004 to 2007.
The consumer product persons per residential unit changed from 2.861 to 3.056.
Mitigation measure Orient Buildings North/South: Rsdntl Space Heat.
has been changed from off to on.
Mitigation measure Increase Insulation Beyond Title 24: Rsdntl Space Heat.
has been changed from off to on.
Mitigation measure All Electric Landscape Maintenance Equipment: Rsdntl Lndscp Maint.
has been changed from off to on.
Mitigation measure Central Water Heater: Cmrcl Space Heat.
has been changed from off to on.
Mitigation measure Orient Buildings North/South: Cmrcl Space Heat.
has been changed from off to on.
Mitigation measure Increase Insulation Beyond Title 24: Cmrcl Space Heat.
has been changed from off to on.
Mitigation measure All Electric Landscape Maintenance Equipment: Cmrcl Lndscp Maint.
has been changed from off to on.

Changes made to the default values for Operations

The operational emission year changed from 2004 to 2007.
The double counting internal work trip limit changed from to 791.577.
The double counting shopping trip limit changed from to 395.7885.
The double counting other trip limit changed from to 5234.992.
The travel mode environment settings changed from both to: both
Mitigation measure Mixed Use Project (Residential Oriented):3
has been changed from off to on.
Mitigation measure Provide Sidewalks and/or Pedestrian Paths:1
has been changed from off to on.
Mitigation measure Provide Direct Pedestrian Connections:1
has been changed from off to on.
Mitigation measure Provide Pedestrian Safety:0.5
has been changed from off to on.
Mitigation measure Provide Street Furniture:0.5
has been changed from off to on.
Mitigation measure Provide Street Lighting:0.5
has been changed from off to on.
Mitigation measure Provide Pedestrian Signalization and Signage:0.5
has been changed from off to on.
Mitigation measure Mixed Use Project (Commercial Oriented):1
has been changed from off to on.
Mitigation measure Floor Area Ratio 0.75 or Greater:1
has been changed from off to on.
Mitigation measure Provide Wide Sidewalks and Onsite Pedestrian Facilities:1
has been changed from off to on.
Mitigation measure Provide Street Lighting:0.5
has been changed from off to on.
Mitigation measure Project Provides Shade Trees to Shade Sidewalks:0.5
has been changed from off to on.
Mitigation measure Project Provides Street Art and/or Street Furniture:0.5
has been changed from off to on.
Mitigation measure Provide Pedestrian Safety Designs/Infrastructure at Crossings:0.5
has been changed from off to on.
Mitigation measure Articulated Storefront(s) Display Windows with Visual Interest:0.25
has been changed from off to on.
Mitigation measure No Long Uninterrupted Walls Along Pedestrian Walkways:0.25
has been changed from off to on.
Mitigation measure Provide Bike Lanes/Paths Connecting to Bikeway System:2
has been changed from off to on.
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Mitigation measure Shuttle Bus Service to Transit/Multi-Modal Center:2
has been changed from off to on.
Mitigation measure Preferential Carpool/Vanpool Parking:1.5
has been changed from off to on.
Mitigation measure Many Frequently Needed Services Provided:5

has been changed from off to on.
Litigation measuremitop5: Park and Ride Lots
has been changed from on to off.

SUMMERTIME EMISSIONS REDUCTIONS

ESTIMATED SUMMERTIME EMISSIONS REDUCTIONS EFFICIENCIES
River Village Emissions With Implementation of Newhall Ranch Specific Plan FEIR Air Quality Mitigation Measures and Without Wood Burning Stoves or Fire Places

Input Fields

LAND USE		Unmitigated Emissions in Pounds per Day CO	VOC	NO_x	PM_{10}
Single Family Residential Uses	Vehicular Sources	669.93	56.31	60.96	59.43
	Area Sources	9.36	39.22	13.67	0.04
Multi-Family Residential Uses	Vehicular Sources	723.93	64.47	65.82	64.23
	Area Sources	7.36	38.82	8.25	0.03
Commercial/Office/Institutional Uses	Vehicular Sources	2,762.13	221.64	265.32	253.67
	Area Sources	4.10	0.20	9.76	0.02
Wood-Burning Fire Place Emissions	Vehicular Sources	0.00	0.00	0.00	0.00
	Area Sources	0.00	0.00	0.00	0.00
Total Emissions	Vehicular Sources	4,155.39	342.42	391.84	377.33
	Area Sources	21.52	78.84	31.68	0.09
	Total Non-Reduced Emissions	4,177.41	421.26	423.48	377.42

Recommended (Measures already incorporated into Project are marked "No." Yes	No	MEASURES, EFFICIENCIES, AND REDUCTIONS	Emission Reduction Efficiency CO	VOC	NO_x	PM_{10}	Reduced Emissions in Pounds per Day CO	VOC	NO_x	PM_{10}	REASONS FOR REJECTING MITIGATION MEASURES
Stationary Sources											
All Residential Uses											
X		Use solar or low emission water heaters	10.0%	11.0%	9.5%	4.5%	1.74	8.58	2.08	0.00	
X		Use built-in energy-efficient appliances	3.0%	2.5%	3.0%	6.5%	0.52	1.95	0.64	0.00	
X		Provide shade trees to reduce heating/cooling needs	0.0%	0.0%	0.0%	0.5%	0.00	0.00	0.00	0.00	
X		Use energy-efficient and automated controls for air conditioners	0.0%	0.0%	0.0%	0.5%	0.00	0.00	0.00	0.00	
X		Use double-glass paned windows	4.5%	4.5%	4.0%	2.5%	0.78	3.51	0.88	0.00	
	X	Provide ventilation systems for enclosed parking facilities	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	Parking structures are not proposed within the project.
X		Use lighting controls and energy efficient lighting	0.0%	0.0%	0.0%	0.5%	0.00	0.00	0.00	0.00	
X		Use fuel cells in residential subdivisions to produce heat and elec.	1.0%	0.0%	1.5%	7.0%	0.17	0.00	0.33	0.00	
X		Orient buildings to the north	13.5%	14.0%	13.0%	10.5%	2.35	10.93	2.85	0.01	
X		Use light-colored roof materials to reflect heat	1.5%	1.5%	1.5%	1.5%	0.26	1.17	0.33	0.00	
X		Comply with Title 24	13.0%	14.0%	13.0%	7.5%	2.26	10.93	2.85	0.01	
Multi-Family Residential Uses											
	X	Use central water heating systems	8.5%	9.0%	8.0%	4.0%	0.00	0.00	0.00	0.00	Central heating systems are not desired by the average multi-family resident.
Commercial, Office, Institutional Uses											
X		Use solar or low emission water heaters	0.5%	0.5%	0.5%	0.3%	0.02	0.00	0.05	0.00	
X		Use central water heating systems	0.5%	0.5%	0.5%	0.3%	0.02	0.00	0.05	0.00	
X		Provide shade trees to reduce heating/cooling needs	0.5%	0.5%	0.5%	1.0%	0.02	0.00	0.05	0.00	
X		Use energy-efficient and automated controls for air conditioners	1.0%	1.0%	1.0%	1.5%	0.04	0.01	0.10	0.00	
X		Use double-glass paned windows	3.0%	3.5%	3.0%	2.5%	0.12	0.03	0.25	0.00	
X		Use energy-efficient low-sodium parking lights	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Provide ventilation systems for enclosed parking facilities	0.0%	0.0%	0.0%	0.3%	0.00	0.00	0.00	0.00	Parking structures are not proposed within the project.
X		Use lighting controls and energy efficient lighting	7.0%	3.0%	8.5%	19.5%	0.29	0.02	0.82	0.00	
X		Use light-colored roof materials to reflect heat	1.0%	1.0%	1.0%	0.3%	0.04	0.01	0.10	0.00	
X		Comply with Title 24	9.5%	10.0%	9.0%	7.0%	0.39	0.08	0.87	0.00	
X		Orient buildings to the north	12.5%	11.0%	13.5%	17.5%	0.51	0.09	1.31	0.00	
Industrial Uses											
	X	Provide shade trees to reduce heating/cooling needs	0.0%	0.0%	0.0%	0.5%	0.00	0.00	0.00	0.00	No industrial uses are proposed within the project.
	X	Use energy-efficient and automated controls for air conditioners	0.0%	0.0%	0.0%	1.0%	0.00	0.00	0.00	0.00	
	X	Use double-glass paned windows	0.0%	0.0%	0.5%	1.0%	0.00	0.00	0.00	0.00	
	X	Use energy-efficient low-sodium parking lights	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Provide ventilation systems for enclosed parking facilities	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Use lighting controls and energy efficient lighting	0.5%	0.0%	1.0%	2.5%	0.00	0.00	0.00	0.00	
	X	Use light-colored roof materials to reflect heat	0.0%	0.0%	0.0%	0.5%	0.00	0.00	0.00	0.00	
	X	Orient buildings to the north	2.5%	2.0%	3.0%	5.5%	0.00	0.00	0.00	0.00	
	X	Comply with Title 24	0.5%	0.0%	1.0%	3.0%	0.00	0.00	0.00	0.00	
	X	Improved storage and handling of source materials	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Materials substitution (e.g., use water-based paints, life cycle analysis)	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Utilize efficient manufacturing processes	1.5%	0.5%	2.0%	6.0%	0.00	0.00	0.00	0.00	
	X	Resource recovery systems	3.0%	3.5%	3.0%	1.5%	0.00	0.00	0.00	0.00	

Impact Sciences, Inc.
Prepared by R. Mamaghani
2/12/04

Based on SCAQMD
CEQA Air Quality Handbook
Table 11-6

ESTIMATED SUMMERTIME EMISSIONS REDUCTIONS EFFICIENCIES
River Village Emissions With Implementation of Newhall Ranch Specific Plan FEIR Air Quality Mitigation Measures and Without Wood Burning Stoves or Fire Places

Recommended (Measures already incorporated into Project are marked "No."			Emission Reduction Efficiency				Reduced Emissions in Pounds per Day				
Yes	No	MEASURES, EFFICIENCIES, AND REDUCTIONS	CO	VOC	NO_x	PM_{10}	CO	VOC	NO_x	PM_{10}	REASONS FOR REJECTING MITIGATION MEASURES
Mobile Sources											
Residential Uses											
	X	Allow satellite telecommunications centers in residential subdivisions	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	Satellite telecommunications centers are superseded by other technology.
	X	Shuttle service from res. subdivisions to commercial core areas	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	Residences are proposed in walking distance to proposed commercial areas.
X		Construct bus passenger benches and shelters	0.2%	0.2%	0.2%	0.2%	2.79	0.24	0.25	0.25	
X		Construct pedestrian facility improvements	0.1%	0.1%	0.1%	0.1%	1.39	0.12	0.13	0.12	
X		Retail services within or adjacent to residential subdivisions	1.3%	1.0%	1.3%	1.3%	18.12	1.21	1.65	1.61	
X		Shuttles to major rail transit centers or multi-modal stations	0.1%	0.1%	0.1%	0.1%	1.39	0.12	0.13	0.12	
X		Contribute to regional transit systems	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
X		Synchronize traffic lights on streets impacted by development	4.0%	4.0%	4.0%	4.0%	55.75	4.83	5.07	4.95	
X		Construct bicycle trails	0.1%	0.1%	0.1%	0.1%	1.39	0.12	0.13	0.12	
Commercial, Office and Institutional Uses											
X		Preferential parking spaces for carpools and vanpools	0.1%	0.1%	0.1%	0.1%	2.76	0.22	0.27	0.25	
X		Implement on-site circulation plan in parking lots	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
X		Provide separate windows for fast-food restaurants	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
X		Provide video-conference facilities	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Set up resident worker training programs to improve job/housing balance	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	Such programs are set up by and at the discretion of future occupants of the commercial uses.
	X	Implement home dispatching system for employees	0.1%	0.0%	0.1%	0.1%	0.00	0.00	0.00	0.00	Such programs are set up by and at the discretion of future occupants of the commercial uses.
	X	Minimize use of fleet vehicles during smog alerts	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	No commercial retail or office use on the site is expected to use fleet vehicles.
	X	Use low emission fleet vehicles	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	No commercial retail or office use on the site is expected to use fleet vehicles.
	X	Reduce employee parking spaces for those business not under Rule 2202	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	There is potential for employees to park in areas designated for retail customers, thereby negating the intent of this measure.
	X	Lunch shuttle service from a worksite to food establishments	0.5%	0.4%	0.5%	0.5%	0.00	0.00	0.00	0.00	Mixed use lots are expected to have food establishments located within walking distance for employees.
	X	Implement compressed work-week schedules	1.0%	0.8%	1.0%	1.0%	0.00	0.00	0.00	0.00	Such programs are set up by and at the discretion of future occupants of the commercial uses.
	X	Trip reduction plan to achieve 1.5 AVR for businesses	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	The requirement to achieve a specific AVR has been ruled unlawful by the federal government.
	X	Utilize satellite offices rather than regular worksite to reduce VMT	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	Such programs are set up by and at the discretion of future occupants of the commercial uses.
	X	Establish a home-based telecommuting program	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	Such programs are set up by and at the discretion of future occupants of the commercial uses.
X		Provide or contribute to child care and after school facilities	0.1%	0.1%	0.1%	0.1%	2.76	0.22	0.27	0.25	
	X	Offer travel incentives such as discounts on purchases for transit riders	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	Such programs are set up by and at the discretion of future occupants of the commercial uses.
X		Provide on-site employee services such as cafeteria, banks, etc.	0.3%	0.2%	0.3%	0.3%	8.29	0.44	0.80	0.76	
	X	Shuttle service from residential core area to the worksite	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	Residential uses are in close proximity and within walking distance to proposed commercial uses.
X		Construct bus passenger benches and shelters	0.1%	0.1%	0.1%	0.1%	2.76	0.22	0.27	0.25	
	X	Pricing structure for single-occupancy employee parking	2.0%	1.5%	2.0%	2.0%	0.00	0.00	0.00	0.00	There is potential for employees to park in areas designated for retail customers, thereby negating the intent of this measure.
X		Residential units within or adjacent to commercial developments	4.0%	3.1%	4.0%	4.0%	110.49	6.87	10.60	10.15	
X		Utilize excess parking as park-n-ride or contribute to park-n-ride	0.1%	0.1%	0.1%	0.1%	2.76	0.22	0.27	0.25	
X		Construct bicycle facility improvements	0.3%	0.2%	0.3%	0.3%	8.29	0.44	0.80	0.76	
X		Construct pedestrian facility improvements	0.2%	0.2%	0.2%	0.2%	5.52	0.44	0.53	0.51	
X		Shuttles to major rail transit centers or multi-modal stations	0.1%	0.1%	0.1%	0.1%	2.76	0.22	0.27	0.25	
X		Contribute to regional transit systems	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
X		Charge visitors to park	2.0%	1.5%	2.0%	2.0%	55.24	3.32	5.30	5.07	
X		Synchronize traffic lights on streets impacted by development	4.0%	4.0%	4.0%	4.0%	110.49	8.87	10.60	10.15	
X		Reschedule truck deliveries and pickups for off-peak hours	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Paid parking at walkup kiosks	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	There is potential for employees to park in areas designated for retail customers, thereby negating the intent of this measure.
X		On-site truck loading zones	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Implement or contribute to public outreach programs	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
X		Provide commuter information areas	0.1%	0.1%	0.1%	0.1%	2.76	0.22	0.27	0.25	Such programs are set up by and at the discretion of future occupants of the commercial uses.

ESTIMATED SUMMERTIME EMISSIONS REDUCTIONS EFFICIENCIES
River Village Emissions With Implementation of Newhall Ranch Specific Plan FEIR Air Quality Mitigation Measures and Without Wood Burning Stoves or Fire Places

Recommended (Measures already incorporated into Project are marked "No."			Emission Reduction Efficiency				Reduced Emissions in Pounds per Day				
Yes	No	MEASURES, EFFICIENCIES, AND REDUCTIONS	CO	VOC	NO_x	PM_{10}	CO	VOC	NO_x	PM_{10}	REASONS FOR REJECTING MITIGATION MEASURES
Industrial Uses											
	X	Preferential parking spaces for carpools and vanpools	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	No industrial uses are proposed within the project.
	X	Implement on-site circulation plan in parking lots	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Set up resident worker training programs to improve job/housing balance	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Implement home dispatching system for employees	0.1%	0.0%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Minimize use of fleet vehicles during smog alerts	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Use low emission fleet vehicles	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Provide commuter information areas	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Reduce employee parking spaces for those business not under Rule 2202	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Implement compressed work-week schedules	1.0%	0.8%	1.0%	1.0%	0.00	0.00	0.00	0.00	
	X	Offer loans or other incentives to employees who move locally	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Trip reduction plan to achieve 1.5 AVR for businesses	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Provide or contribute to child care and after school facilities	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Provide on-site employee services such as cafeteria, banks, etc.	0.3%	0.2%	0.3%	0.3%	0.00	0.00	0.00	0.00	
	X	Shuttle service from residential core area to the worksite	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Construct bus passenger benches and shelters	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Pricing structure for single-occupancy employee parking	2.0%	1.5%	2.0%	2.0%	0.00	0.00	0.00	0.00	
	X	Utilize excess parking as park-n-ride or contribute to park-n-ride	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Construct bicycle facility improvements	0.3%	0.2%	0.3%	0.3%	0.00	0.00	0.00	0.00	
	X	Construct pedestrian facility improvements	0.2%	0.2%	0.2%	0.2%	0.00	0.00	0.00	0.00	
	X	Shuttles to major rail transit centers or multi-modal stations	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Contribute to regional transit systems	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Synchronize traffic lights on streets impacted by development	4.0%	4.0%	4.0%	4.0%	0.00	0.00	0.00	0.00	
	X	Reschedule truck deliveries and pickups for off-peak hours	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Lunch shuttle system from worksite to food establishments	0.5%	0.4%	0.5%	0.5%	0.00	0.00	0.00	0.00	
	X	On-site truck loading zones	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Install aerodynamic add-on devices to heavy-duty trucks	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Implement or contribute to public outreach programs	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Reduce ship cruising speeds in the inner harbor	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Use low-emission fuels or electrify airport ground service vehicles	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Engine tuning for marine vessels	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Reduce number of aircraft engines used during idling	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Install monitoring system to control airport shuttles	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Use centralized ground power systems for airport service vehicles	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
		Reduction in Stationary Sources Emissions (Pounds per day)					-9.56	-37.32	-13.62	-0.04	
		Reduction in Mobile Sources Emissions (Pounds per day)					-395.72	-28.36	-37.57	-36.09	
		Total Reduction in Emissions Based on Newhall Ranch FEIR Measures (Pounds per day)					-405.28	-65.68	-51.19	-36.13	
		Percentage Reduced Based on Newhall Ranch FEIR Measures					-9.70%	-15.59%	-12.09%	-9.57%	
		No Wood Burning Fire Places or Stoves in Residential Units					0.00	0.00	0.00	0.00	
		Total Percent Reduction Based on Implementation of All Recommended Measures					-9.70%	-15.59%	-12.09%	-9.57%	
		Total Reduced Stationary Source Emissions					**11.96**	**41.52**	**18.02**	**0.05**	
		Total Reduced Mobile Source Emissions					**3,760.17**	**314.06**	**354.27**	**341.24**	
		TOTAL REDUCED EMISSIONS					**3,772.13**	**355.58**	**372.29**	**341.29**	
		SCAQMD Thresholds					**550.00**	**55.00**	**55.00**	**150.00**	
		ProjectAir Quality Impacts Significant?					YES	YES	YES	YES	

WINTERTIME EMISSIONS REDUCTIONS

ESTIMATED WINTERTIME EMISSIONS REDUCTIONS EFFICIENCIES
River Village Emissions With Implementation of Newhall Ranch Specific Plan FEIR Air Quality Mitigation Measures and Without Wood Burning Stoves or Fire Places

Input Fields

LAND USE		Unmitigated Emissions in Pounds per Day CO	VOC	NO_x	PM_{10}
Single Family Residential Uses	Vehicular Sources	633.57	52.80	88.27	59.43
	Area Sources	9.86	39.22	13.67	0.04
Multi-Family Residential Uses	Vehicular Sources	684.75	57.17	95.39	64.23
	Area Sources	7.56	38.82	8.27	0.03
Commercial/Office/Institutional Uses	Vehicular Sources	2,687.35	220.04	383.23	253.67
	Area Sources	4.10	0.80	9.70	0.02
Wood-Burning Fire Place Emissions	Vehicular Sources	0.00	0.00	0.00	0.00
	Area Sources	1,784.09	1,617.41	18.36	244.38
Total Emissions	Vehicular Sources	4,005.67	330.01	566.89	377.33
	Area Sources	1,805.61	1,696.25	50.00	244.47
	Total Non-Reduced Emissions	5,811.28	2,026.26	616.89	621.80

Recommended (Measures already incorporated into Project are marked "No." Yes	No	MEASURES, EFFICIENCIES, AND REDUCTIONS	Emission Reduction Efficiency CO	VOC	NO_x	PM_{10}	Reduced Emissions in Pounds per Day CO	VOC	NO_x	PM_{10}	REASONS FOR REJECTING MITIGATION MEASURES
Stationary Sources											
All Residential Uses											
X		Use solar or low emission water heaters	10.0%	11.0%	9.5%	4.5%	1.74	8.58	2.08	0.00	
X		Use built-in energy-efficient appliances	3.0%	2.5%	3.0%	6.5%	0.52	1.95	0.66	0.00	
X		Provide shade trees to reduce heating/cooling needs	0.0%	0.0%	0.0%	0.5%	0.00	0.00	0.00	0.00	
X		Use energy-efficient and automated controls for air conditioners	0.0%	0.0%	0.0%	0.5%	0.00	0.00	0.00	0.00	
X		Use double-glass paned windows	4.5%	4.5%	4.0%	2.5%	0.78	3.51	0.88	0.00	
	X	Provide ventilation systems for enclosed parking facilities	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	Parking structures are not proposed within the project.
X		Use lighting controls and energy efficient lighting	0.0%	0.0%	0.0%	0.5%	0.00	0.00	0.00	0.00	
X		Use fuel cells in residential subdivisions to produce heat and elec.	1.0%	0.0%	1.5%	7.0%	0.17	0.00	0.33	0.00	
X		Orient buildings to the north	13.5%	14.0%	13.0%	10.5%	2.35	10.93	2.85	0.01	
X		Use light-colored roof materials to reflect heat	1.5%	1.5%	1.5%	1.5%	0.26	1.17	0.33	0.00	
X		Comply with Title 24	13.0%	14.0%	13.0%	7.5%	2.26	10.93	2.85	0.01	
Multi-Family Residential Uses											
	X	Use central water heating systems	8.5%	9.0%	8.0%	4.0%	0.00	0.00	0.00	0.00	Central heating systems are not desired by the average multi-family resident.
Commercial, Office, Institutional Uses											
X		Use solar or low emission water heaters	0.5%	0.5%	0.5%	0.5%	0.02	0.00	0.05	0.00	
X		Use central water heating systems	0.5%	0.5%	0.5%	0.5%	0.02	0.00	0.05	0.00	
X		Provide shade trees to reduce heating/cooling needs	0.5%	0.5%	0.5%	1.0%	0.02	0.00	0.05	0.00	
X		Use energy-efficient and automated controls for air conditioners	1.0%	1.0%	1.0%	1.5%	0.04	0.01	0.10	0.00	
X		Use double-glass paned windows	3.0%	3.5%	3.0%	2.5%	0.12	0.03	0.29	0.00	
X		Use energy-efficient low-sodium parking lights	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Provide ventilation systems for enclosed parking facilities	0.0%	0.0%	0.0%	0.5%	0.00	0.00	0.00	0.00	Parking structures are not proposed within the project.
X		Use lighting controls and energy efficient lighting	7.0%	3.0%	8.5%	19.5%	0.29	0.02	0.82	0.00	
X		Use light-colored roof materials to reflect heat	1.0%	1.0%	1.0%	0.5%	0.04	0.01	0.10	0.00	
X		Comply with Title 24	9.5%	10.0%	9.0%	7.0%	0.39	0.08	0.87	0.00	
X		Orient buildings to the north	12.5%	11.0%	13.5%	17.5%	0.51	0.09	1.31	0.00	
Industrial Uses											
	X	Provide shade trees to reduce heating/cooling needs	0.0%	0.0%	0.0%	0.5%	0.00	0.00	0.00	0.00	No industrial uses are proposed within the project.
	X	Use energy-efficient and automated controls for air conditioners	0.0%	0.0%	0.0%	1.0%	0.00	0.00	0.00	0.00	
	X	Use double-glass paned windows	0.0%	0.0%	0.5%	1.0%	0.00	0.00	0.00	0.00	
	X	Use energy-efficient low-sodium parking lights	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Provide ventilation systems for enclosed parking facilities	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Use lighting controls and energy efficient lighting	0.5%	0.0%	1.0%	2.5%	0.00	0.00	0.00	0.00	
	X	Use light-colored roof materials to reflect heat	0.0%	0.0%	0.0%	0.5%	0.00	0.00	0.00	0.00	
	X	Orient buildings to the north	2.5%	2.0%	3.0%	5.5%	0.00	0.00	0.00	0.00	
	X	Comply with Title 24	0.5%	0.0%	1.0%	3.0%	0.00	0.00	0.00	0.00	
	X	Improved storage and handling of source materials	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Materials substitution (e.g., use water-based paints, life cycle analysis)	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Utilize efficient manufacturing processes	1.5%	0.5%	2.0%	6.0%	0.00	0.00	0.00	0.00	
	X	Resource recovery systems	3.0%	3.5%	3.0%	1.5%	0.00	0.00	0.00	0.00	

Impact Sciences, Inc.
Prepared by R. Mamaghani
2/13/04

Based on SCAQMD
CEQA Air Quality Handbook
Table 11-6

ESTIMATED WINTERTIME EMISSIONS REDUCTIONS EFFICIENCIES
River Village Emissions With Implementation of Newhall Ranch Specific Plan FEIR Air Quality Mitigation Measures and Without Wood Burning Stoves or Fire Places

Recommended (Measures already incorporated into Project are marked "No."			Emission Reduction Efficiency				Reduced Emissions in Pounds per Day				
Yes	No	MEASURES, EFFICIENCIES, AND REDUCTIONS	CO	VOC	NO_x	PM_{10}	CO	VOC	NO_x	PM_{10}	REASONS FOR REJECTING MITIGATION MEASURES
Mobile Sources											
Residential Uses											
	X	Allow satellite telecommunications centers in residential subdivisions	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	Satellite telecommunications centers are superseded by other technology.
	X	Shuttle service from res. subdivisions to commercial core areas	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	Residences are proposed in walking distance to proposed commercial areas.
X		Construct bus passenger benches and shelters	0.2%	0.2%	0.2%	0.2%	2.64	0.22	0.37	0.25	
X		Construct pedestrian facility improvements	0.1%	0.1%	0.1%	0.1%	1.32	0.11	0.18	0.12	
X		Retail services within or adjacent to residential subdivisions	1.3%	1.0%	1.3%	1.3%	17.14	1.10	2.39	1.61	
X		Shuttles to major rail transit centers or multi-modal stations	0.1%	0.1%	0.1%	0.1%	1.32	0.11	0.18	0.12	
X		Contribute to regional transit systems	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
X		Synchronize traffic lights on streets impacted by development	4.0%	4.0%	4.0%	4.0%	52.73	4.40	7.35	4.95	
X		Construct bicycle trails	0.1%	0.1%	0.1%	0.1%	1.32	0.11	0.18	0.12	
Commercial, Office and Institutional Uses											
X		Preferential parking spaces for carpools and vanpools	0.1%	0.1%	0.1%	0.1%	2.69	0.22	0.38	0.25	
X		Implement on-site circulation plan in parking lots	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
X		Provide separate windows for fast-food restaurants	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
X		Provide video-conference facilities	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Set up resident worker training programs to improve job/housing balance	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	Such programs are set up by and at the discretion of future occupants of the commercial uses.
	X	Implement home dispatching system for employees	0.1%	0.0%	0.1%	0.1%	0.00	0.00	0.00	0.00	Such programs are set up by and at the discretion of future occupants of the commercial uses.
	X	Minimize use of fleet vehicles during smog alerts	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	No commercial retail or office use on the site is expected to use fleet vehicles.
	X	Use low emission fleet vehicles	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	No commercial retail or office use on the site is expected to use fleet vehicles.
	X	Reduce employee parking spaces for those business not under Rule 2202	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	There is potential for employees to park in areas designated for retail customers, thereby negating the intent of this measure.
	X	Lunch shuttle service from a worksite to food establishments	0.5%	0.4%	0.5%	0.5%	0.00	0.00	0.00	0.00	Mixed use lots are expected to have food establishments located within walking distance for employees.
	X	Implement compressed work-week schedules	1.0%	0.8%	1.0%	1.0%	0.00	0.00	0.00	0.00	Such programs are set up by and at the discretion of future occupants of the commercial uses.
	X	Trip reduction plan to achieve 1.5 AVR for businesses	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	The requirement to achieve a specific AVR has been ruled unlawful by the federal government.
	X	Utilize satellite offices rather than regular worksite to reduce VMT	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	Such programs are set up by and at the discretion of future occupants of the commercial uses.
	X	Establish a home-based telecommuting program	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	Such programs are set up by and at the discretion of future occupants of the commercial uses.
X		Provide or contribute to child care and after school facilities	0.1%	0.1%	0.1%	0.1%	2.69	0.22	0.38	0.25	
	X	Offer travel incentives such as discounts on purchases for transit riders	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	Such programs are set up by and at the discretion of future occupants of the commercial uses.
X		Provide on-site employee services such as cafeteria, banks, etc.	0.3%	0.2%	0.3%	0.3%	8.06	0.44	1.15	0.76	
	X	Shuttle service from residential core area to the worksite	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	Residential uses are in close proximity and within walking distance to proposed commercial uses.
X		Construct bus passenger benches and shelters	0.1%	0.1%	0.1%	0.1%	2.69	0.22	0.38	0.25	
	X	Pricing structure for single-occupancy employee parking	2.0%	1.5%	2.0%	2.0%	0.00	0.00	0.00	0.00	There is potential for employees to park in areas designated for retail customers, thereby negating the intent of this measure.
X		Residential units within or adjacent to commercial developments	4.0%	3.1%	4.0%	4.0%	107.49	6.82	15.33	10.15	
X		Utilize excess parking as park-n-ride or contribute to park-n-ride	0.1%	0.1%	0.1%	0.1%	2.69	0.22	0.38	0.25	
X		Construct bicycle facility improvements	0.3%	0.2%	0.3%	0.3%	8.06	0.44	1.15	0.76	
X		Construct pedestrian facility improvements	0.2%	0.2%	0.2%	0.2%	5.37	0.44	0.77	0.51	
X		Shuttles to major rail transit centers or multi-modal stations	0.1%	0.1%	0.1%	0.1%	2.69	0.22	0.38	0.25	
X		Contribute to regional transit systems	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
X		Charge visitors to park	2.0%	1.5%	2.0%	2.0%	53.75	3.30	7.66	5.07	
X		Synchronize traffic lights on streets impacted by development	4.0%	4.0%	4.0%	4.0%	107.49	8.80	15.33	10.15	
X		Reschedule truck deliveries and pickups for off-peak hours	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Paid parking at walkup kiosks	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	There is potential for employees to park in areas designated for retail customers, thereby negating the intent of this measure.
X		On-site truck loading zones	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Implement or contribute to public outreach programs	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
X		Provide commuter information areas	0.1%	0.1%	0.1%	0.1%	2.69	0.22	0.38	0.25	Such programs are set up by and at the discretion of future occupants of the commercial uses.

ESTIMATED WINTERTIME EMISSIONS REDUCTIONS EFFICIENCIES
River Village Emissions With Implementation of Newhall Ranch Specific Plan FEIR Air Quality Mitigation Measures and Without Wood Burning Stoves or Fire Places

Recommended (Measures already incorporated into Project are marked "No."			Emission Reduction Efficiency				Reduced Emissions in Pounds per Day				
Yes	No	MEASURES, EFFICIENCIES, AND REDUCTIONS	CO	VOC	NO_x	PM_{10}	CO	VOC	NO_x	PM_{10}	REASONS FOR REJECTING MITIGATION MEASURES
Industrial Uses											
	X	Preferential parking spaces for carpools and vanpools	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	No industrial uses are proposed within the project.
	X	Implement on-site circulation plan in parking lots	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Set up resident worker training programs to improve job/housing balance	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Implement home dispatching system for employees	0.1%	0.0%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Minimize use of fleet vehicles during smog alerts	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Use low emission fleet vehicles	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Provide commuter information areas	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Reduce employee parking spaces for those business not under Rule 2202	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Implement compressed work-week schedules	1.0%	0.8%	1.0%	1.0%	0.00	0.00	0.00	0.00	
	X	Offer loans or other incentives to employees who move locally	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Trip reduction plan to achieve 1.5 AVR for businesses	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Provide or contribute to child care and after school facilities	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Provide on-site employee services such as cafeteria, banks, etc.	0.3%	0.2%	0.3%	0.3%	0.00	0.00	0.00	0.00	
	X	Shuttle service from residential core area to the worksite	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Construct bus passenger benches and shelters	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Pricing structure for single-occupancy employee parking	2.0%	1.5%	2.0%	2.0%	0.00	0.00	0.00	0.00	
	X	Utilize excess parking as park-n-ride or contribute to park-n-ride	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Construct bicycle facility improvements	0.3%	0.2%	0.3%	0.3%	0.00	0.00	0.00	0.00	
	X	Construct pedestrian facility improvements	0.2%	0.2%	0.2%	0.2%	0.00	0.00	0.00	0.00	
	X	Shuttles to major rail transit centers or multi-modal stations	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Contribute to regional transit systems	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Synchronize traffic lights on streets impacted by development	4.0%	4.0%	4.0%	4.0%	0.00	0.00	0.00	0.00	
	X	Reschedule truck deliveries and pickups for off-peak hours	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Lunch shuttle system from worksite to food establishments	0.5%	0.4%	0.5%	0.5%	0.00	0.00	0.00	0.00	
	X	On-site truck loading zones	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Install aerodynamic add-on devices to heavy-duty trucks	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Implement or contribute to public outreach programs	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Reduce ship cruising speeds in the inner harbor	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Use low-emission fuels or electrify airport ground service vehicles	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Engine tuning for marine vessels	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Reduce number of aircraft engines used during idling	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Install monitoring system to control airport shuttles	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Use centralized ground power systems for airport service vehicles	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
		Reduction in Stationary Sources Emissions (Pounds per day)					-9.56	-37.32	-13.62	-0.04	
		Reduction in Mobile Sources Emissions (Pounds per day)					-382.82	-27.61	-54.34	-36.09	
		Total Reduction in Emissions Based on Newhall Ranch FEIR Measures (Pounds per day)					-392.38	-64.93	-67.96	-36.13	
		Percentage Reduced Based on Newhall Ranch FEIR Measures					-6.75%	-3.20%	-11.02%	-5.81%	
		No Wood Burning Fire Places or Stoves in Residential Units					-1,784.09	-1,617.41	-18.36	-244.38	
		Total Percent Reduction Based on Implementation of All Recommended Measures					-37.45%	-83.03%	-13.99%	-45.11%	
		Total Reduced Stationary Source Emissions					**11.96**	**41.52**	**18.02**	**0.05**	
		Total Reduced Mobile Source Emissions					**3,622.85**	**302.40**	**512.55**	**341.24**	
		TOTAL REDUCED EMISSIONS					**3,634.81**	**343.92**	**530.57**	**341.29**	
		SCAQMD Thresholds					**550.00**	**55.00**	**55.00**	**150.00**	
		ProjectAir Quality Impacts Significant?					YES	YES	YES	YES	

Impact Sciences, Inc.
Prepared by R. Mamaghani
2/13/04

Based on SCAQMD
CEQA Air Quality Handbook
Table 11-6

APPENDIX B
ISCST3 Files

ISCST3 Files

APPENDIX C
Calculations of Chronic Hazard Indices

Landmark Village EIR
Chronic Hazard Indices Calculations

Multiplying factor used in Cancer Risk Calculations: 40.96

Receptor	Risk (in one million)	Concentration ($\mu g/m^3$)	REL for DPM ($\mu g/m^3$)	Chronic Hazard Index
Residential	1.7	0.042	5	0.008
Workplace	1.2	0.029	5	0.006
Sensitive	0.3	0.007	5	0.001

REL: Reference Exposure Limit
DPM: Diesel Particulate Matter

NEWHALL RANCH SPECIFIC PLAN FINAL EIR
AIR QUALITY MITIGATION MEASURES

The following air quality mitigation measures are from the Newhall Ranch Specific Plan Final EIR. These measures, as appropriate, are intended to apply to all future development within Newhall Ranch. Not all of the following measure are appropriate for River Village and comments on the appropriateness of each measure to the River Village project is noted in *italics*.

4.10-1. The Specific Plan will provide Commercial and Service uses in close proximity to residential subdivisions.

4.10-2. The Specific Plan will locate residential uses in close proximity to Commercial uses, Mixed-Uses, and Business Parks.

4.10-3. Bus pull-ins will be constructed throughout the Specific Plan site.

4.10-4. Pedestrian facilities, such as sidewalks, and community regional, and local trails, will be provided throughout the Specific Plan site.

4.10-5. Roads with adjacent trails for pedestrian and bicycle use will be provided throughout the Specific Plan site connecting the individual Villages and community.

4.10-6. The applicant of future subdivisions shall implement all rules and regulations adopted by the Governing Board of the SCAQMD which are applicable to the development of the subdivision (such as Rule 402 - Nuisance, Rule 403 - Fugitive Dust, Rule 1113 - Architectural Coatings) and which are in effect at the time of development. The purpose of Rule 403 is to reduce the amount of particulate matter entrained in the ambient air as a result of man-made fugitive dust sources by requiring actions to prevent, reduce, or mitigate fugitive dust emissions. Rule 403 applies to any activity or man-made condition capable of generating fugitive dust such as the mass and remedial grading associated with the project as well as weed abatement and stockpiling of construction materials (*i.e.*, rock, earth, gravel). Rule 403 requires that grading operations either (1) take actions specified in Tables 1 and 2 of the Rule for each applicable source of fugitive dust and take certain notification and record keeping actions; or (2) obtain an approved Fugitive Dust Control Plan. A complete copy of the SCAQMD's Rule 403 Implementation Handbook, which has been included in Appendix 4.10, provides guideline tables to demonstrate the typical mitigation program and record keeping required for grading operations (Tables 1 and 2 and sample record keeping chart). The record keeping is accomplished by on-site construction personnel, typically the construction superintendent.

Each future subdivision proposed in association with the Newhall Ranch Specific Plan shall implement the following if found applicable and feasible for that subdivision.

GRADING

a. Apply non-toxic soil stabilizers according to manufacturers' specification to all inactive construction areas (previously graded areas inactive for ten days or more).
b. Replace groundcover in disturbed areas as quickly as possible.
c. Enclose, cover, water twice daily, or apply non-toxic soil binders according to manufacturers' specifications, to exposed piles (*i.e.*, gravel, sand, dirt) with 5 percent or greater silt content.
d. Water active sites at least twice daily.
e. Suspend all excavating and grading operations when wind speeds (as instantaneous gusts) exceed 25 mph.
f. Monitor for particulate emissions according to District-specified procedures.
g. All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of freeboard (*i.e.*, minimum vertical distance between top of the load and the top of the trailer) in accordance with the requirements of CVC Section 23114.

The effectiveness of these measures at reducing PM10 emissions ranges from 7 to 74 percent.[1]

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[1] *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-15 and p. A11-77.*

PAVED ROADS

h. Sweep streets at the end of the day if visible soil material is carried onto adjacent public paved roads (recommend water sweepers with reclaimed water).
i. Install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash off trucks and any equipment leaving the site each trip.

The effectiveness of these measures at reducing PM10 emissions ranges from 25 to 70 percent.[2]

UNPAVED ROADS

j. Apply water three times daily, or non-toxic soil stabilizers according to manufacturers' specifications, to all unpaved parking or staging areas or unpaved road surfaces.
k. Reduce traffic speeds on all unpaved roads to 15 mph or less.
l. Pave construction roads that have a traffic volume of more than 50 daily trips by construction equipment, 150 total daily trips for all vehicles.
m. Pave all construction access roads at least 100 feet on to the site from the main road.
n. Pave construction roads that have a daily traffic volume of less than 50 vehicular trips.

The effectiveness of these measures at reducing PM10 emissions ranges from 40 to 92.5 percent.[3]

4.10-7. Prior to the approval of each future subdivision proposed in association with the Newhall Ranch Specific Plan, each of the construction emission reduction measures indicated below (and in Tables 11-2 and 11-3 of the SCAQMD's CEQA *Air Quality Handbook*, as amended) shall be implemented if found applicable and feasible for that subdivision.

ON-ROAD MOBILE SOURCE CONSTRUCTION EMISSIONS:

a. Configure construction parking to minimize traffic interference. *The effectiveness of this measure to reduce VOC emissions is not quantified by SCAQMD.*[4]
b. Provide temporary traffic controls when construction activities have the potential to disrupt traffic to maintain traffic flow (e.g., signage, flag person, detours). *The effectiveness of this measure to reduce VOC emissions is not quantified by SCAQMD.*[5]
c. Schedule construction activities that affect traffic flow to off-peak hours (*e.g.*, between 7:00 P.M. and 6:00 A.M. and between 10:00 A.M. and 3:00 P.M.). *The effectiveness of this measure to reduce VOC emissions is not quantified by SCAQMD.*[6]
d. Develop a trip reduction plan to achieve a 1.5 average vehicle ridership (AVR) for construction employees. *Mitigation not suitable for River Village because SCAQMD Rule 2202 applies to all employers who meet certain criteria for implementing trip reduction measures. The requirement to achieve a specific AVR has been ruled unlawful by the federal government and is no longer recommended.*
e. Implement a shuttle service to and from retail services and food establishments during lunch hours. *Mitigation not suitable for River Village because construction workers typically take a half-hour lunch at various times of the day and eat on-site food that was either brought by the workers (brown bag) or purchased from mobile caterers who travel to the site.*
f. Develop a construction traffic management plan that includes the following measures to address construction traffic that has the potential to affect traffic on public streets:
   - Rerouting construction traffic off congested streets *Mitigation not suitable for River Village because the only access to the site is via SR-126 and there are no other roadways on which to reroute traffic.;*
   - Consolidating truck deliveries; and
   - Providing temporary dedicated turn lanes for movement of construction trucks and equipment on and off of the site. *The effectiveness of this measure to reduce VOC emissions is not quantified by SCAQMD.*[7]

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2 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-15 and pp. A11-77 to -78.*
3 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-16 and p. A11-78.*
4 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-13.*
5 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-13.*
6 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-13.*

g. Prohibit truck idling in excess of two minutes. *Mitigation not suitable for River Village because the nature of diesel motors does not lend them to constant turning on and off. Premature wear, and increased air emissions from turning the engines on and off, are common results. It is also extremely difficult to effectively monitor the implementation of this measure on an approximately 700-acre site with contractors who would be concerned about maintaining their equipment. Furthermore, the effectiveness of this measure to reduce VOC emissions is not quantified by SCAQMD.*[8]

OFF-ROAD MOBILE SOURCE CONSTRUCTION EMISSIONS:

h. Use methanol-fueled pile drivers. *Any equipment that utilizes an alternative fuel that reduces VOC, NOx, and/or PM10 emissions is advisable. This measure is replaced in the impact analysis with another measure that considers other alternative fuels for diesel-fueled construction equipment.*
i. Suspend use of all construction equipment operations during second stage smog alerts. *The effectiveness of this measure to reduce VOC emissions is not quantified by SCAQMD.*[9]
j. Prevent trucks from idling longer than two minutes. *Mitigation not suitable for River Village because the nature of diesel motors does not lend them to constant turning on and off. Premature wear, and increased air emissions from turning the engines on and off, are common results. It is also extremely difficult to effectively monitor the implementation of this measure on an approximately 700-acre site with contractors who would be concerned about maintaining their equipment. Furthermore, the effectiveness of this measure to reduce VOC emissions is not quantified by SCAQMD.*[10]
k. Use electricity from power poles rather than temporary diesel-powered generators.
l. Use electricity from power poles rather than temporary gasoline-powered generators.
m. Use methanol- or natural gas-powered mobile equipment instead of diesel. *Any equipment that utilizes an alternative fuel that reduces VOC, NOx, and/or PM10 emissions is advisable.*
n. Use propane- or butane-powered on-site mobile equipment instead of gasoline. *Any equipment that utilizes an alternative fuel that reduces VOC, NOx, and/or PM10 emissions is advisable.*

OPERATION IMPACTS

4.10-8. The applicant of future subdivisions shall implement all rules and regulations adopted by the Governing Board of the SCAQMD which are applicable to the development of the subdivision (such as Rule 402 - Nuisance, Rule 1102 - Petroleum Solvent Dry Cleaners, Rule 1111 - NOx Emissions from Natural Gas-Fired, Fan-Type Central Furnaces, Rule 1146 - Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters) and which are in effect at the time of occupancy permit issuance.

4.10-9. Prior to the approval of each future subdivision proposed in association with the Newhall Ranch Specific Plan, each of the operational emission reduction measures indicated below (and in Tables 11-6 and 11-7 of the SCAQMD's CEQA *Air Quality Handbook*, as amended) shall be implemented if found applicable and feasible for that subdivision.

ON-ROAD MOBILE SOURCE OPERATIONAL EMISSIONS:

RESIDENTIAL USES

a. Include satellite telecommunications centers in residential subdivisions. *Mitigation not suitable for River Village because satellite telecommunications centers have been superseded by other technology.*
b. Establish a shuttle service from residential subdivisions to commercial core areas. *Mitigation not suitable for River Village because residential uses are in close proximity and within walking distance to commercial uses proposed within River Village.*
c. Construct on-site or off-site bus stops (*e.g.*, bus turnouts, passenger benches, and shelters).

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7 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-13.*
8 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-13.*
9 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-14.*
10 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-14.*

d. Construct off-site pedestrian facility improvements, such as overpasses and wider sidewalks. *Mitigation not suitable for River Village because no uses adjacent to the River Village site exist within Newhall Ranch to which pedestrian access would be warranted.*
e. Include retail services within or adjacent to residential subdivisions. *The proposed project is in conformance with this measure.*
f. Provide shuttles to major rail transit centers or multi-modal stations.
g. Contribute to regional transit systems (*e.g.*, right-of-way, capital improvements, *etc.*). *This measure does not directly contribute to reduced air emissions, emission reductions have not been quantified by SCAQMD,*[11] *and it is not given emissions reduction credit in the impact analysis.*
h. Synchronize traffic lights on streets impacted by development.
i. Construct, contribute, or dedicate land for the provision of off-site bicycle trails linking the facility to designated bicycle commuting routes.

COMMERCIAL USES

j. Provide preferential parking spaces for carpools and vanpools and provide 7'2" minimum vertical clearance in parking facilities for vanpool access.
k. Implement on-site circulation plans in parking lots to reduce vehicle queuing. *The effectiveness of this measure is not quantified by SCAQMD and is not given emission reduction credit in the impact analysis.*[12]
l. Improve traffic flow at drive-thru's by designing separate windows for different functions and by providing temporary parking for orders not immediately available for pickup. *The effectiveness of this measure is not quantified by SCAQMD and is not given emission reduction credit in the impact analysis.*[13]
m. Provide video-conference facilities. *The effectiveness of this measure is not quantified by SCAQMD and is not given emission reduction credit in the impact analysis.*[14]
n. Set up resident worker training programs to improve job/housing balance. *Mitigation not suitable for River Village because it is outside the purview of the project applicant/developer to set up such a program. Such programs are more appropriately set up by and at the discretion of future occupants of the commercial retail and office uses that will locate on the site. Furthermore, the effectiveness of this measure to reduce air emissions in the basin lies in actually achieving jobs/housing balance. The effectiveness of this measure is not quantified by SCAQMD and is not given emission reduction credit in the impact analysis.*[15]
o. Implement home dispatching system where employees receive routing schedule by phone instead of driving to work. *Mitigation not suitable for River Village because it is outside the purview of the project applicant/developer to set up such a system. Such systems are more appropriately set up by and at the discretion of future occupants of the commercial retail and office uses that will locate on the site.*
p. Develop a program to minimize the use of fleet vehicles during smog alerts (for business not subject to Regulation XV (now Rule 2202) or XII). *Mitigation not suitable for River Village because no commercial retail or office use on the site is expected to use fleet vehicles.*
q. Use low-emissions fleet vehicles:
   - TLEV
   - ULEV
   - LEV
   - ZEV

   Mitigation not suitable for River Village because no commercial retail or office use on the site is expected to use fleet vehicles.
r. Reduce employee parking spaces for those businesses subject to Regulation XV (now Rule 2202). *Rule 2202 applies to any employer who employs 250 or more employees on a full or part-time basis at a work site for a consecutive six-month period. It is conceivable that an office use employing as*

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[11] *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-18.*
[12] *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-22.*
[13] *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-19.*
[14] *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-19.*
[15] *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-19.*

many as 250 people can locate on the site; therefore, this mitigation measure applies to the River Village project. The requirement to achieve a specific AVR has been ruled unlawful by the federal government and is no longer recommended.[16]

s. Implement a lunch shuttle service from a work site(s) to food establishments. Mitigation not suitable for River Village because *Lots within River Village designated for mixed use commercial are expected to have food establishments located within walking distance, thereby not necessitating lunch shuttle service.*

t. Implement compressed work-week schedules where weekly work hours are compressed into fewer than five days.
   - 9/80
   - 4/40
   - 3/36

   Mitigation not suitable for the River Village applicant/developer because it is outside the purview of the project applicant/developer to set up such a program. Such programs are more appropriately set up by and at the discretion of future occupants of the commercial retail and office uses that will locate on the site.

u. Develop a trip reduction plan to achieve 1.5 AVR for businesses with less than 100 employees or multi-tenant work sites. *Mitigation not suitable for River Village because SCAQMD Rule 2202 applies to all employers who meet certain criteria for implementing trip reduction measures. The requirement to achieve a specific AVR has been ruled unlawful by the federal government and is no longer recommended.*

v. Utilize satellite offices rather than regular work site to reduce VMT. *Mitigation not suitable for the River Village applicant/developer because it is outside the purview of the project applicant/developer to set up such a program. Such programs are more appropriately set up by and at the discretion of future occupants of the commercial retail and office uses that will locate on the site.*

w. Establish a home-based telecommuting program. *Mitigation not suitable for the River Village applicant/developer because it is outside the purview of the project applicant/developer to set up such a program. Such programs are more appropriately set up by and at the discretion of future occupants of the commercial retail and office uses that will locate on the site.*

x. Provide on-site child care and after-school facilities or contribute to off-site development within walking distance. *Mitigation not suitable for the River Village applicant/developer because it is outside the purview of the project applicant/developer to set up such a program. Such programs are more appropriately set up by and at the discretion of future occupants of the commercial retail and office uses that will locate on the site.*

y. Require retail facilities or special event centers to offer travel incentives such as discounts on purchases for transit riders. *Mitigation not suitable for the River Village applicant/developer because it is outside the purview of the project applicant/developer to set up such a program. Such programs are more appropriately set up by and at the discretion of future occupants of the commercial retail and office uses that will locate on the site. Such a program to reduce air emissions in the Basin is not quantified by the SCAQMD and it is not given emission reduction credit in this impact analysis.*[17]

z. Provide on-site employee services such as cafeterias, banks, *etc.*

aa. Establish a shuttle service from residential core areas to the work site. *Mitigation not suitable for River Village because residential uses are proposed in close proximity and within walking distance to commercial uses proposed within River Village.*

ab. Construct on-site or off-site bus stops (*e.g.*, bus turnouts, passenger benches, and shelters).

ac. Implement a pricing structure for single-occupancy employee parking and/or provide discounts to ridesharers.

ad. Include residential units within a commercial project.

ae. Utilize parking in excess of code requirements as on-site park-n-ride lots or contribute to construction of off-site lots.

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[16] *In 1988, the SCAQMD instituted Regulation XV that required enterprises with 100 or more employees to adopt trip reduction programs. The regulation required each employer to institute a trip reduction program that would achieve an Average Vehicle Ridership (AVR) of 1.75 in Downtown Los Angeles, 1.5 in the remainder of urbanized areas, and 1.3 in rural parts of the District. AVR measures the extent to which commuters use public transit, car pooling, and other multiple-occupant-vehicle modes of transportation. Regulation XV was repealed in December, 1995 and was replaced with Rule 2202 which provides options for employers to either continue trip reduction programs or reduce mobile source emissions through other strategies. As of January 1, 1997 Rule 2202 applies only to enterprises with 250 or more employees.*

[17] *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-20.*

af. Any two of the following:
   - Construct off-site bicycle facility improvements, such as bicycle trails linking the facility to designated bicycle commuting routes, or on-site improvements, such as bicycle paths.
   - Include bicycle parking facilities, such as bicycle lockers and racks.
   - Include showers for bicycling employees' use.

ag. Any two of the following:
   - Construct off-site pedestrian facility improvements, such as overpasses, wider sidewalks.
   - Construct on-site pedestrian facility improvements, such as building access which is physically separated from street and parking lot traffic and walk paths.
   - Include showers for pedestrian employees' use.

ah. Provide shuttles to major rail transit stations and multi-modal centers.

ai. Contribute to regional transit systems (*e.g.*, right-of-way, capital improvements, *etc.*) . *This measure does not directly contribute to reduced air emissions, emission reductions have not been quantified,*[18] *and it is not given emissions reduction credit in the impact analysis.*[19]

aj. Charge visitors to park. *Mitigation not suitable for River Village because charging visitors to park at retail establishments would discourage patronage. Charging visitors to park at the office uses would encourage patrons to park in retail parking spaces or on the street. Charging visitors to pay for parking at the park site would encourage on-street parking.*

ak. Synchronize traffic lights on streets impacted by development.

al. Reschedule truck deliveries and pickups to off-peak hours. *The effectiveness of this measure is not quantified by SCAQMD and is not given emission reduction credit in the impact analysis.*[20]

am. Set up paid parking systems where drivers pay at walkup kiosk and exit via a stamped ticket to reduce emissions from queuing vehicles. *Mitigation not suitable for River Village because charging visitors to park at retail establishments would discourage patronage. Charging visitors to park at the office uses would encourage patrons to park in retail parking spaces or on the street. Charging visitors to pay for parking at the park site would encourage on-street parking. The effectiveness of this measure is not quantified by SCAQMD and is not given emission reduction credit in the impact analysis.*[21]

an. Require on-site truck loading zones. *The effectiveness of this measure is not quantified by SCAQMD and is not given emission reduction credit in the impact analysis.*[22]

ao. Implement or contribute to public outreach programs. *Mitigation not suitable for the River Village applicant/developer because it is unclear as to what type of outreach program this mitigation measure refers. Furthermore, it is outside the purview of the project applicant/developer to set up such programs. Such programs are more appropriately set up and maintained by and at the discretion of future occupants of the commercial retail and office uses that will locate on the site. Furthermore, the effectiveness of this measure is not quantified by SCAQMD and is not given emission reduction credit in the impact analysis.*[23]

ap. Require employers not subject to Regulation XV (now Rule 2202) to provide commuter information area.

BUSINESS PARK USES

No Business Park uses are proposed within the River Village project.

aq. Provide preferential parking spaces for carpools and vanpools and provide 7'2" minimum vertical clearance in parking facilities for vanpool access.

ar. Implement on-site circulation plans in parking lots to reduce vehicle queuing.

as. Set up resident worker training programs to improve job/housing balance.

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18 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-18.*

19 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-22.*

20 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-22.*

21 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-22.*

22 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-22.*

23 *South Coast Air Quality Management District, CEQA Air Quality Handbook (Diamond Bar, California: South Coast Air Quality Management District, April 1993), p. 11-22.*

bx. Use energy-efficient low-sodium parking lot lights.

COMMERCIAL USES

by. Use lighting controls and energy-efficient lighting.
bz. Use fuel cells in residential subdivisions to produce heat and electricity.
ca. Orient buildings to the north for natural cooling and include passive solar design (*e.g.*, daylighting).
cb. Use light-colored roofing materials to reflect heat.
cc. Increase walls and attic insulation beyond Title 24 requirements.
cd. Use solar or low emission water heaters.
ce. Use central water heating systems.
cf. Provide shade trees to reduce building heating/cooling needs.
cg. Use energy-efficient and automated controls for air conditioners.
ch. Use double-paned windows.
ci. Use energy-efficient low-sodium parking lot lights.
cj. Use lighting controls and energy-efficient lighting.
ck. Use light-colored roofing materials to reflect heat.
cl. Increase walls and attic insulation beyond Title 24 requirements.
cm. Orient buildings to the north for natural cooling and include passive solar design (*e.g.*, daylighting).

BUSINESS PARK USES

No Business Park uses are proposed within the River Village project.

cn. Provide shade trees to reduce building heating/cooling needs.
co. Use energy-efficient and automated controls for air conditioning.
cp. Use double-paned windows.
cq. Use energy-efficient low-sodium parking lot lights.
cr. Use lighting controls and energy-efficient lighting.
cs. Use light-colored roofing materials to reflect heat.
ct. Orient buildings to the north for natural cooling and include passive solar design (*e.g.*, daylighting).
cu. Increase walls and attic insulation beyond Title 24 requirements.
cv. Improved storage and handling or source materials.
cw. Materials substitution (*e.g.*, use water-based paints, life-cycle analysis).
cx. Modify manufacturing processes (*e.g.*, reduce process stages, closed-loop systems, materials recycling).
cy. Resource recovery systems that redirect chemicals to new production processes.

4.10-10. All non-residential development of 25,000 gross square feet or more shall comply with the County's Transportation Demand Management (TDM) Ordinance (Ordinance No. 93-0028M) in effect at the time of subdivision. The sizes and configurations of the Specific Plan's non-residential uses are not known at this time and the Ordinance specifies different requirements based on the size of the project under review. All current provisions of the ordinance are summarized in Appendix 4.10.

4.10-11. Subdivisions and buildings shall comply with Title 24 of the California Code of Regulations which are current at the time of development.

4.10-12. Lighting for public streets, parking areas, and recreation areas shall utilize energy efficient light and mechanical, computerized or photo cell switching devices to reduce unnecessary energy usage.

4.10-13. Any on-site subterranean parking structures shall provide adequate ventilation systems to disperse pollutants and preclude the potential for a pollutant concentration to occur. *Mitigation not suitable for River Village because no subterranean parking structures are proposed within the project. Furthermore, this measure reduces indoor air pollutants, but does not effectively reduce air emissions within the Basin.*

4.10-14. The sellers of new residential units shall be required to distribute brochures and other relevant information published by the SCAQMD or similar organization to new homeowners regarding the importance of reducing vehicle miles traveled and related air quality impacts, as well as on local opportunities for public transit and ridesharing.

UNMITIGATED CONSTRUCTION EMISSIONS

Project Name	**River Village**	**Unmitigated Emissions**
Subphase	**Weeks 1 thru 19**	
Length of Subphase (weeks)		**19.00**
Year	**2006**	
Total Acreage	**120.28**	

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	19,407.42	
On-Road Diesel Exhaust	130.69	182.74	18.98	1.69	3.30	
Off-Road Diesel Exhaust	1,841.01	226.11	1,521.55	--	65.65	
Worker Commute Trips	15.58	1.71	2.90	0.02	0.11	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	9,703.71	Fugitive Dust Rule 403
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.00	--	--	--	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	--	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	No Building Construction During This Subphase
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Architectural Painting						
Off-Gas Emissions	--	0.00	--	--	--	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	**1,987.28**	**410.56**	**1,543.43**	**1.72**	**9,772.76**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**Yes**	**Yes**	**Yes**	**No**	**Yes**	

Project Name River Village **Unmitigated Emissions**
Subphase Weeks 20 thru 39
Length of Subphase (weeks) 20.00
Year 2006
Total Acreage 126.61

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	–	–	–	–	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	–	–	–	–	19,393.70	
On-Road Diesel Exhaust	130.69	182.74	18.98	1.69	3.30	
Off-Road Diesel Exhaust	1,841.01	226.11	1,521.55	–	65.65	
Worker Commute Trips	15.98	1.71	2.90	0.02	0.11	
Mitigation/Reduction						
Fugitive Dust	–	–	–	–	9,696.85	Fugitive Dust Rule 403
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	–	1.01	–	–	–	
Off-Road Diesel Exhaust Emissions	1,352.50	167.28	1,126.24	–	46.72	
On-Road Diesel Exhaust Emissions	4.44	0.65	6.21	0.06	0.11	
Worker Commute Emissions	23.98	2.86	12.29	0.11	0.28	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	No Building Construction During This Subphase
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Architectural Painting						
Off-Gas Emissions	–	0.00	–	–	–	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	**3,368.20**	**582.35**	**2,688.18**	**1.88**	**9,813.02**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**Yes**	**Yes**	**Yes**	**No**	**Yes**	

Project Name River Village **Unmitigated Emissions**
Subphase Weeks 40 thru 46
Length of Subphase (weeks) 7.00
Year 2006
Total Acreage 44.31

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	19,407.42	
On-Road Diesel Exhaust	130.69	182.74	18.98	1.69	3.30	
Off-Road Diesel Exhaust	1,841.01	226.11	1,521.55	--	65.65	
Worker Commute Trips	15.58	1.71	2.90	0.02	0.11	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	9,703.71	Fugitive Dust Rule 403
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	1.01	--	--	--	
Off-Road Diesel Exhaust Emissions	1,352.50	167.28	1,126.24	--	46.72	
On-Road Diesel Exhaust Emissions	4.44	0.65	6.21	0.06	0.11	
Worker Commute Emissions	12.27	1.35	2.28	0.02	0.09	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	1,682.38	222.74	1,654.08	--	72.90	
Worker Commute Trips	25.51	2.80	4.75	0.04	0.18	
Architectural Painting						
Off-Gas Emissions	--	151.01	--	--	--	
Worker Commute Trips	25.51	2.80	4.75	0.04	0.18	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	5,089.89	960.19	4,341.75	1.86	9,892.94	
SCAQMD Threshold:	550.00	75.00	100.00	150.00	150.00	
Exceeds Threshold?	Yes	Yes	Yes	No	Yes	

Project Name River Village Unmitigated Emissions
Subphase Weeks 47 thru 91
Length of Subphase (weeks) 45.00
Year 2006
Total Acreage

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	21.98	No Gradng During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	10.99	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	1.01	--	--	--	
Off-Road Diesel Exhaust Emissions	1,352.50	167.28	1,126.24	--	46.72	
On-Road Diesel Exhaust Emissions	4.44	0.65	6.21	0.06	0.11	
Worker Commute Emissions	12.27	1.35	2.28	0.02	0.09	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	1,682.38	222.74	1,654.08	--	72.90	
Worker Commute Trips	25.51	2.80	4.75	0.04	0.18	
Architectural Painting						
Off-Gas Emissions	--	151.01	--	--	--	
Worker Commute Trips	25.51	2.80	4.75	0.04	0.18	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	3,102.61	549.63	2,798.32	0.15	131.16	
SCAQMD Threshold:	550.00	75.00	100.00	150.00	150.00	
Exceeds Threshold?	Yes	Yes	Yes	No	No	

Project Name River Village Unmitigated Emissions
Subphase Week 92
Length of Subphase (weeks) 1.00
Year 2007
Total Acreage

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Gradng During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	1.01	--	--	--	
Off-Road Diesel Exhaust Emissions	1,373.05	167.28	1,085.87	--	41.93	
On-Road Diesel Exhaust Emissions	4.05	0.61	5.80	0.01	0.10	
Worker Commute Emissions	11.29	1.25	2.11	0.01	0.08	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	2,159.16	275.61	1,931.00	--	79.99	
Worker Commute Trips	28.13	3.11	5.26	0.02	0.21	
Architectural Painting						
Off-Gas Emissions	--	151.50	--	--	--	
Worker Commute Trips	28.13	3.11	5.26	0.02	0.21	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	**3,603.81**	**603.46**	**3,035.29**	**0.06**	**122.52**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	Yes	Yes	Yes	No	No	

Project Name River Village Unmitigated Emissions
Subphase Weeks 93 thru 144
Length of Subphase (weeks) 52.00
Year 2007
Total Acreage

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Gradng During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.02	--	--	--	
Off-Road Diesel Exhaust Emissions	1,373.05	167.28	1,085.87	--	41.93	
On-Road Diesel Exhaust Emissions	0.08	0.01	0.11	0.00	0.00	
Worker Commute Emissions	11.29	1.25	2.11	0.01	0.08	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	1,872.07	240.07	1,693.55	--	70.48	
Worker Commute Trips	24.90	2.75	4.65	0.02	0.18	
Architectural Painting						
Off-Gas Emissions	--	141.73	--	--	--	
Worker Commute Trips	24.90	2.75	4.65	0.02	0.18	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	**3,306.30**	**555.86**	**2,790.95**	**0.05**	**112.86**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	Yes	Yes	Yes	No	No	

Project Name River Village Unmitigated Emissions
Subphase Weeks 145 thru 158
Length of Subphase (weeks) 14.00
Year 2008
Total Acreage

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Gradng During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	1.01	--	--	--	
Off-Road Diesel Exhaust Emissions	1,385.56	167.28	1,058.35	--	38.46	
On-Road Diesel Exhaust Emissions	3.70	0.57	5.39	0.01	0.10	
Worker Commute Emissions	10.38	1.15	1.94	0.01	0.08	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	1,685.60	212.51	1,453.80	--	58.55	
Worker Commute Trips	20.77	2.30	3.89	0.02	0.17	
Architectural Painting						
Off-Gas Emissions	--	141.66	--	--	--	
Worker Commute Trips	20.77	2.30	3.89	0.02	0.17	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	**3,126.78**	**528.79**	**2,527.25**	**0.05**	**97.52**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**Yes**	**Yes**	**Yes**	**No**	**No**	

Project Name River Village Unmitigated Emissions
Subphase Weeks 159 thru 178
Length of Subphase (weeks) 21.00
Year 2009
Total Acreage

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Gradng During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.00	--	--	--	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	--	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	1,726.62	212.51	1,394.91	--	53.47	
Worker Commute Trips	19.09	2.13	3.58	0.02	0.17	
Architectural Painting						
Off-Gas Emissions	--	141.66	--	--	--	
Worker Commute Trips	19.09	2.13	3.58	0.02	0.17	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	**1,764.79**	**358.43**	**1,402.06**	**0.03**	**53.80**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**Yes**	**Yes**	**Yes**	**No**	**No**	

Project Name River Village Unmitigated Emissions
Subphase Weeks 179 thru 196
Length of Subphase (weeks) 18.00
Year 2009
Total Acreage

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Gradng During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.00	--	--	--	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	--	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	1,515.09	187.20	1,239.14	--	48.23	
Worker Commute Trips	17.12	1.91	3.21	0.02	0.15	
Architectural Painting						
Off-Gas Emissions	--	141.24	--	--	--	
Worker Commute Trips	17.12	1.91	3.21	0.02	0.15	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	**1,549.32**	**332.26**	**1,245.55**	**0.03**	**48.53**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**Yes**	**Yes**	**Yes**	**No**	**No**	

Project Name River Village Unmitigated Emissions
Subphase Weeks 197 thru 210
Length of Subphase (weeks) 13.00
Year 2009
Total Acreage

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Gradng During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.00	--	--	--	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	--	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	1,041.33	128.61	850.48	--	33.06	
Worker Commute Trips	11.51	1.29	2.16	0.01	0.10	
Architectural Painting						
Off-Gas Emissions	--	87.64	--	--	--	
Worker Commute Trips	11.51	1.29	2.16	0.01	0.10	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	1,064.36	218.82	854.79	0.02	33.26	
SCAQMD Threshold:	550.00	75.00	100.00	150.00	150.00	
Exceeds Threshold?	Yes	Yes	Yes	No	No	

Project Name River Village Unmitigated Emissions
Subphase Weeks 211 thru 220
Length of Subphase (weeks) 10.00
Year 2010
Total Acreage

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Gradng During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.00	--	--	--	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	--	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	779.57	93.89	593.66	--	21.89	
Worker Commute Trips	7.50	0.84	1.39	0.01	0.07	
Architectural Painting						
Off-Gas Emissions	--	39.26	--	--	--	
Worker Commute Trips	7.50	0.84	1.39	0.01	0.07	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	794.57	134.83	596.44	0.01	22.03	
SCAQMD Threshold:	550.00	75.00	100.00	150.00	150.00	
Exceeds Threshold?	Yes	Yes	Yes	No	No	

Project Name River Village Unmitigated Emissions
Subphase Weeks 221 thru 235
Length of Subphase (weeks) 15.00
Year 2010
Total Acreage

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Gradng During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.00	--	--	--	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	--	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	491.65	59.17	372.96	--	13.64	
Worker Commute Trips	4.44	0.50	0.82	0.00	0.04	
Architectural Painting						
Off-Gas Emissions	--	11.78	--	--	--	
Worker Commute Trips	4.44	0.50	0.82	0.00	0.04	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	**500.54**	**71.95**	**374.61**	**0.01**	**13.72**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	No	No	Yes	No	No	

River Village Office Construction Only Unmitigated Emissions

Weeks of Construction: 140

Year Constr. Begins: 2015

Calculated Emissions

Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	0.00	0.00	0.00	0.00	0.00	No Grading During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	884.12	106.21	665.11	--	23.88	
Worker Commute Trips	10.90	1.20	2.03	0.02	0.08	
Architectural Painting						
Off-Gas Emissions	--	38.48	--	--	--	
Worker Commute Trips	10.90	1.20	2.03	0.02	0.08	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	**905.93**	**147.09**	**669.17**	**0.03**	**24.03**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**Yes**	**Yes**	**Yes**	**No**	**No**	

MITIGATED CONSTRUCTION EMISSIONS

Project Name River Village **Mitigated Emissions**
Subphase Weeks 1 thru 19
Length of Subphase (weeks) 19.00
Year 2006

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	19,407.42	
On-Road Diesel Exhaust	130.69	182.74	18.98	1.69	3.30	
Off-Road Diesel Exhaust	1,841.01	226.11	1,521.55	--	65.65	
Worker Commute Trips	15.58	1.71	2.90	0.02	0.11	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	9,703.71	Water Exposed Surfaces Three Times Daily
On-Road Diesel Exhaust	0.00	0.00	0.00	1.69	2.64	Assumes Use of Aqueous Fuel, Cooled Exhaust Gas Recirculation
Off-Road Diesel Exhaust	1,656.91	203.50	821.64	n/a	97.16	Assumes Use of Aqueous Fuel, Cooled Exhaust Gas Recirculation
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.00	--	--	--	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	--	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	No Building Construction During This Subphase
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Architectural Painting						
Off-Gas Emissions	--	0.00	--	--	--	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	--	n/a	--	--	--	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	**330.37**	**207.06**	**721.79**	**0.02**	**9,672.96**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**No**	**Yes**	**Yes**	**No**	**Yes**	

Project Name River Village **Mitigated Emissions**
Subphase Weeks 20 thru 39
Length of Subphase (weeks) 20.00
Year 2006

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	19,393.70	
On-Road Diesel Exhaust	130.69	182.74	18.98	1.69	3.30	
Off-Road Diesel Exhaust	1,841.01	226.11	1,521.55	--	65.65	
Worker Commute Trips	15.58	1.71	2.90	0.02	0.11	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	9,696.85	Water Exposed Surfaces Three Times Daily
On-Road Diesel Exhaust	0.00	0.00	0.00	1.69	2.64	Aqueous Fuel, Cooled Exhaust Gas Recirculation
Off-Road Diesel Exhaust	1,656.91	203.50	821.64	n/a	97.16	Aqueous Fuel, Cooled Exhaust Gas Recirculation
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	1.01	--	--	--	
Off-Road Diesel Exhaust Emissions	1,352.50	167.28	1,126.24	--	46.72	
On-Road Diesel Exhaust Emissions	4.44	0.65	6.21	0.06	0.11	
Worker Commute Emissions	23.98	2.86	12.29	0.11	0.28	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	None Available
On-Road Diesel Exhaust	4.00	0.58	3.35	0.06	0.09	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Road Diesel Exhaust	1,217.25	150.55	608.17	n/a	69.15	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	No Building Construction During This Subphase
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Architectural Painting						
Off-Gas Emissions	--	0.00	--	--	--	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	--	n/a	--	--	--	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Net Emission Totals:	**490.05**	**227.72**	**1,255.02**	**0.13**	**9,643.99**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**No**	**Yes**	**Yes**	**No**	**Yes**	

Project Name **River Village** **Mitigated Emissions**
Subphase **Weeks 40 thru 46**
Length of Subphase (weeks) **7.00**
Year **2006**

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	19,407.42	
On-Road Diesel Exhaust	130.69	182.74	18.98	1.69	3.30	
Off-Road Diesel Exhaust	1,841.01	226.11	1,521.55	--	65.65	
Worker Commute Trips	15.58	1.71	2.90	0.02	0.11	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	9,703.71	Water Exposed Surfaces Three Times Daily
On-Road Diesel Exhaust	0.00	0.00	0.00	1.69	2.64	Aqueous Fuel, Cooled Exhaust Gas Recirculation
Off-Road Diesel Exhaust	1,656.91	203.50	821.64	n/a	97.16	Aqueous Fuel, Cooled Exhaust Gas Recirculation
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	1.01	--	--	--	
Off-Road Diesel Exhaust Emissions	1,352.50	167.28	1,126.24	--	46.72	
On-Road Diesel Exhaust Emissions	4.44	0.65	6.21	0.06	0.11	
Worker Commute Emissions	12.27	1.35	2.28	0.02	0.09	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	None Available
On-Road Diesel Exhaust	4.00	0.58	3.35	0.06	0.09	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Road Diesel Exhaust	1,217.25	150.55	608.17	n/a	69.15	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	1,682.38	222.74	1,654.08	--	72.90	
Worker Commute Trips	25.51	2.80	4.75	0.04	0.18	
Architectural Painting						
Off-Gas Emissions	--	151.01	--	--	--	
Worker Commute Trips	25.51	2.80	4.75	0.04	0.18	
Mitigation/Reduction						
Off-Road Diesel Exhaust	1,514.14	200.47	893.20	0.00	107.89	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Gas Emissions	--	n/a	--	--	--	No Mitigation Available
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Net Emission Totals:	**697.59**	**405.10**	**2,015.39**	**0.11**	**9,616.01**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**Yes**	**Yes**	**Yes**	**No**	**Yes**	

Project Name River Village **Mitigated Emissions**
Subphase Weeks 47 thru 91
Length of Subphase (weeks) 45.00
Year 2006

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	21.98	No Grading During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	10.99	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	1.01	--	--	--	
Off-Road Diesel Exhaust Emissions	1,352.50	167.28	1,126.24	--	46.72	
On-Road Diesel Exhaust Emissions	4.44	0.65	6.21	0.06	0.11	
Worker Commute Emissions	12.27	1.35	2.28	0.02	0.09	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	None Available
On-Road Diesel Exhaust	4.00	0.58	3.35	0.06	0.09	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Road Diesel Exhaust	1,217.25	150.55	608.17	n/a	69.15	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	1,682.38	222.74	1,654.08	--	72.90	
Worker Commute Trips	25.51	2.80	4.75	0.04	0.18	
Architectural Painting						
Off-Gas Emissions	--	151.01	--	--	--	
Worker Commute Trips	25.51	2.80	4.75	0.04	0.18	
Mitigation/Reduction						
Off-Road Diesel Exhaust	1,514.14	200.47	893.20	0.00	107.89	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Gas Emissions	--	n/a	--	--	--	No Mitigation Available
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Net Emission Totals:	**367.22**	**198.03**	**1,293.59**	**0.09**	**-45.97**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**No**	**Yes**	**Yes**	**No**	**No**	

Project Name **River Village** **Mitigated Emissions**
Subphase **Week 92**
Length of Subphase (weeks) **1.00**
Year **2007**

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Grading During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	1.01	--	--	--	
Off-Road Diesel Exhaust Emissions	1,373.05	167.28	1,085.87	--	41.93	
On-Road Diesel Exhaust Emissions	4.05	0.61	5.80	0.01	0.10	
Worker Commute Emissions	11.29	1.25	2.11	0.01	0.08	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	None Available
On-Road Diesel Exhaust	3.65	0.54	3.13	0.01	0.08	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Road Diesel Exhaust	1,235.75	150.55	586.37	n/a	62.06	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	2,159.16	275.61	1,931.00	--	79.99	
Worker Commute Trips	28.13	3.11	5.26	0.02	0.21	
Architectural Painting	0.00	0.00	0.00	0.00	0.00	
Off-Gas Emissions	--	151.50	--	--	--	
Worker Commute Trips	28.13	3.11	5.26	0.02	0.21	
Mitigation/Reduction	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	1,943.24	248.05	1,042.74	0.00	118.39	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Gas Emissions	--	n/a	--	--	--	No Mitigation Available
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Net Emission Totals:	**421.17**	**204.32**	**1,403.05**	**0.05**	**-58.00**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**No**	**Yes**	**Yes**	**No**	**No**	

Project Name **River Village** **Mitigated Emissions**
Subphase **Weeks 93 thru 144**
Length of Subphase (weeks) **52.00**
Year **2007**

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Grading During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.02	--	--	--	
Off-Road Diesel Exhaust Emissions	1,373.05	167.28	1,085.87	--	41.93	
On-Road Diesel Exhaust Emissions	0.08	0.01	0.11	0.00	0.00	
Worker Commute Emissions	11.29	1.25	2.11	0.01	0.08	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	None Available
On-Road Diesel Exhaust	0.07	0.01	0.06	0.00	0.00	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Road Diesel Exhaust	1,235.75	150.55	586.37	n/a	62.06	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	1,872.07	240.07	1,693.55	--	70.48	
Worker Commute Trips	24.90	2.75	4.65	0.02	0.18	
Architectural Painting						
Off-Gas Emissions	--	141.73	--	--	--	
Worker Commute Trips	24.90	2.75	4.65	0.02	0.18	
Mitigation/Reduction						
Off-Road Diesel Exhaust	1,684.86	216.06	914.52	0.00	104.31	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Gas Emissions	--	n/a	--	--	--	No Mitigation Available
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Net Emission Totals:	**385.62**	**189.23**	**1,290.00**	**0.05**	**-53.50**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**No**	**Yes**	**Yes**	**No**	**No**	

Project Name **River Village** **Mitigated Emissions**
Subphase **Weeks 145 thru 158**
Length of Subphase (weeks) **14.00**
Year **2008**

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Grading During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	1.01	--	--	--	
Off-Road Diesel Exhaust Emissions	1,385.56	167.28	1,058.35	--	38.46	
On-Road Diesel Exhaust Emissions	3.70	0.57	5.39	0.01	0.10	
Worker Commute Emissions	10.38	1.15	1.94	0.01	0.08	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	None Available
On-Road Diesel Exhaust	3.33	0.51	2.91	0.01	0.08	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Road Diesel Exhaust	1,247.00	150.55	571.51	n/a	56.92	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	1,685.60	212.51	1,453.80	--	58.55	
Worker Commute Trips	20.77	2.30	3.89	0.02	0.17	
Architectural Painting						
Off-Gas Emissions	--	141.66	--	--	--	
Worker Commute Trips	20.77	2.30	3.89	0.02	0.17	
Mitigation/Reduction						
Off-Road Diesel Exhaust	1,517.04	191.26	785.05	0.00	86.65	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Gas Emissions	--	n/a	--	--	--	No Mitigation Available
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Net Emission Totals:	**359.40**	**186.46**	**1,167.78**	**0.04**	**-46.13**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**No**	**Yes**	**Yes**	**No**	**No**	

Project Name **River Village** **Mitigated Emissions**
Subphase **Weeks 159 thru 178**
Length of Subphase (weeks) **21.00**
Year **2009**

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Grading During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.00	--	--	--	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	--	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	1,726.62	212.51	1,394.91	--	53.47	
Worker Commute Trips	19.09	2.13	3.58	0.02	0.17	
Architectural Painting						
Off-Gas Emissions	--	141.66	--	--	--	
Worker Commute Trips	19.09	2.13	3.58	0.02	0.17	
Mitigation/Reduction						
Off-Road Diesel Exhaust	1,553.96	191.26	753.25	0.00	79.14	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Gas Emissions	--	n/a	--	--	--	No Mitigation Available
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Net Emission Totals:	**210.84**	**167.17**	**648.81**	**0.03**	**-25.33**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**No**	**Yes**	**Yes**	**No**	**No**	

Project Name River Village **Mitigated Emissions**
Subphase Weeks 179 thru 196
Length of Subphase (weeks) 18.00
Year 2009

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Gradng During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.00	--	--	--	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	--	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	1,515.09	187.20	1,239.14	--	48.23	
Worker Commute Trips	17.12	1.91	3.21	0.02	0.15	
Architectural Painting						
Off-Gas Emissions	--	141.24	--	--	--	
Worker Commute Trips	17.12	1.91	3.21	0.02	0.15	
Mitigation/Reduction						
Off-Road Diesel Exhaust	1,363.58	168.48	669.14	0.00	71.38	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Gas Emissions	--	n/a	--	--	--	No Mitigation Available
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Net Emission Totals:	**185.74**	**163.78**	**576.42**	**0.03**	**-22.85**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**No**	**Yes**	**Yes**	**No**	**No**	

Project Name **River Village** **Mitigated Emissions**
Subphase **Weeks 197 thru 210**
Length of Subphase (weeks) **13.00**
Year **2009**

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Grading During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.00	--	--	--	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	--	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	11.51	1.29	2.16	0.01	0.10	
Architectural Painting						
Off-Gas Emissions	--	87.64	--	--	--	
Worker Commute Trips	11.51	1.29	2.16	0.01	0.10	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Gas Emissions	--	n/a	--	--	--	No Mitigation Available
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Net Emission Totals:	**23.03**	**90.21**	**4.31**	**0.02**	**0.20**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**No**	**Yes**	**No**	**No**	**No**	

Project Name **River Village** **Mitigated Emissions**
Subphase **Weeks 211 thru 220**
Length of Subphase (weeks) **10.00**
Year **2010**

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.00	--	--	--	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	--	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	7.50	0.84	1.39	0.01	0.07	
Architectural Painting						
Off-Gas Emissions	--	39.26	--	--	--	
Worker Commute Trips	7.50	0.84	1.39	0.01	0.07	
Mitigation/Reduction						
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Gas Emissions	--	n/a	--	--	--	No Mitigation Available
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Net Emission Totals:	**15.00**	**40.94**	**2.78**	**0.01**	**0.14**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	

Project Name **River Village** **Mitigated Emissions**
Subphase **Weeks 221 thru 235**
Length of Subphase (weeks) **15.00**
Year **2010**

Calculated Emissions
Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	--	--	--	--	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	--	--	--	--	0.00	No Grading During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	--	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	--	--	--	--	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	--	0.00	--	--	--	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	--	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	n/a	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	491.65	59.17	372.96	--	13.64	
Worker Commute Trips	4.44	0.50	0.82	0.00	0.04	
Architectural Painting						
Off-Gas Emissions	--	11.78	--	--	--	
Worker Commute Trips	4.44	0.50	0.82	0.00	0.04	
Mitigation/Reduction						
Off-Road Diesel Exhaust	442.49	53.25	201.40	0.00	20.19	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Gas Emissions	--	n/a	--	--	--	No Mitigation Available
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Net Emission Totals:	**58.05**	**18.70**	**173.21**	**0.01**	**-6.46**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**No**	**No**	**Yes**	**No**	**No**	

River Village Office Construction Only Mitigated Emissions

Weeks of Construction: 140

Year Constr. Begins: 2015

Calculated Emissions

Mitigated Emissions

Emissions Source/Subphase	Emissions (Pounds per Day) CO	ROG	NOx	SOx	PM10	Mitigation
Demolition Subphase						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	No Demolition During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Demolition Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Grading Subphase						
FugitiveDust	0.00	0.00	0.00	0.00	0.00	No Grading During This Subphase
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Fugitive Dust	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Pavement and Asphalt Subphase						
Paving Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	No Pavement and Asphalt During This Subphase
Off-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust Emissions	0.00	0.00	0.00	0.00	0.00	
Worker Commute Emissions	0.00	0.00	0.00	0.00	0.00	
Mitigation/Reduction						
Off-Gas Emissions	0.00	0.00	0.00	0.00	0.00	
On-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Off-Road Diesel Exhaust	0.00	0.00	0.00	0.00	0.00	
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	
Building Construction and Architectural Coatings Subphase						
Building Construction						
Off-Road Diesel Exhaust	884.12	106.21	665.11	--	23.88	
Worker Commute Trips	10.90	1.20	2.03	0.02	0.08	
Architectural Painting						
Off-Gas Emissions	--	38.48	--	--	--	
Worker Commute Trips	10.90	1.20	2.03	0.02	0.08	
Mitigation/Reduction						
Off-Road Diesel Exhaust	795.71	95.59	359.16	0.00	35.34	Aqueous Diesel Fuel, Cooled Exhaust Gas Recirculation
Off-Gas Emissions	--	n/a	--	--	--	No Mitigation Available
Worker Commute Trips	0.00	0.00	0.00	0.00	0.00	No Feasible Mitigation Available
Net Emission Totals:	**110.22**	**51.50**	**310.01**	**0.03**	**-11.31**	
SCAQMD Threshold:	**550.00**	**75.00**	**100.00**	**150.00**	**150.00**	
Exceeds Threshold?	**No**	**No**	**Yes**	**No**	**No**	

URBEMIS2002
UNMITIGATED OPERATIONAL EMISSIONS
SUMMERTIME

URBEMIS 2002 For Windows 7.5.0

File Name: C:\URBEMIS2002\URBEMIS River Village\River Village Operational Emissions.urb
Project Name: River Village Operational Emissions
Project Location: South Coast Air Basin (Los Angeles area)
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	78.83	31.65	21.52	0.17	0.08
TOTALS (lbs/day, mitigated)	77.29	26.13	10.61	0.00	0.05

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	342.42	391.84	4,155.89	2.47	377.33
TOTALS (lbs/day, mitigated)	342.41	391.82	4,155.68	2.47	377.31

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	421.25	423.49	4,177.40	2.65	377.40
TOTALS (lbs/day, mitigated)	419.69	417.94	4,166.29	2.47	377.36

URBEMIS 2002 For Windows 7.5.0

File Name: C:\URBEMIS2002\URBEMIS River Village\River Village Operational Emissions.urb
Project Name: River Village Operational Emissions
Project Location: South Coast Air Basin (Los Angeles area)
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	2.40	31.52	13.20	-	0.06
Wood Stoves - No summer emissions					
Fireplaces - No summer emissions					
Landscaping	0.97	0.13	8.32	0.17	0.02
Consumer Prdcts	75.46	-	-	-	-
TOTALS(lbs/day,unmitigated)	78.83	31.65	21.52	0.17	0.08

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Single family housing	56.31	60.90	669.83	0.39	59.43
Apartments low rise	32.54	32.68	359.42	0.21	31.89
Condo/townhouse general	31.93	33.14	364.51	0.21	32.34
Elementary school	20.51	10.98	116.55	0.07	10.66
City park	0.71	0.49	5.16	0.00	0.47
Comercial Center 10-30 ac	91.46	120.96	1,259.13	0.76	115.66
Commercial Center <10 ac.	42.72	57.47	598.28	0.36	54.96
Commercial Shops	2.41	3.13	32.54	0.02	2.99
Commercial Office	63.82	72.09	750.48	0.45	68.94
TOTAL EMISSIONS (lbs/day)	342.42	391.84	4,155.89	2.47	377.33

Does not include correction for passby trips.
Includes a double counting reduction for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2007 Temperature (F): 90 Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Trip Rate	Size	Total Trips
Single family housing	9.90 trips / dwelling units	591.00	5,850.90
Apartments low rise	6.90 trips / dwelling units	455.00	3,139.50
Condo/townhouse general	8.00 trips / dwelling units	398.00	3,184.00
Elementary school	1.45 trips / students	750.00	1,087.50
City park	2.60 trips / acres	20.90	54.34
Comercial Center 10-30 ac	54.06 trips / 1000 sq. ft.	252.00	13,623.12
Commercial Center <10 ac.	85.06 trips / 1000 sq. ft.	76.10	6,473.07
Commercial Shops	37.06 trips / 1000 sq. ft.	9.50	352.07
Commercial Office	11.56 trips / 1000 sq. ft.	702.40	8,119.74

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	55.20	1.80	97.80	0.40
Light Truck < 3,750 lbs	15.10	3.30	94.00	2.70
Light Truck 3,751- 5,750	16.10	1.90	96.90	1.20
Med Truck 5,751- 8,500	7.10	1.40	95.80	2.80
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.40	0.00	50.00	50.00
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.10	0.00	0.00	100.00
Motorcycle	1.70	82.40	17.60	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.20	8.30	83.30	8.40

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.5	4.9	6.0	10.3	5.5	5.5
Rural Trip Length (miles)	11.5	4.9	6.0	10.3	5.5	5.5
Trip Speeds (mph)	35.0	40.0	40.0	40.0	40.0	40.0
% of Trips - Residential	20.0	37.0	43.0			
% of Trips - Commercial (by land use)						
Elementary school				20.0	10.0	70.0
City park				5.0	2.5	92.5
Comercial Center 10-30 ac.				2.0	1.0	97.0
Commercial Center <10 ac.				2.0	1.0	97.0
Commercial Shops				2.0	1.0	97.0
Commercial Office				2.0	1.0	97.0

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Area

The area souce mitigation measure option switch changed from off to on.
The natural gas residential percentage changed from 60 to 100.
The percentage of wood stoves changed from 35 to 0.
The landscape length of the summer period (in days) changed from 180 to 365.
The landscape year changed from 2004 to 2007.
The consumer product persons per residential unit changed from 2.861 to 3.056.
Mitigation measure Orient Buildings North/South: Rsdntl Space Heat.
has been changed from off to on.
Mitigation measure Increase Insulation Beyond Title 24: Rsdntl Space Heat.
has been changed from off to on.
Mitigation measure All Electric Landscape Maintenance Equipment: Rsdntl Lndscp Maint.
has been changed from off to on.
Mitigation measure Central Water Heater: Cmrcl Space Heat.
has been changed from off to on.
Mitigation measure Orient Buildings North/South: Cmrcl Space Heat.
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Mitigation measure Increase Insulation Beyond Title 24: Cmrcl Space Heat.
has been changed from off to on.
Mitigation measure All Electric Landscape Maintenance Equipment: Cmrcl Lndscp Maint.
has been changed from off to on.

Changes made to the default values for Operations

The operational emission year changed from 2004 to 2007.
The double counting internal work trip limit changed from to 791.577.
The double counting shopping trip limit changed from to 395.7885.
The double counting other trip limit changed from to 5234.992.
The travel mode environment settings changed from both to: both
Mitigation measure Mixed Use Project (Residential Oriented):3
has been changed from off to on.
Mitigation measure Provide Sidewalks and/or Pedestrian Paths:1
has been changed from off to on.
Mitigation measure Provide Direct Pedestrian Connections:1
has been changed from off to on.
Mitigation measure Provide Pedestrian Safety:0.5
has been changed from off to on.
Mitigation measure Provide Street Furniture:0.5
has been changed from off to on.
Mitigation measure Provide Street Lighting:0.5
has been changed from off to on.
Mitigation measure Provide Pedestrian Signalization and Signage:0.5
has been changed from off to on.
Mitigation measure Mixed Use Project (Commercial Oriented):1
has been changed from off to on.
Mitigation measure Floor Area Ratio 0.75 or Greater:1
has been changed from off to on.
Mitigation measure Provide Wide Sidewalks and Onsite Pedestrian Facilities:1
has been changed from off to on.
Mitigation measure Provide Street Lighting:0.5
has been changed from off to on.
Mitigation measure Project Provides Shade Trees to Shade Sidewalks:0.5
has been changed from off to on.
Mitigation measure Project Provides Street Art and/or Street Furniture:0.5
has been changed from off to on.
Mitigation measure Provide Pedestrian Safety Designs/Infrastructure at Crossings:0.5
has been changed from off to on.
Mitigation measure Articulated Storefront(s) Display Windows with Visual Interest:0.25
has been changed from off to on.
Mitigation measure No Long Uninterrupted Walls Along Pedestrian Walkways:0.25
has been changed from off to on.
Mitigation measure Provide Bike Lanes/Paths Connecting to Bikeway System:2
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Mitigation measure Provide Securre Bicycle Parking:1
has been changed from off to on.
Mitigation measure Provide Employee Lockers and Showers:1
has been changed from off to on.
Mitigation measure Shuttle Bus Service to Transit/Multi-Modal Center:2
has been changed from off to on.
Mitigation measure Preferential Carpool/Vanpool Parking:1.5
has been changed from off to on.
Mitigation measure Many Frequently Needed Services Provided:5

has been changed from off to on.
Mitigation measuremitop5: Park and Ride Lots
has been changed from on to off.

URBEMIS2002
UNMITIGATED OPERATIONAL EMISSIONS
WINTERTIME

URBEMIS 2002 For Windows 7.5.0

File Name: C:\URBEMIS2002\URBEMIS River Village\River Village Operational Emissions.urb
Project Name: River Village Operational Emissions
Project Location: South Coast Air Basin (Los Angeles area)
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Winter)

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	1,695.26	49.89	1,797.29	2.83	244.44
TOTALS (lbs/day, mitigated)	1,694.70	44.49	1,794.71	2.83	244.43

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	330.01	566.89	4,005.67	2.01	377.33
TOTALS (lbs/day, mitigated)	330.00	566.86	4,005.48	2.01	377.31

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	2,025.28	616.78	5,802.96	4.83	621.77
TOTALS (lbs/day, mitigated)	2,024.69	611.36	5,800.19	4.83	621.74

URBEMIS 2002 For Windows 7.5.0

ile Name: C:\URBEMIS2002\URBEMIS River Village\River Village Operational Emissions.urb
roject Name: River Village Operational Emissions
roject Location: South Coast Air Basin (Los Angeles area)
n-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Winter)

REA SOURCE EMISSION ESTIMATES (Winter Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	2.40	31.52	13.20	-	0.06
Wood Stoves	0.00	0.00	0.00	0.00	0.00
Fireplaces	1,617.41	18.36	1,784.09	2.83	244.38
Landscaping - No winter emissions					
Consumer Prdcts	75.46	-	-	-	-
TOTALS(lbs/day,unmitigated)	1,695.26	49.89	1,797.29	2.83	244.44

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
ingle family housing	52.80	88.27	633.57	0.32	59.43
partments low rise	28.40	47.36	339.97	0.17	31.89
ondo/townhouse general	28.77	48.03	344.78	0.18	32.34
lementary school	9.34	15.91	110.82	0.06	10.66
ity park	0.42	0.71	5.00	0.00	0.47
omercial Center 10-30 ac	100.15	174.82	1,226.28	0.61	115.66
ommercial Center <10 ac.	47.56	83.07	582.67	0.29	54.96
ommercial Shops	2.59	4.52	31.69	0.02	2.99
ommercial Office	59.98	104.20	730.89	0.36	68.94
OTAL EMISSIONS (lbs/day)	330.01	566.89	4,005.67	2.01	377.33

oes not include correction for passby trips.
ncludes a double counting reduction for internal trips.

PERATIONAL (Vehicle) EMISSION ESTIMATES

nalysis Year: 2007 Temperature (F): 50 Season: Winter

MFAC Version: EMFAC2002 (9/2002)

ummary of Land Uses:

nit Type	Trip Rate	Size	Total Trips
ingle family housing	9.90 trips / dwelling units	591.00	5,850.90
partments low rise	6.90 trips / dwelling units	455.00	3,139.50
ondo/townhouse general	8.00 trips / dwelling units	398.00	3,184.00
lementary school	1.45 trips / students	750.00	1,087.50
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ehicle Assumptions:

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ehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
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eavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
ine Haul > 60,000 lbs	0.00	0.00	0.00	100.00
rban Bus	0.10	0.00	0.00	100.00
otorcycle	1.70	82.40	17.60	0.00
School Bus	0.10	0.00	0.00	100.00
otor Home	1.20	8.30	83.30	8.40

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.5	4.9	6.0	10.3	5.5	5.5
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% of Trips - Commercial (by land use)						
Elementary school				20.0	10.0	70.0
City park				5.0	2.5	92.5
Comercial Center 10-30 ac.				2.0	1.0	97.0
Commercial Center <10 ac.				2.0	1.0	97.0
Commercial Shops				2.0	1.0	97.0
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has been changed from off to on.
Litigation measuremitop5: Park and Ride Lots
has been changed from on to off.

SUMMERTIME EMISSIONS REDUCTIONS

ESTIMATED SUMMERTIME EMISSIONS REDUCTIONS EFFICIENCIES
River Village Emissions With Implementation of Newhall Ranch Specific Plan FEIR Air Quality Mitigation Measures and Without Wood Burning Stoves or Fire Places

Input Fields

LAND USE		Unmitigated Emissions in Pounds per Day CO	VOC	NO_x	PM_{10}
Single Family Residential Uses	Vehicular Sources	669.93	56.31	60.96	59.43
	Area Sources	9.36	39.22	13.67	0.04
Multi-Family Residential Uses	Vehicular Sources	723.93	64.47	65.82	64.23
	Area Sources	7.36	38.82	8.25	0.03
Commercial/Office/Institutional Uses	Vehicular Sources	2,762.13	221.64	265.32	253.67
	Area Sources	4.10	0.20	9.76	0.02
Wood-Burning Fire Place Emissions	Vehicular Sources	0.00	0.00	0.00	0.00
	Area Sources	0.00	0.00	0.00	0.00
Total Emissions	Vehicular Sources	4,155.39	342.42	391.84	377.33
	Area Sources	21.52	78.84	31.68	0.09
	Total Non-Reduced Emissions	4,177.41	421.26	423.48	377.42

Recommended (Measures already incorporated into Project are marked "No." Yes	No	MEASURES, EFFICIENCIES, AND REDUCTIONS	Emission Reduction Efficiency CO	VOC	NO_x	PM_{10}	Reduced Emissions in Pounds per Day CO	VOC	NO_x	PM_{10}	REASONS FOR REJECTING MITIGATION MEASURES
Stationary Sources											
All Residential Uses											
X		Use solar or low emission water heaters	10.0%	11.0%	9.5%	4.5%	1.74	8.58	2.08	0.00	
X		Use built-in energy-efficient appliances	3.0%	2.5%	3.0%	6.5%	0.52	1.95	0.64	0.00	
X		Provide shade trees to reduce heating/cooling needs	0.0%	0.0%	0.0%	0.5%	0.00	0.00	0.00	0.00	
X		Use energy-efficient and automated controls for air conditioners	0.0%	0.0%	0.0%	0.5%	0.00	0.00	0.00	0.00	
X		Use double-glass paned windows	4.5%	4.5%	4.0%	2.5%	0.78	3.51	0.88	0.00	
	X	Provide ventilation systems for enclosed parking facilities	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	Parking structures are not proposed within the project.
X		Use lighting controls and energy efficient lighting	0.0%	0.0%	0.0%	0.5%	0.00	0.00	0.00	0.00	
X		Use fuel cells in residential subdivisions to produce heat and elec.	1.0%	0.0%	1.5%	7.0%	0.17	0.00	0.33	0.00	
X		Orient buildings to the north	13.5%	14.0%	13.0%	10.5%	2.35	10.93	2.85	0.01	
X		Use light-colored roof materials to reflect heat	1.5%	1.5%	1.5%	1.5%	0.26	1.17	0.33	0.00	
X		Comply with Title 24	13.0%	14.0%	13.0%	7.5%	2.26	10.93	2.85	0.01	
Multi-Family Residential Uses											
	X	Use central water heating systems	8.5%	9.0%	8.0%	4.0%	0.00	0.00	0.00	0.00	Central heating systems are not desired by the average multi-family resident.
Commercial, Office, Institutional Uses											
X		Use solar or low emission water heaters	0.5%	0.5%	0.5%	0.3%	0.02	0.00	0.05	0.00	
X		Use central water heating systems	0.5%	0.5%	0.5%	0.3%	0.02	0.00	0.05	0.00	
X		Provide shade trees to reduce heating/cooling needs	0.5%	0.5%	0.5%	1.0%	0.02	0.00	0.05	0.00	
X		Use energy-efficient and automated controls for air conditioners	1.0%	1.0%	1.0%	1.5%	0.04	0.01	0.10	0.00	
X		Use double-glass paned windows	3.0%	3.5%	3.0%	2.5%	0.12	0.03	0.25	0.00	
X		Use energy-efficient low-sodium parking lights	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Provide ventilation systems for enclosed parking facilities	0.0%	0.0%	0.0%	0.3%	0.00	0.00	0.00	0.00	Parking structures are not proposed within the project.
X		Use lighting controls and energy efficient lighting	7.0%	3.0%	8.5%	19.5%	0.29	0.02	0.82	0.00	
X		Use light-colored roof materials to reflect heat	1.0%	1.0%	1.0%	0.3%	0.04	0.01	0.10	0.00	
X		Comply with Title 24	9.5%	10.0%	9.0%	7.0%	0.39	0.08	0.87	0.00	
X		Orient buildings to the north	12.5%	11.0%	13.5%	17.5%	0.51	0.09	1.31	0.00	
Industrial Uses											
	X	Provide shade trees to reduce heating/cooling needs	0.0%	0.0%	0.0%	0.5%	0.00	0.00	0.00	0.00	No industrial uses are proposed within the project.
	X	Use energy-efficient and automated controls for air conditioners	0.0%	0.0%	0.0%	1.0%	0.00	0.00	0.00	0.00	
	X	Use double-glass paned windows	0.0%	0.0%	0.5%	1.0%	0.00	0.00	0.00	0.00	
	X	Use energy-efficient low-sodium parking lights	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Provide ventilation systems for enclosed parking facilities	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Use lighting controls and energy efficient lighting	0.5%	0.0%	1.0%	2.5%	0.00	0.00	0.00	0.00	
	X	Use light-colored roof materials to reflect heat	0.0%	0.0%	0.0%	0.5%	0.00	0.00	0.00	0.00	
	X	Orient buildings to the north	2.5%	2.0%	3.0%	5.5%	0.00	0.00	0.00	0.00	
	X	Comply with Title 24	0.5%	0.0%	1.0%	3.0%	0.00	0.00	0.00	0.00	
	X	Improved storage and handling of source materials	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Materials substitution (e.g., use water-based paints, life cycle analysis)	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Utilize efficient manufacturing processes	1.5%	0.5%	2.0%	6.0%	0.00	0.00	0.00	0.00	
	X	Resource recovery systems	3.0%	3.5%	3.0%	1.5%	0.00	0.00	0.00	0.00	

Impact Sciences, Inc.
Prepared by R. Mamaghani
2/12/04

Based on SCAQMD
CEQA Air Quality Handbook
Table 11-6

ESTIMATED SUMMERTIME EMISSIONS REDUCTIONS EFFICIENCIES
River Village Emissions With Implementation of Newhall Ranch Specific Plan FEIR Air Quality Mitigation Measures and Without Wood Burning Stoves or Fire Places

Recommended (Measures already incorporated into Project are marked "No."			Emission Reduction Efficiency				Reduced Emissions in Pounds per Day				
Yes	No	MEASURES, EFFICIENCIES, AND REDUCTIONS	CO	VOC	NO_x	PM_{10}	CO	VOC	NO_x	PM_{10}	REASONS FOR REJECTING MITIGATION MEASURES
Mobile Sources											
Residential Uses											
	X	Allow satellite telecommunications centers in residential subdivisions	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	Satellite telecommunications centers are superseded by other technology.
	X	Shuttle service from res. subdivisions to commercial core areas	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	Residences are proposed in walking distance to proposed commercial areas.
X		Construct bus passenger benches and shelters	0.2%	0.2%	0.2%	0.2%	2.79	0.24	0.25	0.25	
X		Construct pedestrian facility improvements	0.1%	0.1%	0.1%	0.1%	1.39	0.12	0.13	0.12	
X		Retail services within or adjacent to residential subdivisions	1.3%	1.0%	1.3%	1.3%	18.12	1.21	1.65	1.61	
X		Shuttles to major rail transit centers or multi-modal stations	0.1%	0.1%	0.1%	0.1%	1.39	0.12	0.13	0.12	
X		Contribute to regional transit systems	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
X		Synchronize traffic lights on streets impacted by development	4.0%	4.0%	4.0%	4.0%	55.75	4.83	5.07	4.95	
X		Construct bicycle trails	0.1%	0.1%	0.1%	0.1%	1.39	0.12	0.13	0.12	
Commercial, Office and Institutional Uses											
X		Preferential parking spaces for carpools and vanpools	0.1%	0.1%	0.1%	0.1%	2.76	0.22	0.27	0.25	
X		Implement on-site circulation plan in parking lots	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
X		Provide separate windows for fast-food restaurants	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
X		Provide video-conference facilities	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Set up resident worker training programs to improve job/housing balance	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	Such programs are set up by and at the discretion of future occupants of the commercial uses.
	X	Implement home dispatching system for employees	0.1%	0.0%	0.1%	0.1%	0.00	0.00	0.00	0.00	Such programs are set up by and at the discretion of future occupants of the commercial uses.
	X	Minimize use of fleet vehicles during smog alerts	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	No commercial retail or office use on the site is expected to use fleet vehicles.
	X	Use low emission fleet vehicles	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	No commercial retail or office use on the site is expected to use fleet vehicles.
	X	Reduce employee parking spaces for those business not under Rule 2202	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	There is potential for employees to park in areas designated for retail customers, thereby negating the intent of this measure.
	X	Lunch shuttle service from a worksite to food establishments	0.5%	0.4%	0.5%	0.5%	0.00	0.00	0.00	0.00	Mixed use lots are expected to have food establishments located within walking distance for employees.
	X	Implement compressed work-week schedules	1.0%	0.8%	1.0%	1.0%	0.00	0.00	0.00	0.00	Such programs are set up by and at the discretion of future occupants of the commercial uses.
	X	Trip reduction plan to achieve 1.5 AVR for businesses	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	The requirement to achieve a specific AVR has been ruled unlawful by the federal government.
	X	Utilize satellite offices rather than regular worksite to reduce VMT	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	Such programs are set up by and at the discretion of future occupants of the commercial uses.
	X	Establish a home-based telecommuting program	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	Such programs are set up by and at the discretion of future occupants of the commercial uses.
X		Provide or contribute to child care and after school facilities	0.1%	0.1%	0.1%	0.1%	2.76	0.22	0.27	0.25	
	X	Offer travel incentives such as discounts on purchases for transit riders	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	Such programs are set up by and at the discretion of future occupants of the commercial uses.
X		Provide on-site employee services such as cafeteria, banks, etc.	0.3%	0.2%	0.3%	0.3%	8.29	0.44	0.80	0.76	
	X	Shuttle service from residential core area to the worksite	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	Residential uses are in close proximity and within walking distance to proposed commercial uses.
X		Construct bus passenger benches and shelters	0.1%	0.1%	0.1%	0.1%	2.76	0.22	0.27	0.25	
	X	Pricing structure for single-occupancy employee parking	2.0%	1.5%	2.0%	2.0%	0.00	0.00	0.00	0.00	There is potential for employees to park in areas designated for retail customers, thereby negating the intent of this measure.
X		Residential units within or adjacent to commercial developments	4.0%	3.1%	4.0%	4.0%	110.49	6.87	10.60	10.15	
X		Utilize excess parking as park-n-ride or contribute to park-n-ride	0.1%	0.1%	0.1%	0.1%	2.76	0.22	0.27	0.25	
X		Construct bicycle facility improvements	0.3%	0.2%	0.3%	0.3%	8.29	0.44	0.80	0.76	
X		Construct pedestrian facility improvements	0.2%	0.2%	0.2%	0.2%	5.52	0.44	0.53	0.51	
X		Shuttles to major rail transit centers or multi-modal stations	0.1%	0.1%	0.1%	0.1%	2.76	0.22	0.27	0.25	
X		Contribute to regional transit systems	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
X		Charge visitors to park	2.0%	1.5%	2.0%	2.0%	55.24	3.32	5.30	5.07	
X		Synchronize traffic lights on streets impacted by development	4.0%	4.0%	4.0%	4.0%	110.49	8.87	10.60	10.15	
X		Reschedule truck deliveries and pickups for off-peak hours	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Paid parking at walkup kiosks	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	There is potential for employees to park in areas designated for retail customers, thereby negating the intent of this measure.
X		On-site truck loading zones	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Implement or contribute to public outreach programs	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
X		Provide commuter information areas	0.1%	0.1%	0.1%	0.1%	2.76	0.22	0.27	0.25	Such programs are set up by and at the discretion of future occupants of the commercial uses.

ESTIMATED SUMMERTIME EMISSIONS REDUCTIONS EFFICIENCIES
River Village Emissions With Implementation of Newhall Ranch Specific Plan FEIR Air Quality Mitigation Measures and Without Wood Burning Stoves or Fire Places

Recommended (Measures already incorporated into Project are marked "No."			Emission Reduction Efficiency				Reduced Emissions in Pounds per Day				
Yes	No	MEASURES, EFFICIENCIES, AND REDUCTIONS	CO	VOC	NO_x	PM_{10}	CO	VOC	NO_x	PM_{10}	REASONS FOR REJECTING MITIGATION MEASURES
Industrial Uses											
	X	Preferential parking spaces for carpools and vanpools	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	No industrial uses are proposed within the project.
	X	Implement on-site circulation plan in parking lots	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Set up resident worker training programs to improve job/housing balance	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Implement home dispatching system for employees	0.1%	0.0%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Minimize use of fleet vehicles during smog alerts	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Use low emission fleet vehicles	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Provide commuter information areas	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Reduce employee parking spaces for those business not under Rule 2202	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Implement compressed work-week schedules	1.0%	0.8%	1.0%	1.0%	0.00	0.00	0.00	0.00	
	X	Offer loans or other incentives to employees who move locally	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Trip reduction plan to achieve 1.5 AVR for businesses	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Provide or contribute to child care and after school facilities	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Provide on-site employee services such as cafeteria, banks, etc.	0.3%	0.2%	0.3%	0.3%	0.00	0.00	0.00	0.00	
	X	Shuttle service from residential core area to the worksite	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Construct bus passenger benches and shelters	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Pricing structure for single-occupancy employee parking	2.0%	1.5%	2.0%	2.0%	0.00	0.00	0.00	0.00	
	X	Utilize excess parking as park-n-ride or contribute to park-n-ride	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Construct bicycle facility improvements	0.3%	0.2%	0.3%	0.3%	0.00	0.00	0.00	0.00	
	X	Construct pedestrian facility improvements	0.2%	0.2%	0.2%	0.2%	0.00	0.00	0.00	0.00	
	X	Shuttles to major rail transit centers or multi-modal stations	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Contribute to regional transit systems	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Synchronize traffic lights on streets impacted by development	4.0%	4.0%	4.0%	4.0%	0.00	0.00	0.00	0.00	
	X	Reschedule truck deliveries and pickups for off-peak hours	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Lunch shuttle system from worksite to food establishments	0.5%	0.4%	0.5%	0.5%	0.00	0.00	0.00	0.00	
	X	On-site truck loading zones	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Install aerodynamic add-on devices to heavy-duty trucks	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Implement or contribute to public outreach programs	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Reduce ship cruising speeds in the inner harbor	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Use low-emission fuels or electrify airport ground service vehicles	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Engine tuning for marine vessels	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Reduce number of aircraft engines used during idling	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Install monitoring system to control airport shuttles	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Use centralized ground power systems for airport service vehicles	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
		Reduction in Stationary Sources Emissions (Pounds per day)					-9.56	-37.32	-13.62	-0.04	
		Reduction in Mobile Sources Emissions (Pounds per day)					-395.72	-28.36	-37.57	-36.09	
		Total Reduction in Emissions Based on Newhall Ranch FEIR Measures (Pounds per day)					-405.28	-65.68	-51.19	-36.13	
		Percentage Reduced Based on Newhall Ranch FEIR Measures					-9.70%	-15.59%	-12.09%	-9.57%	
		No Wood Burning Fire Places or Stoves in Residential Units					0.00	0.00	0.00	0.00	
		Total Percent Reduction Based on Implementation of All Recommended Measures					-9.70%	-15.59%	-12.09%	-9.57%	
		Total Reduced Stationary Source Emissions					**11.96**	**41.52**	**18.02**	**0.05**	
		Total Reduced Mobile Source Emissions					**3,760.17**	**314.06**	**354.27**	**341.24**	
		TOTAL REDUCED EMISSIONS					**3,772.13**	**355.58**	**372.29**	**341.29**	
		SCAQMD Thresholds					**550.00**	**55.00**	**55.00**	**150.00**	
		ProjectAir Quality Impacts Significant?					YES	YES	YES	YES	

WINTERTIME EMISSIONS REDUCTIONS

ESTIMATED WINTERTIME EMISSIONS REDUCTIONS EFFICIENCIES
River Village Emissions With Implementation of Newhall Ranch Specific Plan FEIR Air Quality Mitigation Measures and Without Wood Burning Stoves or Fire Places

Input Fields

LAND USE		Unmitigated Emissions in Pounds per Day CO	VOC	NO_x	PM_{10}
Single Family Residential Uses	Vehicular Sources	633.57	52.80	88.27	59.43
	Area Sources	9.86	39.22	13.67	0.04
Multi-Family Residential Uses	Vehicular Sources	684.75	57.17	95.39	64.23
	Area Sources	7.56	38.82	8.27	0.03
Commercial/Office/Institutional Uses	Vehicular Sources	2,687.35	220.04	383.23	253.67
	Area Sources	4.10	0.80	9.70	0.02
Wood-Burning Fire Place Emissions	Vehicular Sources	0.00	0.00	0.00	0.00
	Area Sources	1,784.09	1,617.41	18.36	244.38
Total Emissions	Vehicular Sources	4,005.67	330.01	566.89	377.33
	Area Sources	1,805.61	1,696.25	50.00	244.47
	Total Non-Reduced Emissions	5,811.28	2,026.26	616.89	621.80

Recommended (Measures already incorporated into Project are marked "No." Yes	No	MEASURES, EFFICIENCIES, AND REDUCTIONS	Emission Reduction Efficiency CO	VOC	NO_x	PM_{10}	Reduced Emissions in Pounds per Day CO	VOC	NO_x	PM_{10}	REASONS FOR REJECTING MITIGATION MEASURES
Stationary Sources											
All Residential Uses											
X		Use solar or low emission water heaters	10.0%	11.0%	9.5%	4.5%	1.74	8.58	2.08	0.00	
X		Use built-in energy-efficient appliances	3.0%	2.5%	3.0%	6.5%	0.52	1.95	0.66	0.00	
X		Provide shade trees to reduce heating/cooling needs	0.0%	0.0%	0.0%	0.5%	0.00	0.00	0.00	0.00	
X		Use energy-efficient and automated controls for air conditioners	0.0%	0.0%	0.0%	0.5%	0.00	0.00	0.00	0.00	
X		Use double-glass paned windows	4.5%	4.5%	4.0%	2.5%	0.78	3.51	0.88	0.00	
	X	Provide ventilation systems for enclosed parking facilities	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	Parking structures are not proposed within the project.
X		Use lighting controls and energy efficient lighting	0.0%	0.0%	0.0%	0.5%	0.00	0.00	0.00	0.00	
X		Use fuel cells in residential subdivisions to produce heat and elec.	1.0%	0.0%	1.5%	7.0%	0.17	0.00	0.33	0.00	
X		Orient buildings to the north	13.5%	14.0%	13.0%	10.5%	2.35	10.93	2.85	0.01	
X		Use light-colored roof materials to reflect heat	1.5%	1.5%	1.5%	1.5%	0.26	1.17	0.33	0.00	
X		Comply with Title 24	13.0%	14.0%	13.0%	7.5%	2.26	10.93	2.85	0.01	
Multi-Family Residential Uses											
	X	Use central water heating systems	8.5%	9.0%	8.0%	4.0%	0.00	0.00	0.00	0.00	Central heating systems are not desired by the average multi-family resident.
Commercial, Office, Institutional Uses											
X		Use solar or low emission water heaters	0.5%	0.5%	0.5%	0.5%	0.02	0.00	0.05	0.00	
X		Use central water heating systems	0.5%	0.5%	0.5%	0.5%	0.02	0.00	0.05	0.00	
X		Provide shade trees to reduce heating/cooling needs	0.5%	0.5%	0.5%	1.0%	0.02	0.00	0.05	0.00	
X		Use energy-efficient and automated controls for air conditioners	1.0%	1.0%	1.0%	1.5%	0.04	0.01	0.10	0.00	
X		Use double-glass paned windows	3.0%	3.5%	3.0%	2.5%	0.12	0.03	0.29	0.00	
X		Use energy-efficient low-sodium parking lights	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Provide ventilation systems for enclosed parking facilities	0.0%	0.0%	0.0%	0.5%	0.00	0.00	0.00	0.00	Parking structures are not proposed within the project.
X		Use lighting controls and energy efficient lighting	7.0%	3.0%	8.5%	19.5%	0.29	0.02	0.82	0.00	
X		Use light-colored roof materials to reflect heat	1.0%	1.0%	1.0%	0.5%	0.04	0.01	0.10	0.00	
X		Comply with Title 24	9.5%	10.0%	9.0%	7.0%	0.39	0.08	0.87	0.00	
X		Orient buildings to the north	12.5%	11.0%	13.5%	17.5%	0.51	0.09	1.31	0.00	
Industrial Uses											
	X	Provide shade trees to reduce heating/cooling needs	0.0%	0.0%	0.0%	0.5%	0.00	0.00	0.00	0.00	No industrial uses are proposed within the project.
	X	Use energy-efficient and automated controls for air conditioners	0.0%	0.0%	0.0%	1.0%	0.00	0.00	0.00	0.00	
	X	Use double-glass paned windows	0.0%	0.0%	0.5%	1.0%	0.00	0.00	0.00	0.00	
	X	Use energy-efficient low-sodium parking lights	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Provide ventilation systems for enclosed parking facilities	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Use lighting controls and energy efficient lighting	0.5%	0.0%	1.0%	2.5%	0.00	0.00	0.00	0.00	
	X	Use light-colored roof materials to reflect heat	0.0%	0.0%	0.0%	0.5%	0.00	0.00	0.00	0.00	
	X	Orient buildings to the north	2.5%	2.0%	3.0%	5.5%	0.00	0.00	0.00	0.00	
	X	Comply with Title 24	0.5%	0.0%	1.0%	3.0%	0.00	0.00	0.00	0.00	
	X	Improved storage and handling of source materials	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Materials substitution (e.g., use water-based paints, life cycle analysis)	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Utilize efficient manufacturing processes	1.5%	0.5%	2.0%	6.0%	0.00	0.00	0.00	0.00	
	X	Resource recovery systems	3.0%	3.5%	3.0%	1.5%	0.00	0.00	0.00	0.00	

Impact Sciences, Inc.
Prepared by R. Mamaghani
2/13/04

Based on SCAQMD
CEQA Air Quality Handbook
Table 11-6

ESTIMATED WINTERTIME EMISSIONS REDUCTIONS EFFICIENCIES
River Village Emissions With Implementation of Newhall Ranch Specific Plan FEIR Air Quality Mitigation Measures and Without Wood Burning Stoves or Fire Places

Recommended (Measures already incorporated into Project are marked "No."			Emission Reduction Efficiency				Reduced Emissions in Pounds per Day				
Yes	No	MEASURES, EFFICIENCIES, AND REDUCTIONS	CO	VOC	NO_x	PM_{10}	CO	VOC	NO_x	PM_{10}	REASONS FOR REJECTING MITIGATION MEASURES
Mobile Sources											
Residential Uses											
	X	Allow satellite telecommunications centers in residential subdivisions	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	Satellite telecommunications centers are superseded by other technology.
	X	Shuttle service from res. subdivisions to commercial core areas	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	Residences are proposed in walking distance to proposed commercial areas.
X		Construct bus passenger benches and shelters	0.2%	0.2%	0.2%	0.2%	2.64	0.22	0.37	0.25	
X		Construct pedestrian facility improvements	0.1%	0.1%	0.1%	0.1%	1.32	0.11	0.18	0.12	
X		Retail services within or adjacent to residential subdivisions	1.3%	1.0%	1.3%	1.3%	17.14	1.10	2.39	1.61	
X		Shuttles to major rail transit centers or multi-modal stations	0.1%	0.1%	0.1%	0.1%	1.32	0.11	0.18	0.12	
X		Contribute to regional transit systems	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
X		Synchronize traffic lights on streets impacted by development	4.0%	4.0%	4.0%	4.0%	52.73	4.40	7.35	4.95	
X		Construct bicycle trails	0.1%	0.1%	0.1%	0.1%	1.32	0.11	0.18	0.12	
Commercial, Office and Institutional Uses											
X		Preferential parking spaces for carpools and vanpools	0.1%	0.1%	0.1%	0.1%	2.69	0.22	0.38	0.25	
X		Implement on-site circulation plan in parking lots	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
X		Provide separate windows for fast-food restaurants	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
X		Provide video-conference facilities	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Set up resident worker training programs to improve job/housing balance	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	Such programs are set up by and at the discretion of future occupants of the commercial uses.
	X	Implement home dispatching system for employees	0.1%	0.0%	0.1%	0.1%	0.00	0.00	0.00	0.00	Such programs are set up by and at the discretion of future occupants of the commercial uses.
	X	Minimize use of fleet vehicles during smog alerts	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	No commercial retail or office use on the site is expected to use fleet vehicles.
	X	Use low emission fleet vehicles	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	No commercial retail or office use on the site is expected to use fleet vehicles.
	X	Reduce employee parking spaces for those business not under Rule 2202	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	There is potential for employees to park in areas designated for retail customers, thereby negating the intent of this measure.
	X	Lunch shuttle service from a worksite to food establishments	0.5%	0.4%	0.5%	0.5%	0.00	0.00	0.00	0.00	Mixed use lots are expected to have food establishments located within walking distance for employees.
	X	Implement compressed work-week schedules	1.0%	0.8%	1.0%	1.0%	0.00	0.00	0.00	0.00	Such programs are set up by and at the discretion of future occupants of the commercial uses.
	X	Trip reduction plan to achieve 1.5 AVR for businesses	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	The requirement to achieve a specific AVR has been ruled unlawful by the federal government.
	X	Utilize satellite offices rather than regular worksite to reduce VMT	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	Such programs are set up by and at the discretion of future occupants of the commercial uses.
	X	Establish a home-based telecommuting program	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	Such programs are set up by and at the discretion of future occupants of the commercial uses.
X		Provide or contribute to child care and after school facilities	0.1%	0.1%	0.1%	0.1%	2.69	0.22	0.38	0.25	
	X	Offer travel incentives such as discounts on purchases for transit riders	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	Such programs are set up by and at the discretion of future occupants of the commercial uses.
X		Provide on-site employee services such as cafeteria, banks, etc.	0.3%	0.2%	0.3%	0.3%	8.06	0.44	1.15	0.76	
	X	Shuttle service from residential core area to the worksite	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	Residential uses are in close proximity and within walking distance to proposed commercial uses.
X		Construct bus passenger benches and shelters	0.1%	0.1%	0.1%	0.1%	2.69	0.22	0.38	0.25	
	X	Pricing structure for single-occupancy employee parking	2.0%	1.5%	2.0%	2.0%	0.00	0.00	0.00	0.00	There is potential for employees to park in areas designated for retail customers, thereby negating the intent of this measure.
X		Residential units within or adjacent to commercial developments	4.0%	3.1%	4.0%	4.0%	107.49	6.82	15.33	10.15	
X		Utilize excess parking as park-n-ride or contribute to park-n-ride	0.1%	0.1%	0.1%	0.1%	2.69	0.22	0.38	0.25	
X		Construct bicycle facility improvements	0.3%	0.2%	0.3%	0.3%	8.06	0.44	1.15	0.76	
X		Construct pedestrian facility improvements	0.2%	0.2%	0.2%	0.2%	5.37	0.44	0.77	0.51	
X		Shuttles to major rail transit centers or multi-modal stations	0.1%	0.1%	0.1%	0.1%	2.69	0.22	0.38	0.25	
X		Contribute to regional transit systems	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
X		Charge visitors to park	2.0%	1.5%	2.0%	2.0%	53.75	3.30	7.66	5.07	
X		Synchronize traffic lights on streets impacted by development	4.0%	4.0%	4.0%	4.0%	107.49	8.80	15.33	10.15	
X		Reschedule truck deliveries and pickups for off-peak hours	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Paid parking at walkup kiosks	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	There is potential for employees to park in areas designated for retail customers, thereby negating the intent of this measure.
X		On-site truck loading zones	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Implement or contribute to public outreach programs	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
X		Provide commuter information areas	0.1%	0.1%	0.1%	0.1%	2.69	0.22	0.38	0.25	Such programs are set up by and at the discretion of future occupants of the commercial uses.

ESTIMATED WINTERTIME EMISSIONS REDUCTIONS EFFICIENCIES
River Village Emissions With Implementation of Newhall Ranch Specific Plan FEIR Air Quality Mitigation Measures and Without Wood Burning Stoves or Fire Places

Recommended (Measures already incorporated into Project are marked "No."			Emission Reduction Efficiency				Reduced Emissions in Pounds per Day				
Yes	No	MEASURES, EFFICIENCIES, AND REDUCTIONS	CO	VOC	NO_x	PM_{10}	CO	VOC	NO_x	PM_{10}	REASONS FOR REJECTING MITIGATION MEASURES
Industrial Uses											
	X	Preferential parking spaces for carpools and vanpools	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	No industrial uses are proposed within the project.
	X	Implement on-site circulation plan in parking lots	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Set up resident worker training programs to improve job/housing balance	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Implement home dispatching system for employees	0.1%	0.0%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Minimize use of fleet vehicles during smog alerts	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Use low emission fleet vehicles	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Provide commuter information areas	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Reduce employee parking spaces for those business not under Rule 2202	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Implement compressed work-week schedules	1.0%	0.8%	1.0%	1.0%	0.00	0.00	0.00	0.00	
	X	Offer loans or other incentives to employees who move locally	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Trip reduction plan to achieve 1.5 AVR for businesses	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Provide or contribute to child care and after school facilities	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Provide on-site employee services such as cafeteria, banks, etc.	0.3%	0.2%	0.3%	0.3%	0.00	0.00	0.00	0.00	
	X	Shuttle service from residential core area to the worksite	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Construct bus passenger benches and shelters	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Pricing structure for single-occupancy employee parking	2.0%	1.5%	2.0%	2.0%	0.00	0.00	0.00	0.00	
	X	Utilize excess parking as park-n-ride or contribute to park-n-ride	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Construct bicycle facility improvements	0.3%	0.2%	0.3%	0.3%	0.00	0.00	0.00	0.00	
	X	Construct pedestrian facility improvements	0.2%	0.2%	0.2%	0.2%	0.00	0.00	0.00	0.00	
	X	Shuttles to major rail transit centers or multi-modal stations	0.1%	0.1%	0.1%	0.1%	0.00	0.00	0.00	0.00	
	X	Contribute to regional transit systems	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Synchronize traffic lights on streets impacted by development	4.0%	4.0%	4.0%	4.0%	0.00	0.00	0.00	0.00	
	X	Reschedule truck deliveries and pickups for off-peak hours	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Lunch shuttle system from worksite to food establishments	0.5%	0.4%	0.5%	0.5%	0.00	0.00	0.00	0.00	
	X	On-site truck loading zones	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Install aerodynamic add-on devices to heavy-duty trucks	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Implement or contribute to public outreach programs	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Reduce ship cruising speeds in the inner harbor	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Use low-emission fuels or electrify airport ground service vehicles	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Engine tuning for marine vessels	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Reduce number of aircraft engines used during idling	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Install monitoring system to control airport shuttles	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
	X	Use centralized ground power systems for airport service vehicles	0.0%	0.0%	0.0%	0.0%	0.00	0.00	0.00	0.00	
		Reduction in Stationary Sources Emissions (Pounds per day)					-9.56	-37.32	-13.62	-0.04	
		Reduction in Mobile Sources Emissions (Pounds per day)					-382.82	-27.61	-54.34	-36.09	
		Total Reduction in Emissions Based on Newhall Ranch FEIR Measures (Pounds per day)					-392.38	-64.93	-67.96	-36.13	
		Percentage Reduced Based on Newhall Ranch FEIR Measures					-6.75%	-3.20%	-11.02%	-5.81%	
		No Wood Burning Fire Places or Stoves in Residential Units					-1,784.09	-1,617.41	-18.36	-244.38	
		Total Percent Reduction Based on Implementation of All Recommended Measures					-37.45%	-83.03%	-13.99%	-45.11%	
		Total Reduced Stationary Source Emissions					**11.96**	**41.52**	**18.02**	**0.05**	
		Total Reduced Mobile Source Emissions					**3,622.85**	**302.40**	**512.55**	**341.24**	
		TOTAL REDUCED EMISSIONS					**3,634.81**	**343.92**	**530.57**	**341.29**	
		SCAQMD Thresholds					**550.00**	**55.00**	**55.00**	**150.00**	
		ProjectAir Quality Impacts Significant?					YES	YES	YES	YES	

Impact Sciences, Inc.
Prepared by R. Mamaghani
2/13/04

Based on SCAQMD
CEQA Air Quality Handbook
Table 11-6

2002 Annual Average Daily Truck Traffic on the California State Highway System

2002

Annual Average Daily Truck Traffic on the California State Highway System

Compiled by
Traffic and Vehicle Data Systems

State of California
Business, Transportation and Housing Agency
Department of Transportation

Prepared in cooperation with the
U.S. Department of Transportation
Federal Highway Administration

FEBRUARY 2004

RTE	DIST	CNTY	POST MILE	LEG	DESCRIPTION	VEHICLE AADT TOTAL	TRUCK AADT TOTAL	TRUCK % TOT VEH	TRUCK AADT TOTAL By Axle 2	3	4	5+	% TRUCK AADT By Axle 2	3	4	5+	EAL 1-WAY (1000)	YEAR VER/ EST
126	07	VEN	.001	A	JCT RTE 101	43500	1927	4.43	871	140	61	855	45.19	7.29	3.14	44.39	347	02E
126	07	VEN	1.448	A	VICTORIA AVENUE	44500	3204	7.2	1426	333	103	1342	44.5	10.4	3.2	41.9	559	92V
126	07	VEN	5.031	B	JCT. RTE. 118 EAST	36000	1944	5.4	878	142	61	863	45.19	7.29	3.14	44.39	350	02E
126	07	VEN	R5.031	A	JCT. RTE. 118 EAST	50000	2465	4.93	1114	180	77	1094	45.19	7.29	3.14	44.39	444	02E
126	07	VEN	R10.629	O	LAURIE LANE PED OC; E/O PECK RD	39500	2263	5.73	1023	165	71	1005	45.19	7.29	3.14	44.39	408	02V
126	07	VEN	R12.042	B	JCT. RTE. 150 NORTH	35000	2219	6.34	935	153	66	1066	42.13	6.89	2.96	48.02	424	02E
126	07	VEN	R12.042	A	JCT. RTE. 150 NORTH	28500	2551	8.95	997	166	71	1318	39.08	6.5	2.77	51.65	515	02E
126	07	VEN	21.137	B	FILLMORE, JCT. RTE. 23 SOUTH	29500	2859	9.69	1030	174	74	1580	36.03	6.1	2.59	55.28	608	02E
126	07	VEN	21.137	A	FILLMORE, JCT. RTE. 23 SOUTH	28500	2745	9.63	905	157	66	1617	32.97	5.71	2.41	58.91	614	02E
126	07	VEN	R30.8	O	PIRU	19600	2824	14.41	845	150	63	1766	29.92	5.31	2.23	62.54	662	02V
126	07	LA	R0	A	VENTURA/LOS ANGELES COUNTY LINE	19600	4296	21.92	644	1379	185	2088	14.99	32.1	4.31	48.6	897	90E
126	07	LA	R5.801	B	WEST OF NORTH JCT RTE 5	23700	2953	12.46	884	157	66	1847	29.92	5.31	2.23	62.54	692	02E

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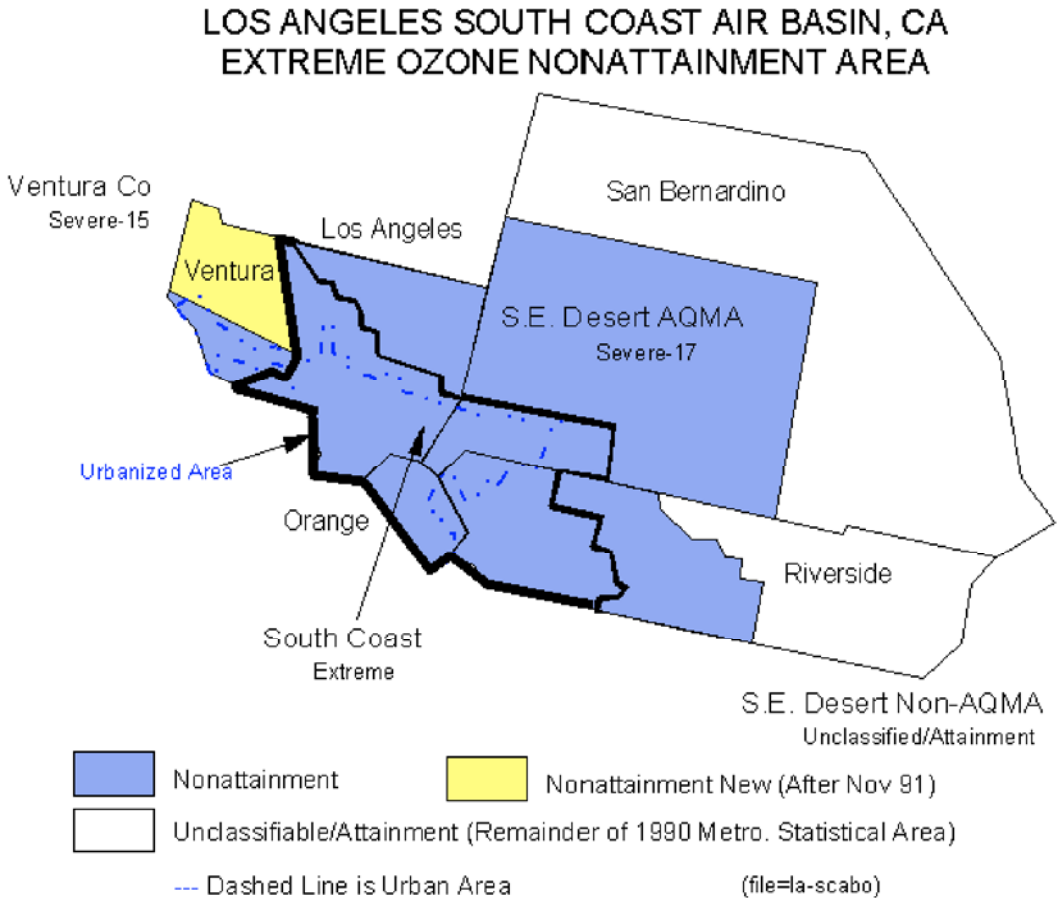
U.S. Environmental Protection Agency. "Particulate Matter Nonattainment Areas as of September 27, 2004." [Online] 26 October 2004. <http://www.epa.gov/air/oaqps/greenbk/pntc.html>.

Nonattainment Areas
1-Hour Ozone
8-Hour Ozone
Carbon Monoxide
Nitrogen Dioxide
Sulfur Dioxide
PM-10
PM-2.5
Lead

1-Hour Ozone Nonattainment Area Map



U.S. Environmental Protection Agency

Green Book

Nonattainment Areas
1-Hour Ozone
8-Hour Ozone
Carbon Monoxide
Nitrogen Dioxide
Sulfur Dioxide
Particulate Matter
Lead

8-Hour Ozone Areas Listed by Category/Classification

As of September 27, 2004

n = area has whole or part county or counties in a current 1-hr Ozone nonattainment area
m = area has whole or part county or counties in a current 1-hr Ozone maintenance area
* = area has whole or part county or counties in 1-hr Ozone, CO, or PM-10 NAA or maintenance area

Category/Classification (Attainment Date)

SEVERE 17 (June 2021)
- Los Angeles South Coast Air Basin, CA [n*]

SERIOUS (June 2013)
- Riverside Co. (Coachella Valley), CA [n*]
- Sacramento Metro, CA [n*]
- San Joaquin Valley, CA [n*]

MODERATE (June 2010)
- Baltimore, MD [n*]
- Boston-Lawrence-Worcester (E. MA), MA [n*]
- Boston-Manchester-Portsmouth(SE),NH [n*]
- Cass Co, MI
- Charlotte-Gastonia-Rock Hill, NC-SC [m*]
- Chicago-Gary-Lake County, IL-IN [n*]
- Cleveland-Akron-Lorain, OH [m*]
- Dallas-Fort Worth, TX [n*]
- Detroit-Ann Arbor, MI [m*]
- Fredericksburg, VA [n*]
- Greater Connecticut, CT [n*]
- Houston-Galveston-Brazoria, TX [n*]
- Jefferson Co, NY [n*]
- Kent and Queen Anne's Cos, MD [n*]
- La Porte, IN
- Lancaster, PA [n*]
- Los Angeles-San Bernardino Cos(W Mojave),CA [n*]
- Memphis, TN-AR [m*]
- Milwaukee-Racine, WI [n*]
- Muskegon, MI [m*]
- New York-N. New Jersey-Long Island,NY-NJ-CT [n*]
- Philadelphia-Wilmin-Atlantic Ci,PA-NJ-MD-DE [n*]
- Poughkeepsie, NY [n*]
- Providence (All RI), RI [n*]
- Richmond-Petersburg, VA [m*]
- Sheboygan, WI [m*]
- Springfield (Western MA), MA [n*]
- St Louis, MO-IL [m*]
- Ventura Co, CA [n*]
- Washington, DC-MD-VA [n*]

MARGINAL (June 2007)
- Atlanta, GA [n*]
- Baton Rouge, LA [n*]
- Beaumont-Port Arthur, TX [n*]
- Imperial Co, CA [n*]
- Norfolk-Virginia Beach-Newport News (HR),VA [m*]
- Portland, ME [n*]
- San Francisco Bay Area, CA [n*]

SUBPART 1 (June 2009)
- Albany-Schenectady-Troy, NY [n*]
- Allegan Co, MI [m*]
- Allentown-Bethlehem-Easton, PA [n*]
- Altoona, PA [n*]
- Amador and Calaveras Cos (Central Mtn), CA
- Benton Harbor, MI
- Berrie Co, MI
- Birmingham, AL [m*]
- Buffalo-Niagara Falls, NY [n*]
- Canton-Massillon, OH [m*]
- Charleston, WV [m*]
- Chico, CA [n*]
- Cincinnati-Hamilton, OH-KY-IN [nm*]
- Clarksville-Hopkinsville, TN-KY
- Clearfield and Indiana Cos, PA
- Columbus, OH [m*]
- Dayton-Springfield, OH [m*]
- Door Co, WI [m*]
- Erie, PA [n*]
- Essex Co (Whiteface Mtn), NY [n*]
- Evansville, IN [m*]
- Flint, MI [m*]
- Fort Wayne, IN
- Franklin Co, PA [n*]
- Grand Rapids, MI [m*]
- Greene Co, IN
- Greene Co, PA [n*]
- Hancock, Knox, Lincoln & Waldo Cos, ME [nm*]
- Harrisburg-Lebanon-Carlisle, PA [n*]
- Haywood and Swain Cos (Great Smoky NP), NC
- Huntington-Ashland, WV-KY [m*]
- Huron Co, MI
- Indianapolis, IN [m*]
- Jackson Co, IN
- Jamestown, NY
- Johnstown, PA [n*]
- Kalamazoo-Battle Creek, MI
- Kern Co (Eastern Kern), CA [m*]
- Kewaunee Co, WI [m*]
- Knoxville, TN [m*]
- Lansing-East Lansing, MI
- Las Vegas, NV [*]
- Lima, OH
- Louisville, KY-IN [m*]
- Macon, GA
- Madison and Page Cos (Shenandoah NP), VA
- Manitowoc Co, WI [m*]
- Mariposa and Tuolumne Cos (Southern Mtn),CA

Mason Co, MI
Muncie, IN
Murray Co (Chattahoochee Nat Forest), GA
Nevada Co. (Western Part), CA
Parkersburg-Marietta, WV-OH [m*]
Phoenix-Mesa, AZ [m*]
Pittsburgh-Beaver Valley, PA [m*]
Raleigh-Durham-Chapel Hill, NC [m*]
Reading, PA [m*]
Rochester, NY
Rocky Mount, NC
San Diego, CA [m*]
Scranton-Wilkes-Barre, PA [m*]
South Bend-Elkhart, IN [m*]
State College, PA
Steubenville-Weirton, OH-WV [m*]
Sutter Co (Sutter Buttes), CA [m*]
Terre Haute, IN
Tioga Co, PA
Toledo, OH [m*]
Wheeling, WV-OH
York, PA [m*]
Youngstown-Warren-Sharon, OH-PA [mm*]

MODERATE EAC (December 2007)

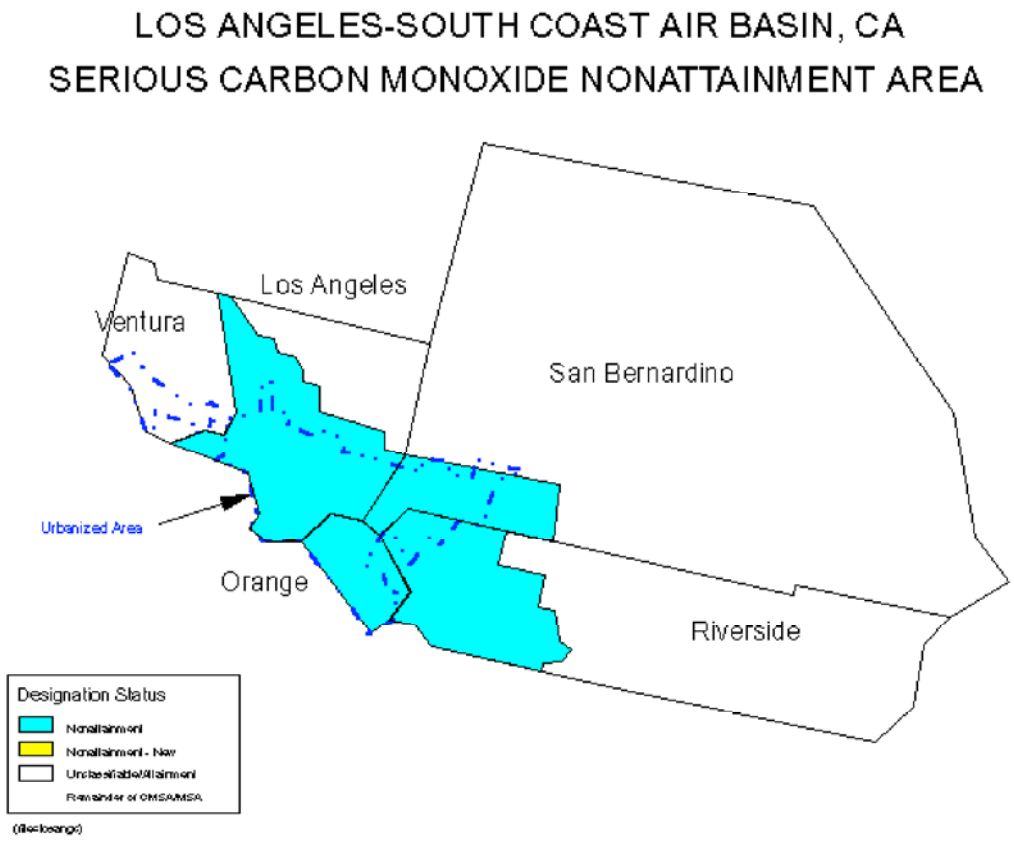
Greensboro-Winston Salem-High Point, NC [m*]

SUBPART 1 EAC (December 2007)

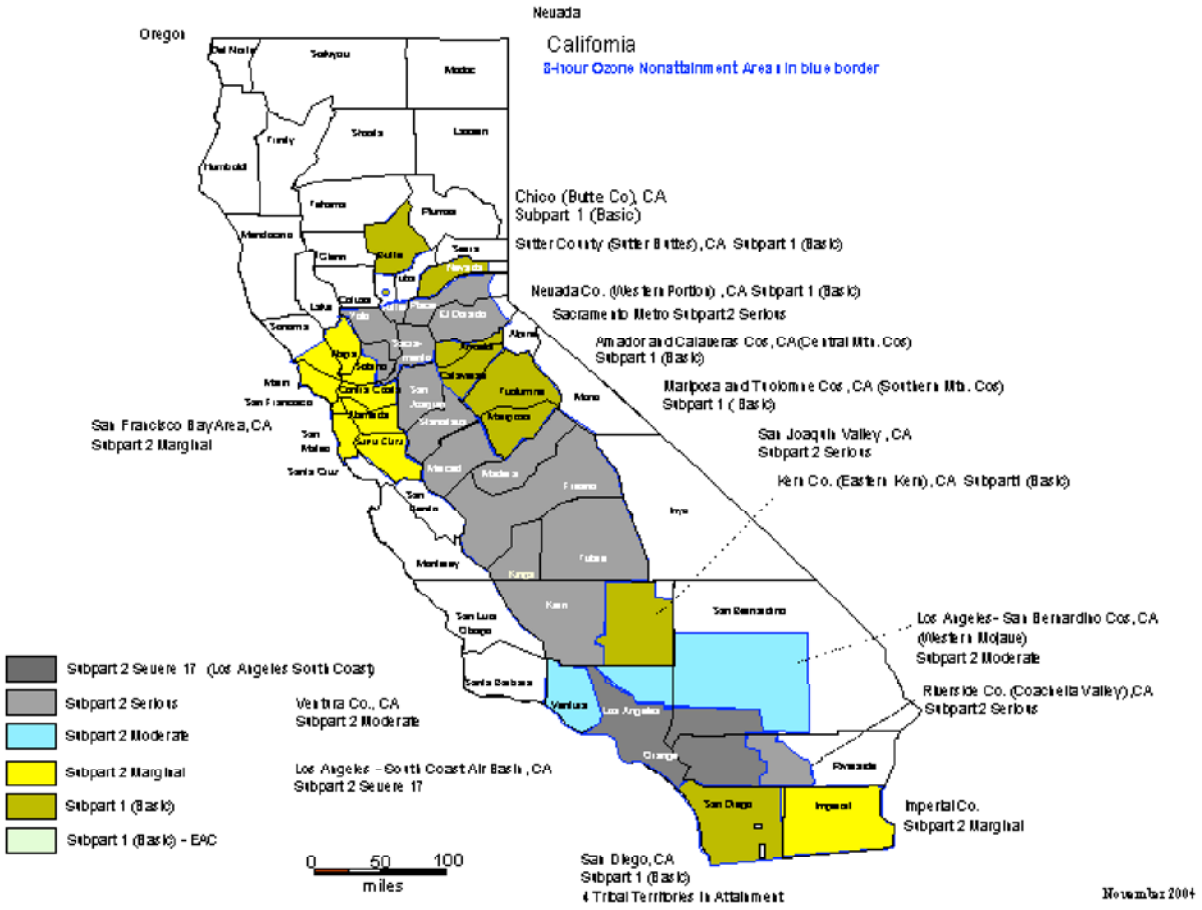
Berkeley and Jefferson Counties, WV
Chattanooga, TN-GA
Columbia, SC
Denver-Boulder-Greeley-Ft Collins-Love., CO [m*]
Fayetteville, NC
Frederick Co, VA
Greenville-Spartanburg-Anderson, SC
Hickory-Morganton-Lenoir, NC
Johnson City-Kingsport-Bristol, TN
Nashville, TN [m*]
Roanoke, VA
San Antonio, TX
Washington Co (Hagerstown), MD

Nonattainment Areas
1-Hour Ozone
8-Hour Ozone
Carbon Monoxide
Nitrogen Dioxide
Sulfur Dioxide
PM-10
PM-2.5
Lead

Carbon Monoxide Nonattainment Area Map

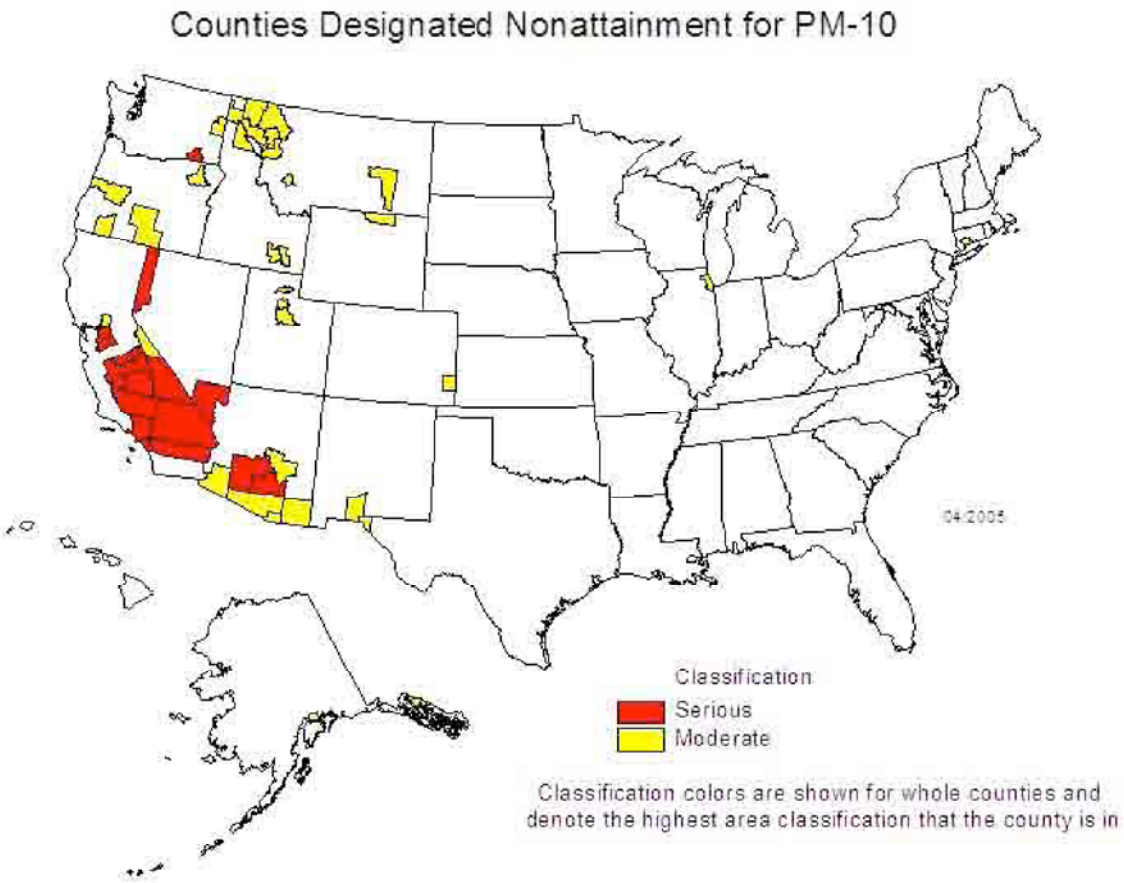


Nonattainment Areas
1-Hour Ozone
8-Hour Ozone
Carbon Monoxide
Nitrogen Dioxide
Sulfur Dioxide
PM-10
PM-2.5
Lead



Nonattainment Areas
1-Hour Ozone
8-Hour Ozone
Carbon Monoxide
Nitrogen Dioxide
Sulfur Dioxide
PM-10
PM-2.5
Lead

Particulate Matter Nonattainment Area Map



U.S. Environmental Protection Agency

Green Book

Particulate Matter Nonattainment Areas

As of September 27, 2004

Areas Listed Alphabetically	Classification	No. Counties NAA	Pop (1,000)	EPA Region	State
Ajo (Pima County), AZ	Moderate	1	8	9	AZ
Anthony, NM	Moderate	1	3	6	NM
Bonner Co. (Sandpoint), ID	Moderate	1	37	10	ID
Butte, MT	Moderate	1	35	8	MT
Clark Co, NV	Serious	1	1376	9	NV
Coachella Valley, CA	Serious	1	182	9	CA
Columbia Falls, MT	Moderate	1	4	8	MT
Coso Junction, CA	Moderate	1	7	9	CA
Douglas (Cochise County), AZ	Moderate	1	16	9	AZ
Eagle River, AK	Moderate	1	195	10	AK
El Paso Co, TX	Moderate	1	564	6	TX
Eugene-Springfield, OR	Moderate	1	179	10	OR
Flathead County/ Whitefish and vicinity, MT	Moderate	1	5	8	MT
Fort Hall Reservation, ID	Moderate	2	1	10	ID
Hayden/Miami, AZ	Moderate	2	4	9	AZ
Imperial Valley, CA	Serious	1	120	9	CA
Juneau, AK	Moderate	1	14	10	AK
Kalispell, MT	Moderate	1	15	8	MT
LaGrande, OR	Moderate	1	12	10	OR
Lake Co, OR	Moderate	1	3	10	OR
Lamar, CO	Moderate	1	9	8	CO
Lame Deer, MT	Moderate	1	1	8	MT
Lane Co, OR	Moderate	1	3	10	OR
Libby, MT	Moderate	1	3	8	MT
Los Angeles South Coast Air Basin, CA	Serious	4	14594	9	CA
Lyons Twsp., IL	Moderate	1	109	5	IL
Medford-Ashland, OR	Moderate	1	78	10	OR
Missoula, MT	Moderate	1	52	8	MT
Mono Basin, CA	Moderate	1	0	9	CA
Mun. of Guaynabo, PR	Moderate	1	92	2	PR
New Haven Co, CT	Moderate	1	124	1	CT
New York Co, NY	Moderate	1	1537	2	NY
Nogales, AZ	Moderate	1	25	9	AZ
Ogden, UT	Moderate	1	77	8	UT
Owens Valley, CA	Serious	1	7	9	CA
Paul Spur, AZ	Moderate	1	1	9	AZ
Phoenix, AZ	Serious	2	3112	9	AZ
Pinehurst, ID	Moderate	1	2	10	ID
Polson, MT	Moderate	1	4	8	MT
Portneuf Valley, ID	Moderate	2	66	10	ID
Rillito, AZ	Moderate	1	1	9	AZ
Ronan, MT	Moderate	1	3	8	MT
Sacramento Co, CA	Moderate	1	1223	9	CA
Salt Lake Co, UT	Moderate	1	898	8	UT
San Bernardino Co, CA	Moderate	1	199	9	CA
San Joaquin Valley, CA	Serious	7	3080	9	CA
Sanders County (part)/Thompson Falls and vicinity,MT	Moderate	1	1	8	MT
Sheridan, WY	Moderate	1	16	8	WY
Shoshone Co, ID	Moderate	1	10	10	ID
Southeast Chicago, IL	Moderate	1	3	5	IL
Spokane Co, WA	Moderate	1	205	10	WA
Steamboat Springs	Moderate	1	10	8	CO
Trona, CA	Moderate	1	4	9	CA
Utah Co, UT	Moderate	1	369	8	UT
Wallula, WA	Serious	1	0	10	WA
Washoe Co, NV	Serious	1	339	9	NV
Weirton, WV	Moderate	2	15	3	WV
Yakima Co, WA	Moderate	1	64	10	WA
Yuma, AZ	Moderate	1	82	9	AZ
59 Total Areas		58	29,198		

No. of Counties NAA reflects the number of counties in the NAA, while the total count accounts for more than one area being in a county.

ENVIRON Assessment of the Contributions of Local Emissions Versus Transport to Ozone and Particulate Matter Air Quality in the Santa Clarita Valley, July 19, 2004

Final Report

Assessment of the Contributions of Local Emissions Versus Transport to Ozone and Particulate Matter (PM) Air Quality in the Santa Clarita Valley Area

Prepared for

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July 19, 2004

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EXECUTIVE SUMMARY

ENVIRON International Corporation has evaluated whether significant amounts of ozone and particulate matter (PM) in the Santa Clarita Valley area (SC Valley) result from local emissions. For that evaluation, ENVIRON compared the ozone and PM pollution levels in the SC Valley with and without local SC Valley development, traffic or industrial emissions. ENVIRON's study shows that the great majority of ozone and PM pollution results from emissions from outside the SC Valley.

SCAQMD Santa Clarita Transport Study

The South Coast Air Quality Management District (SCAQMD) is also performing a study on the role of "transport" on air quality in the Valley ("SCAQMD Study"). Transport refers to pollution in the SC Valley that comes from outside SC Valley (e.g., the greater Los Angeles area). Preliminary results were presented in late June by SCAQMD staff.

The SCAQMD Study addresses the contributions of local emissions in the Valley on 1-hour ozone and PM_{10} concentrations. To assess the contributions of local emissions, the SCAQMD ran air quality models for ozone and PM with and without local man-made emissions. Preliminary results from the SCAQMD Study, presented in late June 2004, found that pollution from the San Fernando Valley and Los Angeles dominates local air quality in SC Valley and that local emissions contribute only about 2% to the local ozone levels. It also found that, even assuming full development in the Valley, the estimated maximum increase in annual PM_{10} concentrations would be 5 ug/m^3, or about 10% of the annual state limit for PM_{10}. PM_{10} consists of PM with a geometric mean diameter of 10 microns or less as compared to fine particulate, or $PM_{2.5}$, that includes PM with a mean diameter of 2.5 microns or less.

ENVIRON Santa Clarita Valley Study

ENVIRON conducted two analyses: one similar to the SCAQMD Study where emissions from the center of the SC Valley (where most emissions are located) were evaluated, and one where emissions from a larger area that incorporated the entire SC Valley were considered. The areas that comprise the smaller and larger definitions of the SC Valley are shown in Figures ES-1 and ES-2.

The SCAQMD and ENVIRON Santa Clarita Valley Studies both used similar air quality planning models to estimate the contribution of local emissions to local air quality in the SC Valley. The report contains a full explanation of the model used by ENVIRON.

Ozone Modeling Analysis

Ozone is formed in the atmosphere through a set of complex chemical reactions involving oxides of nitrogen (NO_x) and Volatile Organic Compounds (VOC) in the presence of sunlight. Sources of NO_x and VOC include mobile sources, other combustion sources, consumer products, solvents, and biogenics.

Looking at the smaller area approximating the center of the SC Valley, local emissions contribute from 1-3% of the estimated peak 1-hour ozone for the current year. For the future year case, local emissions contribute between 0.4% and 5% to the peak 1-hour ozone concentrations in the SC Valley. Looking at the larger SC Valley area, local pollution contributed 0.6% to 9% of the total ozone. These percentages are slightly higher than for the SC Valley center area because the emissions have a longer range to travel (and transform into ozone) in the larger SC Valley area than in the center or smaller SC Valley area.

Looking at the smaller center SC Valley area, local SC Valley emissions are estimated to range from having nearly no effect to contributing up to 2% of the peak 8-hour ozone levels in the Valley. Looking at future emissions in the center SC Valley area, local emissions contribute from between 0.1% and 1.7% of the total 8-hour ozone levels. When the larger definition of the SC Valley is used, local emissions are estimated to contribute between 0.7% and 6.1% using current emissions and 0.6% to 7.7% using future emissions.

In conclusion, a vast majority (> 90%) of the peak 1-hour and 8-hour ozone concentrations in the SC Valley are due to emissions from outside of the SC Valley. These results are consistent with the SCAQMD Santa Clarita Transport Study that has reported, "Santa Clarita emissions contribute about 2% to the local ozone impact" (Cassmassi, 2004).

PM Modeling Analysis

PM consists of primary emitted PM from sources such as road dust, agricultural dust, mining, combustion and other sources and secondary PM that is formed in the atmosphere from SO_2, NO_x and VOC emissions.

To assess the contributions of local SC Valley emissions to PM_{10} and $PM_{2.5}$ air quality in the SC Valley, ENVIRON used models and data that are similar to those used by the SCAQMD for air quality planning purposes.

Looking at the area approximating the center of the SC Valley, local emissions contribute approximately 15% and 16% to the maximum annual average PM_{10} and $PM_{2.5}$ concentrations in the SC Valley, respectively. Looking at the larger SC Valley area, the contribution of local emissions to the annual average PM_{10} and $PM_{2.5}$ concentrations in the SC Valley are approximately 16% and 19%, respectively.

The contributions of local emissions to the four highest 24-hour PM_{10} concentrations in the smaller central SC Valley area range from 5% to 14%. Local SC Valley emissions have a lower contribution to the four highest 24-hour $PM_{2.5}$ concentrations in this smaller SC Valley area, with local contributions ranging from 2% to 7%. Local emissions have a lower relative contribution to local $PM_{2.5}$ levels than to local PM_{10} concentrations because PM_{10} deposits out faster than $PM_{2.5}$. When the larger SC Valley area is studied, the contribution of local sources is even lower than for the smaller, central SC Valley area.

Summary

In summary, the ENVIRON study demonstrates that the impact of SC Valley emissions sources on SC Valley ozone and PM air quality is small. The great majority of ozone and PM pollution in the SC Valley is created by sources of emissions outside the SC Valley.

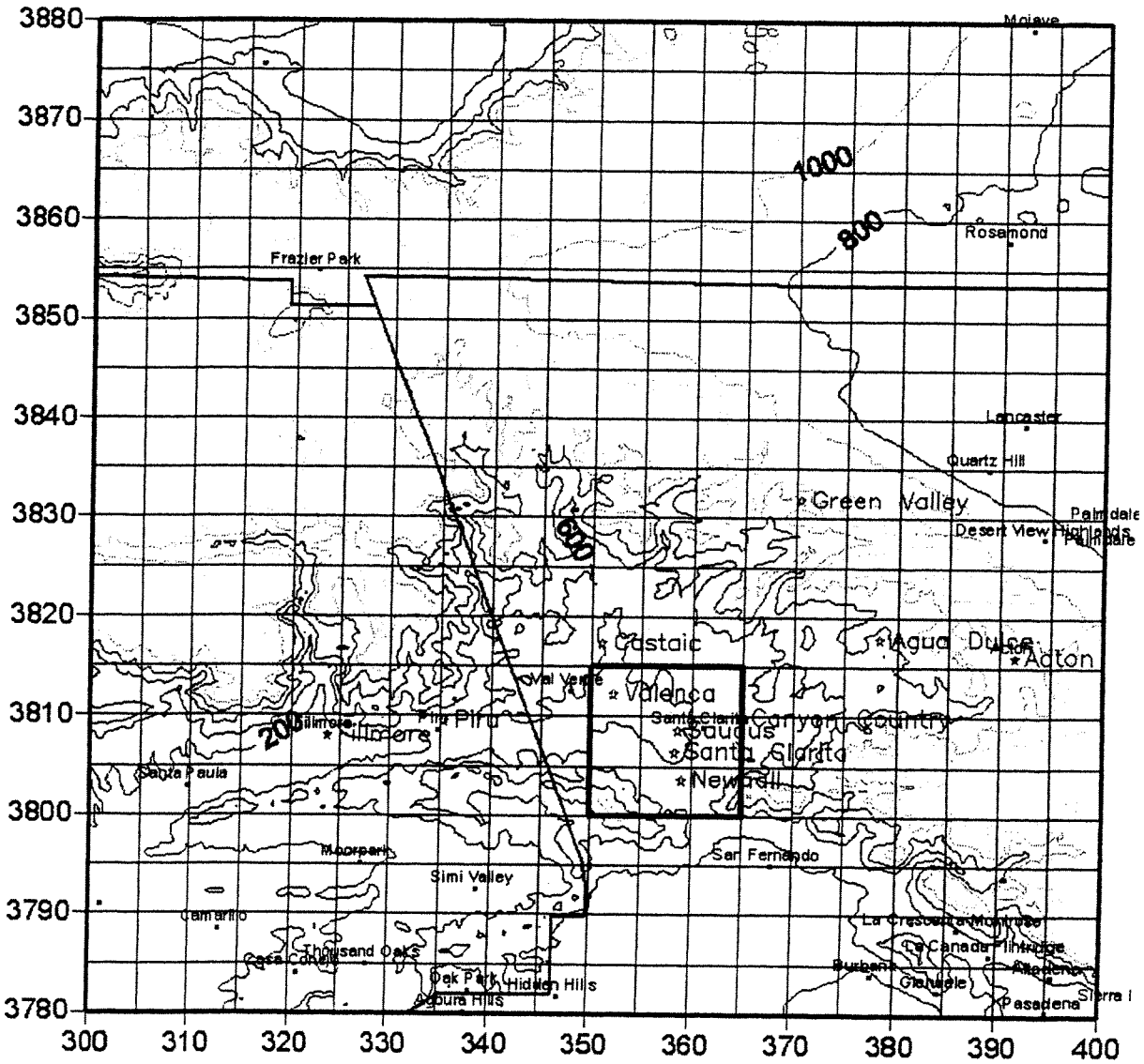

Figure ES-1. Cities, terrain heights and 5-km grid cell boundaries and the smaller (nine 5-km grid cells-red box) definition of the Santa Clarita Valley.

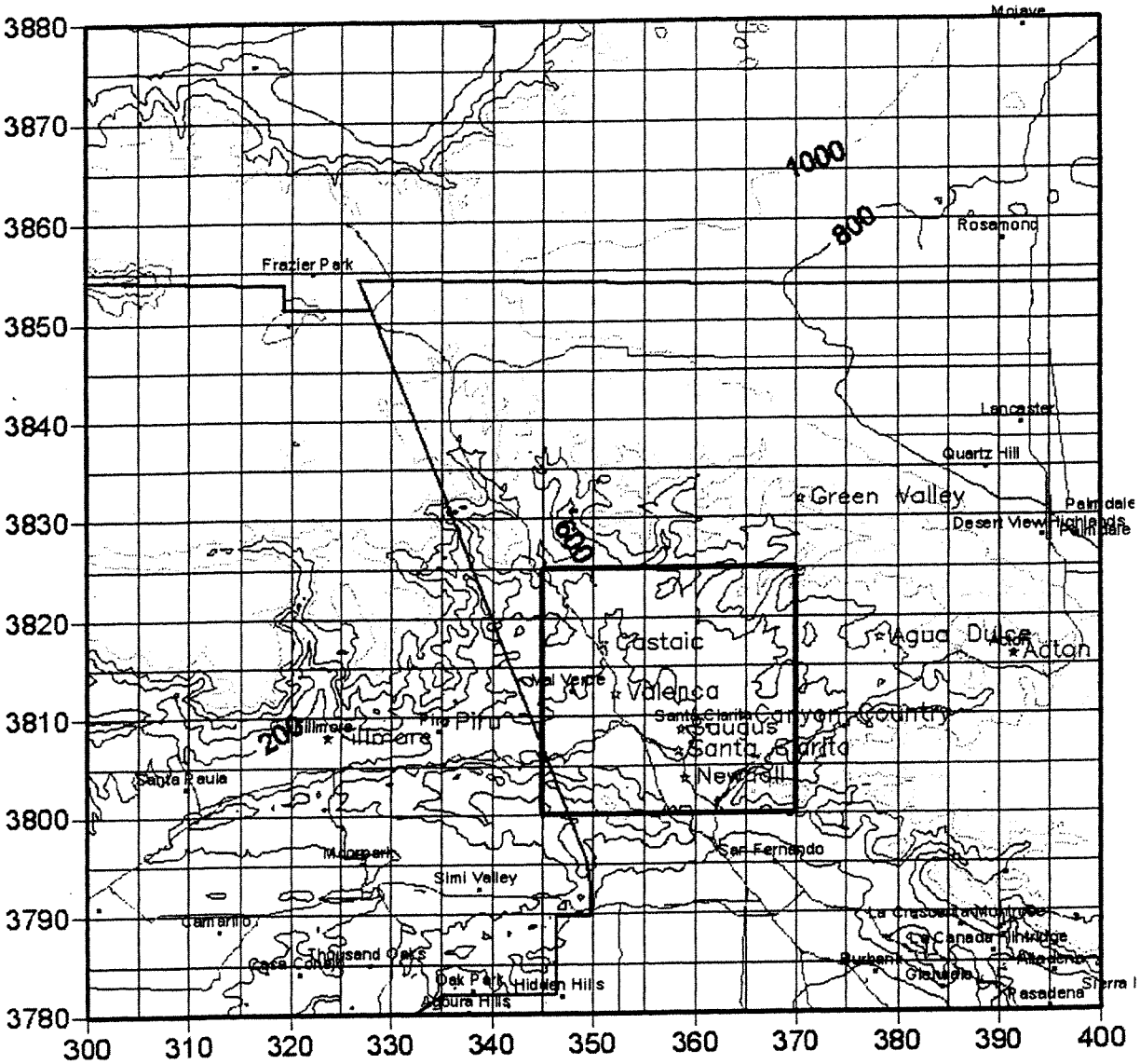

Figure ES-2. Cities, terrain heights and 5-km grid cell boundaries and the larger (25 - 5-km grid cells-red box) definition of the Santa Clarita Valley.

1.0 INTRODUCTION

ENVIRON International Corporation has been retained to evaluate whether significant amounts of ozone and particulate matter (PM) in the Santa Clarita Valley area are due to local emissions. In particular, ENVIRON has been asked to compare the ozone and PM pollution levels in the Santa Clarita Valley area with and without anthropogenic emissions in the Santa Clarita Valley area. The analysis needs to address the contribution of local emissions in the Santa Clarita Valley on both 1-hour and 8-hour ozone concentrations as well as on both 24-hour and annual $PM_{2.5}$ and PM_{10} concentrations. PM_{10} consists of PM with a geometric mean diameter of 10 microns or less as compared to fine particulate or $PM_{2.5}$ that includes PM with a mean diameter of 2.5 microns or less.

SCAQMD Santa Clarita Transport Study

ENVIRON has discussed this issue with the South Coast Air Quality Management District (SCAQMD) staff members, who have informed us that the SCAQMD is just completing a study on the role of "transport" on air quality in the Santa Clarita area (SCAQMD Santa Clarita Transport Study) (J. Cassmassi, 2004, personal communication). Transport is defined as the level of air pollutants in Santa Clarita due to sources from outside of Santa Clarita. A summary of the results of the SCAQMD Transport Study was presented to the SCAQMD Mobile Source Committee public meeting on June 25, 2004 (Cassmassi, 2004). The SCAQMD Santa Clarita Transport Study report is expected to be completed by the end of summer (Cassmassi, 2004). The SCAQMD Santa Clarita Transport Study performed ozone, PM and diesel air toxics risk modeling to assess the contributions of local emissions from the City of Santa Clarita versus transported emissions from outside of Santa Clarita on ozone and PM concentrations and risk due to diesel particles in the Santa Clarita area.

According to the June 25, 2004 presentation to the Mobile Source Committee, the SCAQMD Santa Clarita Transport Study had the following objectives (Cassmassi, 2004):

- Characterize and evaluate observed ozone and particulate air quality: (1) trends; (2) impact of local emissions; and (3) weekend effects.
- Evaluate the impact of potential growth on air quality through simulation of doubled mobile source emissions and simulating a 25-year valley build-out.
- Evaluate the impact of CEMEX mining operations.
- Provide potential mitigation measures.

To achieve these objectives the SCAQMD performed the following model sensitivity analysis to address ozone, PM_{10} and diesel risk:

- Ozone
  - Modeling and trend analysis
  - Zero and doubled emissions in Santa Clarita
  - Zero emissions in Santa Barbara and Ventura
  - Weekend emissions
- PM_{10}
  - Zero emissions in Santa Clarita

  - 25-year construction build-out
  - CEMEX mine operations
- Additional Risk From Diesel Particulates
  - Baseline MATES-II average risk
  - CEMEX mine operations
  - Heavy duty diesel truck gravel hauling

Based on the presentation to the SCAQMD Mobile Source Committee, the following were some of the key findings from the SCAQMD Santa Clarita Transport Study (Cassmassi, 2004):

Ozone

- Transport from San Fernando Valley and L.A. dominates local air quality in Santa Clarita
- Santa Clarita emissions contribute about 2% to local ozone impact
- Weekend ozone concentrations under average transport are ~23% higher than on weekdays

PM_{10}

- Santa Clarita meets federal standard but exceeds the more restrictive California standard
- Assumed simultaneous 25-year build-out in city and county portions of valley
- Annual impact up to 5 ug/m^3 due to build-out
- Maximum impact near Newhall Ranch due to build-out.

Diesel Particulate Risk

- Santa Clarita background average risk of 500 in one million (MATES II study)
- Average Basin risk 1400 in one million

The SCAQMD used ozone and PM models for both a Base Case (i.e., all emissions in the South Coast Air Basin) and for a "Santa Clarita Zero-Out Case" (i.e., the elimination of all anthropogenic emissions in the City of Santa Clarita). The difference in the Base Case and Santa Clarita Zero-Out Case provides an estimate of the contributions of local emissions to air quality, with the remainder contribution due to transport. The SCAQMD Santa Clarita Transport Study also enhanced emissions in the Santa Clarita area (i.e., doubled mobile source emissions for ozone and 25-year maximum build-out for PM_{10}) to examine the effects that increases in these emissions in Santa Clarita would have on air quality in Santa Clarita.

The SCAQMD "Santa Clarita Zero-Out Case" eliminated all anthropogenic emissions in the City of Santa Clarita. For this purpose, the SCAQMD reportedly defined the City of Santa Clarita area as an area comprised of 9 5-km grid cells that cover the City of Santa Clarita and geographically adjacent area (J. Cassmassi, 2004, personal communication).

ENVIRON Santa Clarita Valley Transport Study

ENVIRON has undertaken a Santa Clarita Valley Transport Study to assess the contributions of local emissions versus transport to ozone and PM concentrations in the Santa Clarita Valley area. In addition to trying to analyze the effects of local emissions on local air quality in Santa Clarita, as was done in the SCAQMD Santa Clarita Transport Study, the ENVIRON Santa Clarita Valley

Transport Study has expanded the study concept to a larger area that encompasses more of the geographical Santa Clarita Valley area and addresses both 1-hour and 8-hour ozone as well as both coarse (PM_{10}) and fine ($PM_{2.5}$) particulates. Thus, ENVIRON identified two geographical areas in the Santa Clarita Valley area where anthropogenic emissions were eliminated to examine the contributions from local emissions versus transport to air quality in the Santa Clarita Valley area: (1) a 9-grid cell area at 5-km resolution (i.e., 225 km^2 or 87 mi^2) encompassing the City of Santa Clarita and geographical nearby areas that is ENVIRON's best estimate of the 9-grid cell area reportedly used by the SCAQMD in the SCAQMD Santa Clarita Transport Study (J. Cassmassi, 2004, personal communication); and (2) an expanded area that encompasses a 25-grid cell area at 5-km resolution (i.e., 625 km^2 or 241 mi^2) that includes Cities of Santa Clarita, Newhall, Saugus, Valencia, Castaic, Val Verde and adjacent areas.

Definition of the Modeling Analysis

ENVIRON has performed ozone and PM modeling for a Base Case and Santa Clarita Valley Area Zero-Out Case to estimate the contributions of local emissions to 1-hour and 8-hour ozone and 24-hour and annual PM_{10} and $PM_{2.5}$ air quality in the Santa Clarita Valley area.

Ozone Modeling

For the ozone modeling, ENVIRON used the 2003 Air Quality Management Plan (AQMP) August 3-7, 1997 Southern California Ozone Study (SCOS) ozone modeling database (SCAQMD, 2003). This database is for the Urban Airshed Model (UAM) (Morris and Meyers, 1990) and covers southwestern California from San Diego in the south to San Luis Obispo in the north and the Pacific Ocean in the west to approximately the California/Arizona border in the east using a 110 by 74 5-km grid cell resolution (see "SCOS" domain in Figure 1-1). The effects of Santa Clarita Valley area emissions versus pollutant transport from upwind areas on local air quality was assessed for the current episode year (1997) and a future year (2007). The Santa Clarita Valley area violated the Federal 1-hour and 8-hour ozone standards in 1997. In 2007, the Santa Clarita Valley area is projected to attain the 1-hour ozone standard, but violate the 8-hour ozone standard. By examining both the 1997 episode year and 2007 1-hour attainment year we will be able to bound the contributions of local emissions versus transport on ozone air quality in the Santa Clarita Valley area for the years in between (1997-2007).

PM Modeling

To assess the contributions of local emissions to PM air quality in the Santa Clarita Valley area ENVIRON used an annual PM modeling database for a 1997/1998 annual period (April 1998-March 1998). This modeling period was used in the SCAQMD's Multiple Air Toxics Exposure Study and (MATES-II) (SCAQMD, 2000) and the Department of Energy (DOE) National Renewable Energy Laboratory (NREL) Biodiesel assessment study (Morris and Jia, 2002) to simulate air toxics and PM, respectively. The PM modeling was performed on a 65 by 40 5-km grid (see "AQMP" domain in Figure 1-1). Emissions in this PM modeling database are available for just the for the 1997/1998 year so the PM modeling analysis was performed for the episode (1997/1998) year.

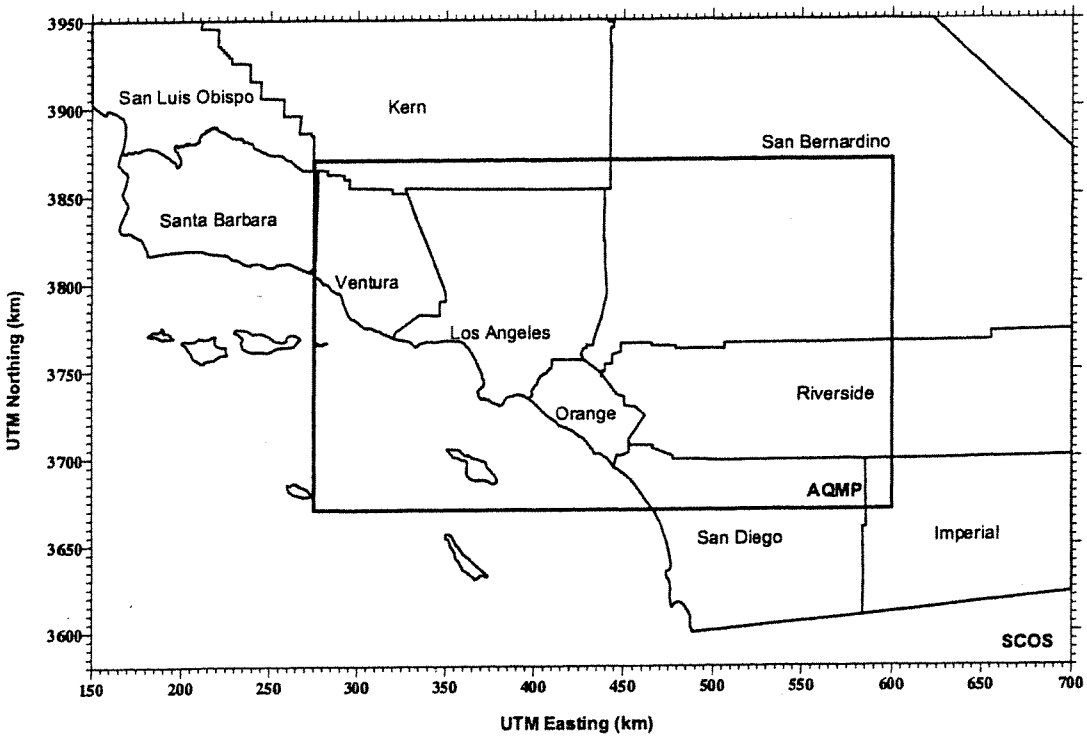

Figure 1-1. Definition of the 110 x 74 5-km SCOS and 65 x 40 5-km AQMP domains used in the ozone and PM modeling, respectively.

Definition of Santa Clarita Valley Area

For the Santa Clarita Valley Zero-Out Cases, the definition of the Santa Clarita Valley area where anthropogenic emissions will be eliminated must be defined. Two definitions were used in this modeling.

As discussed above, in the SCAQMD transport study the SCAAQMD reportedly used nine (3 x 3) 5-km grid cells (225 km^2 or 87 mi^2) to represent the Santa Clarita Valley area (J. Cassmassi, 2004, personal communication), thus ENVIRON has also used nine 5-km grid cells for its study to attempt to replicate the assumptions used in the SCAQMD Santa Clarita Transport Study as closely as possible. This area captures the majority of the ozone and PM precursor emissions in the Santa Clarita Valley area. Figure 1-2 displays a portion of the ozone/PM modeling domain that includes northern Los Angeles County focusing on the Santa Clarita Valley area. The 9 5-km grid cell area is centered on the City of Santa Clarita and is represented by the red box in Figure 1-2. This nine cell definition of the Santa Clarita Valley area for the zero-out run includes communities within and directly outside of the city of Santa Clarita, Newhall, Saugus, Valencia and Canyon County -- but not the communities of Castaic and Val Verde or Piru and Fillmore to the west in Ventura County, Agua Dulce and Acton to the east, Lebec and Gorman to the north, or Sylmar/San Fernando to the south that are further away from the City of Santa Clarita.

Figures 1-3 and 1-4 display the daily average VOC and NO_x emissions for the same subdomain as depicted in Figure 1-2, with the nine grid cells that are used to represent the Santa Clarita Valley area indicated by the red box. Although there are areas with higher emissions to the south

in the San Fernando Valley that are outside the Santa Clarita Valley, these nine grid cells appear to encompass the highest emitting grid cells within the Santa Clarita Valley area.

For the 25 (5 x 5) grid cell definition of the Santa Clarita Valley area, the 9 grid cell area was expanded to the west, north and east by two 5-km grid cells as shown in Figure 1-5; the area was not expanded to the south into the San Fernando Valley. The 25 grid cell definition of the Santa Clarita Valley area includes the 9 grid cell area discussed previously, as well as the cities of Castaic and Val Verde and unincorporated areas.

Note that after the ENVIRON ozone and PM modeling was completed, the SCAQMD released a presentation on their Santa Clarita Transport Study that indicated their Santa Clarita Zero-Out runs eliminated anthropogenic emissions in 10 5-km grid cells (Cassmassi, 2004), not 9-grid cells as originally reported (J. Cassmassi, 2004, personal communication). The SCAQMD's 10-grid cells were completely contained with the ENVIRON study enhanced 25-grid cell definition of the Santa Clarita Valley area.

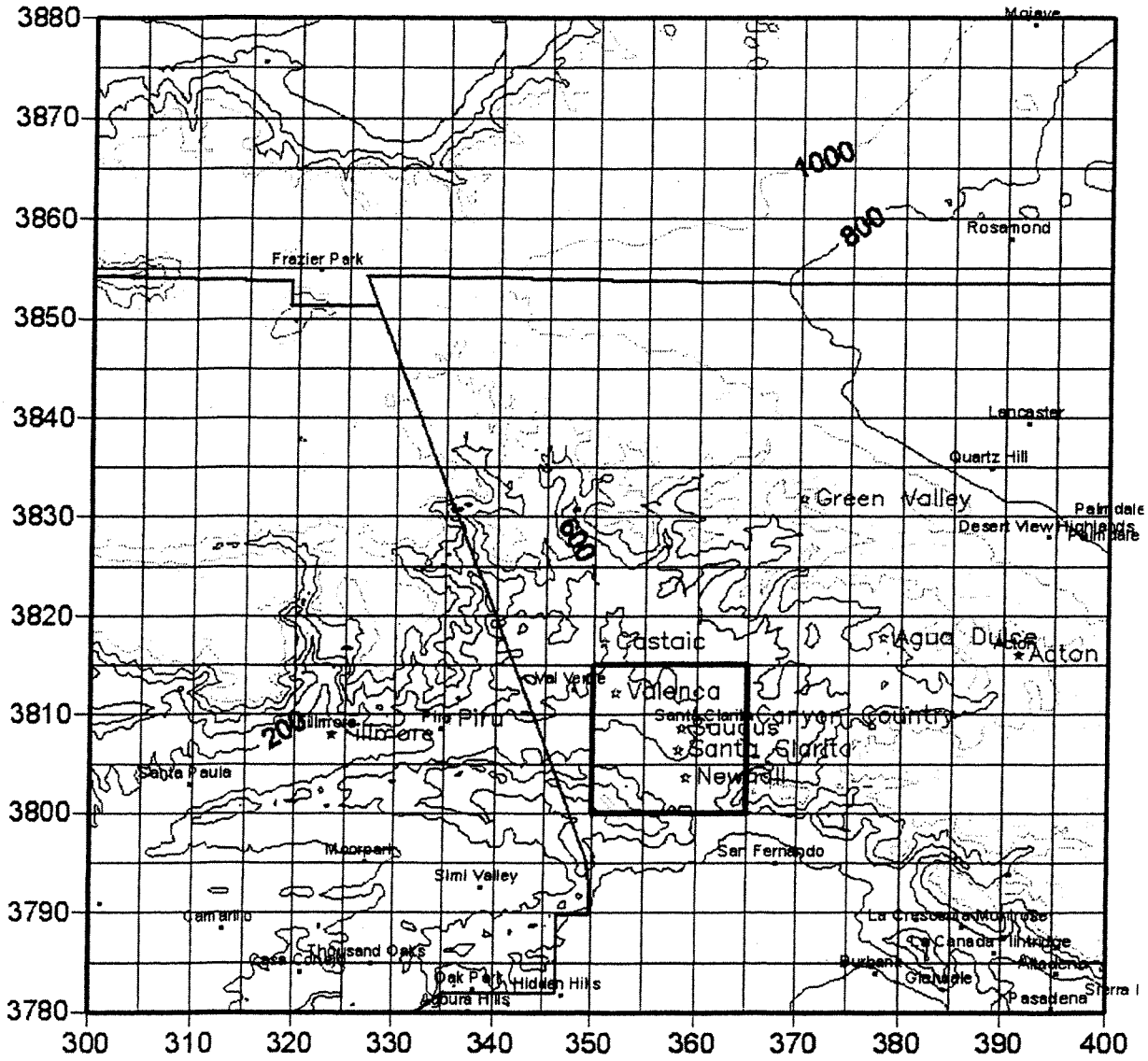

Figure 1-2. Cities, terrain heights and 5-km grid cell definitions in the subregion of the ozone/PM modeling domains that includes Santa Clarita and definition of the 9 5-km grid cells (red box) proposed to be used to represent the Santa Clarita Valley area.

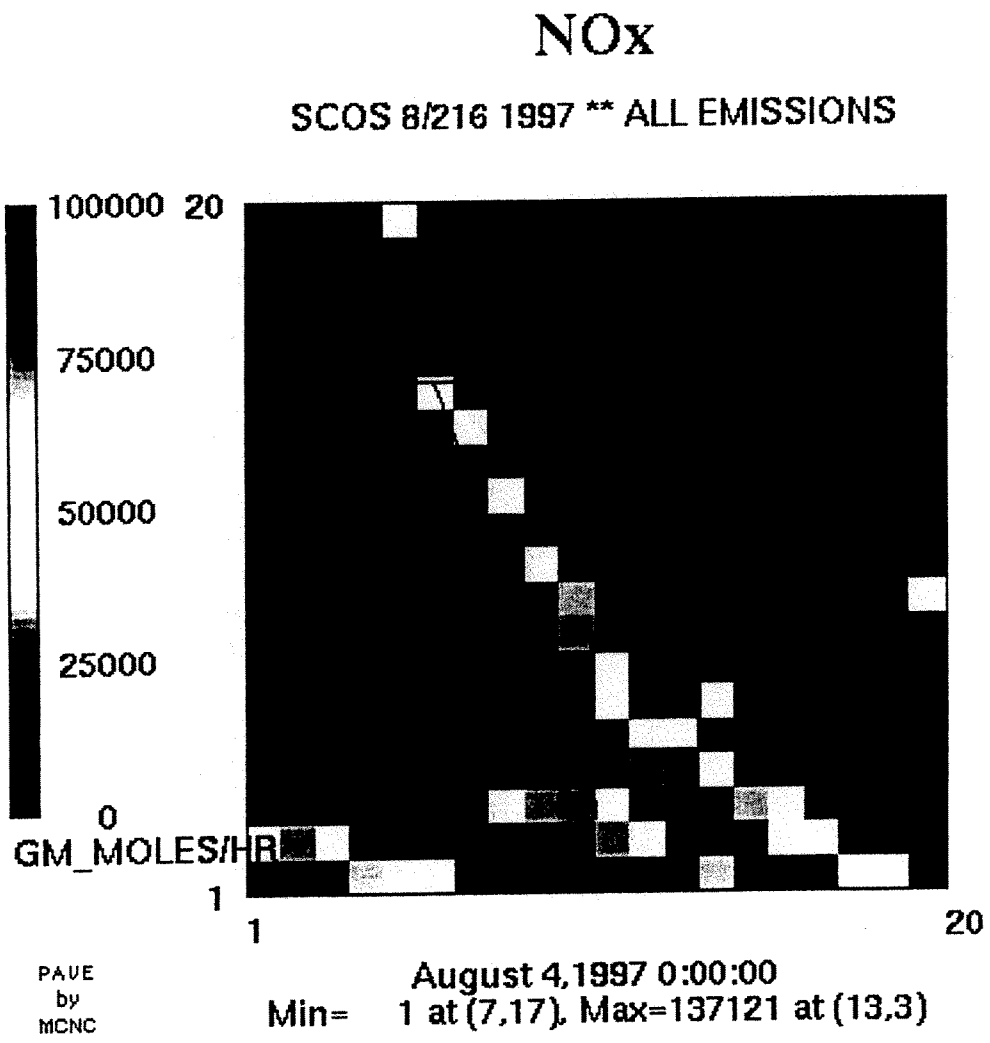

Figure 1-3. Spatial distribution of NO_x emissions in the Santa Clarita Valley area and definition of the 9 5-km grid cells used to represent the Santa Clarita Valley area.

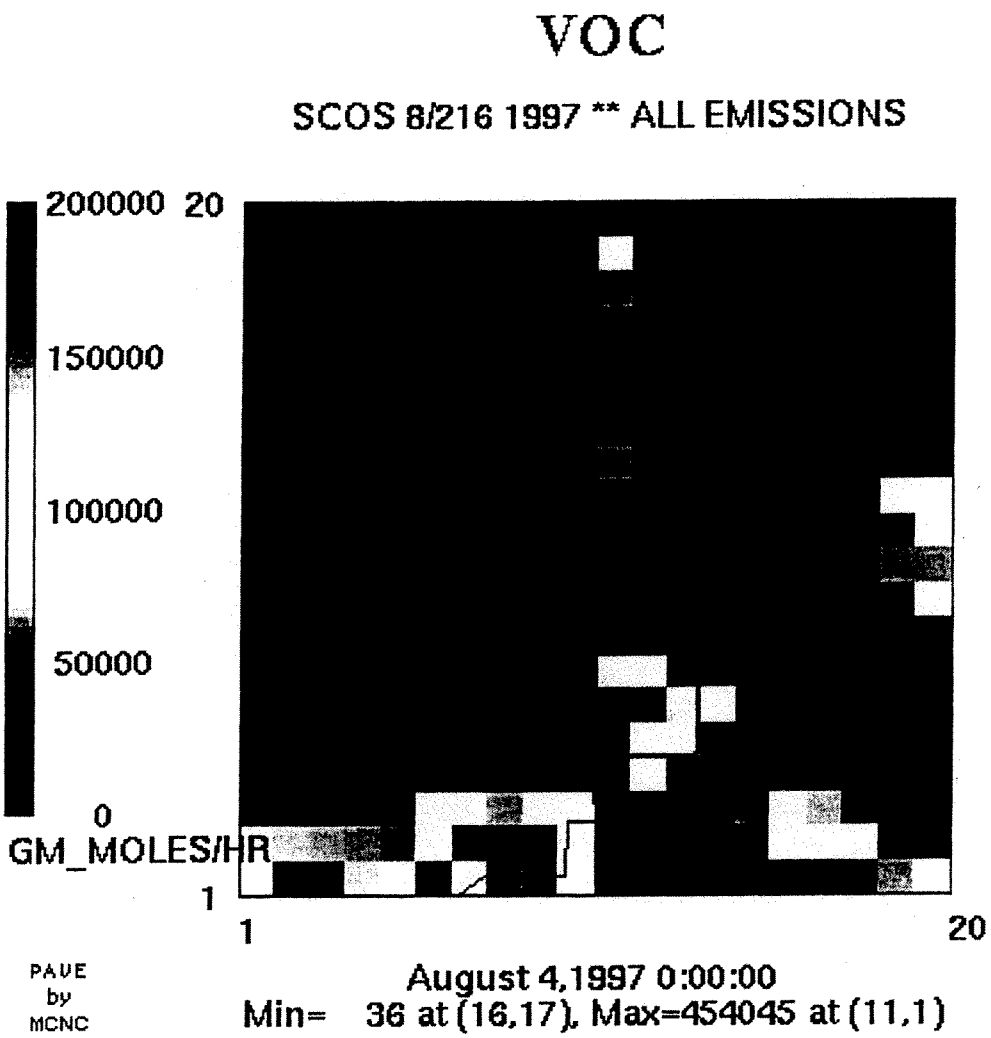

Figure 1-4. Spatial distribution of VOC emissions in the Santa Clarita Valley area and definition **of the** 9 5-km grid cells used to represent the Santa Clarita Valley area.

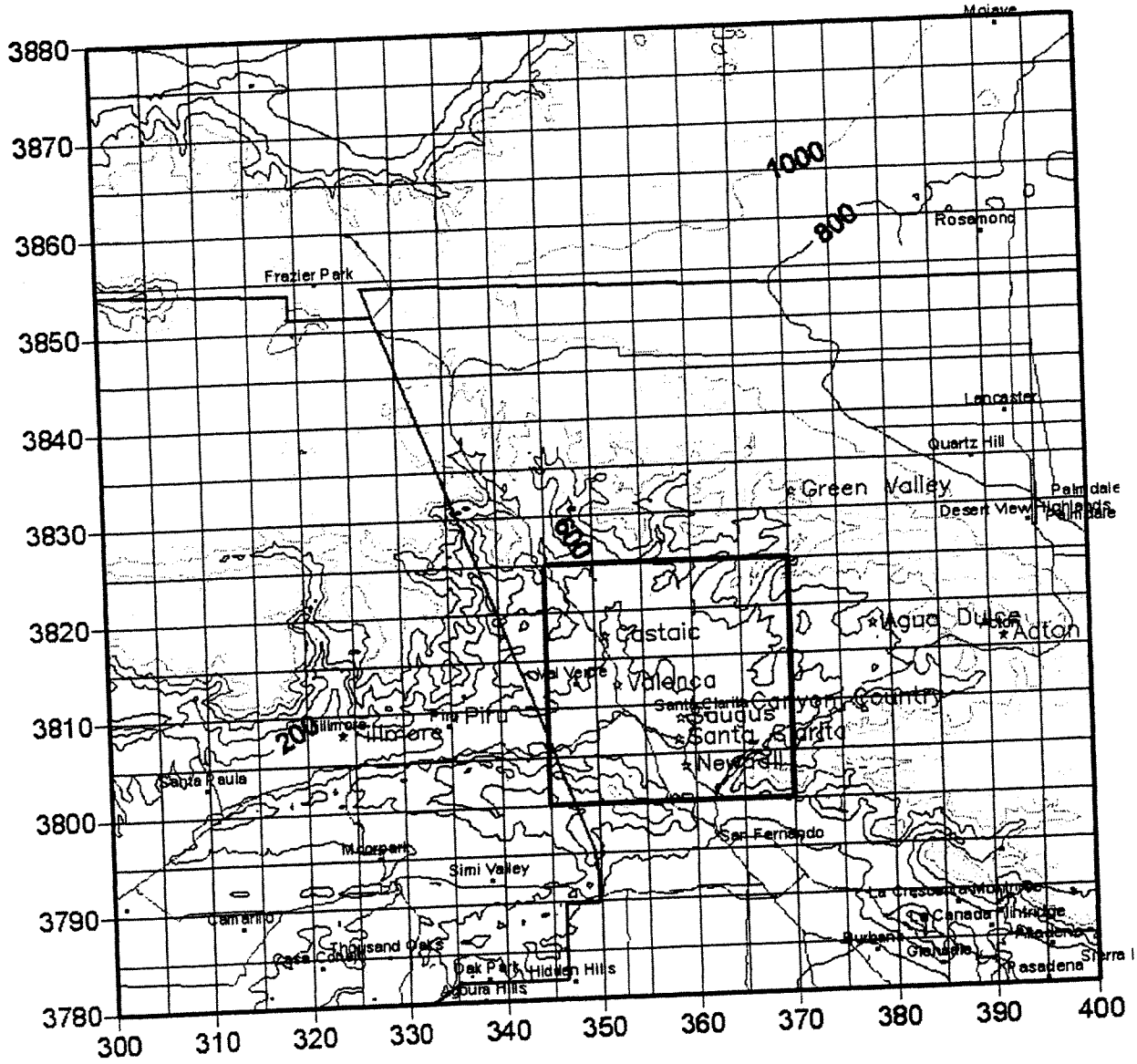

Figure 1-5. Cities, terrain heights and 5-km grid cell definitions in the subregion of the ozone/PM modeling domains that includes Santa Clarita and definition of the 25 5-km grid cells (red box) proposed to be used to represent the Santa Clarita Valley area.

Use of Photochemical Grid Models for Air Quality Planning

The ENVIRON Santa Clarita Valley and SCAQMD Santa Clarita Transport Studies both used Photochemical Grid Models (PGMs) (e.g., UAM and CAMx) to assess the contributions of local emissions on air quality in the Santa Clarita area. PGMs simulate the three-dimensional evolution of air quality within a modeling domain (e.g., Figure 1-1) solving numerical equations representing transport, diffusion, chemical transformation and deposition. The main inputs for a PGM consist of meteorology, emissions and boundary conditions (i.e., assumed concentrations entering the modeling domain). The steps in a PGM application typically consist of the following:

1. Selection of historical episode to be simulated.
2. Development of meteorological, emissions and boundary condition inputs for the historical episode.
3. Simulation of the episode year Base Case emissions scenario using the historical episode.
4. Comparison of the model estimated episode year Base Case concentration estimates against concurrent measured values in a model performance evaluation (MPE).
5. Assessment of whether model is replicating the observed concentrations well enough to proceed including comparison with EPA's model performance goals such as those for ozone (EPA, 1991; 1998) and PM (EPA, 2001). Make improvements to model inputs to improve model performance as necessary.
6. Develop new emission scenarios to assess air quality under different scenarios to answer specific questions, such as estimated air quality under future-year emission conditions or what would have air quality been like if specific emissions were eliminated.

Both the SCAQMD and ENVIRON transport studies used existing PGM databases that have already undergone steps 1 – 5 above, so just performed step 6. More specifically, the base case modeling and model performance evaluation for the ENVIRON Santa Clarita Valley Transport Study ozone and PM modeling can be found in reports by SCAQMD (2003) and Morris and Jia (2002), respectively.

2.0 OZONE MODELING RESULTS

To assess the effects of local emissions versus transport on 1-hour and 8-hour ozone concentrations in the Santa Clarita Valley area, the SCAQMD's August 3-7, 1997 Urban Airshed Model (UAM) database from the 2003 AQMP was used (SCAQMD, 2003). This is the same database reportedly used by the SCAQMD in their Santa Clarita Transport Study (J. Cassmassi, 2004, personal communication). The UAM is a three-dimensional photochemical grid model that simulates ozone formation using gridded emissions and meteorological inputs (Morris and Myers, 1990). Ozone is formed in the atmosphere through a complex set of nonlinear reactions involving oxides of nitrogen (NO_x) and Volatile Organic Compounds (VOC) (as well as Carbon Monoxide (CO) to a lesser extent) in the presence of sunlight.

EMISSIONS SCENARIOS ANALYZED

As noted in Section 1, three separate emission scenarios were analyzed for the 1997 and 2007 years:

- Base Case emissions scenario that represented actual emissions in 1997 and the 2003 AQMP control plan emissions in 2007;
- Santa Clarita Valley area 9-Grid Cell Zero-Out Case (designed to be similar to the area used in the SCAQMD Santa Clarita Transport Study); and
- Santa Clarita Valley area 25-Grid Cell Zero-Out Case (expanded definition of Santa Clarita Valley area).

Table 2-1 lists the total anthropogenic NO_x, VOC and CO emissions in the "SCOS" South Coast Air Basin domain (see Figure 1-1) for the three emission scenarios and two years analyzed. Anthropogenic NO_x, VOC and CO emissions in the 9-grid cell definition of the Santa Clarita Valley area represent 0.4% to 0.8% of the total emissions within the SCOS modeling domain. The 25-grid cell definition of the Santa Clarita Valley area contains 0.5% to 1.2% of the total emissions in the SCOS modeling domain.

There are substantial reductions in emissions in the SCOS modeling domain from the 1997 Base Case to the 2007 Base Case (i.e., 2003 AQMP Control Plan) with reductions in NO_x, VOC and CO emissions of approximately 30%, 40% and 60%, respectively. Emissions in the Santa Clarita Valley area contribute approximately 0.1% more to the total SCOS domain emissions in the 2007 Base Case emission scenario than in the 1997 Base Case.

Table 2-1. Summary of NO_x, VOC and CO anthropogenic emissions (tons per day, TPD) for the South Coast Air Basin "SCOS" domain (see Figure 1-1) for the 1997 and 2007 Base Case and 9-cell and 25-cell Santa Clarita Valley area Zero-Out Cases.

Scenario Species	Base Case	9-Grid Cell SCV Area			25-Grid Cell SCV Area		
		Emiss	Diff	%Diff	Emiss	Diff	%Diff
	(TPD)	(TPD)	(TPD)	(%)	(TPD)	(TPD)	(%)
1997 Emission Scenarios							
NOx	2318.4	2301.6	-16.8	-0.7%	2292.1	-26.3	-1.1%
VOC	2674.8	2665.4	-9.4	-0.4%	2661.2	-13.7	-0.5%
CO	19837.1	19762.9	-74.2	-0.4%	19722.5	-114.7	-0.6%
2007 Emission Scenarios							
NOx	1608.9	1596.74	-12.2	-0.8%	1589.68	-19.2	-1.2%
VOC	1543.6	1537.2	-6.4	-0.4%	1534.6	-9.0	-0.6%
CO	7407.1	7367.7	-39.4	-0.5%	7344.84	-62.2	-0.8%

OZONE MODELING RESULTS

Ozone modeling results are presented for both 1-hour and 8-hour ozone concentrations. The EPA has a Federal 1-hour ozone standard with a threshold of 0.12 ppm (120 ppb) that can be exceeded at a specific monitor no more than three days in three consecutive years. The Clean Air Act Amendments (CAAA) require that regions attain the Federal 1-hour ozone standard by specific years that are based on their attainment classification; the Federal 1-hour ozone attainment date for the South Coast Air Basin that includes the Santa Clarita Valley is 2010. The State of California has a 1-hour ozone standard with a threshold of 0.09 ppm (90 ppb). Regions in California must demonstrate progress toward achieving the California 1-hour ozone standard. There is also a new Federal 8-hour ozone standard with a threshold of 0.08 ppm (80 ppb) that is based on the three-year average of the fourth highest daily maximum 8-hour ozone concentration in three consecutive years. The State of California is considering the adoption of an 8-hour ozone standard with a threshold of 0.07 ppm (70 ppb).

The effects of the Santa Clarita Valley area Zero-Out Cases on 1-hour and 8-hour ozone concentrations using the August 1997 episode was examined using two definitions of the Santa Clarita Valley area:

- A 9-grid cell definition (3 x 3 5-km grid cells) of the Santa Clarita Valley area as shown by the red box in Figure 1-2; and
- A 25-grid cell definition (5 x 5 5-km grid cells) of the Santa Clarita Valley area as shown by the red box in Figure 1-5.

1-Hour Ozone Modeling Results

Table 2-2 and 2-3 display the peak 1-hour ozone concentrations for the 1997 and 2007 emissions scenarios, respectively, using the 9-grid cell and 25-grid cell definitions of the Santa Clarita Valley area. Spatial maps of daily maximum 1-hour ozone estimates for the northern South Coast Air Basin subdomain, the three emissions scenarios and the1997 and 2007 years are given in Appendices A and B, respectively.

An examination of the spatial maps of daily maximum 1-hour ozone concentrations for the Base Case and two Santa Clarita Valley Zero-Out cases and the 1997 (Appendix A) and 2007 (Appendix B) years reveals that emissions in the Santa Clarita Valley area have little effect on the maximum 1-hour ozone concentrations in the Santa Clarita Valley area. For the 1997 emission scenarios, the complete elimination of all anthropogenic emissions in the 9-grid cell definition of the Santa Clarita Valley area reduces the estimated peak 1-hour ozone concentration in the northern South Coast Air Basin subdomain by 0.1 ppb, 0.5 ppb, and 2.0 ppb (i.e., 0.1%, 0.2% and 1.1%) on, respectively, August 5, 6, and 7, 1997 (Appendix A). Even when the expanded 25-grid cell definition of the Santa Clarita Valley area is used, the1-hour peak ozone concentrations in the northern South Coast Air Basin domain are reduced only 0.4 ppb (0.3%) to 7.4 ppb (4.2%) when the Santa Clarita Valley area emissions are eliminated. The 1-hour peak ozone in the northern South Coast Air Basin subdomain on August 5th occurs west of Castaic at the Los Angeles/Ventura County line (Appendix A). On August 6th, the peak 1-hour ozone concentrations in the northern South Coast Air Basin subdomain occurs north of Piru on elevated terrain that lies west of the Santa Clarita Valley. On August 7th the peak 1-hour ozone concentration occurs on elevated terrain to the east of Santa Clarita Valley.

Tables 2-2 and 2-3 display the contributions of local Santa Clarita Valley area emissions versus transport for the peak 1-hour ozone concentrations within Santa Clarita Valley area using the 9-grid cell and 25-grid cell definitions of the Santa Clarita Valley area. The estimated 1-hour ozone peak is reduced by 0.1 ppb to 2.0 ppb (0.1% to 1.1%) and 1.1 ppb to 6.5 ppb (0.5% to 3.8%) when all anthropogenic emissions are eliminated in the, respectively, 9-grid cell and 25-grid cell definition of the Santa Clarita Valley area and using 1997 emissions (Table 2-2). Thus, for the 1997 emission scenarios emissions from outside the Santa Clarita Valley area (i.e. transport) contributes 95% or more to the peak 1-hour ozone concentrations in the Santa Clarita Valley area.

Larger reductions in the 1-hour ozone peaks are estimated using the 2007 (AQMP Control) emissions scenario, with reductions of 0.5 ppb to 7.7 ppb (0.4 % to 10.2%) and 0.8 ppb to 11.2 ppb (0.6% to 12.0%) estimated to occur using them 9-grid cell and 25-grid cell definitions of the Santa Clarita Valley area, respectively (Table 2-3). That is, for the 2007 emission scenarios ozone transport due to emissions outside of the Santa Clarita Valley area contributes > 92% and > 88%, respectively, of the peak 1-hour ozone concentrations in the Santa Clarita Valley area using the 9-grid cell and 25-grid cell definitions of the Santa Clarita Valley area, respectively.

It should be pointed out that the largest emissions reductions in the Santa Clarita Valley area due to local emission controls tend to occur on lower ozone days that are below the ozone standard. For example, the maximum reduction in the peak 1-hour ozone concentrations in the Santa Clarita Valley area that exceed the Federal 1-hour ozone standard is 3.8% and 0.8% for the 1997 and 2007 emissions scenarios, respectively.

Table 2-2. Estimated peak 1-hour ozone concentrations (ppb) for the 1997 Base Case and Santa Clarita Valley (SCV) area Zero-Out Cases and the 9-grid cell and 25-grid cell definitions of the SCV area (see Figures 1-3 and 1-5).

Date	1997 9-Grid Cell SCV Zero-Out				1997 25-Grid Cell SCV Zero-Out			
August 1997	Base Case (ppb)	Zero-Out (ppb)	Ozone Diff (ppb)	Ozone Diff (%)	Base Case (ppb)	Zero-Out (ppb)	Ozone Diff (ppb)	Ozone Diff (%)
Aug 5	116.4	116.4	-0.1	-0.1%	116.0	113.1	-2.9	-2.5%
Aug 6	276.0	275.5	-0.5	-0.2%	221.3	220.2	-1.1	-0.5%
Aug 7	175.8	173.8	-2.0	-1.1%	172.6	166.1	-6.5	-3.8%

Table 2-3. Estimated peak 1-hour ozone concentrations (ppb) for the 2007 Base Case and Santa Clarita Valley (SCV) area Zero-Out Cases and the 9-grid cell and 25-grid cell definitions of the SCV area (see Figures 1-3 and 1-5).

Date	2007 9-Grid Cell SCV Zero-Out				2007 25-Grid Cell SCV Zero-Out			
August 1997	Base Case (ppb)	Zero-Out (ppb)	Ozone Diff (ppb)	Ozone Diff (%)	Base Case (ppb)	Zero-Out (ppb)	Ozone Diff (ppb)	Ozone Diff (%)
Aug 5	75.4	67.7	-7.7	-10.2%	81.8	72.0	-9.9	-12.0%
Aug 6	132.4	131.9	-0.5	-0.4%	133.8	133.1	-0.8	-0.6%
Aug 7	108.1	102.6	-5.5	-5.1%	123.1	111.9	-11.2	-9.1%

8-Hour Ozone Modeling Results

Tables 2-4 and 2-5 display the effects of the Santa Clarita Valley area zero-out runs on peak 8-hour ozone concentrations in the Santa Clarita Valley area and vicinity. These results are qualitatively similar to the 1-hour ozone peak results. However, in the local Santa Clarita Valley area, for the 8-hour ozone peaks in the Santa Clarita Valley area, emissions sometimes have a negative contribution because the elimination of all anthropogenic emissions in the Santa Clarita Valley area results in a slight increase in the peak 8-hour ozone concentration in the Santa Clarita Valley area on some days. This is due to the elimination of the NO emissions in the Santa Clarita Valley area, which reduces ozone destruction through the ozone + NO titration reaction.

Table 2-4. Estimated peak 8-hour ozone concentrations (ppb) for the 1997 Base Case and Santa Clarita Valley (SCV) area Zero-Out Cases and the 9-grid cell and 25-grid cell definitions of the SCV area (see Figures 1-3 and 1-5).

Date	1997 9-Grid Cell SCV Zero-Out				1997 25-Grid Cell SCV Zero-Out			
August 1997	Base Case (ppb)	Zero-Out (ppb)	Ozone Diff (ppb)	Ozone Diff (%)	Base Case (ppb)	Zero-Out (ppb)	Ozone Diff (ppb)	Ozone Diff (%)
Aug 5	76.3	69.5	-6.8	-9.0%	84.8	85.0	+0.2	+0.2%
Aug 6	145.3	145.3	+0.3	+0.2%	151.7	150.6	-1.1	-0.7%
Aug 7	102.9	103.0	+0.2	+0.2%	132.1	124.0	-8.1	-6.1%

Table 2-5. Estimated peak 8-hour ozone concentrations (ppb) for the 2007 Base Case and Santa Clarita Valley (SCV) area Zero-Out Cases and the 9-grid cell and 25-grid cell definitions of the SCV area (see Figures 1-3 and 1-5).

Date	2007 9-Grid Cell SCV Zero-Out				2007 25-Grid Cell SCV Zero-Out			
August 1997	Base Case (ppb)	Zero-Out (ppb)	Ozone Diff (ppb)	Ozone Diff (%)	Base Case (ppb)	Zero-Out (ppb)	Ozone Diff (ppb)	Ozone Diff (%)
Aug 5	65.2	60.4	-4.8	-7.4%	68.3	63.3	-5.0	-7.3%
Aug 6	114.0	113.9	-0.1	-0.1%	119.2	118.6	-0.7	-0.6%
Aug 7	87.1	85.6	-1.4	-1.7%	102.5	94.6	-7.9	-7.7%

Summary of 1-Hour and 8-hour Ozone Modeling Results

Table 2-6 summarizes the contributions of local Santa Clarita Valley area emissions to peak 1-hour and 8-hour ozone concentrations in the Santa Clarita Valley area versus ozone that is due to emissions outside of the Santa Clarita Valley area and is transported into the area. Using the 1997 emissions, local Santa Clarita Valley area emissions are estimated to contribute less than 4% to the peak 1-hour ozone concentrations in the Santa Clarita Valley area; thus, transport is estimated to contribute over 96% to the peak 1-hour ozone concentrations in the Santa Clarita Valley area. Using the 2007 emissions, local Santa Clarita Valley area emissions are estimated to contribute 12% or less to the peak 1-hour ozone concentrations in 2007. Thus, in 2007, ozone transport contributes over 88% of the peak 1-hour ozone concentrations in the Santa Clarita Valley area in 2007.

For the 8-hour ozone peaks in the Santa Clarita Valley area, local emissions contribute –0.2% to 9.0% with transport contributing 91% to 100% under the 1997 and 2007 emission scenarios.

Table 2-6. Percent contribution of local emissions in the Santa Clarita Valley (SCV) area versus transport due to emissions from outside of the SCV area to peak 1-hour and 8-hour ozone concentrations in the SCV area using the 9-grid cell (3 x 3 5-km) and 25-grid cell (5 x 5 5-km) definitions of the SCV area.

Date	9-Grid Cell SCV Area			25-Grid Cell SCV Area		
August 1997	Peak Ozone (ppb)	Local Emissions (%)	Transport Emissions (%)	Peak Ozone (ppb)	Local Emissions (%)	Transport Emissions (%)
1997 1-Hour Ozone Concentrations						
Aug 5	85.8	1.7%	98.3%	116.0	2.5%	97.5%
Aug 6	168.2	0.6%	99.4%	221.3	0.5%	99.5%
Aug 7	131.4	3.4%	96.6%	172.6	3.8%	96.2%
2007 1-Hour Ozone Concentrations						
Aug 5	75.4	10.2%	89.8%	81.8	12.0%	88.0%
Aug 6	132.4	0.4%	99.6%	133.8	0.6%	99.4%
Aug 7	108.1	5.1%	94.9%	123.1	9.1%	90.9%
1997 8-Hour Ozone Concentrations						
Aug 5	76.3	9.0%	91.0%	84.8	-0.2%	100.2%
Aug 6	145.3	-0.2%	100.2%	151.7	0.7%	99.2%
Aug 7	102.9	-0.2%	100.2%	132.1	6.1%	93.9%
2007 8-Hour Ozone Concentrations						
Aug 5	65.2	7.4%	93.6%	68.3	7.3%	92.7%
Aug 6	114.0	0.1%	99.9%	119.2	0.6%	99.4%
Aug 7	87.1	1.7%	98.3%	102.5	7.7%	92.3%

3.0 PM MODELING RESULTS

To assess the effects of local emissions versus transport on PM concentrations in the Santa Clarita Valley area, an April 1998 to May 1999 annual PM modeling database was used. This database corresponds to the period used in the SCAQMD's annual modeling as part of the Multiple Air Toxics Exposure Study (MATES-II) (SCAQMD, 2000) and a Department of Energy (DOE) study to assess the effects of biodiesel fuel use on PM in the South Coast Air Basin region of southern California (Morris and Jia, 2002). The Comprehensive Air-quality Model with extensions (CAMx) (ENVIRON, 2004), a photochemical grid model (PGM), was used to assess the contributions of local emissions versus transport to PM air quality in the Santa Clarita Valley area. The contributions of local emissions to both annual and 24-hour PM concentrations were assessed as well as for PM with geometric size less than 10 microns (PM_{10}) and 2.5 microns ($PM_{2.5}$). PM consists of primary emitted particles from combustion source, road dust, construction, wind blown dust, etc as well as secondary particles, such as sulfate, nitrate and secondary organic aerosols, that are formed in the atmosphere from gaseous pollutants. The contributions of local emissions verses transport was assessed accounting for both primary and secondary PM.

EMISSIONS SCENARIOS ANALYZED

Three separate PM emission scenarios were analyzed:

- Base Case emissions scenario that represented estimates of the actual emissions during the April 1998 to March 1999 year;
- Santa Clarita Valley Area 9-Grid Cell Zero-Out Case (designed to be similar to the study area used in the SCAQMD Santa Clarita Transport Study); and
- Santa Clarita Valley Area 25-Grid Cell Zero-Out Case (expanded definition of Santa Clarita Valley area).

Table 3-1 lists the total anthropogenic (man-made) NO_x, VOC, CO fine particulate ($PM_{2.5}$) and coarse particulate (PM_{10}) emissions in the "AQMP" South Coast Air Basin domain (see Figure 1-1) for the three emission scenarios and averaged over the winter 1999 and summer 1998 periods of the April 1998 through March 1999 modeling year. Anthropogenic NO_x, VOC CO, $PM_{2.5}$ and PM_{10} emissions in the 9-grid cell definition of the Santa Clarita Valley area represent 0.3% to 1.1% of the total emissions within the South Coast Air Basin AQMP modeling domain. The 25-grid cell definition of the Santa Clarita Valley area contains 0.5% to 1.7% of the total emissions in the AQMP modeling domain. Note that, for the PM modeling, the Santa Clarita Valley area emissions (Table 3-1) represent a larger fraction of the total emissions in the South Coast Air Basin than the ozone modeling (Table 2-1) because the PM modeling used the smaller "AQMP" domain compared to the ozone modeling that used the larger "SCOS" domain (see Figure 1-1).

Table 3-1. Summary of NO_x, VOC, CO, and fine ($PM_{2.5}$) and just the coarse mode ($PM_{2.5-10}$) component of PM_{10} ($PM_{2.5-10} = PM_{10} - PM_{2.5}$) mode particulate matter anthropogenic emissions (tons per day, TPD) for the South Coast Air Basin "AQMP" domain (see Figure 1-1) for the winter 1999 and summer 1998 Base Case and 9-cell and 25-cell Santa Clarita Valley (SCV) area Zero-Out Cases.

Scenario Species	Base Case (TPD)	9-Grid Cell SCV Area Emiss (TPD)	9-Grid Cell SCV Area Diff (TPD)	9-Grid Cell SCV Area %Diff (%)	25-Grid Cell SCV Area Emiss (TPD)	25-Grid Cell SCV Area Diff (TPD)	25-Grid Cell SCV Area %Diff (%)
1999 Winter Average							
NOx	1520.8	1503.6	-17.2	-1.1%	1495.1	-25.7	-1.7%
VOC	1461.2	1450.5	-10.7	-0.7%	1446.2	-14.9	-1.0%
CO	9291.7	9228.6	-63.1	-0.7%	9160.0	-95.7	-1.0%
$PM_{2.5}$	151.9	151.3	-0.6	-0.4%	150.9	-1.0	-0.6%
$PM_{2.5-10}$	851.1	848.4	-2.7	-0.3%	846.9	-4.2	-0.5%
1998 Summer Average							
NOx	1517.3	1501.2	-16.1	-1.1%	1492.7	-24.6	-1.6%
VOC	1500.3	1490.0	-10.3	-0.7%	1485.8	-14.5	-1.0%
CO	9874.3	9804.5	-70.0	-0.7%	9769.7	-104.6	-1.1%
$PM_{2.5}$	152.7	152.1	-0.6	-0.4%	151.7	-1.0	-0.6%
$PM_{2.5-10}$	855.3	852.6	-2.7	-0.3%	851.0	-4.2	-0.5%

PM MODELING RESULTS

Particulate Matter modeling results are presented for both PM_{10} and $PM_{2.5}$ concentrations. The EPA has a Federal annual and 24-hour average PM_{10} standard with thresholds of 50 and 150 $\mu g/m^3$, respectively. The CAAA require that PM_{10} nonattainment areas attain the Federal PM_{10} standard by specific years that are based on their attainment classification. The South Coast Air Basin, including the Santa Clarita Valley area, must attain the Federal PM_{10} by 2006. The State of California also has annual and 24-hour PM_{10} standards with thresholds of 20 and 50 $\mu g/m^3$. Regions in California must demonstrate progress toward achieving the California PM_{10} standards. There are also new Federal annual and 24-hour $PM_{2.5}$ standards with thresholds of 15 and 65 $\mu g/m^3$, respectively. EPA is planning to declare $PM_{2.5}$ nonattaiment areas by the end of 2005; the South Coast Air Basin, including the Santa Clarita Valley area, will be declared nonattainment for $PM_{2.5}$. The State of California also has an annual $PM_{2.5}$ standard with a threshold of 12 $\mu g/m^3$.

The effects of the Santa Clarita Valley area Zero-Out Cases on annual and 24-hour PM_{10} and $PM_{2.5}$ concentrations in the April 1998 to March 1999 annual modeling database for the South Coast Air Basin were assessed using the two definitions of the Santa Clarita Valley area:

- The 9-grid cell definition (3 x 3 5-km grid cells) of the Santa Clarita Valley area as shown by the red box in Figure 1-2; and
- The 25-grid cell definition (5 x 5 5-km grid cells) of the Santa Clarita Valley area as shown by the red box in Figure 1-5.

Annual and 24-Hour PM Modeling Results

Table 3-2 the displays the maximum annual average PM_{10} and $PM_{2.5}$ concentrations in the Santa Clarita Valley area for the 1998/1999 Base Case and two Santa Clarita Valley area Zero-Out Cases using the 9-grid cell (smaller) and 25-grid cell (larger) definitions of the Santa Clarita Valley area. Spatial maps of annual average PM_{10} and $PM_{2.5}$ concentration estimates for the northern South Coast Air Basin subdomain and the Base Case and two Santa Clarita Valley area Zero-Out Cases are shown Appendix C. The peak annual PM_{10} concentration in the Santa Clarita Valley area is 35.1 $\mu g/m^3$ using both the larger (25-grid cell) and smaller (9-grid cell) definitions of the Santa Clarita Valley area. The elimination of all anthropogenic emissions in the Santa Clarita Valley area reduces the peak annual average PM_{10} concentration in the Santa Clarita Valley area by 5.2 $\mu g/m^3$ and 5.7 $\mu g/m^3$ using the smaller and larger definitions of the Santa Clarita Valley area, respectively. These reductions represent 10% and 11% of the Federal annual PM_{10} standard of 50 $\mu g/m^3$.

The elimination of all anthropogenic emissions in the Santa Clarita Valley area reduces the maximum annual average $PM_{2.5}$ concentration estimate in the Santa Clarita Valley area by 2.8 and 3.2 $\mu g/m^3$ using the smaller and larger definitions of the Santa Clarita Valley area, respectively. These reductions represent approximately 20% of the Federal annual average $PM_{2.5}$ standard of 15 $\mu g/m^3$.

Table 3-2. Estimated peak annual average PM_{10} and $PM_{2.5}$ concentrations ($\mu g/m^3$) for the 1998/1999 Base Case and Santa Clarita Valley (SCV) Zero-Out Cases using the 9-grid cell and 25-grid cell definitions of the Santa Clarita Valley area.

Species	9-Grid Cell SCV Zero-Out				25-Grid Cell SCV Zero-Out			
	Base Case	Zero-Out	PM Diff	PM Diff	Base Case	Zero-Out	PM Diff	PM Diff
	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)	(%)	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)	(%)
PM_{10}	35.1	29.9	-5.2	-14.9%	35.1	29.4	-5.7	-16.1%
$PM_{2.5}$	17.2	14.5	-2.8	-16.0%	17.2	14.0	-3.2	-18.7%

The spatial maps of annual average PM_{10} and $PM_{2.5}$ concentrations in Appendix C indicate why the Santa Clarita Valley area Zero-Out Cases have minimal effect on PM levels in the Santa Clarita Valley area. There are large PM concentration gradients from south to north with much higher PM concentrations seen in the San Fernando Valley, that exceed the Federal annual standard of 50 $\mu g/m^3$, and lower levels that are below 40 $\mu g/m^3$ occurring in the Santa Clarita area. These spatial maps of estimate PM concentrations clearly show the transport of PM concentrations from the southern areas of the San Fernando Valley and Los Angeles into the Santa Clarita Valley area.

Table 3-3 lists the contribution of local emissions in the Santa Clarita Valley area and the contribution from transport due to emissions from outside of the Santa Clarita Valley area to the maximum annual average PM_{10} and $PM_{2.5}$ in the Santa Clarita Valley area. Also shown in Table 3-3 are the local versus transport contributions to the maximum 24-hour average PM_{10} and $PM_{2.5}$ concentrations in the Santa Clarita Valley area for the four highest days of the 1998/1999 year. Using the smaller definition of the Santa Clarita Valley area, local emissions contribute approximately 15% and 16% to the maximum annual average PM_{10} and $PM_{2.5}$ concentrations in the Santa Clarita Valley area, respectively. When the larger cell definition of the Santa Clarita

Valley area is used, the contribution of local emissions to the annual average PM_{10} and $PM_{2.5}$ concentrations in the Santa Clarita Valley area are approximately 16% and 19%, respectively.

The contributions of local emissions to the four highest 24-hour PM_{10} concentrations in the Santa Clarita Valley area ranges from 5% to 14%. Local Santa Clarita Valley area emissions have a lower contribution to the four highest 24-hour $PM_{2.5}$ concentrations in the Santa Clarita Valley area with local contributions ranging from 2% to 7%. Local emissions have a lower relative contribution to $PM_{2.5}$ than PM_{10} concentrations because PM formed by pollution in the air is mostly fine and contributes more to transport; $PM_{2.5}$ does not deposit out as fast as PM_{10} and so has a longer transport distance.

Table 3-3. Percent contribution of local emissions in the Santa Clarita Valley (SCV) area versus transport due to emissions from outside of the SCV area to peak annual average PM_{10} and $PM_{2.5}$ concentrations and four-highest 24-hour PM_{10} and $PM_{2.5}$ concentrations in the SCV area during the May 1998 to April 1999 year using the 9-grid cell (3 x 3 5-km) and 25-grid cell (5 x 5 5-km) definitions of the SCV area.

	9-Grid Cell SCV Area			25-Grid Cell SCV Area		
Species Or Date	Peak PM (g/m^3)	Local Emissions (%)	Transport Emissions (%)	Peak PM (g/m^3)	Local Emissions (%)	Transport Emissions (%)
Annual Average PM Concentrations						
PM_{10}	35.1	14.9%	85.1%	35.1	16.1%	83.9%
$PM_{2.5}$	17.2	16.0%	84.0%	17.2	18.7%	81.3%
Four Highest 24-Hour PM_{10} Concentrations						
12/01/98	149.0	13.5%	86.5%	149.0	10.5%	89.5%
11/27/98	143.9	4.7%	95.3%	143.9	4.9%	95.1%
01/07/99	114.5	10.2%	89.8%	119.0	4.3%	95.7%
01/06/99	113.4	10.4%	89.6%	113.4	11.1%	88.9%
Four Highest 24-Hour $PM_{2.5}$ Concentrations						
12/01/98	79.9	7.3%	92.7%	80.0	4.7%	95.3%
11/27/98	68.5	2.3%	97.7%	69.4	2.5%	97.5%
10/12/98	64.9	5.0%	95.0%	68.6	5.3%	94.7%
01/07/99	60.8	3.0%	97.0%	69.9	1.9%	98.1%

4.0 REFERENCES

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APPENDIX A

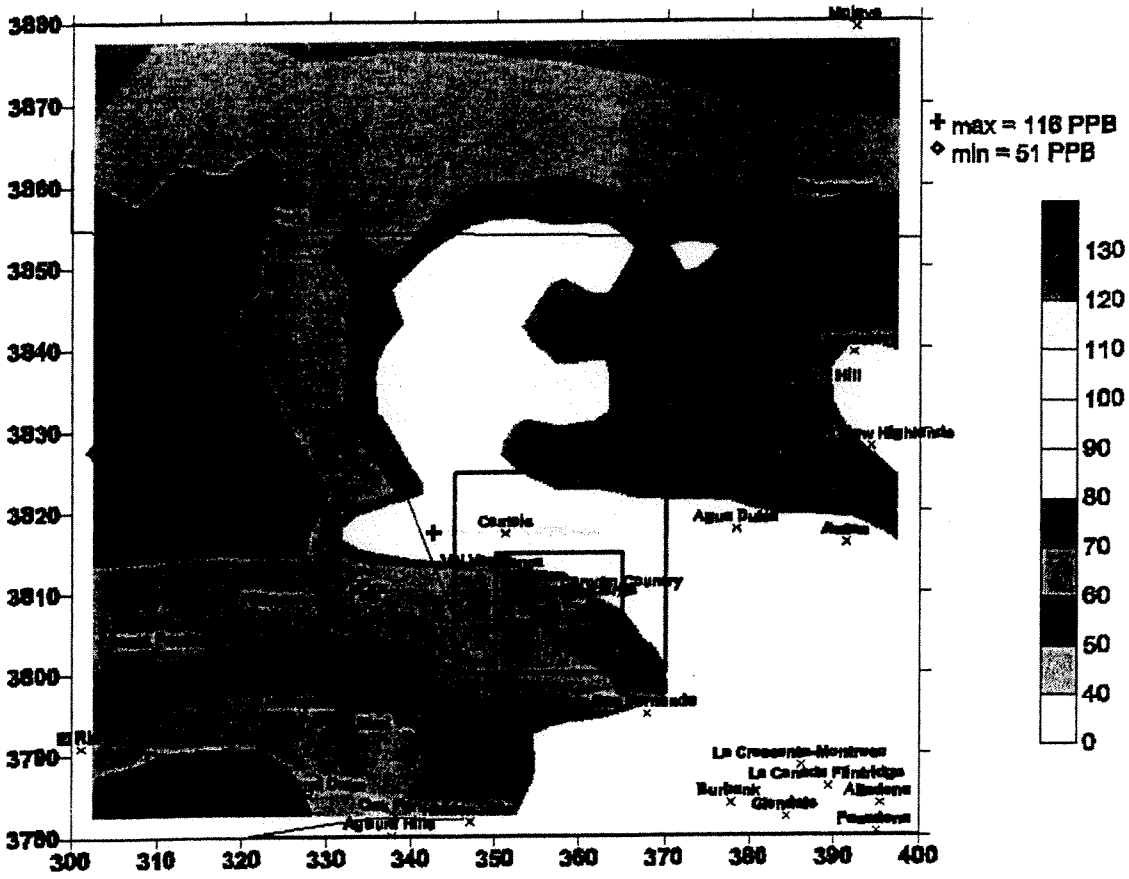
Daily Maximum 1-Hour Ozone Concentrations (ppb)

1997 Emission Scenarios

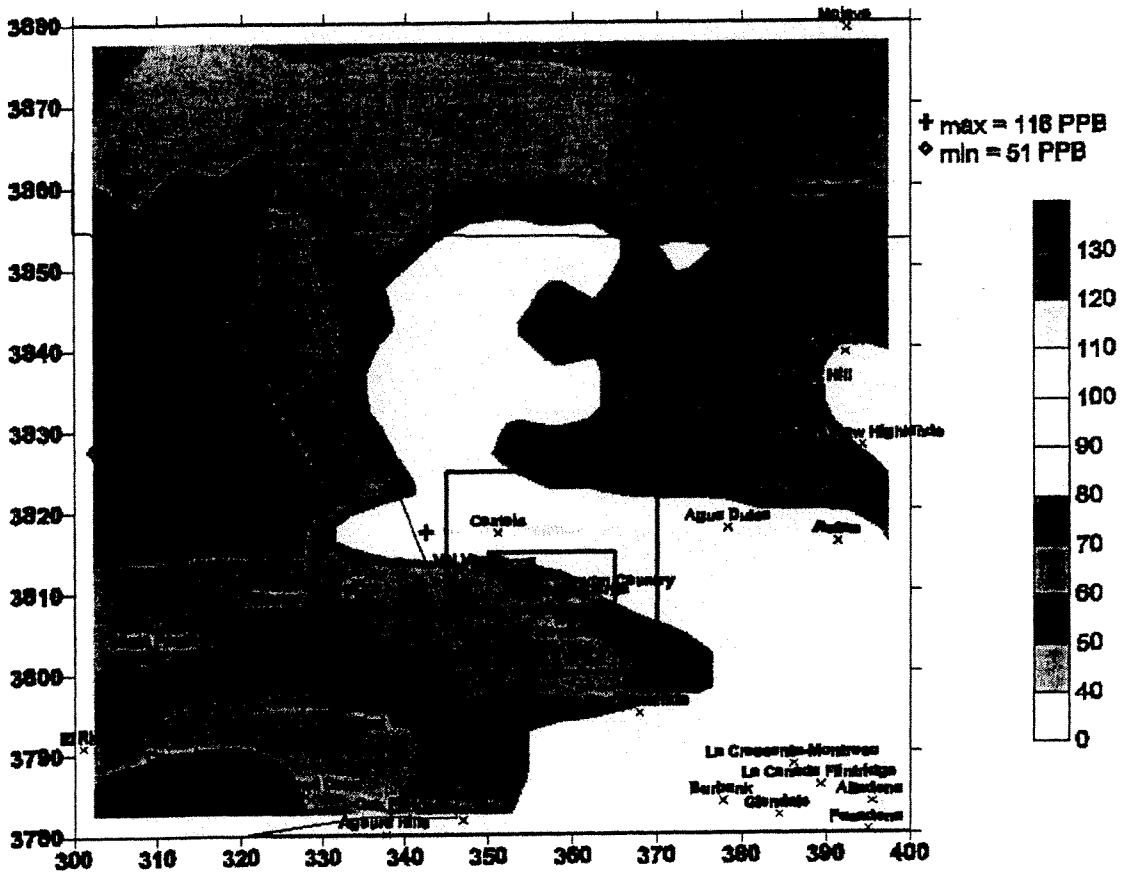
- Base Case
- 9-grid cell (3 x 3) Santa Clarita Valley area Zero-Out Case
- 25-grid cell (5 x 5) Santa Clarita Valley area Zero-Out Case

August 5-7, 1997

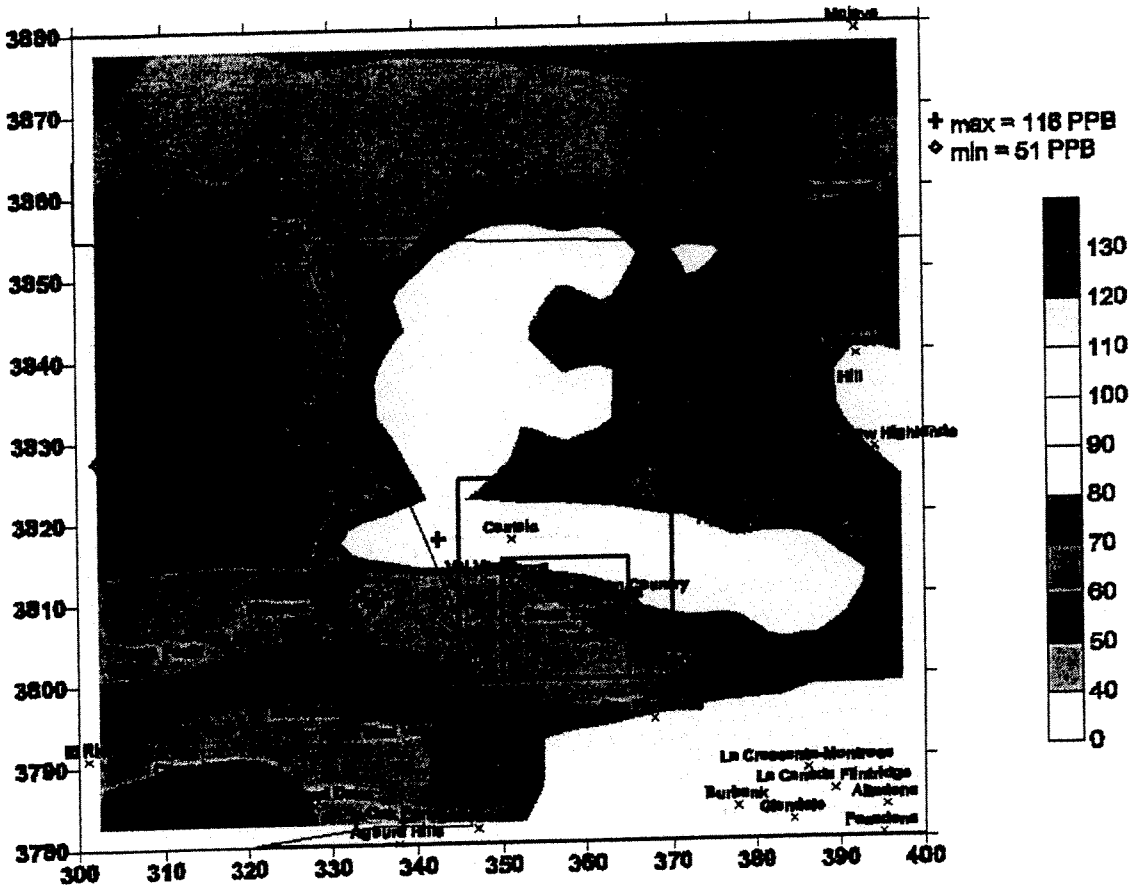
- August 5, 1997 (97217)
- August 6, 1997 (97218)
- August 7, 1997 (97219



UAM Daily Max 1hr O3
97217
1997 Base Case



UAM Daily Max 1hr O3
97217
1997 ZeroOut 3x3



UAM Daily Max 1hr O3
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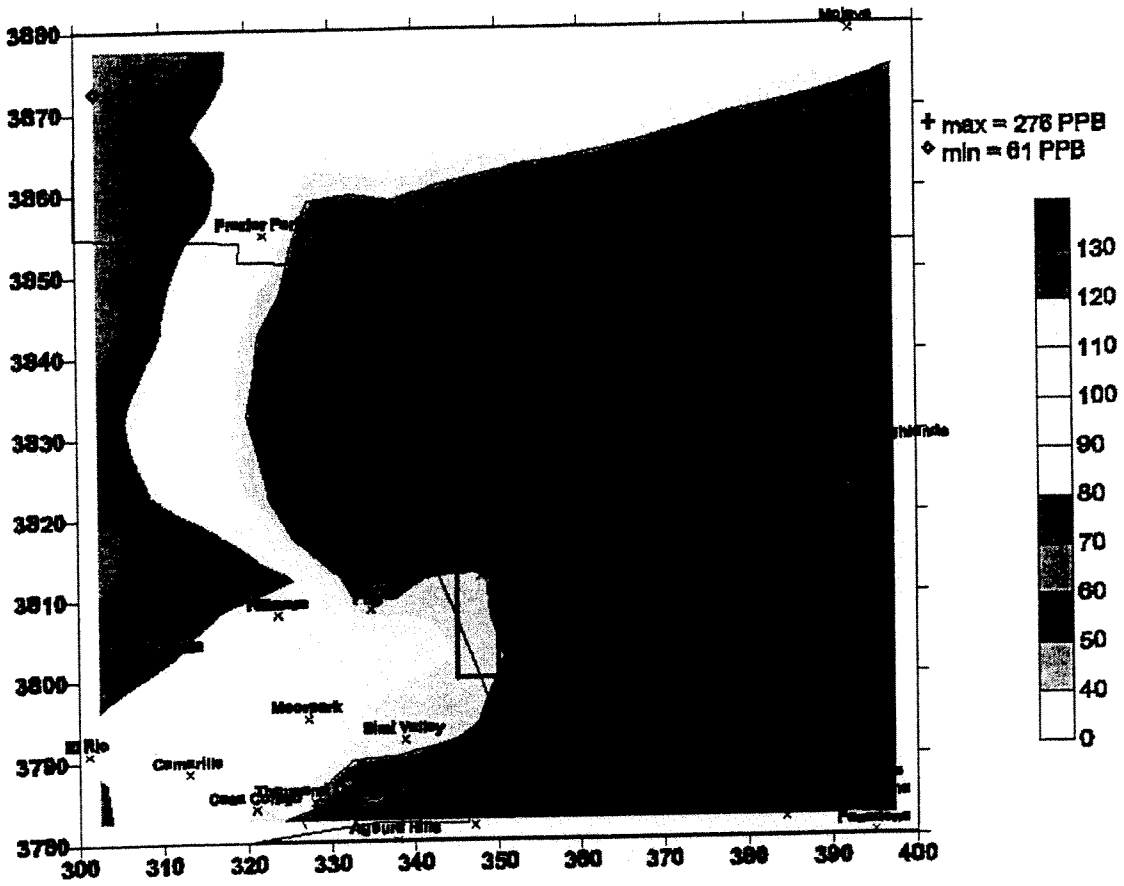
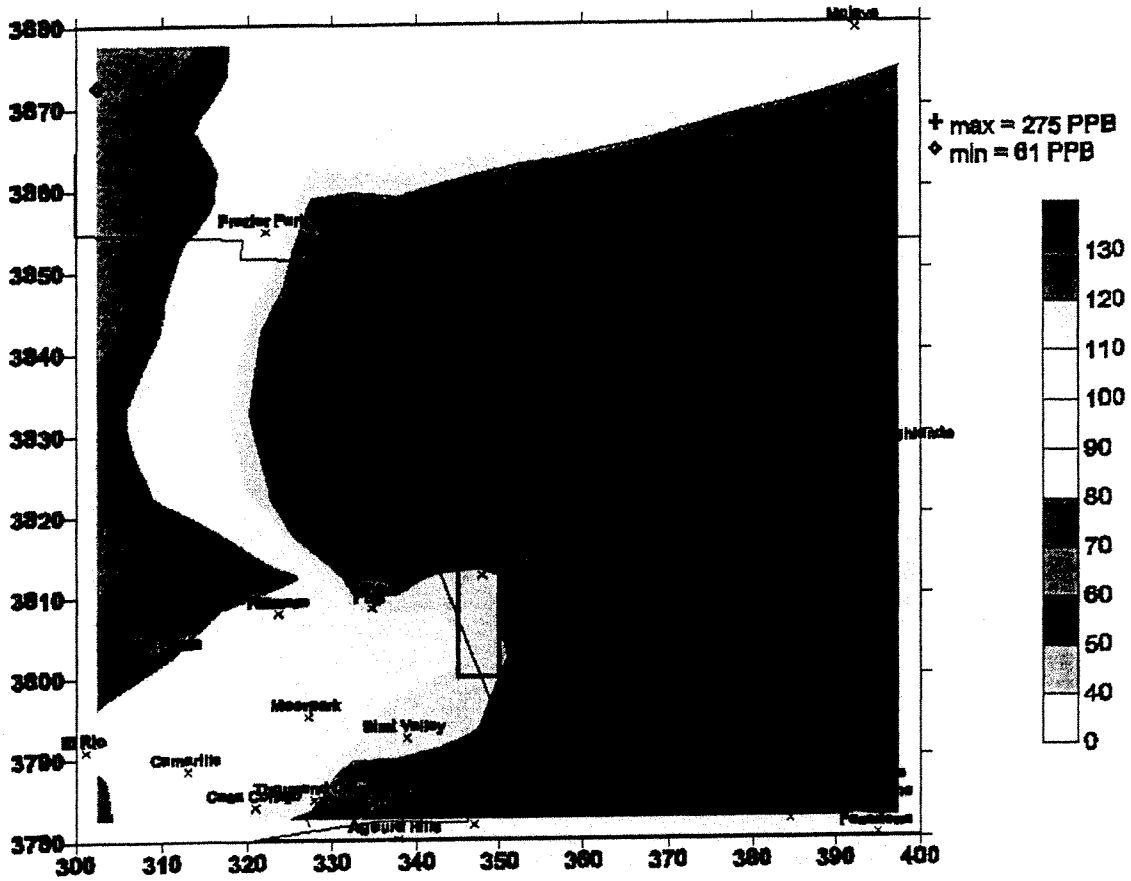
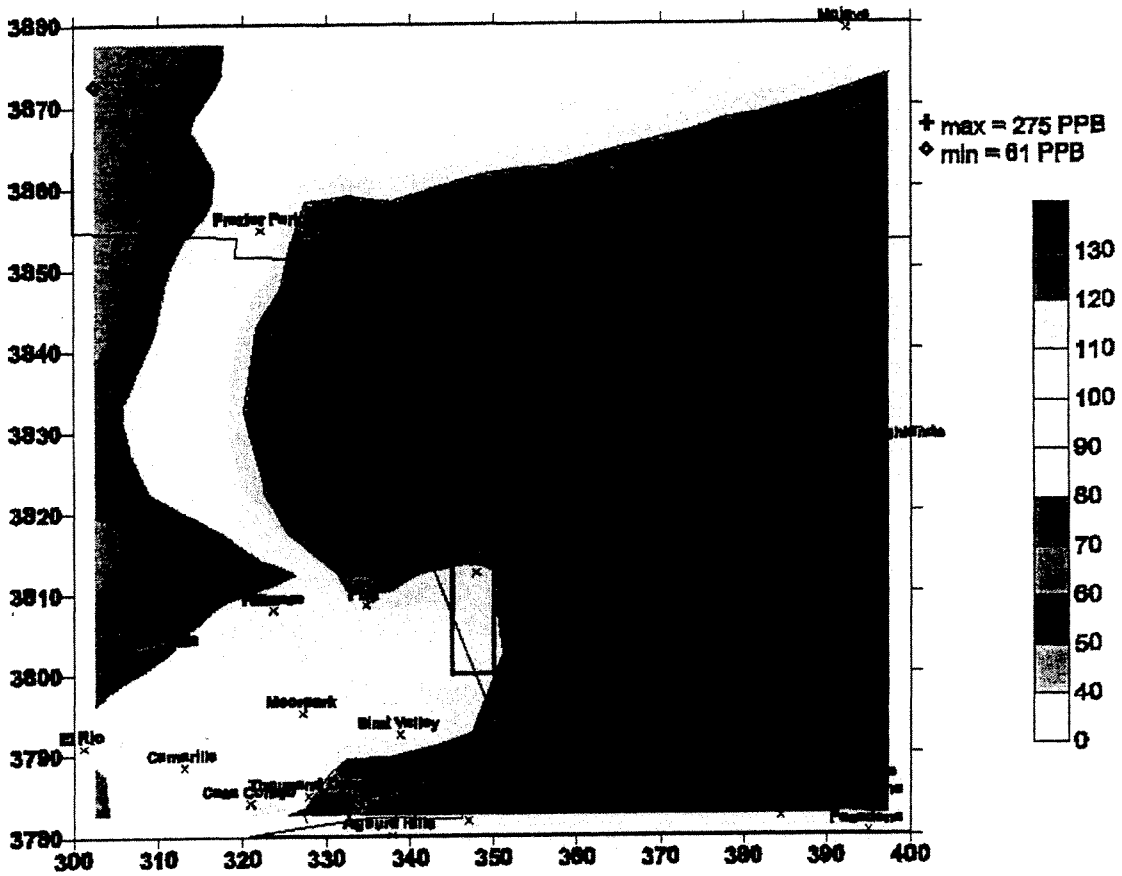
1997 ZeroOut 5x5



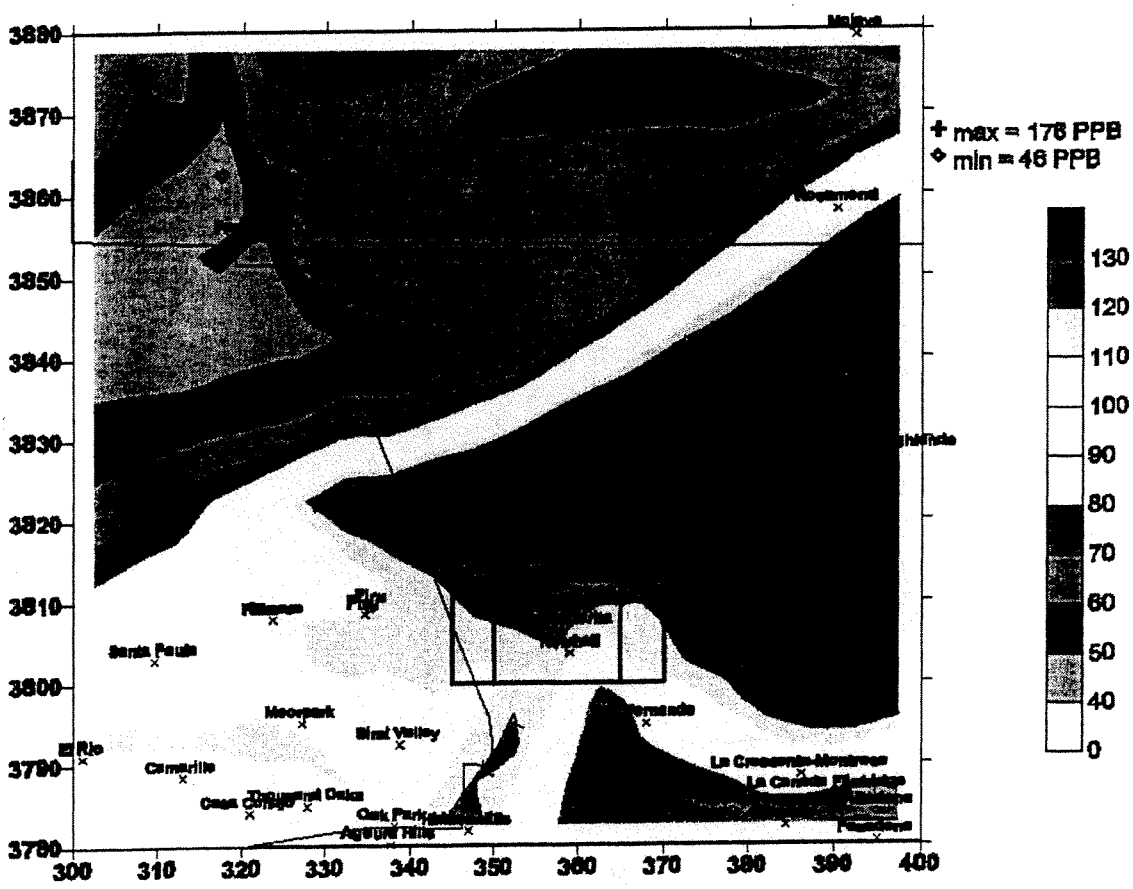
UAM Daily Max 1hr O3
97218
1997 Base Case



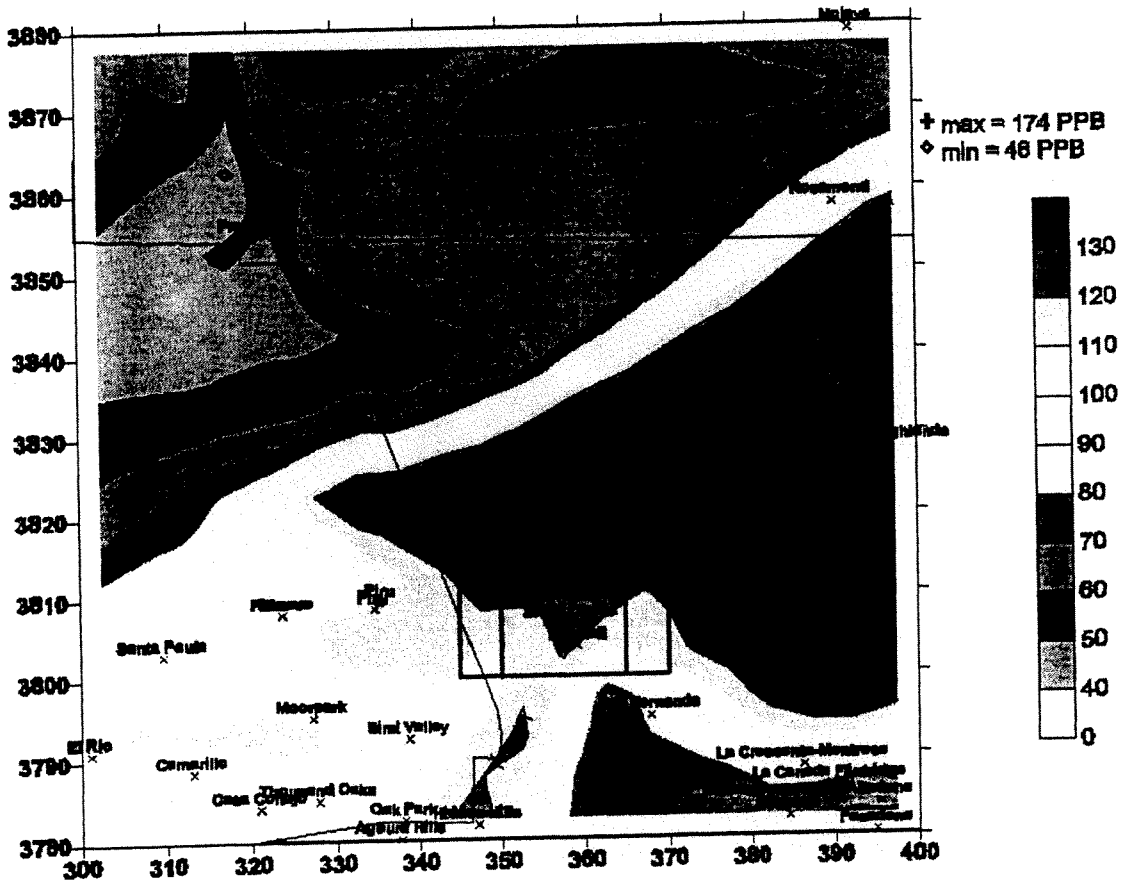
UAM Daily Max 1hr O3
97218
1997 ZeroOut 3x3



UAM Daily Max 1hr O3
97218
1987 ZeroOut 5x5



UAM Daily Max 1hr O3
97219
1997 Base Case



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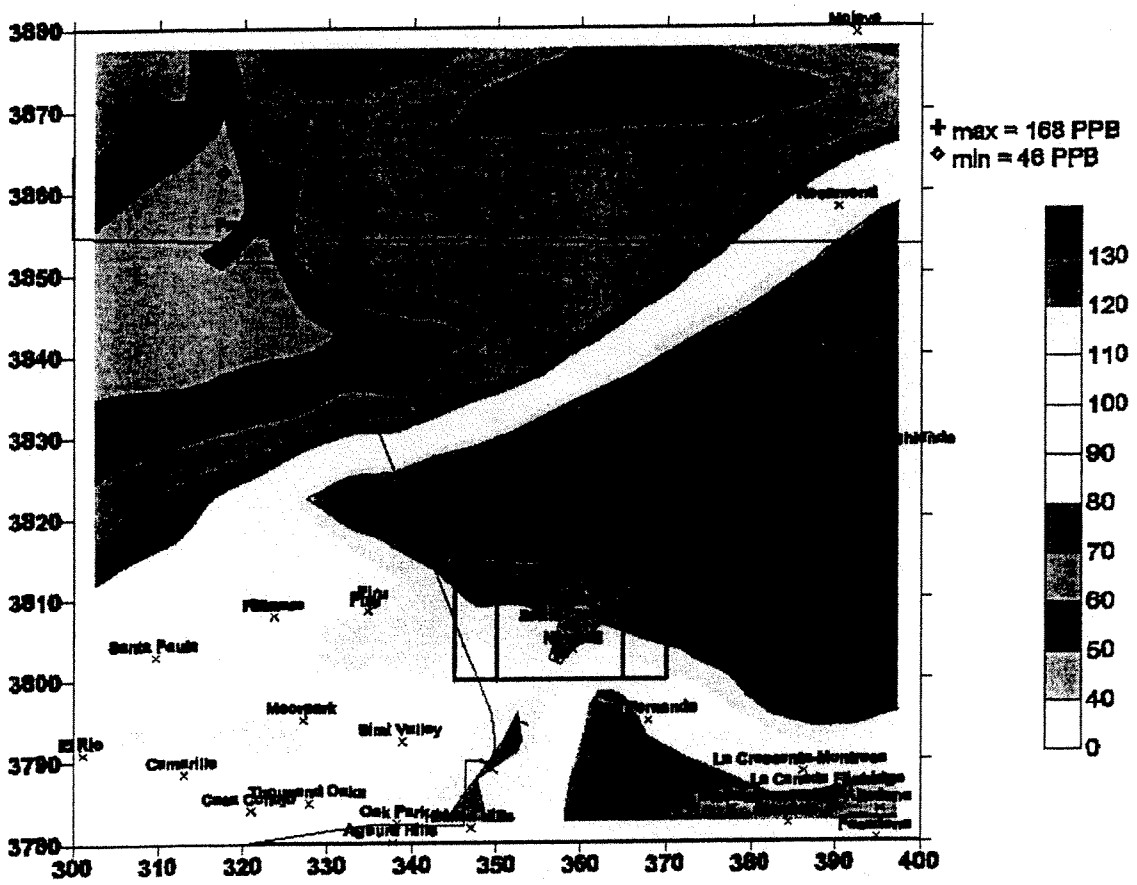
1997 ZeroOut 3x3



UAM Daily Max 1hr O3
97219
1997 ZeroOut 5x5

APPENDIX B

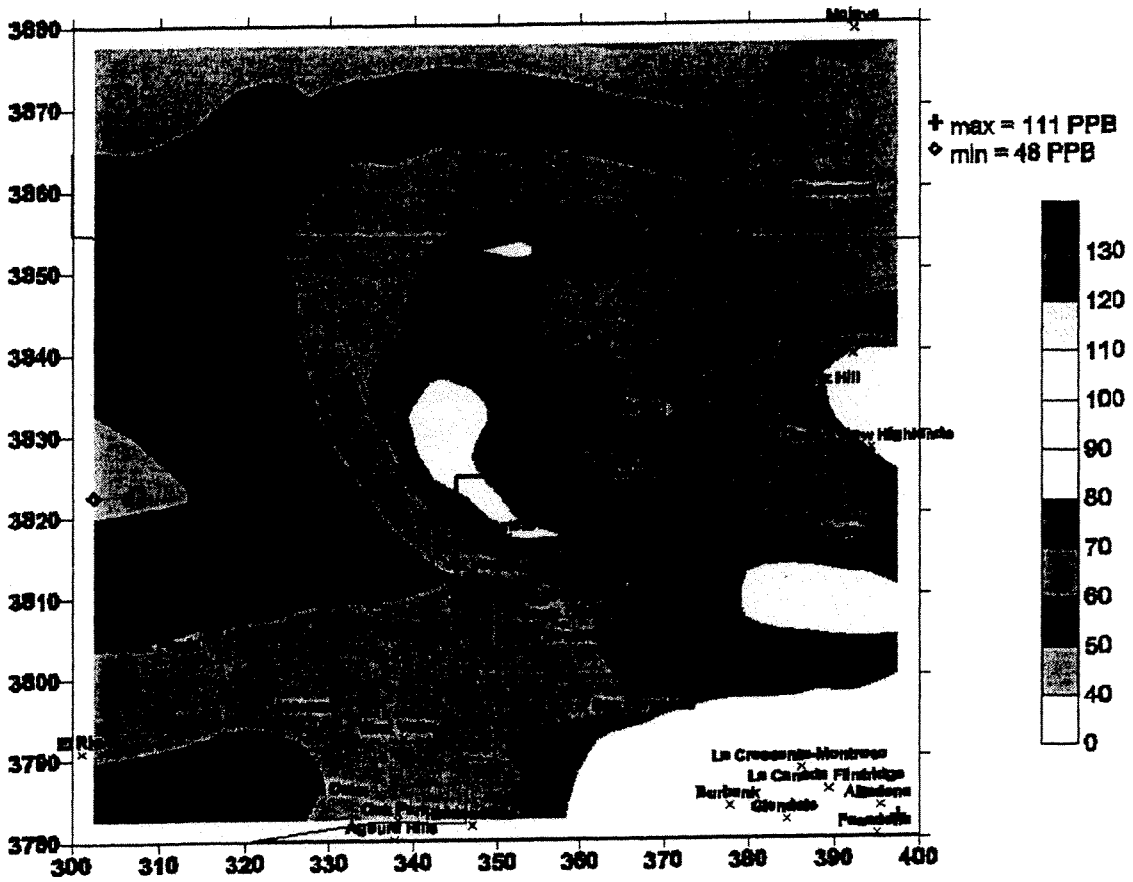
Daily Maximum 1-Hour Ozone Concentrations (ppb)

2007 Emission Scenarios

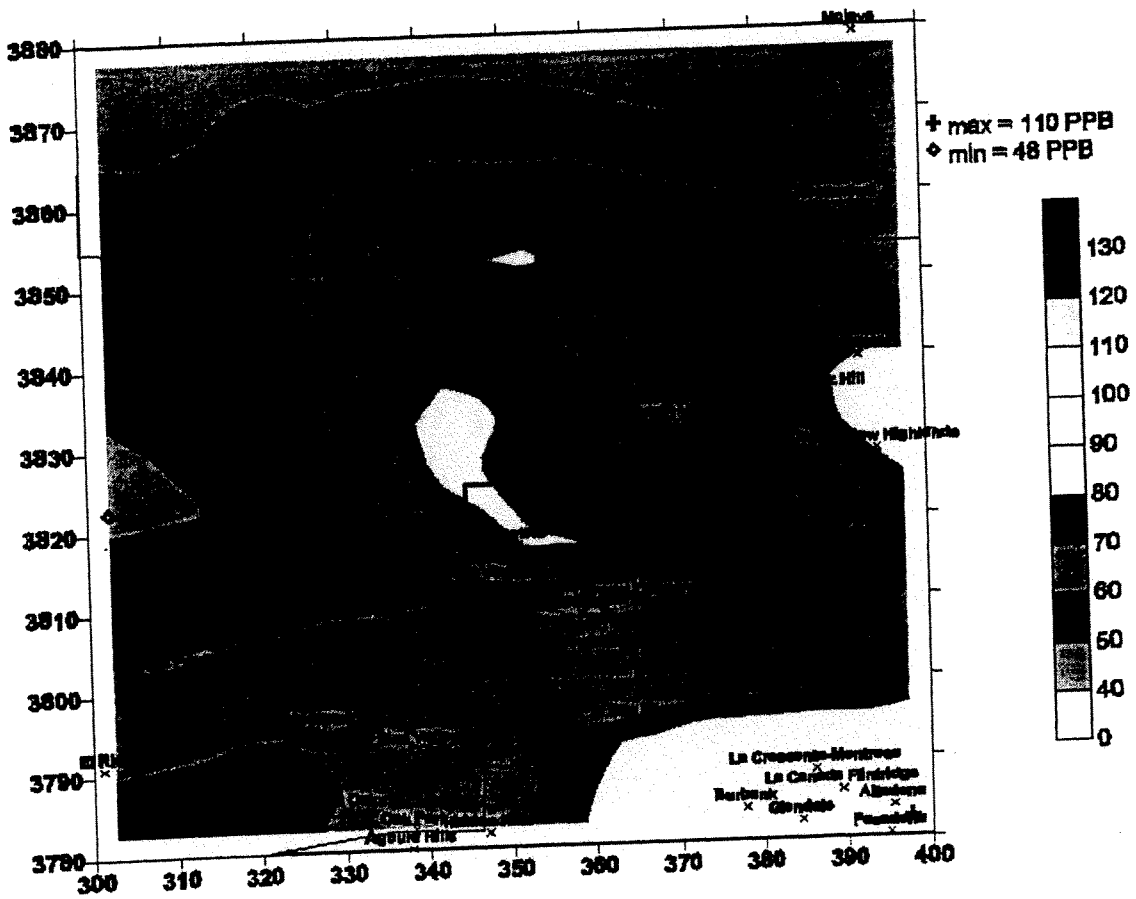
- Base Case
- 9-grid cell (3 x 3) Santa Clarita Valley area Zero-Out Case
- 25-grid cell (5 x 5) Santa Clarita Valley area Zero-Out Case

August 5-7, 1997

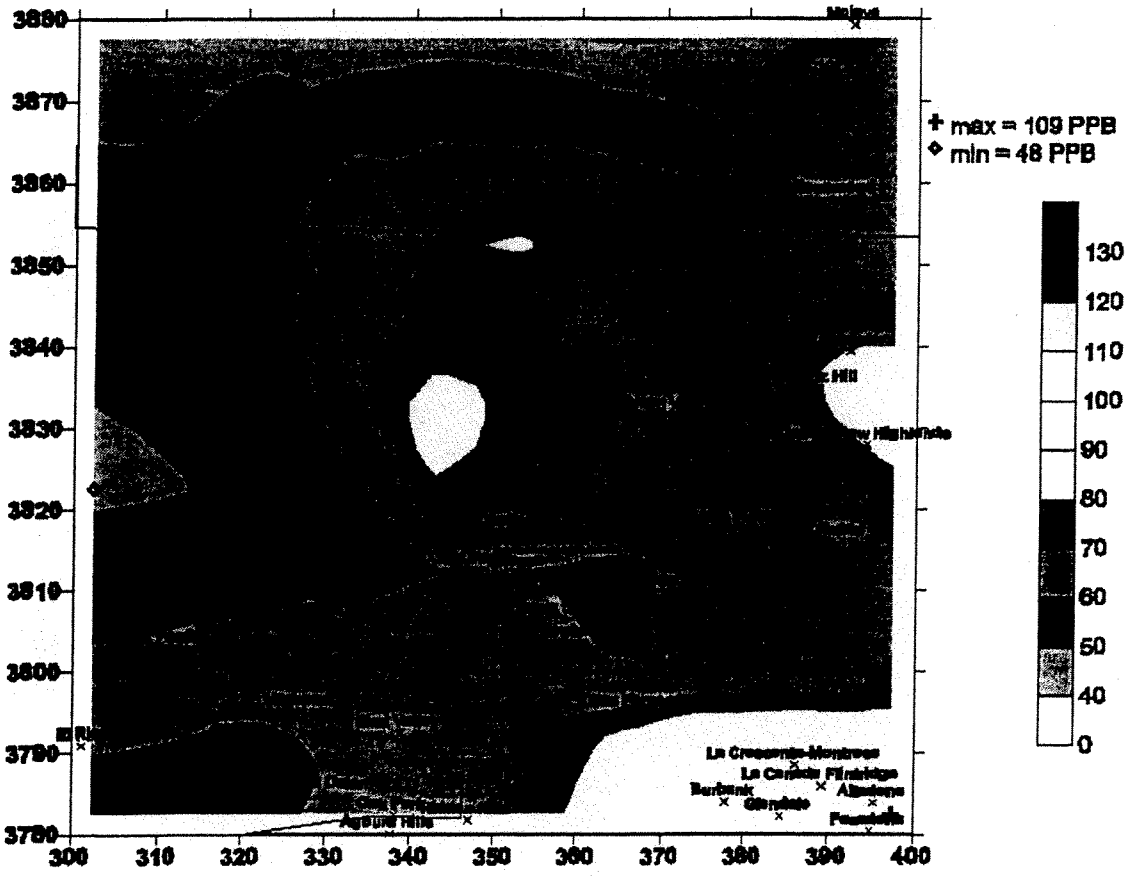
- August 5, 1997 (97217)
- August 6, 1997 (97218)
- August 7, 1997 (97219



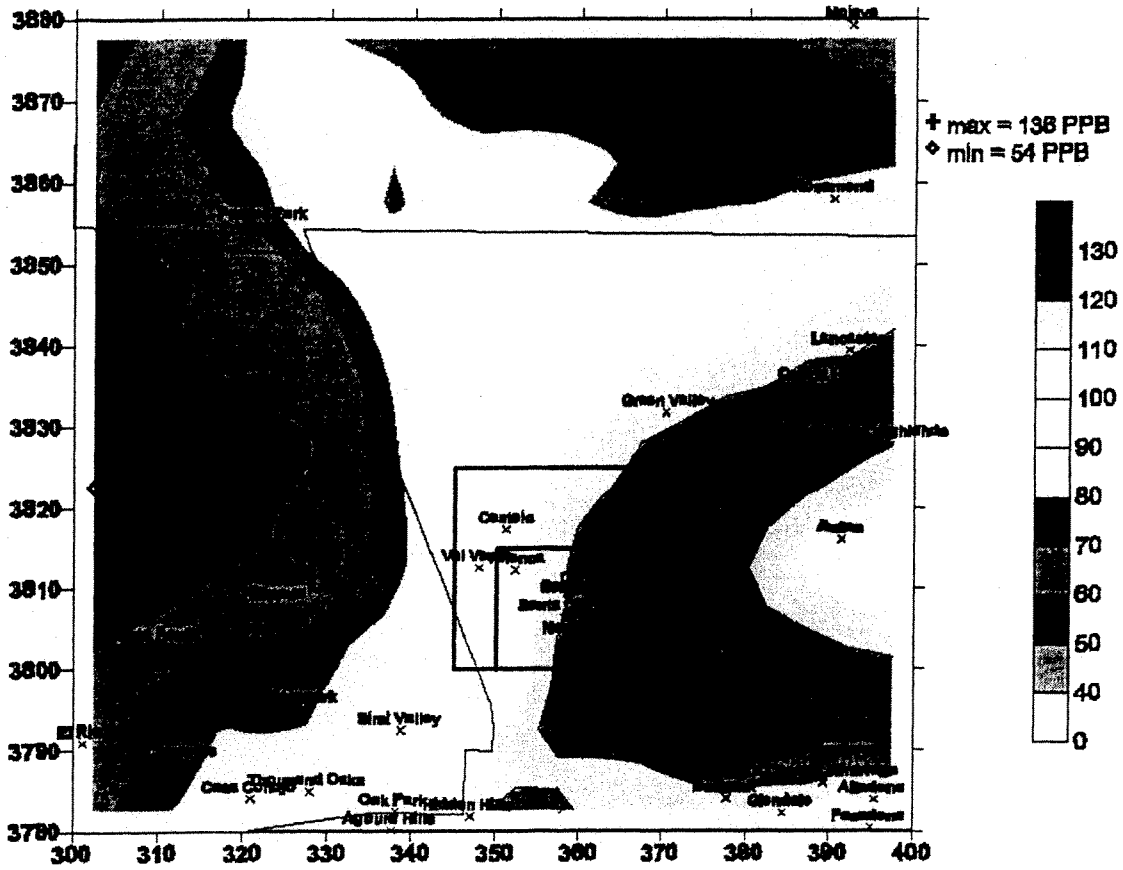
UAM Daily Max 1hr O3
97217
2007 Base Case



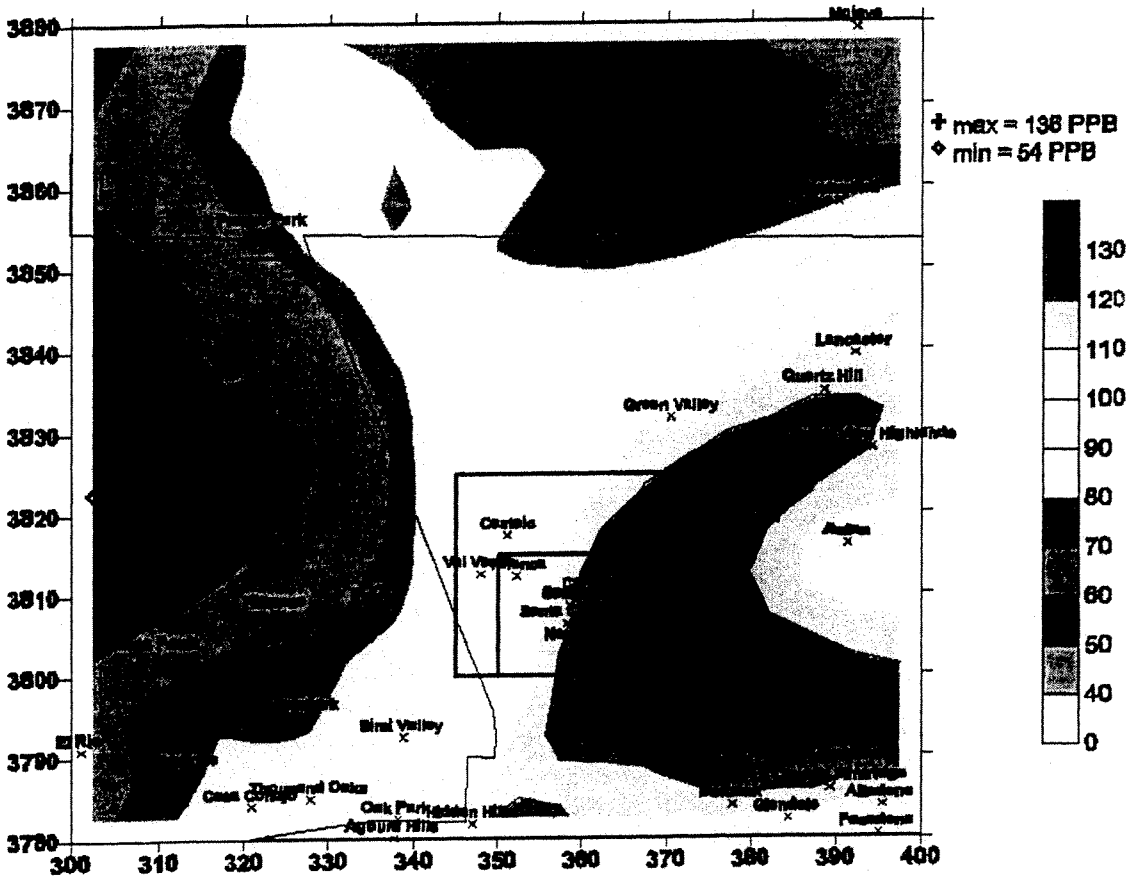
UAM Daily Max 1hr O3
97217
2007 ZeroOut 3x3



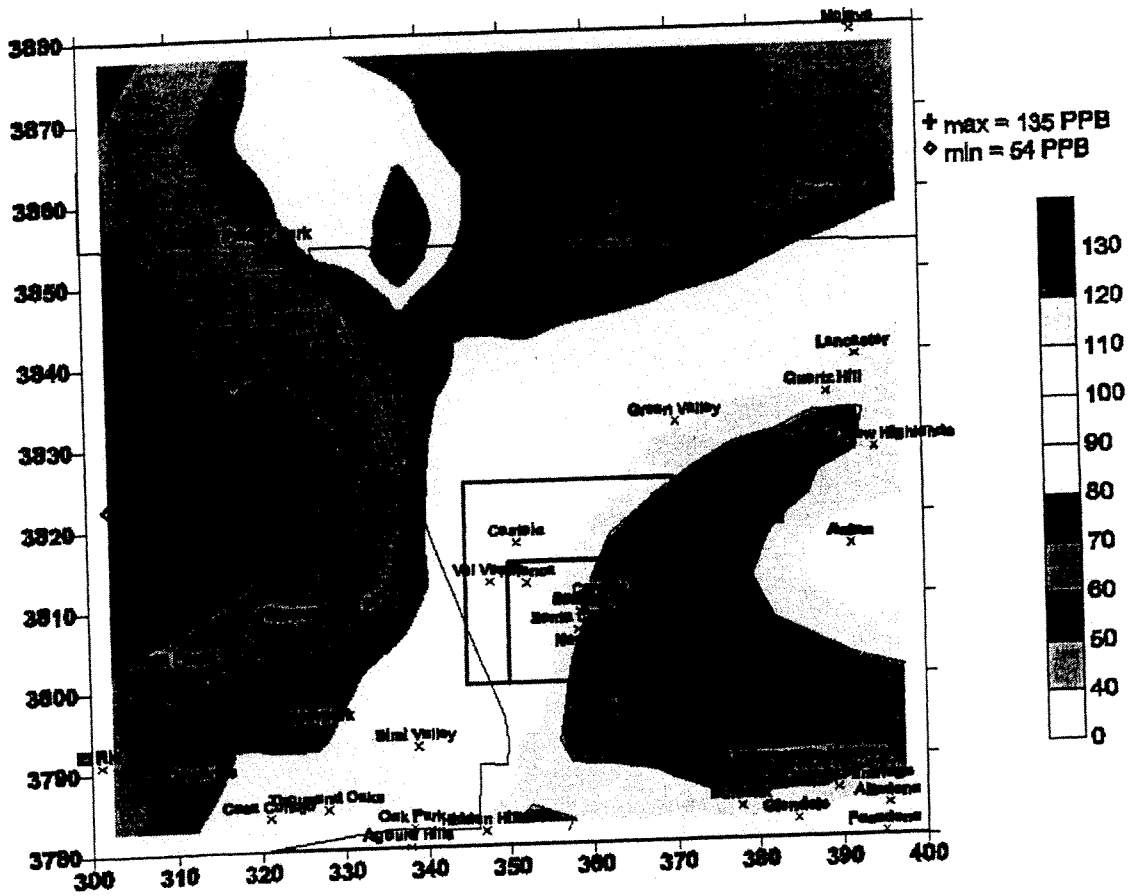
UAM Daily Max 1hr O3
97217
2007 ZeroOut 5x5



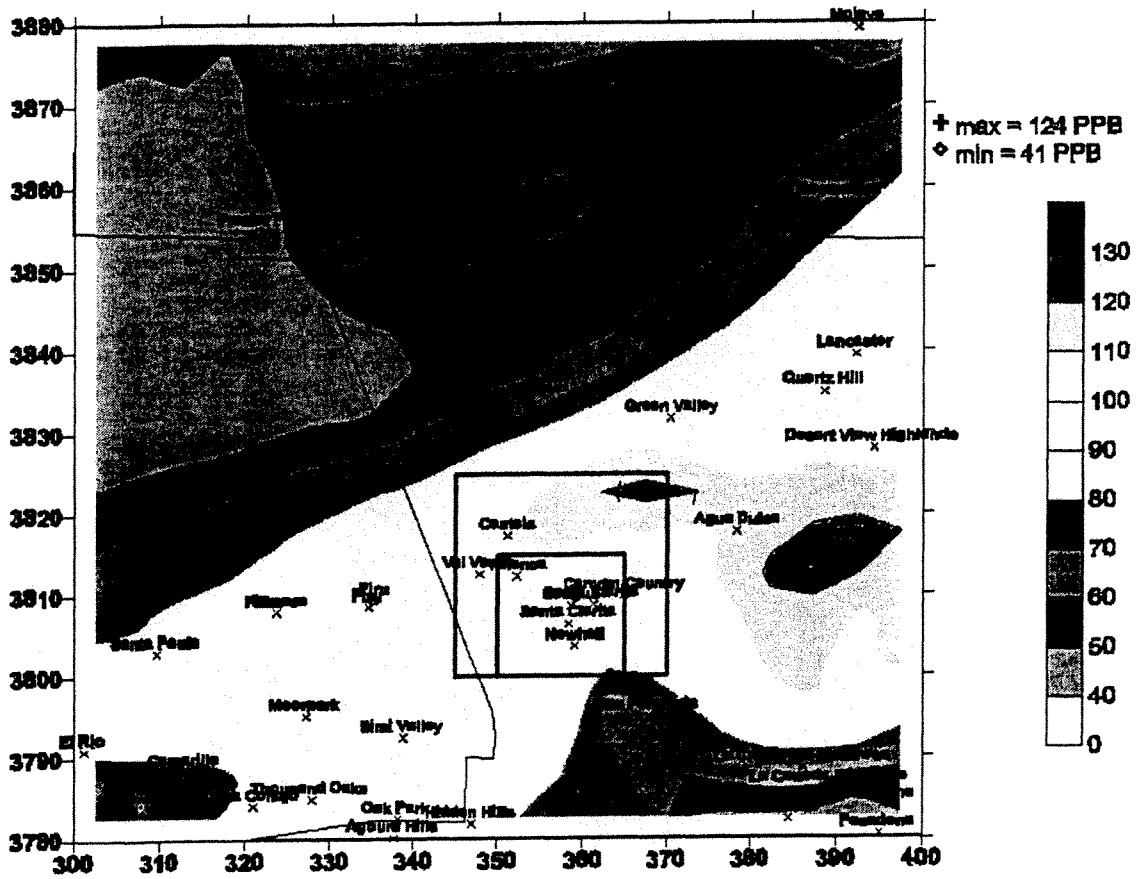
UAM Daily Max 1hr O3
97218
2007 Base Case



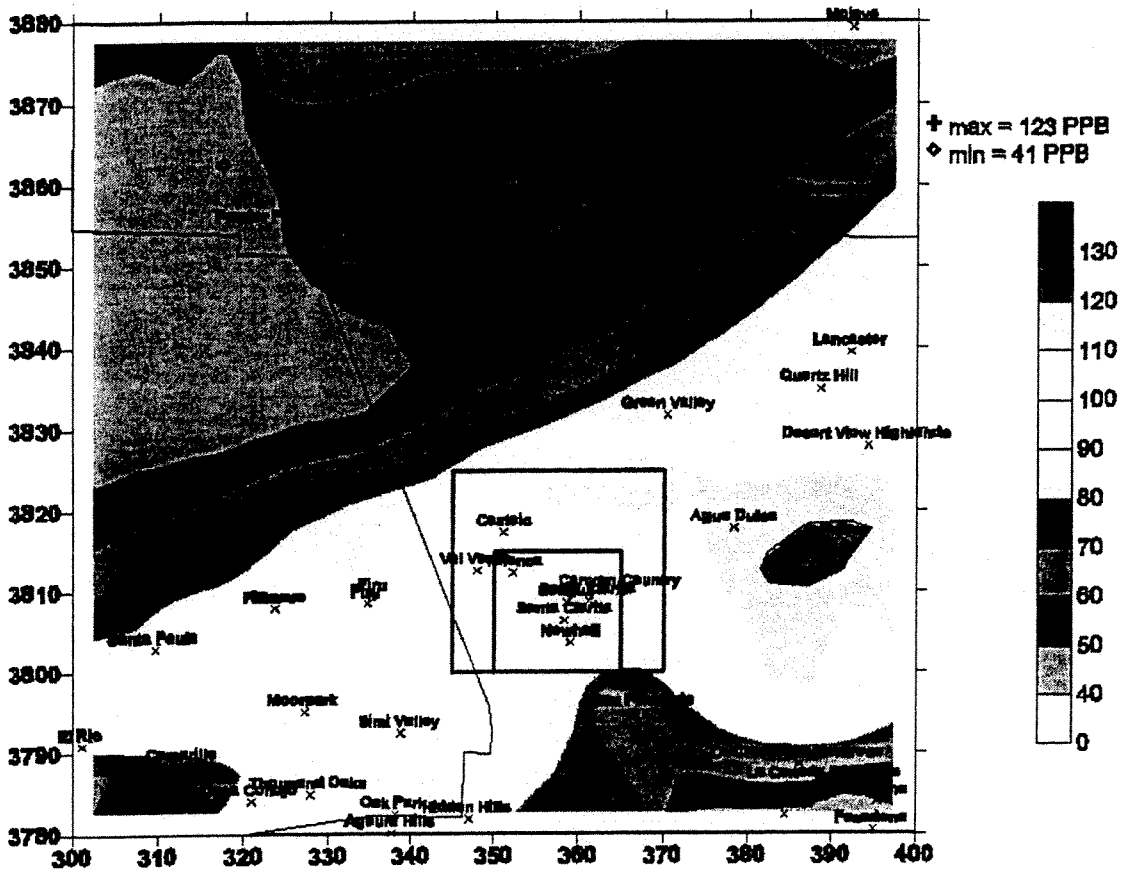
UAM Daily Max 1hr O3
97218
2007 ZeroOut 3x3



UAM Daily Max 1hr O3
97218
2007 ZeroOut 5x5



UAM Daily Max 1hr O3
97219
2007 Base Case



UAM Daily Max 1hr O3
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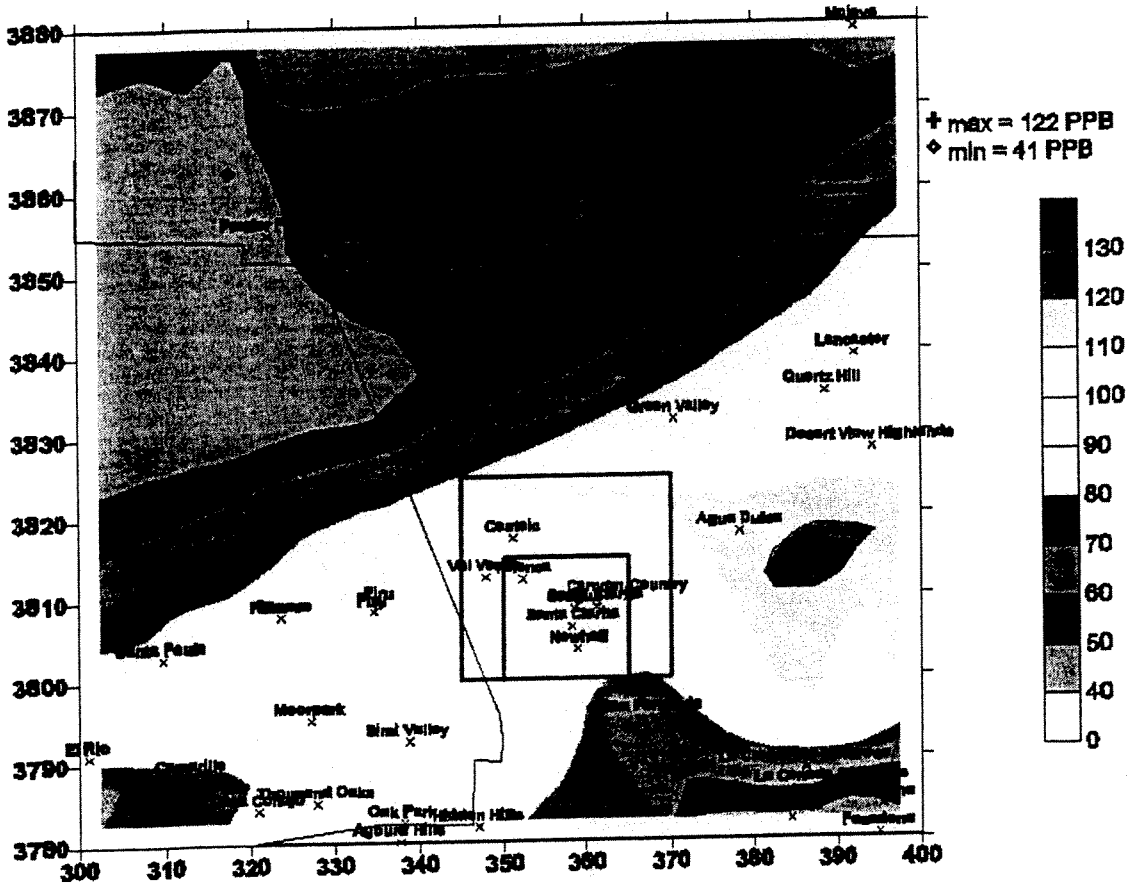
2007 ZeroOut 3x3



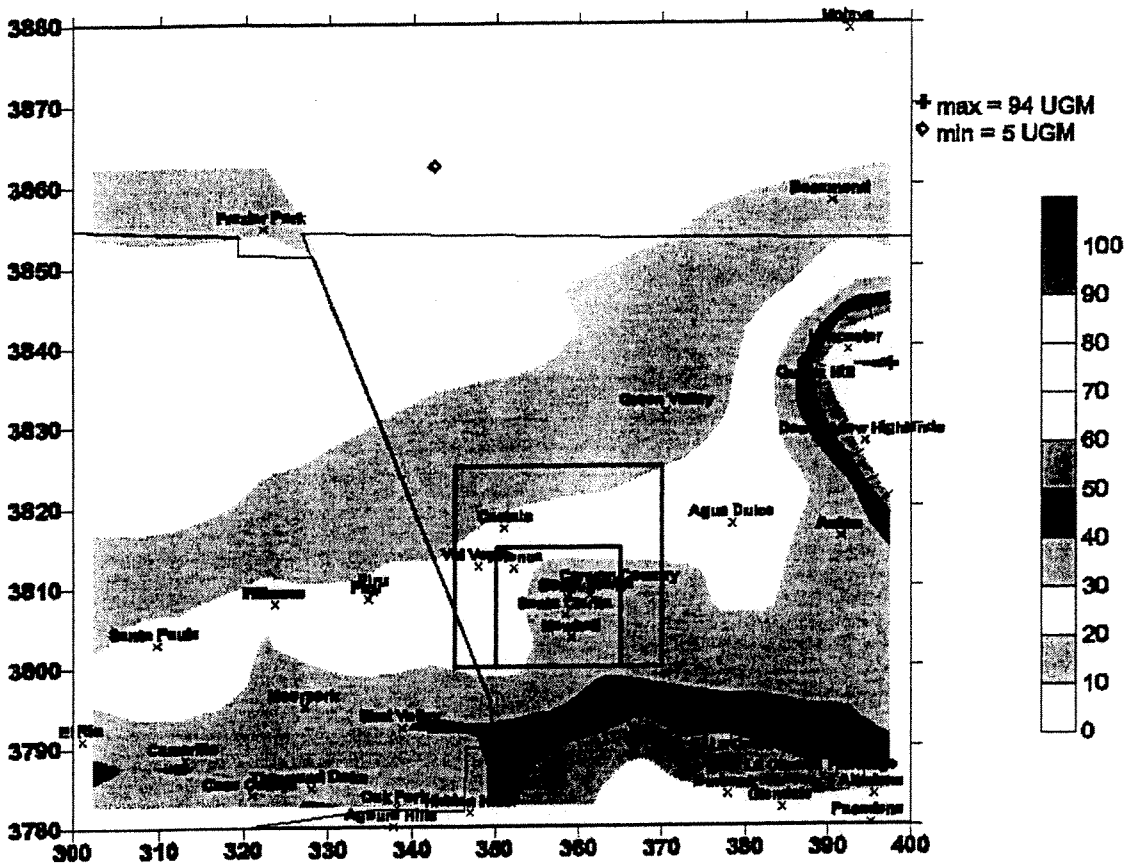
UAM Daily Max 1hr O3
97219
2007 ZeroOut 5x5

APPENDIX C

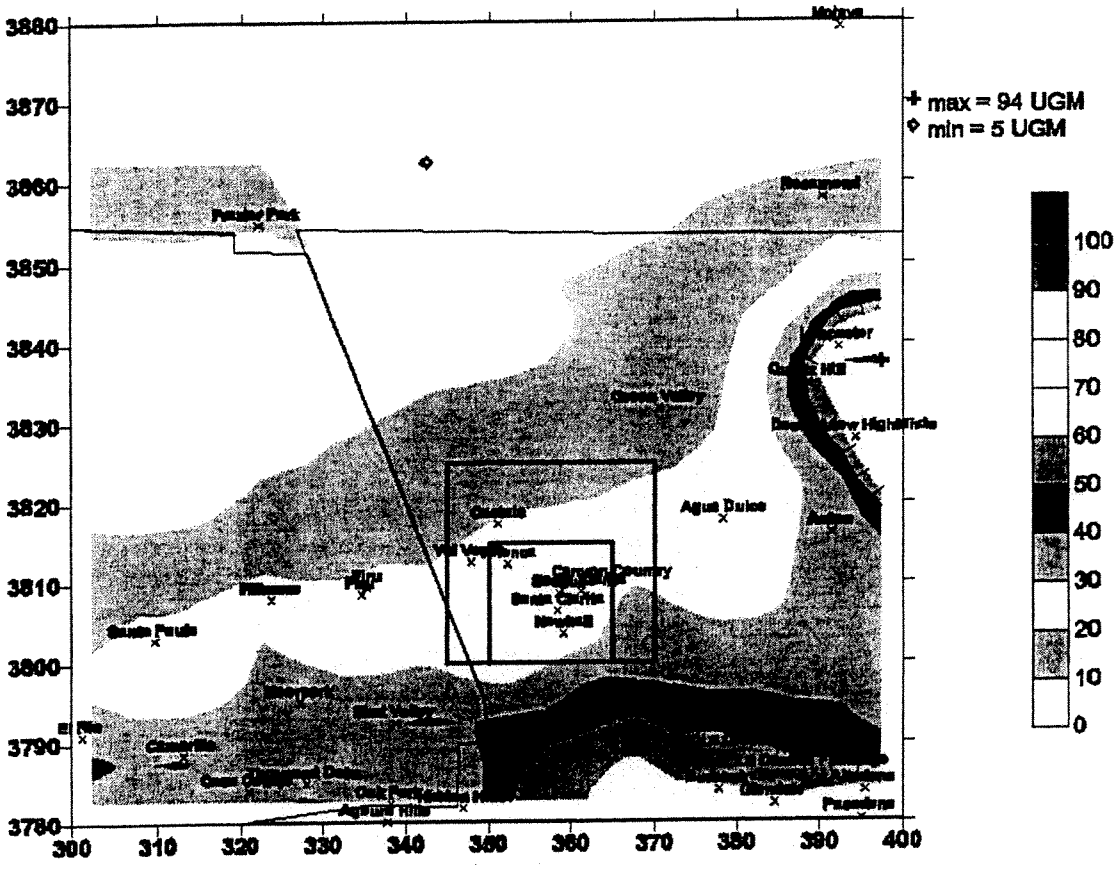
Annual Average PM_{10} and $PM_{2.5}$ Concentrations (ug/m^3)

1998/1999 Emission Scenario

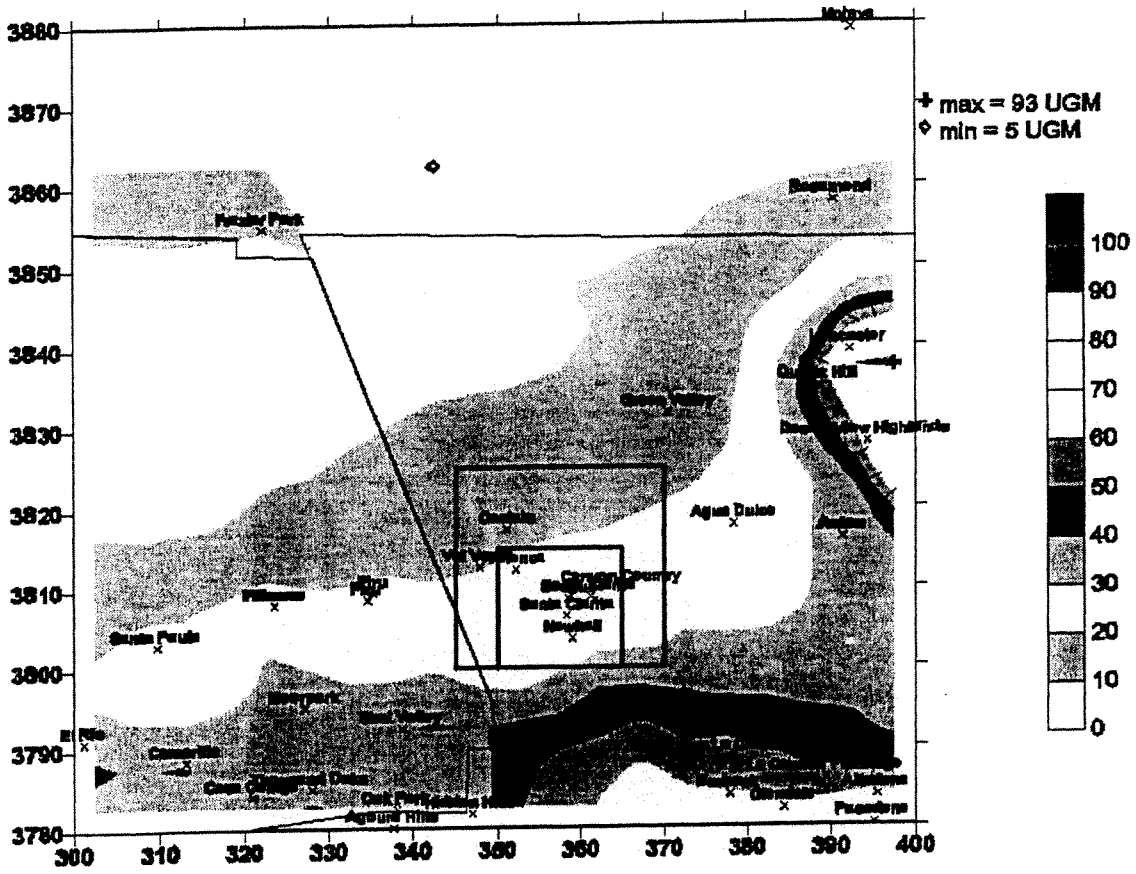
- Base Case
- 9-grid cell (3 x 3) Santa Clarita Valley area Zero-Out Case
- 25-grid cell (5 x 5) Santa Clarita Valley area Zero-Out Case



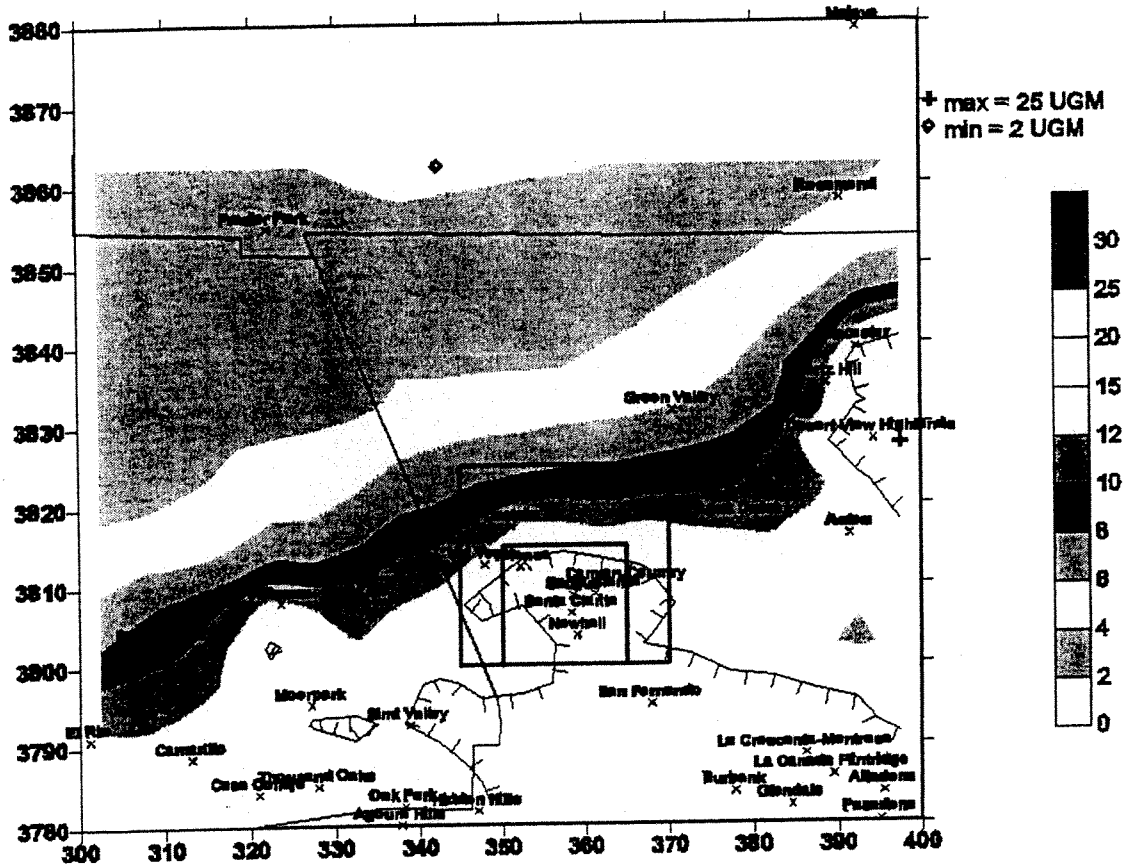
CAMx Annual PM10
April 1998 - March 1999
Base Case



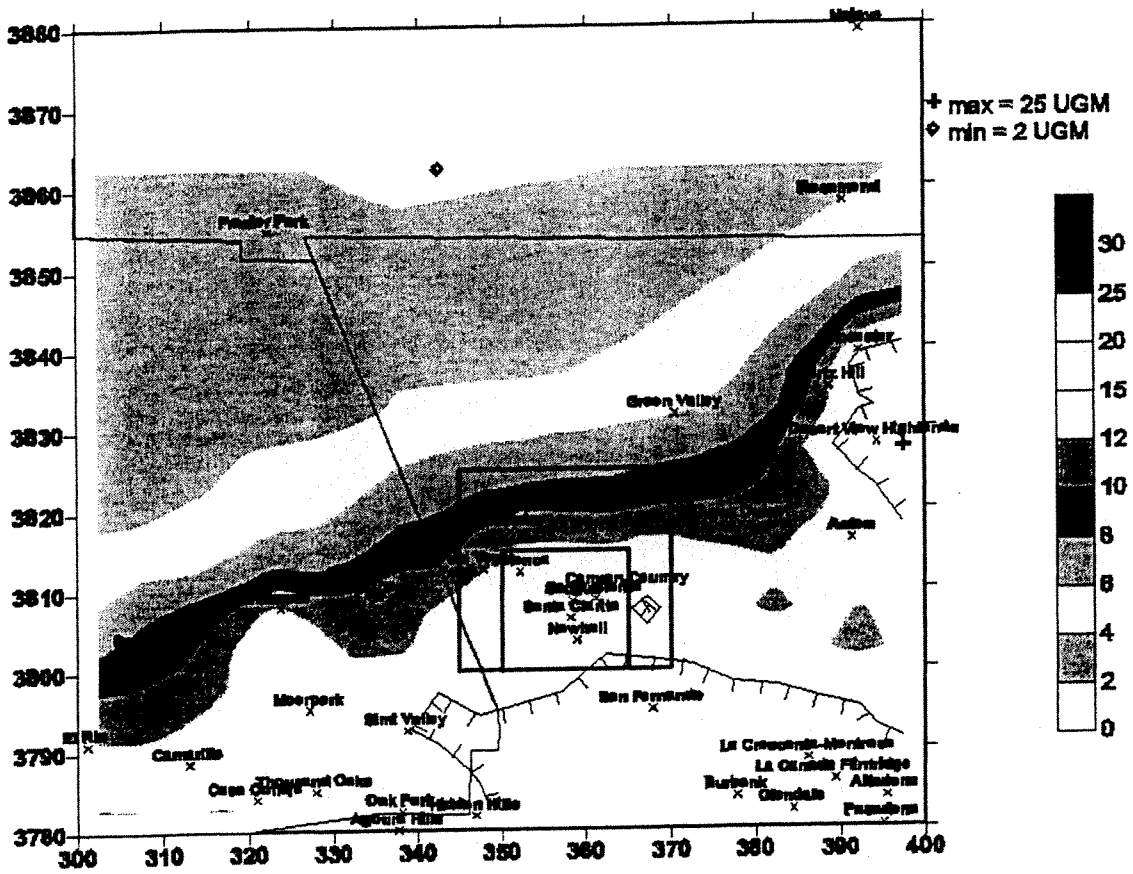
CAMx Annual PM10
April 1998 - March 1999
Base Case without Anthropogenic Emissions from a 3x3 Block over Santa Clarita Valley



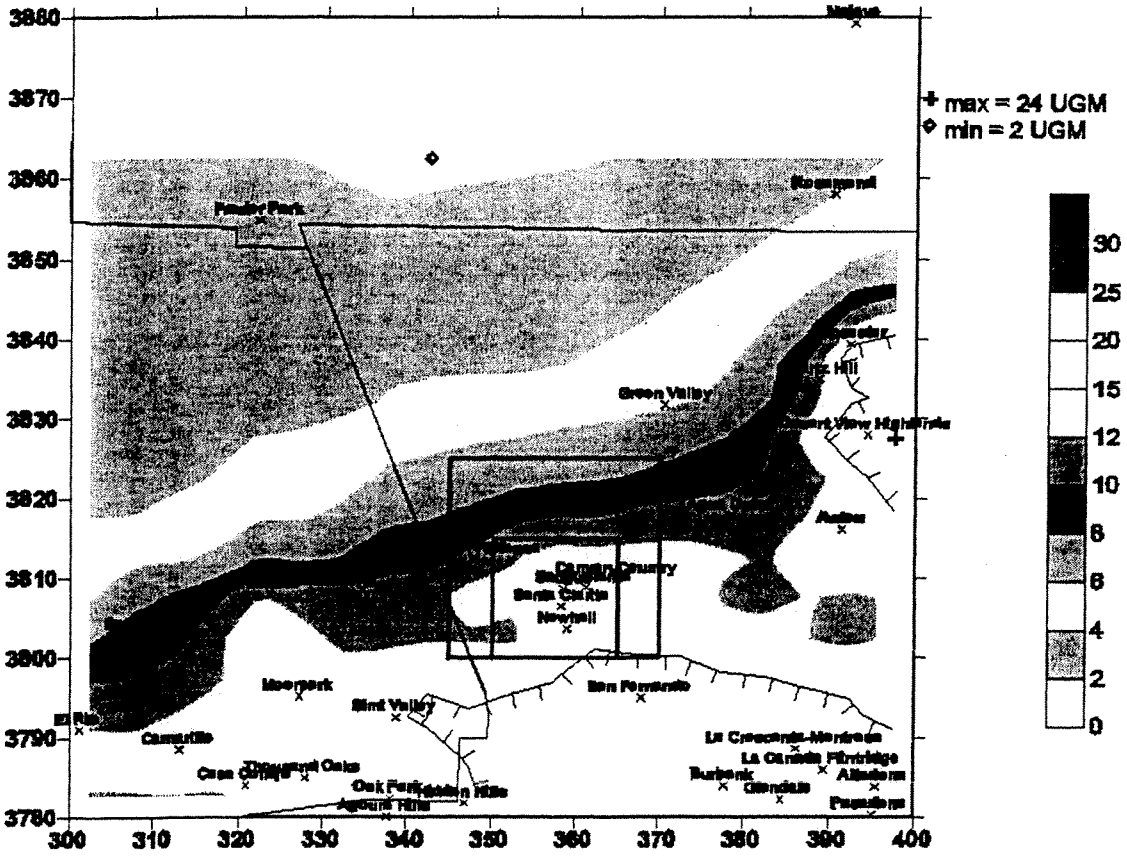
CAMx Annual PM10
April 1998 - March 1999
Base Case without Anthropogenic Emissions from a 5x5 Block over Santa Clarita Valley



CAMx Annual PM25
April 1998 - March 1999
Base Case



CAMx Annual PM25
April 1998 - March 1999
Base Case without Anthropogenic Emissions from a 3x3 Block over Santa Clarita Valley



CAMx Annual PM25
April 1998 - March 1999
Base Case without Anthropogenic Emissions from a 5x5 Block over Santa Clarita Valley

APPENDIX 4.10

Water Service

DRAFT

WATER SUPPLY ASSESSMENT

Landmark Village
Project No. 00-196
Tract Map No. 53108

Prepared for:

The County of Los Angeles
Department of Regional Planning

June 2006

Prepared by

Valencia Water Company

TABLE OF CONTENTS

LIST OF TABLES

1.0 INTRODUCTION

This report provides information necessary to complete a Water Supply Assessment (WSA) for Landmark Village (project). The WSA has been prepared pursuant to the requirements of Senate Bill 610 (Costa; Chapter 643, Stats. 2001) (SB 610), which requires public water agencies, parties or purveyors that may supply water to certain proposed development projects to prepare a WSA for use by the city or county in environmental documentation for such projects, pursuant to the California Environmental Quality Act (CEQA).[1] This document replaces the previously prepared Landmark Village WSA, dated August, 2005. This updated WSA contains information from the 2005 Urban Water Management Plan (2005 UWMP), which was adopted by Castaic Lake Water Agency (CLWA), Valencia Water Company (Valencia) and other water purveyors to replace the prior Amended 2000 UWMP for the Santa Clarita Valley.[2]

The project site is located in the area served by Valencia.[3] This WSA has been prepared by Valencia and is the operator of the public water system that will provide water to the proposed project.[4]

An SB 610 WSA is required for any "project" that is subject to CEQA[5] and proposes, among other things, residential development of more than 500 dwelling units and commercial development having more than 500,000 square feet of floor space.[6] Landmark Village is a qualifying project under this definition.[7] This WSA will provide information to the County of Los Angeles (the County) for its consideration in making a determination as to whether there is sufficient water supply available to serve the project, in addition to existing and planned future uses in the Santa Clarita Valley.[8] The County requested that Valencia prepare this WSA.

This WSA has been prepared by Valencia and approved by its governing body as a draft to be circulated as part of the Draft Environmental Impact Report (EIR) for the Landmark Village project. Valencia will consider public comments on this Draft WSA that are received in connection with the Landmark Village EIR process. This Draft WSA may be revised by

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1 SB 610 amended section 21151.9 of the California Public Resources Code, and amended sections 10631, 10656, 10910, 19811, 19812, and 19815, repealed section 10913, and added and amended section 10657, of the California Water Code.

2 The 2005 UWMP is currently subject to a legal challenge in the form of a petition for writ of mandate and complaint for declaratory and injunctive relief filed in February 2006 by California Water Impact Network and Friends of the Santa Clara River in Los Angles County Superior Court.

3 For purposes of this WSA, Valencia is the "public water system," as defined by Water Code §10912 (b), (c), because it has 3,000 or more service connections and provides piped water to the public for human consumption.

4 Water Code §10910(b).

5 Public Resources Code §21080.

6 Water Code §10912(a)(1)(2). This section also includes other types of development that are defined as a "project" by this section of the code.

7 Water Code §10912(a)(1)(2). This section also includes other types of development that are defined as a "project" by this section of the code.

8 Water Code §10911(c).

Valencia in response to public comments. Valencia's governing body may then approve the Final WSA prior to the County's certification of the Landmark Village EIR.

1.1 Landmark Village Project

The applicant is requesting approval of the Landmark Village residential and commercial mixed-use project (County Project No. 00-196) and associated actions for the entitlements necessary to develop the approximate 292-acre project site. The project is a component of the approved Newhall Ranch Specific Plan, and will consist of a maximum total of 1,444 residential home sites, 1,033,000 square feet of retail/commercial/mixed uses, an elementary school, a community park, and other associated amenities. Public and private recreational facilities will be provided, and a network of hiking/biking trails will extend both throughout the project site and along the Santa Clara River. Buildout of the proposed project would result in the following land use mix:

- 308 single-family residential home sites;
- 1,136 multi-family residential home sites;
- 1,033,000 square feet of retail/commercial/mixed-uses;
- 9-acre elementary school;
- 16-acre Community Park;
- public and private recreational facilities;
- trails; and
- road improvements.

At build-out, total water demand for the proposed Landmark Village project is estimated to be approximately 1,038 acre-feet per year (afy), which includes a potable water demand of 702 afy and a recycled or non-potable water demand of 336 afy.

1.2 Purpose of WSA

The purpose of the WSA is to provide an analysis of whether Valencia's water system has sufficient projected water supplies to meet the projected demands of the project, in addition to existing and planned future uses in the Santa Clarita Valley.[9] Specifically, this WSA evaluates whether the total projected water supply determined to be available during normal, single dry, and multiple dry water years over the next 20 years, will meet the projected water demand associated with the proposed project, in addition to existing and planned future water uses, including agriculture and manufacturing uses.[10] If the water supply is anticipated to be insufficient, the WSA must describe measures being taken to obtain an adequate supply.[11] The WSA is required to be included in the Environmental Impact Report (EIR) prepared by the County for the proposed project pursuant to CEQA.[12]

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9 Water Code §10910(c).

10 Water Code §10910(c)(4).

11 Water Code §10911(a).

12 Water Code §10911(b), (c).

1.3 Castaic Lake Water Agency

CLWA is a public water agency that serves an area of 195 square miles in Los Angeles and Ventura counties. CLWA is a water wholesaler that provides about half of the water used by Santa Clarita households and businesses. CLWA operates two potable water treatment plants, storage facilities, and over 17 miles of transmission pipelines. CLWA supplements local groundwater supplies with State Water Project (SWP) water from Northern California. This water is treated and delivered to the local water retailers in the Santa Clarita Valley. The four retail purveyors served by CLWA are Valencia, Los Angeles County Water District #36, Newhall County Water District (NCWD) and Santa Clarita Water Division of CLWA (SCWD).

CLWA also delivers highly treated recycled water from one of the two existing water reclamation plants in the Santa Clarita Valley owned by the Sanitation Districts of Los Angeles County. The recycled water is used to meet a portion of the non-potable water demands (golf courses and landscape irrigation, etc.) in the Santa Clarita Valley.

1.4 Valencia Water Company

Valencia is an investor-owned water utility regulated by the California Public Utilities Commission (CPUC). Valencia's current service area includes a mix of residential and commercial land uses, mostly comprised of single-family homes, apartments, condominiums and a number of local shopping centers and neighborhood commercial developments. Valencia supplies water from groundwater wells, CLWA imported water and recycled water. The City of Santa Clarita and Los Angeles County special irrigation districts are the largest overall water users for irrigation purposes. Magic Mountain Amusement Park is the largest individual commercial water user. The service area includes three golf courses, the Valencia Industrial Center, and the Valencia Commerce Center. All water services are metered, with the exception of fire services.

1.5 2005 Urban Water Management Plan

The California Urban Water Management Planning Act (UWMP Act) requires most water utilities to update and submit an Urban Water Management Plan (UWMP) every five years. In 2005, the Valley's UWMP was updated by CLWA, in cooperation with Valencia and the other retail water purveyors. The 2005 UWMP was adopted by CLWA's Board of Directors in November 2005 and by Valencia's Board of Directors in December, 2005. The 2005 UWMP is a compilation of information collected from various water resource documents listed in Section 1.6 including the 2000 UWMP and its amendment completed in January 2005. The 2005 UWMP contains updated information on water use, water resources, recycled water, water quality, reliability planning, demand management measures, best management practices and water shortage contingency planning.

The projected water demand associated with the proposed project was accounted for in the 2005 UWMP. The timing of the project places it within the timeframe for calculating "planned future uses" within the 25 year water supply projection included in the 2005 UWMP. This information is incorporated by reference in this WSA. The build-out of Landmark Village is anticipated to

be completed by 2012 and SB 610 requires the WSA to document the water demand for existing uses, planned future uses and the proposed development. Water Code §10910(c)(2) states that if the proposed project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate the requested information from the urban water management plan in preparing the WSA. The 2005 UWMP projects an annual growth rate in water demand of approximately 2.2 percent over a 25-year period for the Santa Clarita Valley. The project's associated water demand was included by Valencia in the water demand projections contained 2005 UWMP (see Table 2-6 in the 2005 UWMP) and, therefore, is accounted for in the 2005 UWMP.

1.6 Documents Relied upon in Preparing this WSA

The following list identifies the documentation that has been relied upon in the preparation of this WSA. The documents are incorporated by reference in this WSA as if fully set forth herein. Copies of the referenced documents are available for review at Valencia Water Company by contacting Robert J. DiPrimio, (661) 295-6501, and can be obtained upon the payment of the costs of reproduction:

- *2005 Urban Water Management Plan*, prepared for Castaic Lake Water Agency, CLWA's Santa Clarita Division, Newhall County Water District, Valencia Water Company, Los Angeles County Waterworks District No. 36, prepared by Black & Veatch, Nancy Clemm, Kennedy Jenks Consultants, Jeff Lambert, Luhdorff & Scalmanini, Richard Slade and Associates, November 2005.
- *Analysis of Groundwater Basin Yield, Upper Santa Clara River Groundwater Basin, East Subbasin, Los Angeles County, California*, prepared in support of the August 2001 Memorandum of Understanding between the Upper Basin Water Purveyors and the United Water Conservation District, prepared by CH2MHill in cooperation with Luhdorff & Scalmanini, August 2005.
- *Interim Remedial Action Plan, prepared for Castaic Lake Water Agency, Santa Clarita California* prepared by Kennedy/Jenks Consultants, December 2005.
- *Potential Capture of Perchlorate Contamination Valencia Water Company's Wells E14-E17,* prepared by Luhdorff and Scalmanini, Consulting Engineers, April 2006 (L&S 2006).
- *Impact and Response to Perchlorate Contamination, Valencia Water Company Well Q2*, prepared by Luhdorff & Scalmanini Consulting Engineers, April 2005 (Q2 Report).
- *Santa Clarita Valley Water Report 2005*, April 2006, prepared by Luhdorff and Scalmanini, Consulting Engineers for CLWA, Los Angeles County Waterworks District #36, Newhall County Water District, and Valencia Water Company (SCVWR 2006).
- *Santa Clarita Valley Water Report 2004*, May 2005, prepared by Luhdorff and Scalmanini, Consulting Engineers for CLWA, Los Angeles County Waterworks District #36, Newhall County Water District, and Valencia Water Company (SCVWR 2005).

- *Santa Clarita Valley Water Report 2003*, May 2004, prepared by Luhdorff and Scalmanini, Consulting Engineers for CLWA, Los Angeles County Waterworks District #36, Santa Clarita Water Division of CLWA, and Valencia Water Company.
- *Santa Clarita Valley Water Report 2002*, April 2003, prepared by Luhdorff and Scalmanini, Consulting Engineers for CLWA, Los Angeles County Waterworks District #36, Newhall County Water District, and Valencia Water Company.
- *2001 Update Report, Hydrogeologic Conditions in the Alluvial and Saugus Formation Aquifer Systems*, prepared by Richard C. Slade & Associates LLC, July 2002 (Slade 2002).
- *The State Water Project Delivery Reliability Report, Public Review Draft*, California Department of Water Resources, November 2005.
- CLWA Capital Improvement Program, Kennedy/Jenks Consultants, 2005.
- *Groundwater Management Plan - Santa Clara River Valley Groundwater Basin, East Subbasin*, prepared for CLWA by Luhdorff & Scalmanini Consulting Engineers, December 2003.
- *Regional Groundwater Flow Model for the Santa Clarita Valley: Model Development and Calibration*, prepared by CH2MHill for Upper Basin Water Purveyors (CLWA, CLWA Santa Clarita Water Division, Newhall County Water District and Valencia Water Company), April 2004.
- *Analysis of Perchlorate Containment in Groundwater Near the Whittaker-Bermite Property, Santa Clarita, California*, prepared by CH2MHill, December 2004, for Upper Basin Water Purveyors in Support of the Department of Health Services 97-005 Permit Application.
- *Analysis of Near-Term Groundwater Capture Areas for Production Wells Located Near the Whittaker-Bermite Property (Santa Clarita, California)*, prepared by CH2MHill, December 21, 2004, for Upper Basin Water Purveyors in support of the amended 2000 UWMP.
- Water Supply Contracts Between the State of California Department of Water Resources and CLWA, 1963 (plus amendments, including the "Monterey Amendment," 1995, and Amendment No. 18, 1999, which covers the transfer of 41,000 acre-feet of SWP Table A amount from Kern County Water Agency to CLWA).[13]

[13] CLWA's contract rights to SWP water total 95,200 afy, including a water transfer of 41,000 afy approved in 1999 from Wheeler Ridge-Maricopa Water Storage District, a member unit of the Kern County Water Agency. CLWA's EIR prepared in connection with the 41,000 water transfer was challenged in *Friends of the Santa Clara River v. Castaic Lake Water Agency* (Los Angeles Superior Court, Case Number PC018110). On appeal, the Court of Appeal, Second District, held that since the 41,000 afy EIR tiered off the Monterey Agreement EIR that was later decertified, CLWA would also have to decertify its EIR as well and prepare a new EIR (*Friends v. Castaic Lake Water Agency* (2002) 95 Cal. App 4th 1373). CLWA has not been enjoined from using any water that is part of the 41,000 afy transfer. CLWA has since prepared and circulated a new draft EIR for the transfer. The public comment period ended for the draft EIR and two separate hearings were held by CLWA to receive and consider public comments. CLWA approved and certified the new EIR for the transfer on December 22, 2004. Two challenges to the new EIR were filed on January 24, 2005 in the Ventura County Superior Court (*Planning and Conservation League v. CLWA* and *California Water Impact Network v. CLWA*). The new certified EIR remains valid unless affected by a future judgment or order of the court.

- 2002 Semitropic Groundwater Storage Program and Point of Delivery Agreement Among the Department of Water Resources of the State of California, CLWA and Kern County Water Agency.[14]
- 2002 *Recycled Water Master Plan* prepared by Kennedy/Jenks Consultants for CLWA.
- 2003 Semitropic Groundwater Storage Program.
- *Water Management Program*, Valencia Water Company, 2001.
- Nickel Water contract and environmental documentation (*see*, Newhall Ranch Revised Draft Additional Analysis, Volume II, November 2002, Appendix 2.5(b), (c)).
- Newhall Ranch Specific Plan Revised Draft EIR, dated March 8, 1999.
- Newhall Ranch Draft Additional Analysis, Volume I (Text, Figures/Tables) and Volumes II-III (Appendices), dated April 2001.
- Newhall Ranch Final Additional Analysis, Volume I (Comments and Responses, *etc*.) and Volume II (Appendix), dated October 2001.
- Newhall Ranch Draft Additional Analysis, Volume I (Text, Figures/Tables/Appendix) and Volume II (Appendix), dated November 2002.
- Newhall Ranch Final Additional Analysis, Volume III (Comments and Responses, *etc*.) and Volume IV (Appendix), dated March 2003.
- Newhall Ranch Revised Additional Analysis, Volume V (Revised Text, Figures and Tables), dated March 2003.
- Newhall Ranch Final Additional Analysis, Volume VI (Comments and Responses, *etc*.) and Volume VII (Appendix), dated May 2003.
- Newhall Ranch Revised Additional Analysis, Volume VIII (Final Revised Text, Figures and Tables), dated May 2003.
- Draft and Final Environmental Impact Report - Supplemental Water Project Transfer of 41,000 Acre-Feet of State Water Project Table A Amount, prepared by Science Applications International Corporation for CLWA, June 2004.

2.0 WATER SUPPLY ASSESSMENT

The preparation of this WSA relies upon information from numerous water resource and planning documents listed in Section 1.6 and the 2005 UWMP. Based on this supporting information, Valencia concludes that there is sufficient water supply available for the project at buildout, in addition to existing and other planned future uses in the Santa Clarita Valley.

[14] Due to availability of SWP water during 2002, CLWA entered into a groundwater banking agreement in 2002. Pursuant to that agreement, 24,000 acre-feet of SWP water, contracted by CLWA, was stored within the Semitropic Groundwater Storage Program in Kern County so that CLWA may withdraw the water in future years of shortage. The Negative Declaration prepared by CLWA was challenged in *California Water Network v. Castaic Lake Water Agency* (Ventura County Superior Court Case No. CIV 215327). The trial court upheld the adequacy of the Negative Declaration. That case was appealed and on May 4, 2006 a decision affirming the Judgment was issued by the Second District Court of Appeal, Sixth Division, Case No. B177978.

Valencia and CLWA have existing water entitlements, rights, and contracts to meet future demand as needed over time, and has committed sufficient capital resources and planned investments in various water programs and facilities to serve all of its existing and planned customers. Valencia also has identified an operational strategy combined with a prudent and flexible management approach to ensure water reliability.

In 2005, Valencia's service area-wide demands were approximately 30,000 afy, and the total municipal demand for both surface and groundwater in the CLWA service area was approximately 68,200 afy. Based on information provided by the project's consultant, Valencia has estimated that the project will require approximately 702 afy of potable water and 336 afy of non-potable (recycled) water at build-out. The project is part of the approved Newhall Ranch Specific Plan. The Specific Plan identified four primary sources of supply: (a) Newhall Ranch agricultural water (from the Alluvial aquifer); (b) recycled water from the Newhall Ranch Water Reclamation Plant (Newhall WRP) and CLWA; (c) imported water supply referred to as Nickel Water (not a part of the SWP); and (d) Semitropic Groundwater Bank. Additional information about these sources and their use is discussed in the previously certified Newhall Ranch Specific Plan Program EIR (March 9, 1999) and the Newhall Ranch Revised Additional Analysis, Vol. VIII (May 2003).

Provided below is a summary of water supply and demand projections presented in the 2005 UWMP that address the requirements of SB 610 for this project. Two of the primary sources of water identified in the approved Newhall Ranch Specific Plan are included as part of the water supplies reported in the 2005 UWMP. The Newhall Ranch agricultural water is included with the existing Alluvial aquifer supplies resulting in no net increase in groundwater use from build-out of the project. Recycled water from the Newhall Ranch WRP and CLWA's recycled water are also included as part of the planned water supplies for the project and included in the 2005 UWMP. The other project supplies (imported water referred to as Nickel Water and the Semitropic Groundwater Bank) identified in the Specific Plan are available, but not included in this analysis because those water supplies are not needed to meet the water demand for the proposed Landmark Village project.

2.1 Average/Normal Year, Single Dry Year and Multiple Dry Year Water Assessment

The amount of available water supply is summarized in Table 1 below. Table 1 is not intended to be an operational plan for how supplies would be used in a particular year, but rather identifies the complete range of water supplies available under a range of hydrologic conditions. Diversity of supply allows Valencia and the purveyors the option of drawing on multiple sources of supply in response to changing conditions such as varying climatic conditions (average/normal years, single dry years, multiple dry years), natural disasters and contamination with substances such as perchlorate. It is the stated goal of Valencia, CLWA and the other retail water purveyors to deliver a reliable and high quality water supply for their customers, even during dry periods. Based on conservative water supply and demand assumptions over the next 25 years in combination with conservation of non-essential demand during certain dry years, the water supply plan described in the 2005 UWMP successfully achieves this goal.

Table 1

Summary of Current and Planned Water Supplies and Banking Programs(1)

Water Supply Sources	Supply (af)					
	2005	2010	2015	2020	2025	2030
Existing Supplies						
Wholesale (Imported)	*70,380*	*73,660*	*75,560*	*76,080*	*77,980*	*77,980*
SWP Table A Supply (2)	65,700	67,600	69,500	71,400	73,300	73,300
Flexible Storage Account (CLWA) (3)	4,680	4,680	4,680	4,680	4,680	4,680
Flexible Storage Account (Ventura County) (3) (4)	0	1,380	1,380	0	0	0
Local Supplies						
Groundwater	*40,000*	*46,000*	*46,000*	*46,000*	*46,000*	*46,000*
Alluvial Aquifer	35,000	35,000	35,000	35,000	35,000	35,000
Saugus Formation	5,000	11,000	11,000	11,000	11,000	11,000
Recycled Water	1,700	1,700	1,700	1,700	1,700	1,700
Total Existing Supplies	112,080	121,360	123,260	123,780	125,680	125,680
Existing Banking Programs (3)						
Semitropic Water Bank (5)	50,870	50,870	0	0	0	0
Rosedale-Rio Bravo (8)	20,000	20,000	20,000	20,000	20,000	20,000
Total Existing Banking Programs	70,870	70,870	20,000	20,000	20,000	20,000
Planned Supplies						
Local Supplies						
Groundwater	*0*	*10,000*	*10,000*	*20,000*	*20,000*	*20,000*
Restored wells (Saugus Formation)	0	10,000	10,000	10,000	10,000	10,000
New Wells (Saugus Formation)	0	0	0	10,000	10,000	10,000
Recycled Water (6)	0	0	1,600	6,300	11,000	15,700
Transfers						
Buena Vista-Rosedale (7)	0	11,000	11,000	11,000	11,000	11,000
Total Planned Supplies	0	21,000	22,600	37,300	42,000	46,700
Planned Banking Programs (3)						
Additional Planned Banking	0	0	20,000	20,000	20,000	20,000
Total Planned Banking Programs	0	0	20,000	20,000	20,000	20,000

Source: 2005 UWMP

Notes:

(1) The values shown under "Existing Supplies" and "Planned Supplies" are supplies projected to be available in average/normal years. The value under "Existing Banking Programs" and "Planned Banking Programs" are either total amounts currently in storage, or the maximum capacity of program withdrawals.

(2) SWP supplies are calculated by multiplying CLWA's annual Table A Amount of 95,200 af by percentages of average deliveries projected to be available from Table 6-5 of DWR's "Excerpts from Working Draft of 2005 State Water Project Delivery Reliability Report (November 2005).

(3) Supplies show are total amounts that can be withdrawn, and would typically be used only during dry years.

(4) Initial term of the Ventura County entities' flexible storage account is ten years (from 2006 to 2015).

(5) Supplies shown are the total amount currently in storage, and would typically be used only during dry years. Once the current storage amount is withdrawn, this supply would no longer be available and, in any event, is not available after 2013.

(6) Recycled water supplies based on projections provided in the 2005 UWMP, Chapter 4, Recycled Water.
(7) CLWA is in the process of acquiring this supply, primarily to meet the potential demands of future annexations to the CLWA service area. This acquisition is consistent with CLWA's annexation policy under which it will not approve potential annexations unless additional water supplies are acquired. Currently, proposed annexations have a demand for about 4,000 afy of this supply which, if approved, would leave the remaining 7,000 afy available for potential future annexations. Unless and until any such annexations are actually approved, this supply will be available to meet demands within the existing CLWA service.
(8) CLWA banked 20,000 af in late 2005 in the Rosedale-Rio Bravo Water Banking and Recovery Program.

The subject of perchlorate contamination and its impact on groundwater supplies was extensively discussed in the 2005 UWMP. The source of the contamination is believed to be the Whittaker-Bermite property located in the center of the Santa Clarita Valley and used as a munitions manufacturing facility for over 50 years. Significant progress has been made toward characterizing the extent of perchlorate contamination and on-going activities to implement the necessary measures for on-site clean-up and off-site groundwater containment and treatment. The reliability analysis provided in the 2005 UWMP takes into account the impact on water supply operations while the planning, design and construction of perchlorate treatment, containment and other restoration activities are implemented. For additional information on this topic, see Chapters 5 and 6, Appendixes D and E in the 2005 UWMP.

2.1.1 Normal Water Year

Table 2 summarizes the water supplies available to Valencia, CLWA and the other retail water purveyors over the 25 year planning period during an average/normal year. The water supplies are broken down into existing and planned water supply sources, including wholesale (imported) water, local supplies, transfers, and banking programs. Demands are shown with and without the effects of an assumed 10 percent urban demand reduction resulting from conservation.

Table 2

Projected Average/Normal Year Supplies and Demands

Water Supply Sources	Supply (af)				
	2010	2015	2020	2025	2030
Existing Supplies					
Wholesale (Imported)	*67,600*	*69,500*	*71,400*	*73,300*	*73,300*
SWP Table A Supply (1)	67,600	69,500	71,400	73,300	73,300
Flexible Storage Account (CLWA) (2)	0	0	0	0	0
Flexible Storage Account (Ventura County) (2)	0	0	0	0	0
Local Supplies					
Groundwater	*46,000*	*46,000*	*46,000*	*46,000*	*46,000*
Alluvial Aquifer	35,000	35,000	35,000	35,000	35,000
Saugus Formation	11,000	11,000	11,000	11,000	11,000
Recycled Water	1,700	1,700	1,700	1,700	1,700
Total Existing Supplies	115,300	117,200	119,100	121,000	121,000
Existing Banking Programs					
Semitropic Water Bank (2)	0	0	0	0	0
Rosedale-Rio Bravo (2)	0	0	0	0	0
Total Existing Banking Programs	0	0	0	0	0
Planned Supplies					
Local Supplies					
Groundwater	*0*	*0*	*0*	*0*	*0*
Restored wells (Saugus Formation) (2)	0	0	0	0	0
New Wells (Saugus Formation) (2)	0	0	0	0	0
Recycled Water (3)	0	1,600	6,300	11,000	15,700
Transfers					
Buena Vista-Rosedale (4)	11,000	11,000	11,000	11,000	11,000
Total Planned Supplies	11,000	12,600	17,300	22,000	26,700
Planned Banking Programs					
Additional Planned Banking (2)	0	0	0	0	0
Total Planned Banking Programs	0	0	0	0	0
Total Existing and Planned Supplies and Banking	126,300	129,800	136,400	143,000	147,700
Total Estimated Demand (w/o conservation) (5)	100,050	109,400	117,150	128,400	138,300
Conservation (6)	(8,600)	(9,700)	(10,700)	(11,900)	(12,900)
Total Adjusted Demand	91,450	99,700	106,450	116,500	125,400

Source: 2005 UWMP

Notes:

(1) SWP supplies are calculated by multiplying CLWA's Table A Amount of 95,200 af by percentages of average deliveries projected to be available (71% in 2010 and 77% in 2025/2030, taken from Table 6-5 of DWR's "Excerpts from Working Draft of 2005 State Water Project Delivery Reliability Report" (November 2005).

(2) Not needed during average/normal years.

(3) Recycled water supplies based on projections provided in the 2005 UWMP, Chapter 4, Recycled Water.

(4) CLWA is in the process of acquiring this supply, primarily to meet the potential demands of future annexations to the CLWA service area. This acquisition is consistent with CLWA's annexation policy under which it will not approve potential annexations unless additional water supplies are acquired. Currently proposed annexations have a demand for about 4,000 afy of this supply which, if approved, would leave the remaining 7,000 afy available to meet demands within the existing CLWA service area.

(5) Demands are for uses within the existing CLWA service area. Demands for any annexations to the CLWA service area will be added if and when such annexations are approved. Currently proposed annexations have a demand for about 4,000 afy and, given supplies CLWA is in the process of acquiring, potential future annexations with demands up to an additional 7,000 afy could eventually be approved (see Footnote 4).

(6) Assumes 10 percent reduction on urban portion of total demand resulting from conservation best management practices, as discussed in the 2005 UWMP, Chapter 7.

2.1.2 Single-Dry Year

Table 3 summarizes the existing and planned water supplies available to Valencia, CLWA and the other retail water purveyors over the 25 year planning period should a single-dry event occur, similar to the drought that occurred in California in 1977. Demand during single-dry years was assumed to increase by 10 percent. During prolonged dry periods, experience indicates that a reduction in demand of 10 percent is achievable through the implementation of conservation best management practices.

Table 3

Projected Single-Dry Year Supplies and Demands

Water Supply Sources	Supply (af)				
	2010	2015	2020	2025	2030
Existing Supplies					
Wholesale (Imported)	*9,860*	*9,860*	*8,480*	*9,480*	*9,480*
SWP Table A Supply (1)	3,800	3,800	3,800	4,800	4,800
Flexible Storage Account (CLWA)	4,680	4,680	4,680	4,680	4,680
Flexible Storage Account (Ventura County) (2)	1,380	1,380	0	0	0
Local Supplies					
Groundwater	*47,500*	*47,500*	*47,500*	*47,500*	*47,500*
Alluvial Aquifer	32,500	32,500	32,500	32,500	32,500
Saugus Formation	15,000	15,000	15,000	15,000	15,000
Recycled Water	1,700	1,700	1,700	1,700	1,700
Total Existing Supplies	59,060	59,060	57,680	58,680	58,680
Existing Banking Programs					
Semitropic Water Bank (3)	17,000	0	0	0	0
Rosedale-Rio Bravo (6)	20,000	20,000	20,000	20,000	20,000
Total Existing Banking Programs	37,000	20,000	20,000	20,000	20,000
Planned Supplies					
Local Supplies					
Groundwater	*10,000*	*10,000*	*20,000*	*20,000*	*20,000*
Restored wells (Saugus Formation)	10,000	10,000	10,000	10,000	10,000
New Wells (Saugus Formation)	0	0	10,000	10,000	10,000
Recycled Water (4)	0	1,600	6,300	11,000	15,700
Transfers					
Buena Vista-Rosedale (5)	11,000	11,000	11,000	11,000	11,000
Total Planned Supplies	21,000	22,600	37,300	42,000	46,700
Planned Banking Programs					
Additional Planned Banking (7)	0	20,000	20,000	20,000	20,000
Total Planned Banking Programs	0	20,000	20,000	20,000	20,000
Total Existing and Planned Supplies and Banking	117,060	121,660	134,980	140,680	145,380
Total Estimated Demand (w/o conservation) (8) (9)	110,100	120,300	128,900	141,200	152,100
Conservation (10)	(9,500)	(10,700)	(11,700)	(13,100)	(14,200)
Total Adjusted Demand	100,600	109,600	117,200	128,100	137,900

Source: 2005 UWMP

Notes:

(1) SWP supplies are calculated by multiplying CLWA's Table A Amount of 95,200 af by percentages of single dry deliveries projected to be available for the worst case single dry year of 1977 (4% in 2010 and 5% in 2025/2030), taken from Table 6-5 of DWR's "Excerpts from Working Draft of 2005 State Water Project Delivery Reliability Report" (November 2005).

(2) Initial term of the Ventura County Entities' flexible storage account is ten years from (2006 to 2015).

(3) The total amount of water currently in storage is 50,870 af, available through 2013. Withdrawals of up to this amount are potentially available in a dry year, but given possible competition for withdrawal capacity with other Semitropic banking partners in extremely dry years, it is assumed here that about one third of the total amount stored could be withdrawn.

(4) Recycled water supplies based on projections provided in the 2005 UWMP, Chapter 4, Recycled Water.

(5) CLWA is in the process of acquiring this supply, primarily to meet the potential demands of future annexations to the CLWA service area. This Acquisition is consistent with CLWA's annexation policy under which it will not approve potential annexations unless additional water supplies are acquired. Currently proposed annexations have a demand for about 4,000 afy of this supply which, if approved, would leave the remaining 7,000 afy available for potential future annexations. Unless and until any such annexations are actually approved, this supply will be available to meet demands within the existing CLWA service area.

(6) CLWA banked 20,000 af in late 2005 in the Rosedale-Rio Bravo Water Banking and Recovery Program by CLWA Board of Directors.

(7) Assumes additional planned banking supplies available by 2014.

(8) Assumes increase in total demand of 10 percent during single-dry years.

(9) Demands are for uses within the existing CLWA service area. Demands for any annexations to the CLWA service area will be added if and when such annexations are approved. Currently proposed annexations have a demand for about 4,000 afy and, given supplies CLWA is in the process of acquiring, potential future annexations with demands up to an additional 7,000 afy could eventually be approved (see Footnote 5).

(10) Assumes 10 percent reduction on urban portion of total normal year demand resulting from conservation best management practices [urban portion of total normal year demand x 1.10] * 0.10), as discussed in the 2005 UWMP, Chapter 7.

2.1.3 Multiple Dry Years

Table 4 summarizes the existing and planned water supplies available to Valencia, CLWA and the other retail water purveyors over the 25 year planning period should a four year multiple dry year event occur, similar to the drought that occurred in California during the years 1931 to 1934. Demand during dry years was assumed to increase by 10 percent. During prolonged dry periods, experience indicates that a reduction in demand of 10 percent is achievable through the implementation of conservation best management practices.

Table 4

Projected Multiple-Dry Year Supplies and Demands (1)

Water Supply Sources	2010	2015	2020	2025	2030
Existing Supplies					
Wholesale (Imported)	*32,010*	*32,910*	*32,570*	*32,570*	*32,570*
SWP Table A Supply (2)	30,500	31,400	31,400	31,400	31,400
Flexible Storage Account (CLWA) (3)	1,170	1,170	1,170	1,170	1,170
Flexible Storage Account (Ventura County) (3)	340	340	0	0	0
Local Supplies					
Groundwater	*47,500*	*47,500*	*47,500*	*47,500*	*47,500*
Alluvial Aquifer	32,500	32,500	32,500	32,500	32,500
Saugus Formation (4)	15,000	15,000	15,000	15,000	15,000
Recycled Water	1,700	1,700	1,700	1,700	1,700
Total Existing Supplies	81,210	82,110	81,770	81,770	81,770
Existing Banking Programs					
Semitropic Water Bank (3)	12,700	0	0	0	0
Rosedale-Rio Bravo (7) (8)	5,000	15,000	15,000	15,000	15,000
Total Existing Banking Programs	17,700	15,000	15,000	15,000	15,000
Planned Supplies					
Local Supplies					
Groundwater	*6,500*	*6,500*	*6,500*	*6,500*	*6,500*
Restored wells (Saugus Formation) (4)	6,500	6,500	5,000	5,000	5,000
New Wells (Saugus Formation) (4)	0	0	1,500	1,500	1,500
Recycled Water (5)	0	1,600	6,300	11,000	15,700
Transfers					
Buena Vista-Rosedale (6)	11,000	11,000	11,000	11,000	11,000
Total Planned Supplies	17,500	19,100	23,800	28,500	33,200
Planned Banking Programs					
Additional Planned Banking (8) (9)	0	5,000	15,000	15,000	15,000
Total Planned Banking Programs	0	5,000	15,000	15,000	15,000
Total Existing and Planned Supplies and Banking	116,410	121,210	135,570	140,270	144,970
Total Estimated Demand (w/o conservation) (10) (11)	110,100	120,300	128,900	141,200	152,100
Conservation (12)	(9,500)	(10,700)	(11,700)	(13,100)	(14,200)
Total Adjusted Demand	100,600	109,600	117,200	128,100	137,900

Source: 2005 UWMP

Notes:

(1) Supplies shown are annual averages over four consecutive dry years (unless otherwise noted).

(2) SWP supplies are calculated by multiplying CLWA's Table A Amount of 95,200 af by percentages of deliveries projected to be available for the worst case four-year drought of 1931-1934 (32% in 2010 and 33% in 2025/2030), taken from Table 6-5 of DWR's

"Excerpts from Working Draft of 2005 State Water Project Delivery Reliability Report" (November 2005).

(3) Based on total amount of storage available divided by 4 (4-year dry period). Initial term of the Ventura County entities' flexible storage account is ten years (from 2006 to 2015).

(4) Total Saugus pumping is the average annual amount that would be pumped under the groundwater operating plan, as summarized in Table 3-6 ([11,000+15,000+25,000+35,000]/4).

(5) Recycled water supplies based on projections provided in the 2005 UWMP, Chapter 4, Recycled Water.

(6) CLWA is in the process of acquiring this supply, primarily to meet the potential demands of future annexations to the CLWA service area. This acquisition is consistent with CLWA's annexation policy under which it will not approve potential annexations unless additional water supplies are acquired. Currently, proposed annexations have a demand for about 4,000 afy of this supply which, if approved, would leave the remaining 7,000 afy available for potential future annexations. Unless and until any such annexations are actually approved, this supply will be available to meet demands within the existing CLWA service area.

(7) CLWA banked 20,000 af in late 2005 in the Rosedale-Rio Bravo Water Banking and Recovery Program.

(8) Average dry year period supplies could be up to 20,000 af for each program depending on storage amounts at the beginning of the dry period.

(9) Assumes additional planned banking supplies available by 2014.

(10) Assumes increase in total demand of 10 percent during dry years.

(11) Demands are for uses within the existing CLWA service area. Demands for any annexations to the CLWA service area will be added if and when such annexations are approved. Currently proposed annexations have a demand for about 4,000 afy and, given supplies CLWA is in the process of acquiring, potential future annexations with demands up to an additional 7,000 afy could eventually be approved (see Footnote 6).

(12) Assumes 10 percent reduction on urban portion of total normal year demand resulting from conservation best management practices ([urban portion of total normal year demand x 1.10] * 0.10), as discussed in the 2005 UWMP, Chapter 7.

3.0 IDENTIFICATION OF EXISTING WATER SUPPLY SOURCES

3.1 Annual Existing Water Supply Entitlements, Water Rights, or Water Service Contracts

The first substantive "content" requirement for a WSA is the identification and description of the existing water supply sources in the public water system that will serve the project. Water Code §10910(d) requires that the WSA identify any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and describe the quantities of water received in prior years by the public water system. The identification of existing water supplies must be demonstrated by providing information related to the following:

- Written contracts or other proof of entitlement to an identified water supply;
- Copies of a capital outlay program for financing the delivery of a water supply that has been adopted by the public water system;
- Federal, state, and local permits for construction of necessary infrastructure associated with delivering the water supply; and
- Any necessary regulatory approvals that are required in order to be able to convey or deliver the water supply.

The current water supply for the Santa Clarita Valley is derived from five primary sources:

- Groundwater from the Alluvial aquifer;
- Groundwater from the Saugus Formation;
- Imported SWP Water;
- Dry year Groundwater Banking Programs; and
- Recycled Water.

Within the CLWA service area, these sources of water supply can be characterized as: (1) *local supplies*, consisting of groundwater and recycled water; and (2) *imported supplies*, transported via the SWP and consisting of SWP contract amounts and dry year supplies delivered from groundwater banking programs. As required by SB 610 (Water Code §10910(d)), Chapter 2 of the 2005 UWMP and the 2005 Santa Clarita Valley Water Report summarizes the quantities of water used by each of the water purveyors in the Santa Clarita Valley to meet water demands since importation of SWP water began in 1980.

Potential future water sources include acquisition of additional imported water supplies, recycled water, desalination, storm water runoff, increased short term pumping from the Saugus Formation during dry years and additional groundwater banking programs. Demand side management programs (conservation) are also considered an important component of water supply resulting from efforts by CLWA, Valencia and the other retailers to reduce water demands on a long term basis.

The proposed project has independent rights to several sources of water. They are:

- Newhall Ranch Agricultural Water (from the Alluvial aquifer);
- Recycled Water generated by the project;
- Imported Nickel Water (not a part of the SWP); and
- Semitropic Groundwater Banking Project.

In addition to the independent sources listed above, the proposed project has identified recycled water from CLWA as an additional source of supply for the project.

3.2 Groundwater

Water Code §10910(f) requires a WSA to include specific information describing groundwater resources if the water supply for a proposed project includes groundwater. Over the last 25 years, the water purveyors have developed a groundwater operating plan that includes municipal, agricultural and other smaller uses while maintaining the local Basin in a sustainable condition (i.e., no long term depletion of groundwater or interrelated surface water). This has resulted in preparation of the following important studies funded by the purveyors to ensure sustainability of the local groundwater resources:

1. Slade (2002) updates prior reports and includes a detailed review of the hydrologic conditions and description of groundwater resources available to Valencia and other large municipal and agriculture groundwater producers including SCWD, NCWD, The Newhall Land and Farming Company (Newhall) and the Wayside Honor Ranch operating within the Santa Clara River Valley East Subbasin, one of several subbasins identified along the Santa Clara River in Los Angeles and Ventura counties by Updated Bulletin 118 of the California Department of Water Resources. The shallow aquifer system is designated the Alluvial aquifer and the deeper aquifer is designated the Saugus Formation. Slade reported that both aquifer systems were in good operating condition and not in an overdraft condition. Also included are hundreds of other small scale water producers that account for less than 1 percent of total production from these aquifer systems (SCVWR 2006).

2. In 2003, CLWA in cooperation with Valencia and the other retail water purveyors completed and adopted a Groundwater Management Plan in accordance with Water Code §10753. Among the elements of the adopted Plan is the preparation of annual groundwater management reports, such as the Santa Clarita Valley Water Report, that provides information about local groundwater conditions, SWP supplies, water conservation and recycled water. The Plan also contemplated preparing other technical reports to address specific aspects of basin management. Recently, technical reports have been prepared on the development and calibration of a numerical groundwater flow model, an analysis of perchlorate containment in groundwater and a groundwater yield study of the Upper Basin.

3. In August 2005, work was completed in support of a Memorandum of Understanding (MOU) entered into by the Valencia, CLWA and the other water purveyors and United Water Conservation District. The MOU is a commitment by the water purveyors to expand on the previous knowledge of groundwater conditions in the Upper Basin and, using a regional groundwater flow model, evaluate the long-term sustainability of the purveyor's groundwater operating plan under a range of existing and potential future hydrologic conditions. The primary conclusion of the modeling analysis is that the groundwater operating plan will not cause detrimental short-term or long-term effects to the groundwater and surface water resources in the Santa Clarita Valley and, therefore, is sustainable (Basin Yield Study, 2005).

The following sub-parts respond to specific requirements of Water Code §10910(f):

3.2.1 *Water Code §10910(f)(1). Review of relevant information contained in the urban water management plan.*

Refer to Chapter 3, Water Resources and Appendix C, Groundwater Resources and Yield in the Santa Clarita Valley of the 2005 UWMP for an overview description of the local Alluvial and Saugus Formation aquifer systems, as well as historical and projected production consistent with the purveyor's groundwater operating plan.

3.2.2 *Water Code §10910(f)(2). Description of any groundwater basin or basins from which the proposed project will be supplied, including information concerning adjudication and overdraft.*

Slade (2002) provides a detailed description of the Santa Clara River Valley East Sub-basin (Basin) and the two aquifer systems, the Alluvial aquifer and the Saugus Formation. The report analyzes the operational yield of both aquifers and other parameters of production capacity. A more recent analysis and update of operational yield for both aquifers is included in the Basin Yield Study completed by CH2MHill/Scalmanini in 2005. The Basin is about 22 miles long east to west and 13 miles wide. Slade (2002) estimates that about 200,000 acre-feet (af) of water is in storage in the Alluvial aquifer and approximately 1.41 million af of potentially usable groundwater is present from depths of 500 to 2,500 feet in the Saugus Formation (Slade 1986). More recent information on the thickness of the alluvium and the degree of potential draw down interference between adjacent Saugus Formation and Alluvial aquifer wells has supported a re-calculation of groundwater in storage in the Saugus Formation to approximately 1.65 million af (Slade 2002).

Neither aquifer system is in overdraft at the present time (Slade 2002) (SCVWR 2006) (Basin Yield Study, 2005). In 2003, CLWA with the cooperation of Valencia and the other retail water purveyors completed and adopted a Groundwater Management Plan in accordance with Water Code §10753. The management objectives of the Plan is to ensure the ongoing use of local groundwater by maintaining the Basin in good operating condition (no overdraft), protecting water quality and preventing adverse impacts to surface waters. The groundwater basin has not been adjudicated and has not been identified as overdrafted or projected to be overdrafted by the Department of Water Resources (DWR Bulletin 118, California's Groundwater, 2003, page 98).

3.2.3 *Water Code §10910(f)(3). Description and analysis of the amount and location of groundwater pumped by the public water system for the past 5 years from any groundwater basin from which the proposed project will be supplied.*

During the past 5-year period, Valencia's production averaged approximately 11,200 afy from the Alluvial aquifer and approximately 1,470 afy from the Saugus Formation. See Table II-5 in the 2006 SCVWR for a summary of the historical groundwater production for the past five years by the retail water purveyors.

Total pumpage from the Alluvial aquifer in 2005 was approximately 38,700 af, an increase of about 4,900 af from the preceding year (SCVWR 2006). Of the total Alluvial pumpage in 2005, 26,400 af was for municipal water supply, and the balance, about 12,300 af was for agriculture and other (minor) miscellaneous uses (SCVWR 2006). Of the 12,300 af of agricultural water pumped from the Alluvial aquifer, Newhall pumped about 8,700 af of the total amount. Newhall has produced, for over fifty years, an average annual amount of water from the Alluvial aquifer in excess of 12,000 afy, even in dry and multiple dry years. This long-term pumping history provides assurance that reliable and adequate supplies are available to meet the potable water demand for the project.

Over the last two decades, since the inception of SWP deliveries in 1980, total pumpage from the Alluvial aquifer has ranged from a low of about 20,200 afy (in 1983) to slightly more than 43,400 afy (in 1999) (SCVWR 2006).

The Saugus Formation is not identified as a source of supply for the project. However, the amount and location of water historically pumped from the Saugus Formation is provided here as additional information on the groundwater Basin. Total pumpage from the Saugus Formation in 2005 was 6,500 af, about the same as the preceding year (SCVWR 2006). Of the total Saugus Formation pumpage in 2005, most (6,000 af) was for municipal water supply, and the balance (500 af) was for agricultural and other (minor) uses (SCVWR 2006). Groundwater pumpage from the Saugus peaked in the early 1990s and then declined steadily; pumpage has remained stable, at an average of about 4,800 afy, since 1998 (SCVWR 2005). On a long-term average basis since the importation of SWP water, total pumpage from the Saugus Formation has ranged from a low of about 3,700 afy (in 1999) to a high of nearly 15,000 afy in (1991); average pumpage from 1980 to present has been about 7,000 afy (SCVWR 2006). These numbers are at the lower end of the estimated range of the operational yield of the Saugus Formation.

3.2.4 *Water Code §10910(f)(4). Description and analysis of the amount and location of groundwater that is projected to be pumped by the public water system from any basin from which the proposed project will be supplied.*

See Table 3-8 in the 2005 UWMP for a summary of the range of groundwater production projected by the retail water purveyors. To ensure sustainability, the purveyors have committed that the annual use of groundwater pumped collectively in any given year will not exceed the purveyors' operating plan as described in the Basin Yield Study (August, 2005) and reported annually in the Santa Clarita Valley Water Report.

3.2.5 *Water Code §10910(f)(5). Analysis of the sufficiency of the groundwater from the basin or basins from which the proposed project will be supplied to meet the projected water demand associated with the proposed project.*

In the case of the Newhall Ranch Specific Plan, the project applicant, Newhall, would meet most of the potable water demands of the Specific Plan by using Newhall's groundwater produced from the Alluvial aquifer in Los Angeles County, which is presently committed to agriculture. The amount of water available from this source totals approximately 7,038 afy. The project's potable water demand is estimated to be 702 afy. The water presently used to irrigate crops

would be used to meet all of the potable water needs of the project resulting in no net increase in groundwater use.

Wells supplying groundwater for the project are located along Castaic Creek and over four miles west of the former Whittaker-Bermite site, the area known to be contaminated with ammonium perchlorate. The groundwater supplies for this project and the remaining build-out of Newhall Ranch are not at risk due to perchlorate contamination released from the Whittaker-Bermite property. (L&S 2006.)

As stated previously, the water purveyors have developed a groundwater operating plan to meet the requirements of municipal, agricultural and other smaller uses while maintaining the local Basin in a sustainable condition (i.e., no long term depletion of groundwater or interrelated surface water). The groundwater operating plan is based on the concept that pumping can vary from year to year to allow increased groundwater use in dry year periods and increased recharge during wet periods and collectively assure that the groundwater Basin is adequately replenished through various wet/dry cycles. A description of the groundwater operating plan can be found in the 2005 UWMP or Basin Yield Study (August, 2005). Based on these studies, the groundwater operating plan is a reliable long term component of water supply for the Santa Clarita Valley.

Additional support is provided by Slade (2002). This study concludes that Alluvial aquifer has storage capacity of about 200,000 af, with a sustainable operational yield ranging from 30,000 to 40,000 afy. Slade (2002) concludes that Alluvial aquifer extractions should be reduced to 30,000 to 35,000 afy during dry periods. The total annual groundwater production from the Alluvial aquifer (urban and agricultural production) over the last 10 years has averaged approximately 35,000 afy, about 10 percent higher than estimates of the earlier "practical or perennial yield" without any evidence of undesirable conditions that might be an indication of aquifer overdraft (Slade 2002).

The Saugus Formation is not identified as a source of supply for the project. However, the amount and location of water projected to be pumped from the Saugus Formation is provided here as additional information on the groundwater Basin. As stated above, Slade (2002) concludes that the Saugus Formation has a storage capacity of 1.65 million af, with a sustainable operational yield of 7,500 to 15,000 afy. Slade (2002) and the Basin Yield Study (August, 2005) conclude that Saugus Formation extraction can be increased on an infrequent basis to the range of from 15,000 to 35,000 afy, without creating undesirable conditions. However, the increase to 35,000 afy would be temporary and would need to return to, or be reduced below, the historical range of 7,500 to 15,000 afy once rainfall patterns returned to normal in order to avoid long-term adverse affects to the aquifer. On a long-term average basis since the importation of SWP water, total pumpage from the Saugus Formation has ranged from a low of about 3,700 afy (in 1999) to a high of nearly 15,000 afy (in 1991); average pumpage from 1980 to present has been about 7,000 afy (SCVWR 2006).

As stated in this WSA, an analysis and discussion regarding the perchlorate contamination on the sufficiency of groundwater supplies is contained in the 2005 UWMP. The reliability analysis contained in the 2005 UWMP takes into account the impact of perchlorate on water supply operations while the planning, design and construction of treatment and other restoration activities are implemented.

3.2.6 Sustainability of Existing Groundwater Supplies and Projected Supplies

Groundwater supplies were reviewed in the 2005 UWMP and evaluated in the Basin Yield Study (August 2005) as to whether supply projections were realistic for average and dry conditions. The review made the following critical findings:

(1) Both the Alluvial aquifer and the Saugus Formation are reasonable and sustainable sources at the yields represented in the 2005 UWMP over the next 25 years;

(2) The yields are not overstated and will not deplete or "dry up" the groundwater basin; and

(3) There is no need to reduce the yields for purposes of planning in the context of the 2005 UWMP.

Additionally, the 2005 UWMP and Basin Yield Study (August 2005) concluded that neither aquifer is in overdraft condition, or projected to become overdrafted.

3.3 Additional Project Water Supplies

3.3.1 Nickel Water

Newhall also maintains contractual rights to an additional source of water, referred to as "Nickel Water." The applicant has secured 1,607 afy of potable water under contract with the Nickel Family LLC in Kern County. This water is 100 percent reliable on a year-to-year basis, and not subject to the annual fluctuations that can occur in dry year conditions. The water would be delivered through the Kern County Water Agency and the SWP system. Nickel Water would only be needed on the Specific Plan site in years when all of the Newhall Agricultural Water has been used, which is estimated to occur after the 20th year of project construction. Consequently, this source of water would not be needed to serve the proposed project.

3.3.2 Semitropic Water Storage District Groundwater Banking Project

The project applicant has entered into an agreement to reserve and purchase water storage capacity of up to 55,000 acre-feet in the Semitropic Water Storage District Groundwater Banking Project. Sources of water that can be stored in this banking project include, but are not limited to, Nickel Water, CLWA SWP entitlement and other CLWA water supplies. The stored water could be extracted in dry years in amounts of up to 4,950 afy from the project. This supply will be used as a water source for the Specific Plan in dry years only after the Newhall Agricultural water is fully committed. Consequently, this source is not needed to serve the proposed project.

3.4 Recycled Water

Wastewater that has been highly treated and disinfected can be reused for landscape irrigation. In 1993, CLWA completed a *Reclaimed Water System Master Plan* to use recycled water as a reliable water source to meet a portion of the non-potable demand within Santa Clarita Valley. The Master Plan was updated in 2002, and the amount of recycled water expected to be produced

in the future is approximately 17,000 af per year in 2030 (2005 UWMP). CLWA is currently under contract for 1,700 af per year that became available in 2003.

As the Newhall Ranch Specific Plan is developed, including the Landmark Village project, two sources of recycled water would be available to the project from the Newhall WRP and the existing Valencia WRP. Water from the Newhall WRP and Valencia WRP would be used to meet the non-potable demands of the project. Areas on the site that would use recycled water to meet non-potable demands include common areas, slopes, school landscaped areas and parks. The Newhall WRP is expected to be operational when the proposed project construction is completed. However, it is possible that wastewater generated by the proposed project on a short-term basis would be pumped to the Valencia WRP for treatment. Consequently, initial deliveries of recycled water to the project could be supplied from Valencia WRP on a short-term basis.

2005
URBAN WATER MANAGEMENT PLAN

Prepared for:

Castaic Lake Water Agency (CLWA)
CLWA Santa Clarita Water Division
Newhall County Water District
Valencia Water Company
(Los Angeles County Waterworks District No. 36/Cooperating Agency)

Prepared by:

Black & Veatch :: Nancy Clemm :: Kennedy/Jenks Consultants :: Jeff Lambert :: Luhdorff & Scalmanini Consulting Engineers :: Reiter/Lowry Consultants :: Richard Slade and Associates, L.L.C.

November 2005

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SUMMARY

SUMMARY

The California Urban Water Planning Act (Act) requires most water utilities to update and submit an Urban Water Management Plan (UWMP) every five years. An UWMP is required in order for a water supplier to be eligible for the California Department of Water Resources (DWR) administered State grants and loans and drought assistance. This document presents the 2005 UWMP (Plan) for the Castaic Lake Water Agency (Agency, CLWA) service area, which includes four local retail water purveyors. This regional Plan builds upon previous documents, specifically CLWA's 2000 UWMP and an amendment to the 2000 Plan. Following a general discussion of Plan preparation and general project rationale, information is provided on water use, water resources, recycled water, water quality, reliability planning, demand management measures (DMMs), best management practices (BMPs), and water shortage contingency planning. This summary chapter presents an overview of each chapter in the Plan.

1.0 INTRODUCTION

CLWA's service area includes the service areas of four local retail water agencies. This regional Plan has been prepared for CLWA and three of the purveyors: CLWA Santa Clarita Water Division (SCWD), Newhall County Water District (NCWD), and Valencia Water Company (VWC). The fourth purveyor, Los Angeles County Waterworks District No. 36 (LACWWD #36), does not prepare a plan because it does not provide water to more than 3,000 customers or supply more than 3,000 acre-feet (af) of water annually – the minimum requirements for plan preparation. However, LACWWD #36 participated in the development of the Plan on an "ad-hoc" basis. Chapter 1 describes the purpose of the Plan, discusses Plan implementation, and provides general information about CLWA, the retail water purveyors, and service area characteristics. In response to new documents by DWR, this Plan also acknowledges the potential effects of global warming as a component of water management planning.

2.0 WATER USE

Chapter 2 describes historic and current water usage and the methodology used to project future demands within CLWA's service area. Water usage is divided into sectors such as residential, industrial, institutional, landscape, agricultural, and other purposes. To undertake this evaluation, existing land use data and new housing construction information were compiled from each of the retail water purveyors and projections prepared by "One Valley One Vision" (OVOV), a joint planning effort by the City of Santa Clarita and Los Angeles County Department of Regional Planning (LACDRP). This information was then compared to historical trends for new water service connections and customer water usage. In addition, weather and water conservation effects on historical water usage were factored into the evaluation.

3.0 WATER RESOURCES

Chapter 3 describes the water resources available to CLWA and the retail water purveyors from 2005 to 2030 – the 25-year period covered by the Plan. Resources include: (1) wholesale (imported) water supplies from the State Water Project (SWP), (2) local groundwater supplies from the Alluvium and Saugus Formation aquifers, and (3) transfers, exchanges, and

groundwater banking programs. Also described are planned water supply projects and programs and the development of desalination. Current and future imported water supplies are discussed, including "Table A" water supplies, CLWA's Flexible Storage Accounts, and reliability issues associated with SWP supplies. CLWA's Groundwater Management Plan (GWMP) is described, and available groundwater supplies are assessed. The adequacy of groundwater supplies and the emergence of perchlorate contamination issues are introduced and discussed in more detail in subsequent chapters. The role of water transfers and groundwater banking is described, and recent and proposed cooperative agreements to maximize local supplies through these progressive water management strategies are also discussed.

4.0 RECYCLED WATER

State water policy identifies water recycling as a beneficial use of water, and recycled water is an important component of water management planning. Chapter 4 describes the existing and future recycled water opportunities available to the CLWA service area. Currently, CLWA serves recycled water to VWC for the Westridge Golf Course and miscellaneous landscape irrigation. This Plan presents estimates of potential supply and demand for 2005 to 2030 in five year increments, as well as CLWA's proposed incentives and optimization plan.

5.0 WATER QUALITY

Chapter 5 describes the water quality of both groundwater and imported water supplies and discusses potential water quality impacts on supply reliability. As mentioned above, perchlorate contamination control is a major issue in CLWA's service area. The contamination is associated with the former Whittaker-Bermite site. Extensive investigations, management plans, and control actions to address this issue have been undertaken and are described in detail in this Plan. It has been determined that the programs underway should restore the impaired wells during 2006.

6.0 RELIABILITY PLANNING

The Act requires urban water suppliers to assess water supply reliability that compares total projected water used with the expected water supply over the next twenty years in five year increments. The Act also requires an assessment for a single dry year and multiple dry years. Chapter 6 presents the reliability assessment for CLWA's service area.

It is the stated goal of CLWA and the retail water purveyors to deliver a reliable and high quality water supply for their customers, even during dry periods. Based on conservative water supply and demand assumptions over the next 25 years in combination with conservation of non-essential demand during certain dry years, the Plan successfully achieves this goal.

The organization of the reliability tables presented in this Plan varies from those presented in the 2000 Plan Amendment to follow more closely with the recommended tables provided in the DWR "Guidebook to Assist Water Suppliers in the Preparation of a 2005 Urban Water Management Plan," dated January 18, 2005.

7.0 WATER DEMAND MANAGEMENT MEASURES AND BEST MANAGEMENT PRACTICES

Establishing goals and choosing water conservation measures is a continuing planning process. Goals are developed, adopted, and then evaluated periodically. Specific conservation measures are phased in and then evaluated for their effectiveness, achievement of desired results, and customer satisfaction. Chapter 7 of this plan summarizes DMMs and BMPs in both the implementation and development stages. CLWA and the retail water purveyors have been aggressively implementing DMM and BMP programs even though implementation is voluntary. Activities include water audits/repairs, public outreach, conservation pricing, residential plumbing retrofit, residential ultra low flush toilet replacement, large landscape conservation, and conservation programs for commercial, industrial, and institutional accounts. CLWA and the retail purveyors continue development and implementation of a comprehensive program.

8.0 WATER SHORTAGE CONTINGENCY PLANNING

Water supplies may be interrupted or reduced significantly in a number of ways, such as a drought which limits supplies, an earthquake which damages water delivery or storage facilities, or a toxic spill that affects water quality. Chapter 8.0 of this Plan describes how CLWA and the retail water purveyors plan to respond to such emergencies so that customer needs are met promptly and equitably.

Chapter 1
INTRODUCTION

Chapter 1.0
INTRODUCTION

1.1 OVERVIEW

This volume presents the Urban Water Management Plan 2005 (Plan) for the Castaic Lake Water Agency (Agency, CLWA) service area, which includes four retail water purveyors. This chapter describes the general purpose of the Plan, discusses Plan implementation, and provides general information about CLWA, retail purveyors, and service area characteristics. A list of acronyms and abbreviations is also provided.

1.2 PURPOSE

An Urban Water Management Plan (UWMP) is a planning tool that generally guides the actions of water management agencies. It provides managers and the public with a broad perspective on a number of water supply issues. It is not a substitute for project-specific planning documents, nor was it intended to be when mandated by the State Legislature. For example, the Legislature mandated that a plan include a section which "describes the opportunities for exchanges or water transfers on a short-term or long-term basis." (California Urban Water Planning Act, Article 2, Section 10630(d).) The identification of such opportunities, and the inclusion of those opportunities in a general water service reliability analysis, neither commits a water management agency to pursue a particular water exchange/transfer opportunity, nor precludes a water management agency from exploring exchange/transfer opportunities not identified in the plan. When specific projects are chosen to be implemented, detailed project plans are developed, environmental analysis, if required, is prepared, and financial and operational plans are detailed.

In short, this Plan is a management tool, providing a framework for action, but not functioning as a detailed project development or action. It is important that this Plan be viewed as a long-term, general planning document, rather than as an exact blueprint for supply and demand management. Water management in California is not a matter of certainty, and planning projections may change in response to a number of factors. From this perspective, it is appropriate to look at the Plan as a general planning framework, not a specific action plan. It is an effort to generally answer a series of planning questions including:

- What are the potential sources of supply and what is the reasonable probable yield from them?
- What is the probable demand, given a reasonable set of assumptions about growth and implementation of good water management practices?
- How well do supply and demand figures match up, assuming that the various probable supplies will be pursued by the implementing agency?

Using these "framework" questions and resulting answers, the implementing agency will pursue feasible and cost-effective options and opportunities to meet demands. CLWA and the retail water purveyors will explore enhancing basic supplies from traditional sources such as the State Water Project (SWP) as well as other options. These include groundwater extraction, water

exchanges, recycling, desalination, and water banking/conjunctive use. Specific planning efforts will be undertaken in regard to each option, involving detailed evaluations of how each option would fit into the overall supply/demand framework, how each option would impact the environment, and how each option would affect customers. The objective of these more detailed evaluations would be to find the optimum mix of conservation and supply programs that ensure that the needs of the customers are met.

The California Urban Water Management Planning Act (Act) requires preparation of a plan that:

- Accomplishes water supply planning over a 20-year period in five year increments. (CLWA and the purveyors are going beyond the requirements of the Act by developing a plan which spans 25 years.)
- Identifies and quantifies adequate water supplies, including recycled water, for existing and future demands, in normal, single-dry, and multiple-dry years.
- Implements conservation and efficient use of urban water supplies.

A checklist to ensure compliance of this Plan with the Act requirements is provided in Appendix A.

In short, the Plan answers the question: *Will there be enough water for the Santa Clarita Valley community in future years, and what mix of programs should be explored for making this water available?*

It is the stated goal of CLWA and the retail water purveyors to deliver a reliable and high quality water supply for their customers, even during dry periods. Based on conservative water supply and demand assumptions over the next 25 years in combination with conservation of non-essential demand during certain dry years, the Plan successfully achieves this goal.

1.3 IMPLEMENTATION OF THE PLAN

The CLWA service area includes the service areas of four local retail water agencies. This Plan has been prepared for the CLWA and three of the purveyors: CLWA Santa Clarita Water Division (SCWD), Newhall County Water District (NCWD), and Valencia Water Company (VWC). The fourth purveyor, Los Angeles County Waterworks District No. 36 (LACWWD #36), is not required to prepare a Plan because the District does not provide water to more than 3,000 customers or supply more than 3,000 acre-feet (af) of water annually; however, LACWWD #36 participated in the development of the Plan on an "ad-hoc" basis. This subsection provides the cooperative framework within which the Plan will be implemented including agency coordination, public outreach, and resources maximization.

1.3.1 Joint Preparation of the Plan

Water agencies are permitted by the State to work together to develop a cooperative regional plan. This approach has been adopted by the water agencies in the Santa Clarita Valley (Valley), which are jointly sponsoring the current Plan. Water resource specialists with expertise in water resource management were retained to assist the local water agencies in preparing the details of the Plan. Agency coordination for this Plan is summarized in Table 1-1.

Table 1-1
Agency Coordination Summary

	Participated in UWMP Development	Received Copy of Draft	Commented on Draft	Attended Public Meetings	Contacted for Assistance	Sent Notice of Intent to Adopt	Not Involved
Antelope Valley-East Kern Water Agency					✓		
California Department of Water Resources	✓				✓		
Castaic Lake Water Agency	✓	✓	✓	✓	✓		
Castaic Town Council		✓	✓	✓	✓		
City of Santa Clarita Department of Planning and Building Services		✓		✓	✓	✓	
CLWA Santa Clarita Water Division	✓	✓	✓	✓	✓		
LA County Department of Regional Planning		✓			✓	✓	
Los Angeles County Supervisor Mike Antonovich (representatives)				✓	✓		
LA County Waterworks District No. 36	✓	✓	✓	✓	✓		
Metropolitan Water District of Southern California		✓			✓		
Newhall County Water District	✓	✓	✓	✓	✓		
Valencia Water Company	✓	✓	✓	✓	✓		
Ventura County Resource Management Agency		✓			✓	✓	
Westranch Town Council					✓		

1.3.2 Public Outreach

The water agencies have encouraged community participation in water planning. For the current Plan, public sessions were held for review and to solicit input on the Draft Plan before its adoption. Interested groups were informed about the development of the Plan along with the schedule of public activities. Notices of public meetings were published in the local press. Copies of the Draft Plan were made available at the water agencies' offices, local public libraries and sent to the City of Santa Clarita, the County of Los Angeles, and the County of Ventura, as well as interested parties. Water agencies also convened meetings with various interests to gather data concerning planned development and the probable implementation of approved development. Such informed data gathering on important issues is a means of checking the short-term "reality" of official projections and understanding the concerns of various groups.

CLWA contracted with a local public relations firm to coordinate preparation of the Plan with the local community. CLWA notified the cities and counties within its service area of the opportunity to provide input regarding the Plan. Table 1-2 presents a timeline for public participation during the development of the Plan. A copy of the public outreach materials,

including paid advertisements, newsletter covers, website postings, and invitation letters are attached in Appendix B.

Table 1-2
Public Participation Timeline

April 7, 2005	Kick-off Community Workshop	Describe UWMP requirements and process
June 27, 2005	Preliminary Draft UWMP	Preliminary Draft released to solicit input
June 29, 2005	Community Workshop	Review UWMP and solicit input
August 31, 2005	Follow-up Community Workshop	Release Draft UWMP and review contents
September 28, 2005	First CLWA Public Hearing	Review contents of Draft UWMP and take comments
October 26, 2005	Second CLWA Public Hearing	UWMP considered for approval by the CLWA Board and NCWD Board (at a joint meeting)

The components of public participation include:

Local Media

- Paid advertisements in local newspapers
- Meeting(s) with local editorial boards (Daily News and Signal)

Community-based Outreach

- Building Industry Association
- Castaic Town Council
- Chamber of Commerce
- Friends of the Santa Clara River
- Santa Clarita Valley Well Owners Association
- Santa Clarita Organization for Planning the Environment (SCOPE)
- Sierra Club
- Valencia Industrial Association
- Westranch Town Council

Water Agencies Public Participation

- Presentation(s) to NCWD Board – March, May, September, and October
- Presentation(s) to CLWA Board – March, May, July, September, and October

City/County Outreach

- Meeting with City Planning Division – March, May, and July

- Meeting with Los Angeles County Department of Regional Planning – March, May, and July
- Meeting with Supervisor Antonovich representative(s) Millie Jones, Paul Novak – May and July

Public Availability of Documents

- Water Agencies' websites
- City Hall
- Local libraries

1.3.3 Resources Maximization

Several documents were developed to enable CLWA to maximize the use of available resources and minimize use of imported water, including the Groundwater Management Plan (GWMP), Santa Clara River Valley Memorandum of Understanding, Water Supply Reliability Plan Draft Report, and the 2004 Santa Clarita Valley Water Report. Chapter 3 of this Plan describes in detail the water resources available to CLWA and the retail purveyors for the 25-year period covered by the Plan. Additional discussion regarding documents developed to maximize resources is included in Section 3.3.2 and Chapter 6.

1.4 THE WATER AGENCIES OF THE SANTA CLARITA VALLEY

1.4.1 Castaic Lake Water Agency

CLWA was formed in 1962 for the purpose of contracting with the California Department of Water Resources (DWR) to provide a supplemental supply of imported water to the water purveyors in the Valley. CLWA serves an area of 195 square miles in Los Angeles and Ventura Counties.

CLWA is a SWP contractor with an annual contractual Table A Amount of 95,200 af. Table A Amount (formerly referred to as "entitlement") is named for the "Table A" in each SWP contractor's Water Supply Contract. It contains an annual buildup in Table A Amounts of SWP water, from the first year of the Water Supply Contract through a specific year, based on growth projections made before the Water Supply Contract was executed. For most contractors, the maximum annual Table A Amount was reached in 1990. The total of all SWP contractors' maximum Table A Amounts is currently about 4.17 million af.

CLWA's original SWP Water Supply Contract with DWR was amended in 1966 for a maximum annual Table A Amount of 41,500 af. In 1991, CLWA purchased 12,700 af of annual Table A Amount from a Kern County water district and in 1999 purchased 41,000 af of annual Table A Amount from another Kern County water district, for a current total annual Table A Amount of 95,200 af.[1] CLWA wholesales this imported water to each of the local retail water purveyors through an extensive transmission pipeline system.

Though the reliability of SWP water is variable due to weather-related issues and environmental factors, SWP water remains an important supplemental water supply source for the Valley in the long-term. An important element to enhancing the long-term water supply reliability of SWP supplies is the effective use of water banking/conjunctive-use programs, such as those described in this Plan.

1.4.2 Retail Water Purveyors

Four retail purveyors provide water service to most residents of the Valley.

SCWD's service area includes portions of the city of Santa Clarita and unincorporated portions of Los Angeles County in the communities of Canyon Country, Newhall, and Saugus. SCWD supplies water from local groundwater and CLWA imported water.

LACWWD #36's service area includes the Hasley Canyon area in the unincorporated community of Val Verde. During most years, the District obtains its water supply from CLWA.

NCWD's service area includes portions of the City of Santa Clarita and unincorporated portions of Los Angeles County in the communities of Newhall, Canyon Country, Saugus, and Castaic. The District supplies water from local groundwater and CLWA imported water.

VWC's service area includes a portion of the City of Santa Clarita and unincorporated portions of Los Angeles County in the communities of Castaic, Stevenson Ranch, and Valencia. VWC supplies water from local groundwater, CLWA imported water, and recycled water.

The service area for CLWA and the retail water purveyors is shown on Figure 1-1.

[1] CLWA's contract rights to SWP water total 95,200 acre feet per year ('afy"), including a water transfer of 41,000 afy approved in 1999 from Wheeler Ridge-Maricopa Water Storage District, a member unit of the Kern County Water Agency. CLWA's Environmental Impact Report ("EIR") prepared in connection with the 41,000 afy water transfer was challenged in *Friends of the Santa Clara River v. Castaic Lake Water Agency* (Los Angeles County Superior Court, Case Number BS056954) ("*Friends*"). That action was dismissed with prejudice (permanently) in February 2005. New challenges to CLWA's environmental review of the transfer were filed in January 2005 (*i.e., Planning and Conservation League v. Castaic Lake Water Agency*, Los Angeles County Superior Court Case Number BS098724). A more detailed discussion of these new challenges and the reasons the challenges will have no impact on the amount of water available to CLWA can be found at Section 3.2.2.

Castaic Lake Water Agency Service Area

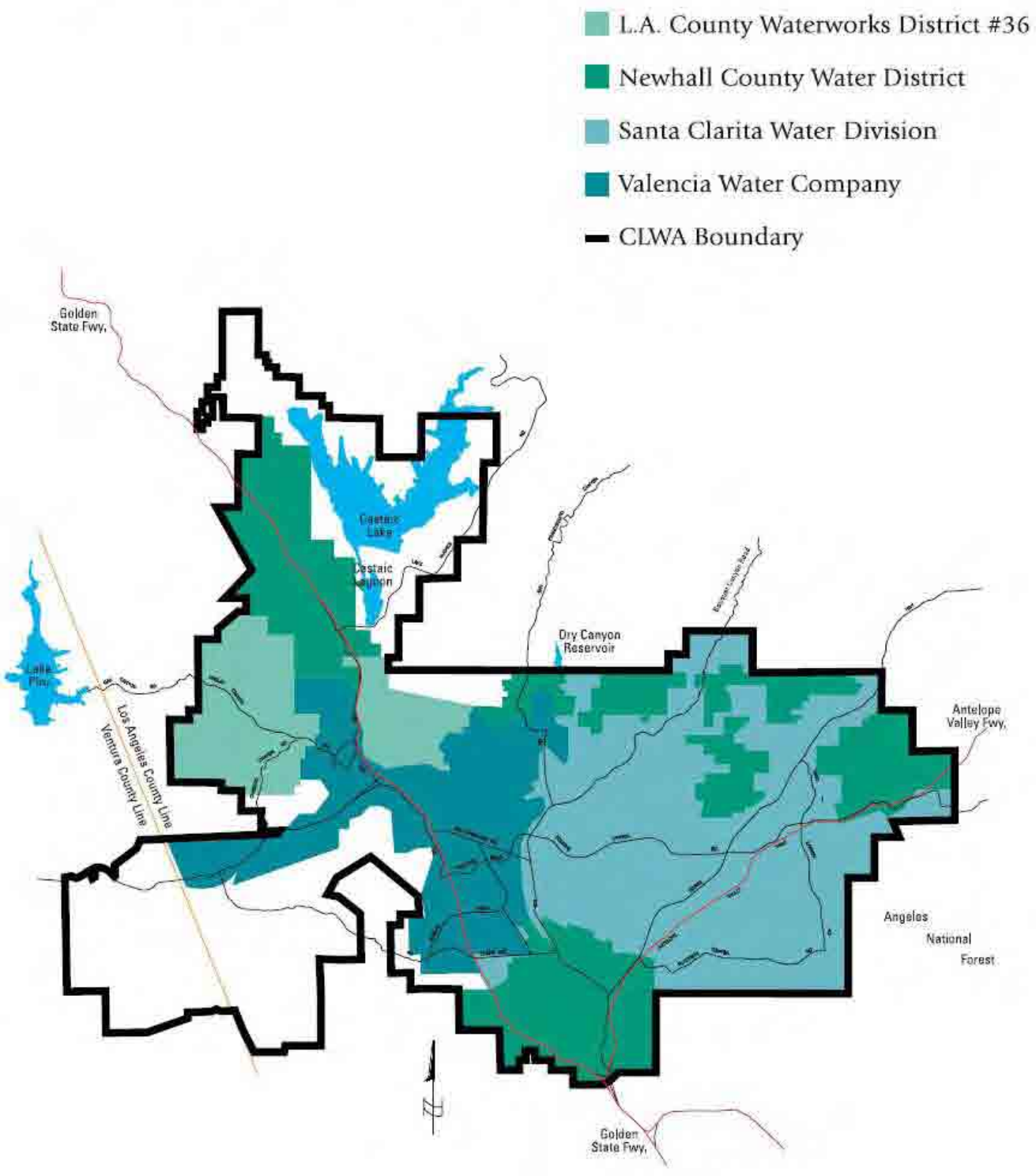


Figure 1-1
Castaic Lake Water Agency Service Area

As of mid-2005, the retail water purveyors served about 65,800 connections, as presented in Table 1-3.

Table 1-3
Retail Water Service Connections

Retail Water Purveyor	Connections
CLWA Santa Clarita Water Division (SCWD)	26,784
Los Angeles County Waterworks District No. 36 (LACWWD # 36)	1,311
Newhall County Water District (NCWD)	9,112
Valencia Water Company (VWC)	28,602
Total Connections	**65,809**

1.5 CLIMATE

The climate in CLWA's service area is generally semi-arid and warm. Summers are dry with temperatures as high as 110°F. Winters are somewhat cool with temperatures as low as 20°F. Average rainfall is about 17.64 inches per year in the flat areas and about 27 inches in the mountains. The region is subject to wide variations in annual precipitation and also experiences periodic wildfires. Table 1-4 presents the region's annual average climate data. Standard Monthly Average data was generated from 1996-2005 data. Average Monthly Rainfall data is provided for 1980-2004, and Average Maximum Temperature data is provided for 1971-2000.

Table 1-4
Climate Data for the Santa Clarita Valley

	Jan	Feb	Mar	Apr	May	Jun
Standard Monthly Average ETo[(1)]	2.20	2.45	3.64	4.74	5.31	6.06
Average Rainfall (inches) [(2)]	3.52	4.88	3.13	0.88	0.28	0.06
Average Max. Temperature (Fahrenheit) [(3)]	64.2	66.0	68.7	73.1	79.9	88.0

	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Standard Monthly Average ETo[(1)]	6.75	6.66	5.01	3.95	2.73	2.31	51.81
Average Rainfall (inches)[(2)]	0.03	0.05	0.15	0.88	1.29	2.49	17.64
Average Max. Temperature (Fahrenheit) [(3)]	94.9	94.9	89.4	81.3	69.1	65.2	78.1

Notes:
(1) ETo (evapotranspiration) data provided for Glendale region, http://wwwcimis.water.ca.gov/cimis/welcome.jsp
(2) Average Monthly Rainfall data gathered from long-term average precipitation records from Newhall-Soledad 32c gage during period 1980-2004.
(3) Temperature data provided for Dry Canyon Reservoir region, http://www.wrcc.dri.edu/CLIMATEDATA.html

1.6 Potential Effects of Global Warming

A topic of growing concern for water planners and managers is global warming and the potential impacts it could have on California's future water supplies. DWR's Draft California Water Plan Update 2005 contains the first-ever assessment of such potential impacts in a California Water Plan.

Volume 1, Chapter 4 of the California Water Plan, "Preparing for an Uncertain Future," lists some potential impacts of global warming, based on more than a decade of scientific studies on the subject:

- Could produce hydrologic conditions, variability, and extremes that are different from what current water systems were designed to manage
- May occur too rapidly to allow sufficient time and information to permit managers to respond appropriately
- May require special efforts or plans to protect against surprises or uncertainties

Should global warming increase over time, it may cause a number of changes impacting future water supplies, including changes in Sierra snowpack patterns (the source of the SWP's water supply in Lake Oroville), hydrologic patterns, sea level, rainfall intensity, and statewide water demand. Computer models (such as CALVIN) have been developed to show water planners how California water management might adapt to climate change. DWR has committed to continue to update and refine these models based on ongoing scientific data collection and to incorporate this information into future California Water Plans. As DWR develops more specific assessments of the potential effects of climate change on SWP delivery reliability and water demands, CLWA and the purveyors can update their plans accordingly.

1.7 OTHER DEMOGRAPHIC FACTORS

Water service is provided to residential, commercial, industrial, institutional, recreational, and agricultural customers and for environmental and other uses, such as fire protection and pipeline cleaning.

Recently, the Valley area (along with most of California) has experienced significant increases in both single family and multi-family residential construction, as well as in commercial and industrial construction. As the local population has increased, the demand for water has also increased.

1.8 LIST OF ABBREVIATIONS AND ACRONYMS

The following abbreviations and acronyms are used in this report.

AB	Assembly Bill
ACOE	U.S. Army Corps of Engineers
Act	California Urban Water Management Planning Act
af	acre-feet
afy	acre-feet per year
Agency	Castaic Lake Water Agency
AWWARF	American Water Works Association Research Foundation
Basin	Santa Clara River Valley Groundwater Basin, East Subbasin
BMPs	Best Management Practices

CCF	One Hundred Cubic Feet
CCR	Consumer Confidence Report
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CLWA	Castaic Lake Water Agency
CUWCC	California Urban Water Conservation Council
CVP	Central Valley Project
DBP	Disinfection by-products
Delta	Sacramento-San Joaquin Delta
DHS	California Department of Health Services
DMM	Demand Management Measures
DOF	Department of Finance
DTSC	Department of Toxic Substances Control
DWR	California Department of Water Resources
EC	Electrical conductivity
Edison	Southern California Edison
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
gpcd	gallons per capita per day
gpd	gallons per day
gpm	gallons per minute
GWMP	Groundwater Management Plan
KCWA	Kern County Water Agency
LACDRP	Los Angeles County Department of Regional Planning
LACSD	Sanitation Districts of Los Angeles County
LACWWD #36	Los Angeles County Waterworks District # 36
M&I	Municipal and Industrial
Metropolitan	Metropolitan Water District of Southern California
mgd	million gallons per day
mg/L	milligrams per liter
MOU	Memorandum of Understanding
NCWD	Newhall County Water District
NPDES	National Pollutant Discharge Elimination System
OVOV	One Valley One Vision
Plan	Urban Water Management Plan 2005
PUC	California Public Utilities Commission
RAP	Remedial Action Plan
RO	Reverse Osmosis
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SCAG	Southern California Association of Governments

SCLLC	Santa Clarita LLC
SCOPE	Santa Clarita Organization for Planning the Environment
SCWC	Santa Clarita Water Company
SCWD	Santa Clarita Water Division
Semitropic	Semitropic Water Storage District
SWP	State Water Project
TDS	Total Dissolved Solids
TOC	Total Organic Carbon
umhos/cm	Micromhos per centimeter
UWCD	United Water Conservation District
UWMP	Urban Water Management Plan
Valley	Santa Clarita Valley
VWC	Valencia Water Company
WRP	Waste Water Reclamation Plant

Chapter 2
WATER USE

Chapter 2.0
WATER USE

2.1 OVERVIEW

This chapter describes historic and current water usage and the methodology used to project future demands within CLWA's service area. Water usage is divided into sectors such as residential, industrial, institutional, landscape, agricultural, and other purposes. To undertake this evaluation, existing land use data and new housing construction information were compiled from each of the retail water purveyors and projections prepared by "One Valley One Vision" (OVOV), a joint planning effort by the City of Santa Clarita and Los Angeles County Department of Regional Planning (LACDRP). This information was then compared to historical trends for new water service connections and customer water usage information. In addition, weather and water conservation effects on historical water usage were factored into the evaluation.

The methodology used to project future demands within CLWA's service area included three steps: (1) obtain projected demands to 2030 from each water purveyor, (2) compare projections based on historical records to the totals developed by the purveyors, and (3) compare these results with the OVOV Plan for consistency with the General Plan.

This approach allowed the comparison of three different sources of data and projections to be evaluated. Several factors can affect demand projections, including:

- Land use revisions
- New regulations
- Consumer choice
- Economic conditions
- Transportation needs
- Highway construction
- Environmental factors
- Conservation programs
- Plumbing codes

The foregoing factors affect the amount of water needed, as well as the timing of when it is needed. Past experience in the Valley has indicated that the economy is the biggest factor in determining water demand projections. During an economic recession, there is a major downturn in development and a subsequent slowing of the projected demand for water. The projections in this Plan do not attempt to forecast recessions or droughts. Likewise, no speculation is made about future plumbing codes or other regulatory changes. However, the projections do include water conservation, which is projected to reduce overall water demand by 10 percent. There have been, and continue to be, major efforts statewide to conserve water, which have been successful.

2.2 HISTORIC WATER USE

Predicting future water supply requires accurate historic water use patterns and water usage records. Both the economy and entitlement process (compliance with the California Environmental Quality Act [CEQA]) are key factors impacting growth in population and demand. Figure 2-1 illustrates the steady increase in Valley water demand since 1980.

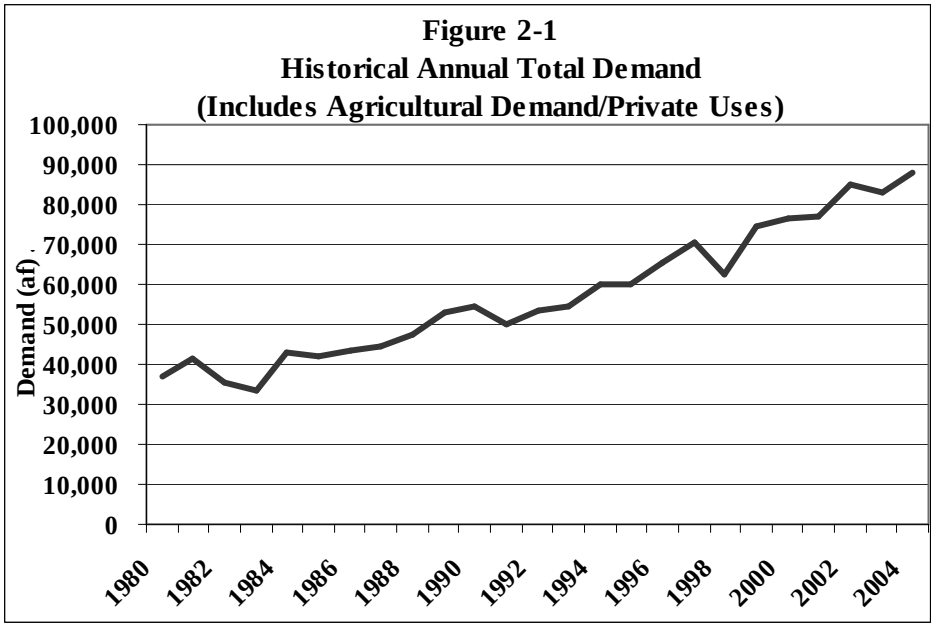


Table 2-1 presents the historical accounts and deliveries by retail purveyor since 1990. The type of customer accounts included in the table are single family homes, multi-family homes, commercial, industrial, institutional/government, and landscape.

Table 2-1
Historical Accounts and Deliveries by Retail Purveyor

Purveyor		1990	1992	1994	1996	1998	2000	2002	2004
CLWA	No. Accounts	18,550	19,000	19,400	19,650	20,300	21,970	24,175	26,161
SCWD	Deliveries (af)	18,503	17,551	19,911	22,006	20,319	25,280	28,434	29,191
LACWWD	No. Accounts	706	736	752	768	774	972	1,200	1,300
#36	Deliveries (af)	513	456	500	533	578	758	1,071	1,302
NCWD	No. Accounts	6,039	6,230	6,373	6,475	6,726	7,434	7,941	8,970
	Deliveries (af)	7,813	7,973	7,754	8,916	8,782	9,623	9,869	10,555
VWC	No. Accounts	13,965	14,520	15,359	17,009	19,389	21,661	24,453	27,238
	Deliveries (af)	16,572	15,338	17,390	19,721	19,874	25,190	28,360	30,682
Total	No. Accounts	39,260	40,486	41,884	43,902	47,189	52,037	57,769	63,669
	Deliveries (af)	43,401	41,318	45,555	51,176	49,553	60,851	67,734	71,730
	af/Account	1.11	1.02	1.09	1.17	1.05	1.17	1.17	1.13

2.3 PROJECTED WATER USE

2.3.1 Purveyor Projections

Each of the four retail water purveyors provided projected water demands based on the projects that are under evaluation, are in the planning process, or the result of its own water planning efforts for its service area. The purveyors maintain historical data, as well as work closely with property owners and developers in their service areas, to ensure they have an adequate water supply and the necessary infrastructure to provide water service.

Since there are only four purveyors in the service area, there is close coordination and exchange of data. SCWD's engineering department continually updates expected demands and infrastructure needs. NCWD prepared a "Water Supply Assessment" in 2004 that is the basis for NCWD's projected demand. VWC is a California Public Utilities Commission (PUC)-regulated water supplier and is required to regularly provide its service plan for rate increases and service area changes. Table 2-2 summarizes the purveyors' projected water demands through 2030.

Table 2-2
Projected Water Demands

Purveyor	Demand (af)						Annual Increase
	2005	2010	2015	2020	2025	2030	
CLWA SCWD	30,400	35,000	39,100	43,100	47,100	51,100	2.1%
LACWWD #36	1,300	1,600	1,800	2,000	2,400	2,800	3.1%
NCWD	11,800	14,400	16,000	17,700	19,300	21,000	2.4%
VWC	30,200	35,100	40,200	43,700	50,600	54,400	2.4%
Total Purveyor	**73,700**	**86,100**	**97,100**	**106,500**	**119,400**	**129,300**	2.2%
Agricultural/Private Uses	15,600	13,950	12,300	10,650	9,000	9,000	--
Total (w/o conservation)	**89,300**	**100,050**	**109,400**	**117,150**	**128,400**	**138,300**	**--**
Conservation (1)	(7,370)	(8,610)	(9,710)	(10,650)	(11,940)	(12,930)	--
Total (w/conservation)	81,930	91,440	99,690	106,500	116,460	125,370	1.3%

Notes:
(1) Assumes 10 percent reduction on urban portion of demand resulting from conservation best management practices (see Chapter 7).

Tables 2-3 through 2-6 present the past, current, and projected water deliveries by customer type for the CLWA SCWD, LACWWD #36, NCWD, and VWC, respectively.

Table 2-3
Past, Current, and Projected Water Deliveries (by customer type)
CLWA Santa Clarita Water Division

Year		Water Use Sectors	Single Family	Multi-Family	Comm-ercial	Industrial	Institutional/ Government	Landscape	Total
2000	metered	No. of accounts	16,906	3,784	537	48	83	612	21,970
		Deliveries (af)	15,966	2,669	930	1,096	893	3,726	25,280
2005	metered	No. of accounts	20,550	4,800	650	50	125	700	26,875
		Deliveries (af)	19,139	3,386	1,126	1,142	1,345	4,262	30,400
2010	metered	No. of accounts	23,575	5,800	750	60	175	800	31,160
		Deliveries (af)	21,486	4,091	1,299	1,370	1,883	4,871	35,000
2015	metered	No. of accounts	25,715	6,800	850	70	225	900	34,560
		Deliveries (af)	23,333	4,796	1,472	1,598	2,421	5,480	39,100
2020	metered	No. of accounts	27,855	7,800	950	80	275	1,000	37,960
		Deliveries (af)	25,080	5,501	1,645	1,826	2,959	6,089	43,100
2025	metered	No. of accounts	29,995	8,800	1,050	90	325	1,100	41,360
		Deliveries (af)	26,827	6,206	1,818	2,054	3,497	6,698	47,100
2030	metered	No. of accounts	32,135	9,800	1,150	100	375	1,200	44,760
		Deliveries (af)	28,574	6,911	1,991	2,282	4,035	7,307	51,100

Table 2-4
Past, Current, and Projected Water Deliveries (by customer type)
Los Angeles County Waterworks District No. 36

Year		Water Use Sectors	Single Family	Multi-Family	Comm-ercial	Const/ Industrial	Institutional/ Government	Landscape	Total
2000	metered	No. of accounts	948	5	0	10	5	4	972
		Deliveries (af)	643	29	0	54	20	12	758
2005	metered	No. of accounts	1,275	5	0	10	5	5	1,300
		Deliveries (af)	1,185	29	0	54	20	12	1,300
2010	metered	No. of accounts	1,575	5	0	10	5	4	1,600
		Deliveries (af)	1,480	30	0	56	21	12	1,600
2015	metered	No. of accounts	1,774	5	0	11	5	4	1,800
		Deliveries (af)	1,676	31	0	58	22	13	1,800
2020	metered	No. of accounts	1,973	6	0	11	6	4	2,000
		Deliveries (af)	1,872	32	0	60	22	13	2,000
2025	metered	No. of accounts	2,372	6	0	11	6	5	2,400
		Deliveries (af)	2,268	33	0	62	23	14	2,400
2030	metered	No. of accounts	2,772	6	0	12	6	5	2,800
		Deliveries (af)	2,665	34	0	63	23	14	2,800

Table 2-5
Past, Current, and Projected Water Deliveries (by customer type)
Newhall County Water District

Year		Water Use Sectors	Single Family	Multi-Family	Commercial	Construction/ Industrial	Institutional/ Government	Landscape	Total
2000	metered	No. of accounts	6,608	293	377	11	18	127	7,434
		Deliveries (af)	5,556	1,537	872	411	119	1,128	9,623
2005	metered	No. of accounts	8,047	293	399	35	59	232	9,065
		Deliveries (af)	7,243	1,969	891	207	133	1,357	11,800
2010	metered	No. of accounts	9,735	425	425	60	75	300	11,020
		Deliveries (af)	8,750	2,485	999	250	176	1,740	14,400
2015	metered	No. of accounts	10,730	450	450	85	90	425	12,230
		Deliveries (af)	9,475	2,595	1,038	315	212	2,365	16,000
2020	metered	No. of accounts	11,865	475	475	110	105	550	13,580
		Deliveries (af)	10,385	2,750	1,066	375	234	2,890	17,700
2025	metered	No. of accounts	12,620	500	500	135	120	675	14,550
		Deliveries (af)	11,000	2,900	1,114	425	261	3,600	19,300
2030	metered	No. of accounts	14,050	525	525	160	135	800	16,195
		Deliveries (af)	12,275	3,000	1,140	500	285	3,800	21,000

Table 2-6
Past, Current, and Projected Water Deliveries (by customer type)
Valencia Water Company

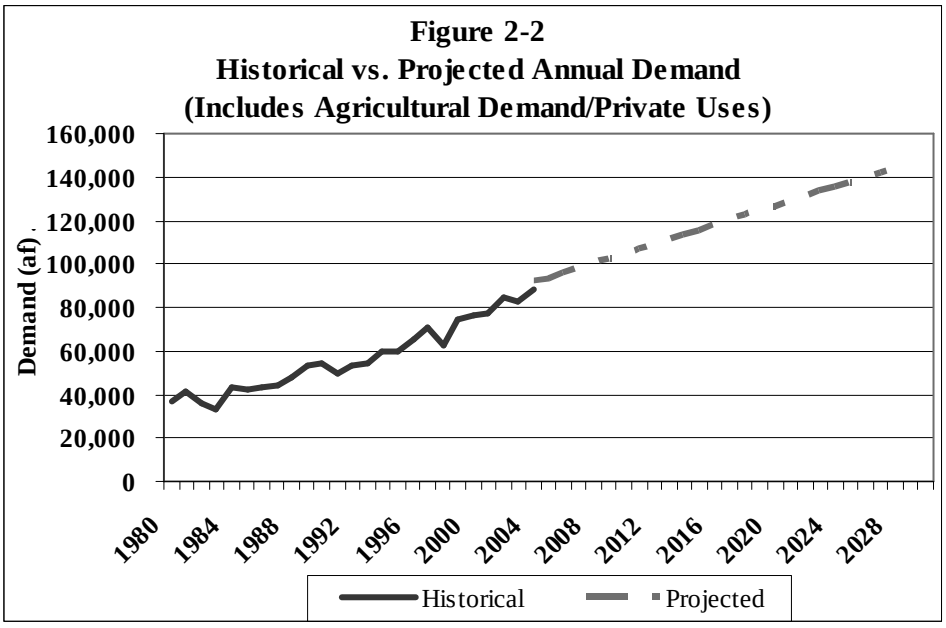
Year		Water Use Sectors	Single Family	Multi-Family	Comm-ercial	Industrial	Institutional/ Government	Landscape	Total
2000	metered	No. of accounts	19,805	191	876	382	406	1	21,661
		Deliveries (af)	12,112	1,373	5,798	1,759	3,711	437	25,190
2005	metered	No. of accounts	25,067	364	1,307	452	505	3	27,698
		Deliveries (af)	14,526	1,646	6,949	2,108	4,448	523	30,200
2010	metered	No. of accounts	29,405	2,035	1,615	558	624	3	34,240
		Deliveries (af)	17,147	2,186	8,611	2,399	4,465	292	35,100
2015	metered	No. of accounts	30,724	8,176	1,998	690	772	3	42,363
		Deliveries (af)	17,998	4,151	9,882	2,753	5,124	292	40,200
2020	metered	No. of accounts	31,234	13,203	2,282	788	882	3	48,392
		Deliveries (af)	18,326	5,760	10,752	2,995	5,575	292	43,700
2025	metered	No. of accounts	36,384	14,341	2,605	900	1,007	3	55,240
		Deliveries (af)	21,803	6,124	12,454	3,469	6,458	292	50,600
2030	metered	No. of accounts	39,484	14,391	2,767	956	1,069	3	58,670
		Deliveries (af)	23,909	6,140	13,388	3,729	6,942	292	54,400

2.3.2 Projections Based On Historical Use

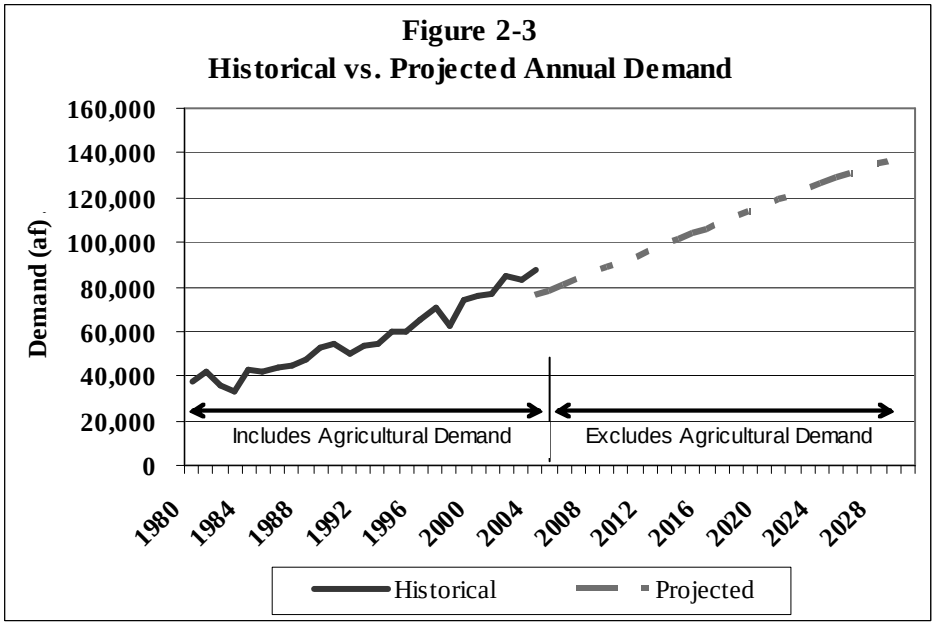
Another methodology to forecast demand involves projecting historical water use into the future. Mathematical methods are used to perform this projection. A correlation factor to the historical data of 1.0 would be considered the most exact. The ideal method results in a correlation of 0.9 or greater. For this Plan, a Linear Regression method was used to project demands, which resulted in a coefficient of correlation of 0.95.

2.3.2.1 Linear Regression Method

The Linear Regression method examines the historical growth in water demand and projects forward using linear regression. Figure 2-2 displays the growth in water demand since 1980 for the CLWA service area with a linear progression through the year 2030. Growth in demand has been relatively constant with some downturns that reflect either weather patterns or economic trends. The demand includes agricultural as well and municipal and industrial (M&I) uses.



On Figure 2-3, agricultural demand is removed to show M&I use only. As shown on Figure 2-3, results from the linear regression (after extracting the projected agricultural demands provided in Table 2-2) indicate a total 2030 demand of 137,100 af. This demand figure is comparable to the 129,300 af submitted by the purveyors (a six percent difference), as shown in Table 2-2.



2.3.2.2 Comparison to City and County Planning

The next step involved comparison of the purveyor-projected growth in water demand with the growth projections provided by local land use planning agencies. Table 2-7 is the result of the joint OVOV planning effort by the City of Santa Clarita and LACDRP.

Table 2-7
Adjusted Santa Clarita Valleywide General Plan [(1)(2)]
(SCAG 2004 RTP, Projections: Years 2000 to 2030)

Jurisdiction	2000 [(3)]	2005	2010	2015	2020	2025	2030	Change	Average Annual Growth
City of Santa Clarita									
Population	151,088	171,290	196,680	210,280	222,290	232,830	242,620	91,532	1.6%
Households	50,787	55,614	62,837	67,832	72,883	77,868	82,806	32,019	1.6%
Employment	51,380	59,640	68,820	73,240	77,490	81,460	85,190	33,810	1.7%
Jobs/Household ratio	*1.01*	*1.07*	*1.10*	*1.08*	*1.06*	*1.05*	*1.03*	0.02	
Persons per Household	*2.97*	*3.08*	*3.13*	*3.10*	*3.05*	*2.99*	*2.93*	(0.04)	
SCV Unincorporated Area									
Population	61,523	78,053	105,094	125,850	146,401	166,557	185,589	124,066	3.7%
Households	17,973	20,645	28,108	34,609	41,154	47,941	54,630	36,657	3.8%
Employment (estimated)	10,790	13,900	18,830	23,190	27,980	33,080	38,240	27,450	4.3%
Jobs/Household ratio	*0.60*	*0.67*	*0.67*	*0.67*	*0.68*	*0.69*	*0.70*	0.10	
Persons per Household	*3.42*	*3.78*	*3.74*	*3.64*	*3.56*	*3.47*	*3.40*	(0.03)	
SCV Planning Area[(4)]									
Population	212,611	249,343	301,774	336,130	368,691	399,387	428,209	215,598	2.4%
Households	68,760	76,259	90,945	102,441	114,037	125,809	137,436	68,676	2.3%
Employment	62,170	73,540	87,650	96,430	105,470	114,540	123,430	61,260	2.3%
Jobs/Household ratio	*0.90*	*0.96*	*0.96*	*0.94*	*0.92*	*0.91*	*0.90*	(0.01)	
Persons per Household	*3.09*	*3.27*	*3.32*	*3.28*	*3.23*	*3.17*	*3.12*	0.02	

Notes:
(1) Source: Stanley R. Hoffman Associates, Inc.; Southern California Association of Governments, 2004 Regional Transportation Plan (RTP).
(2) The SCAG population and household projections are used as control totals for the entire "One Valley One Vision" (OVOV) planning area while the allocation between the City and unincorporated areas is based on 2000-2003 Department of Finance (DOF) population and household trend data. The 1998-2003 Employment Development Department data is used to calibrate the 2005 base year for employment. However, the employment totals for the unincorporated area are allowed to exceed the SCAG RTP 2004 forecast based on local information from the County of Los Angeles Planning staff.
(3) 2000 Population and Household data is based on DOF estimates benchmarked to the 2000 U.S. Census Figures.
(4) The Santa Clarita Valley Planning Area estimates are the sum of the City and unincorporated area.
(5) On May 11, 2005, the OVOV Team agreed to use these adjusted RTP data for the OVOV General Plan Update.

The OVOV task force used the data provided by Southern California Association of Governments' (SCAG's) Regional Transportation Plan (RTP), the State Department of Finance (DOF), and the Employment Development Department. This joint effort was undertaken to ensure compatibility of planning efforts since the Valley is considered a realistic planning area with both City and County jurisdictions.

The annual rate of growth was examined to determine if the projected water demand was in accordance with the purveyors' projected growth shown in Table 2-2.

In Table 2-7, the OVOV projections indicate a 1.6 percent annual growth rate of population and households for the City of Santa Clarita, and 3.7 to 3.8 percent annual growth rates for the Valley Unincorporated Area. This results in a combined growth rate of 2.3 to 2.4 percent, which is

comparable to the purveyors' projected annual growth rate in water demand of 2.2 percent shown in Table 2-2.

Table 2-8 summarizes the projected Valley water use per household in af and in gallons per capita per day (gpcd). The data developed in this table is derived from the total annual demand projections provided in Table 2-2 divided by the projected annual populations and by the projected annual households provided in Table 2-7. Since the forecasted growth is based on households and population, it is not possible to obtain a direct match to number of service connections and water use per connection. However, based on 2005 population and water demand, the current estimated water use is 264 gpcd. The projected water use in 2030 of 270 gpcd remains very close to the 2005 water use of 264 gpcd, thus demonstrating that water demand and projected growth track closely. The term "household" is a term used by OVOV and does not equate to a single family residence.

Table 2-8
Projected Household Water Use

Projected Water Use	2005	2010	2015	2020	2025	2030
Water Use (af/household) (1)	0.97	0.95	0.95	0.93	0.95	0.94
Water Use (gpcd) (2)	264	255	258	258	267	270

Notes:

(1) Based on dividing the total annual demand projections provided in Table 2-2 by the projected annual households provided in Table 2-7.

(2) Based on dividing the total annual demand projections (converted from af to gpd) provided in Table 2-2 by the projected annual populations provided in Table 2-7.

An additional analysis was conducted by using actual 2004 water use (in gpcd) and multiplying that by the projected population from the OVOV population forecast (Table 2-7). 2004 actual water use was determined by taking the "2004 Santa Clarita Valley Water Report" M&I water use for 2004 and dividing that by the 2004 population. This resulted in an actual water use of 269 gpcd, which compares closely to the values presented in Table 2-8. Table 2-9 presents a summary of the comparison between the purveyors and OVOV demand projections. The projected demand by the purveyors varies from -0.20 percent to 5.62 percent of the water demand determined based on the OVOV population projections. This demonstrates that the purveyors' projections track closely with the anticipated growth projected by OVOV.

Table 2-9
Comparison of Purveyor and OVOV Demand Projections

Projection	Demand (af)					
	2005	2010	2015	2020	2025	2030
Purveyor (1)	73,700	86,100	97,100	106,500	119,400	129,300
OVOV (2)	75,136	90,936	101,288	111,100	120,350	129,035
Difference	1,436	4,836	4,188	4,600	950	(264)
Percent Difference	1.95%	5.62%	4.31%	4.32%	0.80%	-0.20%

Notes:

(1) Demand projections based on total puveyor projections provided in Table 2-2.

(2) Demand projections based on 269 gpcd multiplied by OVOV population projections provided in Table 2-7.

The data provided in Tables 2-3 through 2-6 indicates total estimated 2005 Valley water use to be (in af/connection) 1.13 for all connection types and 0.77 for a single family connection. These findings were compared with a study conducted by the American Water Works Association Research Foundation (AWWARF), Residential End Uses of Water (1999). This study compared residential water demand for several cities in the western United States. For comparison, the average annual water use (in af/connection) for a single family connection in Las Virgenes Municipal Water District and the City of San Diego are 0.87 and 0.47, respectively, which compare with the Valley water use of 0.77.

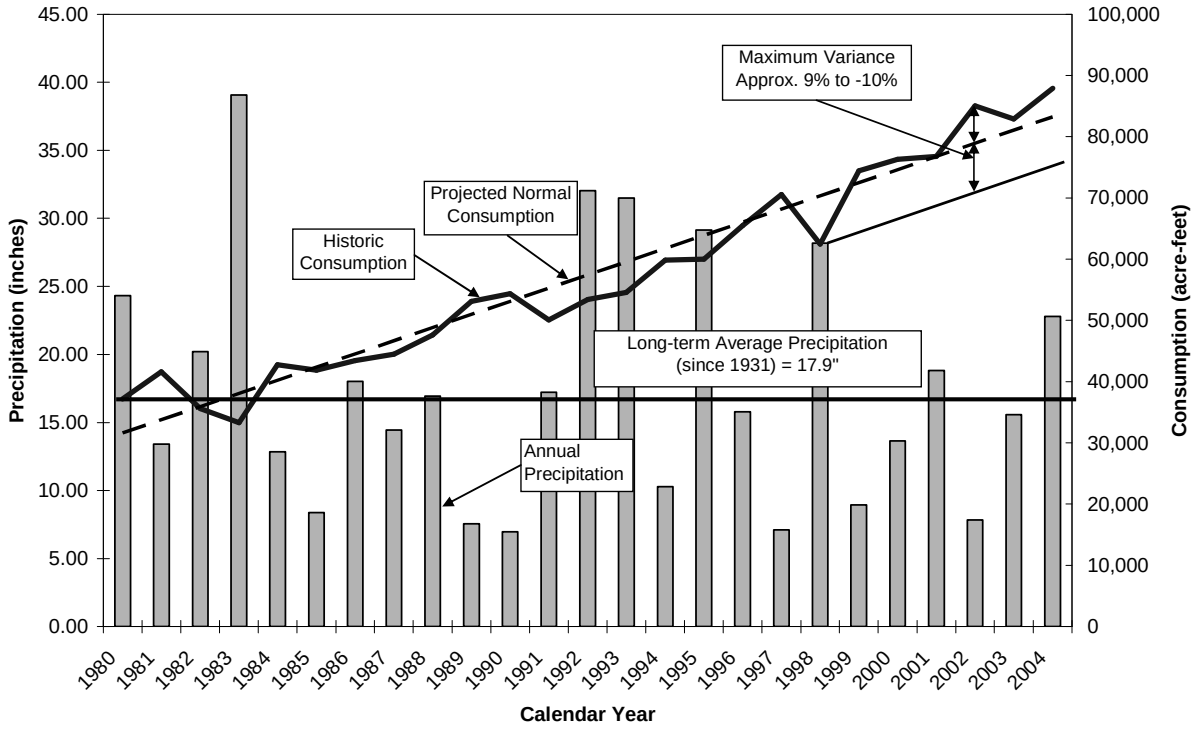
2.4 OTHER FACTORS AFFECTING WATER USAGE

Two major factors that affect water usage are weather and water conservation. Historically, when the weather is hot and dry, water usage increases. The amount of increase varies according to the number of consecutive years of hot, dry weather and the conservation activities imposed. During cool-wet years, historical water usage has decreased to reflect less water usage for external landscaping. Water conservation measures employed within the CLWA's and purveyors' service areas have a direct long-term effect on water usage. Both of these factors are discussed below in detail.

2.4.1 Weather Effects on Water Usage

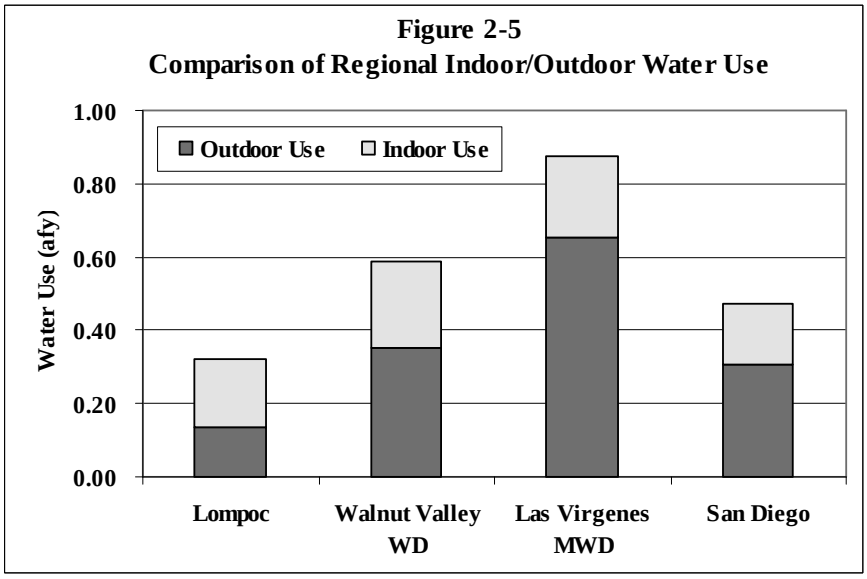
Historically, about 605 to 1,110 gallons of water are consumed daily for urban uses for every household in the CLWA's and purveyors' service areas. Most of this range in water use is due to seasonal weather variations. As presented on Figure 2-4, the historical water use from 1980 to 2004 fluctuated principally due to weather, with the maximum variance around the projected normal of approximately 9 percent higher use in hot, dry years to approximately 10 percent lower use in cool, wet years.

Figure 2-4
Weather Effects on Water Usage



The same AWWARF study described in Section 2.3.2.2 compared residential indoor and outdoor water use for several cities in the western United States. A comparison of the water use for four California locations is presented on Figure 2-5. As shown on the figure, indoor water use tracks closely among each of the four locations. However, outdoor use (landscaping), varies significantly among the locations. CLWA and the retail purveyors' water use correlates most closely with the data provided for Las Virgenes MWD.

Figure 2-5
Comparison of Regional Indoor/Outdoor Water Use



2.4.2 Conservation Effects on Water Usage

In recent years, water conservation has become an increasingly important factor in water supply planning in California. The California plumbing code has instituted requirements for new construction that mandate the installation of ultra low-flow toilets and low-flow showerheads. CLWA and the purveyors have developed water conservation measures that include public information and education programs. CLWA funds a toilet replacement program and, through its connection fee program, has provided financial incentives to developers for good water management practices.

During the 1987-1992 drought period, overall water requirements due to the effects of hot, dry weather were projected to increase by approximately 10 percent. As a result of extraordinary conservation measures enacted during the period, the overall water requirements actually decreased by more than 10 percent.

Residential, commercial, and industrial usage can be expected to decrease as a result of the implementation of more aggressive water conservation practices. As previously discussed, the greatest opportunity for conservation is in developing greater efficiency and reduction in landscape irrigation. The irrigation demand can represent as much as 50 percent of the water demand for residential customers depending upon lot size and amount of irrigated turf and plants. It is assumed that conservation will result in a long-term 10 percent reduction of demand.

Chapter 3
WATER RESOURCES

Chapter 3.0
WATER RESOURCES

3.1 OVERVIEW

This section describes the water resources available to CLWA and the purveyors for the 25-year period covered by the Plan. These are summarized in Table 3-1 and discussed in more detail below. Both currently available and planned supplies are discussed.

Table 3-1
Summary of Current and Planned Water Supplies and Banking Programs(1)

Water Supply Sources	Supply (af)					
	2005	2010	2015	2020	2025	2030
Existing Supplies						
Wholesale (Imported)	*70,380*	*73,660*	*75,560*	*76,080*	*77,980*	*77,980*
SWP Table A Supply (2)	65,700	67,600	69,500	71,400	73,300	73,300
Flexible Storage Account (CLWA) (3)	4,680	4,680	4,680	4,680	4,680	4,680
Flexible Storage Account (Ventura County) (3) (4)	0	1,380	1,380	0	0	0
Local Supplies						
Groundwater	*40,000*	*46,000*	*46,000*	*46,000*	*46,000*	*46,000*
Alluvial Aquifer	35,000	35,000	35,000	35,000	35,000	35,000
Saugus Formation	5,000	11,000	11,000	11,000	11,000	11,000
Recycled Water	1,700	1,700	1,700	1,700	1,700	1,700
Total Existing Supplies	112,080	121,360	123,260	123,780	125,680	125,680
Existing Banking Programs (3)						
Semitropic Water Bank (5)	50,870	50,870	0	0	0	0
Total Existing Banking Programs	50,870	50,870	0	0	0	0
Planned Supplies						
Local Supplies						
Groundwater	*0*	*10,000*	*10,000*	*20,000*	*20,000*	*20,000*
Restored wells (Saugus Formation)	0	10,000	10,000	10,000	10,000	10,000
New Wells (Saugus Formation)	0	0	0	10,000	10,000	10,000
Recycled Water (6)	0	0	1,600	6,300	11,000	15,700
Transfers						
Buena Vista-Rosedale (7)	0	11,000	11,000	11,000	11,000	11,000
Total Planned Supplies	0	21,000	22,600	37,300	42,000	46,700
Planned Banking Programs (3)						
Rosedale-Rio Bravo	0	20,000	20,000	20,000	20,000	20,000
Additional Planned Banking	0	0	20,000	20,000	20,000	20,000
Total Planned Banking Programs	0	20,000	40,000	40,000	40,000	40,000

Notes:

(1) The values shown under "Existing Supplies" and "Planned Supplies" are supplies projected to be available in average/normal years. The values shown under "Existing Banking Programs" and "Planned Banking Programs" are either total amounts currently in storage, or the maximum capacity of program withdrawals.

(2) SWP supplies are calculated by multiplying CLWA's Table A Amount of 95,200 af by percentages of average deliveries projected to be available, taken from Table 6-5 of DWR's "Excerpts from Working Draft of 2005 State Water Project Delivery Reliability Report" (May 2005).

(3) Supplies shown are total amounts that can be withdrawn, and would typically be used only during dry years.

(4) Initial term of the Ventura County entities' flexible storage account is ten years (from 2006 to 2015).

(5) Supplies shown are the total amount currently in storage, and would typically be used only during dry years. Once the current storage amount is withdrawn, this supply would no longer be available and in any event, is not available after 2013.

(6) Recycled water supplies based on projections provided in Chapter 4, Recycled Water.

(7) CLWA is in the process of acquiring this supply, primarily to meet the potential demands of future annexations to the CLWA service area. This acquisition is consistent with CLWA's annexation policy under which it will not approve potential annexations unless additional water supplies are acquired. Currently proposed annexations have a demand for about 4,000 afy of this supply which, if approved, would leave the remaining 7,000 afy available for potential future annexations. Unless and until any such annexations are actually approved, this supply will be available to meet demands within the existing CLWA service area.

The term "dry" is used throughout this chapter and in subsequent chapters concerning water resources and reliability as a measure of supply availability. As used in this Plan, dry years are those years when supplies are the lowest, which occurs primarily when precipitation is lower than the long-term average precipitation. The impact of low precipitation in a given year on a particular supply may differ based on how low the precipitation is, or whether the year follows a high-precipitation year or another low-precipitation year. For the SWP, a low-precipitation year may or may not affect supplies, depending on how much water is in SWP storage at the beginning of the year. Also, dry conditions can differ geographically. For example, a dry year can be local to the Valley area (thereby affecting local groundwater replenishment and production), local to northern California (thereby affecting SWP water deliveries), or statewide (thereby affecting both local groundwater and the SWP). When the term "dry" is used in this Plan, statewide drought conditions are assumed, affecting both local groundwater and SWP supplies at the same time.

3.2 WHOLESALE (IMPORTED) WATER SUPPLIES

3.2.1 Imported Water Supplies

Imported water supplies consist primarily of SWP supplies, which were first delivered to CLWA in 1980. In addition, CLWA has access to water from Flexible Storage Accounts in Castaic Lake, which are planned for dry-year use, but are not strictly limited as such. CLWA wholesales these imported supplies to each of the local retail water purveyors.

The SWP is the largest state-built, multi-purpose water project in the country. It was authorized by the California State Legislature in 1959, with the construction of most initial facilities completed by 1973. Today, the SWP includes 28 dams and reservoirs, 26 pumping and generating plants, and approximately 660 miles of aqueducts. The primary water source for the SWP is the Feather River, a tributary of the Sacramento River. Storage released from Oroville Dam on the Feather River flows down natural river channels to the Sacramento-San Joaquin River Delta (Delta). While some SWP supplies are pumped from the northern Delta into the North Bay Aqueduct, the vast majority of SWP supplies are pumped from the southern Delta into the 444-mile-long California Aqueduct. The California Aqueduct conveys water along the west side of the San Joaquin Valley to Edmonston Pumping Plant, where water is pumped over the Tehachapi Mountains and the aqueduct then divides into the East and West Branches. CLWA takes delivery of its SWP water at Castaic Lake, a terminal reservoir of the West Branch. From Castaic Lake, CLWA delivers its SWP supplies to the local retail water purveyors through an extensive transmission pipeline system.

In the early 1960s, DWR began entering into individual SWP Water Supply Contracts with urban and agricultural public water supply agencies located throughout northern, central, and southern California for SWP water supplies. CLWA is one of 29 water agencies (commonly referred to as “contractors”) that have an SWP Water Supply Contract with DWR. Each SWP contractor’s SWP Water Supply Contract contains a “Table A,” which lists the maximum amount of water an agency may request each year throughout the life of the contract. Table A is used in determining each contractor’s proportionate share, or “allocation,” of the total SWP water supply DWR determines to be available each year. The total planned annual delivery capability of the SWP and the sum of all contractors’ maximum Table A amounts was originally

4.23 million af. The initial SWP storage facilities were designed to meet contractors' water demands in the early years of the SWP, with the construction of additional storage facilities planned as demands increased. However, essentially no additional SWP storage facilities have been constructed since the early 1970s. SWP conveyance facilities were generally designed and have been constructed to deliver maximum Table A amounts to all contractors. After the permanent retirement of some Table A amount by two agricultural contractors in 1996, the maximum Table A amounts of all SWP contractors now totals about 4.17 million af. Currently, CLWA's annual Table A Amount is 95,200 af.[1,2]

While Table A identifies the maximum annual amount of water an SWP contractor may request, the amount of SWP water actually available and allocated to SWP contractors each year is dependent on a number of factors and can vary significantly from year to year. The primary factors affecting SWP supply availability include hydrology, the amount of water in SWP storage at the beginning of the year, regulatory and operational constraints, and the total amount of water requested by SWP contractors. Urban SWP contractors' requests for SWP water, which were low in the early years of the SWP, have been steadily increasing over time, which increases the competition for limited SWP dry-year supplies.

Consistent with other urban SWP contractors, SWP deliveries to CLWA have increased as its requests for SWP water have increased. Tables 3-2 and 3-3 present historical total SWP deliveries to CLWA municipal purveyors and CLWA SWP demand projections provided to DWR (CLWA's wholesale supplier), respectively.

Table 3-2
Historical Total SWP Deliveries to Purveyors(1)

Year	Deliveries (af)	Year	Deliveries (af)
1980	1,125	1993	13,393
1981	5,816	1994	14,389
1982	9,659	1995	16,996
1983	9,185	1996	18,093
1984	10,996	1997	22,148
1985	11,823	1998	20,254
1986	13,759	1999	27,282
1987	16,285	2000	32,579
1988	19,033	2001	35,369
1989	21,618	2002	41,768
1990	21,613	2003	44,419
1991	7,968	2004	47,205
1992	13,911		

Notes:
(1) Includes CLWA SCWD, LACWWD 36, NCWD, and VWC.

[1] CLWA's original SWP Water Supply Contract with DWR was amended in 1966 for a maximum annual Table A Amount of 41,500 af. In 1991, CLWA purchased 12,700 af of annual Table A Amount from a Kern County water district, and in 1999 purchased an additional 41,000 af of annual Table A Amount from another Kern County water district, for a current total annual Table A Amount of 95,200 af.
[2] See Section 3.2.2.

Table 3-3
CLWA Demand Projections Provided to Wholesale Supplier (DWR) (af)

Wholesaler (Supply Source)	2010	2015	2020	2025	2030
DWR (SWP)	95,200	95,200	95,200	95,200	95,200

In an effort to assess the impacts of these varying conditions on SWP supply reliability, DWR issued its "State Water Project Delivery Reliability Report" in May 2003. The report assists SWP contractors in assessing the reliability of the SWP component of their overall supplies. DWR is in the process of updating this report and, on May 25, 2005, provided updated delivery reliability estimates to the SWP contractors in its "Excerpts from the Working Draft of 2005 State Water Project Delivery Reliability." In this update, DWR provided a recommended set of analyses for SWP contractors to use in preparing their 2005 UWMPs.[3] These updated analyses indicate that the SWP, using existing facilities operated under current regulatory and operational constraints, and with all contractors requesting delivery of their full Table A Amounts in most years, could deliver 77 percent of total Table A Amounts on a long-term average basis. These most recent analyses also project that SWP deliveries during multiple-year dry periods could average about 25 to 40 percent of total Table A Amounts and could possibly be as low as 5 percent during an unusually dry single year. During wetter years, or more than 25 percent of the time, 100 percent of full Table A Amounts is projected to be available.

The SWP supplies projected to be available for delivery to CLWA were determined based on the total SWP delivery percentages identified by DWR in its updated analyses. Table 3-4 shows SWP supplies projected to be available to CLWA in average/normal years (based on the average delivery over the study's historic hydrologic period from 1922-1994), i.e., long-term average basis. Table 3-5 summarizes estimated SWP supply availability in a single dry year (based on a repeat of the worst-case historic hydrologic conditions of 1977) and over a multiple dry year period (based on a repeat of the worst-case historic four-year drought of 1931-1934). Reliability and dry-year planning of water supplies are further described in Chapter 6, Reliability Planning.

[3]As part of the Monterey Settlement Agreement, DWR is to prepare an assessment every two years of SWP delivery reliability, which SWP contractors are to use in their water planning efforts. DWR has completed an update of its analysis of SWP delivery reliability and is currently updating this report. While DWR continues its drafting of the remainder of the report, it issued this updated reliability data to the SWP contractors early, so that they could use the most up-to-date SWP reliability data in preparation of their UWMPs. For this reason, DWR issued, in a Notice to Contractors, excerpts from its working draft of this report (available at www.swpao.water.ca.gov/pdfs/05-08.pdf). It is unlikely that the reliability data in DWR's final version of this updated report will differ from the draft.

Table 3-4
Wholesaler Identified and Quantified Existing and Planned Sources of Water Available to CLWA for Average/Normal Years (1)

Wholesaler (Supply Source)	2010	2015	2020	2025	2030
DWR (SWP)					
Table A Supply (af)	67,600	69,500	71,400	73,300	73,300
% of Table A Amount	71%	73%	75%	77%	77%

Notes:

(1) The percentages of Table A Amount projected to be available are taken from Table 6-5 of DWR's "Excerpts from Working Draft of 2005 State Water Project Delivery Reliability Report" (May 2005). Supplies are calculated by multiplying CLWA's Table A Amount of 95,200 af by these percentages.

Table 3-5
Wholesale Supply Reliability (1)

Wholesaler	Single Dry Year (2)	Multiple Dry Years (3)
DWR (SWP Supply)		
2005		
Table A Supply (af)	3,800	30,500
% of Table A Amount	4%	32%
2025/2030		
Table A Supply (af)	4,800	31,400
% of Table A Amount	5%	33%

Notes:

(1) The percentages of Table A Amount projected to be available are taken from Table 6-5 of DWR's "Excerpts from Working Draft of 2005 State Water Project Delivery Reliability Report" (May 2005). Supplies are calculated by multiplying CLWA's Table A Amount of 95,200 af by these percentages.

(2) Based on the worst case historic single dry year of 1977.

(3) Supplies shown are annual averages over four consecutive dry years, based on the worst case historic four-year dry period of 1931-1934.

As part of its Water Supply Contract with DWR, CLWA has access to a portion of the storage capacity of Castaic Lake. This Flexible Storage Account allows CLWA to borrow up to 4,684 af of the storage in Castaic Lake. Any of this amount that CLWA borrows must be replaced by CLWA within five years of its withdrawal. CLWA manages this storage by keeping the account full in normal and wet years and then delivering that stored amount (or a portion of it) during dry periods. The account is refilled during the next year that adequate SWP supplies are available to CLWA to do so. CLWA has recently negotiated with Ventura County water agencies to obtain the use of their Flexible Storage Account. This will allow CLWA access to another 1,376 af of storage in Castaic Lake. CLWA access to this additional storage will be available on a year-to-year basis for ten years, beginning in 2006.

While the primary supply of water available from the SWP is allocated Table A supply, SWP supplies in addition to Table A water may periodically be available, including “Article 21” water, Turnback Pool water, and DWR dry-year purchases. Article 21 water (which refers to the SWP contract provision defining this supply) is water that may be made available by DWR when

excess flows are available in the Delta (i.e., when Delta outflow requirements have been met, SWP storage south of the Delta is full, and conveyance capacity is available beyond that being used for SWP operations and delivery of allocated and scheduled Table A supplies). Article 21 water is made available on an unscheduled and interruptible basis and is typically available only in average to wet years, generally only for a limited time in the late winter. The Turnback Pool is a program where contractors with allocated Table A supplies in excess of their needs in a given year may turn back that excess supply for purchase by other contractors who need additional supplies that year. The Turnback Pool can make water available in all types of hydrologic years, although generally less excess water is turned back in dry years. As urban contractor demands increase in the future, the amount of water turned back and available for purchase will likely diminish. In critical dry years, DWR has formed Dry Year Water Purchase Programs for contractors needing additional supplies. Through these programs, water is purchased by DWR from willing sellers in areas that have available supplies and is then sold by DWR to contractors willing to purchase those supplies. Because the availability of these supplies is somewhat uncertain, they are not included as supplies in this UWMP. However, CLWA's access to these supplies when they are available may enable it to improve the reliability of its SWP supplies beyond the values used throughout this report.

3.2.2 Litigation Effects on Availability of Imported Water

Of CLWA's 95,2000 af annual Table A Amount, 41,000 afy was permanently transferred to CLWA in 1999 by Wheeler Ridge-Maricopa Water Storage District, a member unit of the Kern County Water Agency. CLWA's Environmental Impact Report ("EIR") prepared in connection with the 41,000 afy water transfer was challenged in Friends of the Santa Clara River v. Castaic Lake Water Agency (Los Angeles County Superior Court, Case Number BS056954) ("Friends"). On appeal, the Court of Appeal, Second Appellate District held that since the 41,000 afy EIR tiered off the Monterey Agreement EIR that was later decertified, CLWA would also have to decertify its EIR as well and prepare a revised EIR. As amplified in detail in the following sentences, Friends was dismissed with prejudice (permanently) in February 2005. CLWA has not been enjoined from using any water that is part of the 41,000 afy transfer.

Under the jurisdiction of the Los Angeles County Superior Court in Friends, CLWA prepared and circulated a revised Draft EIR for the transfer, received and responded to public comments regarding the revised Draft EIR, and held two separate public hearings concerning the revised Draft EIR. CLWA approved the revised EIR for the transfer on December 22, 2004 and lodged the revised EIR with the Los Angeles Superior Court as part of its Return to the Preemptory Writ of Mandate in Friends. Thereafter, Friends was dismissed with prejudice (permanently). In January 2005, two new challenges to CLWA's environmental review for the transfer were filed in the Ventura County Superior Court by the Planning and Conservation League and by the California Water Impact Network; these cases have been consolidated and transferred to Los Angeles County Superior Court.

These pending challenges to the EIR for the transfer do not affect the reliability of the transfer amount, and it is still appropriate to include the transfer amount as part of CLWA's 95,200 AFY Table A amount, for the following reasons. First, the transfer was completed in 1999, and DWR has allocated and annually delivered the water in accordance with the completed transfer. Second, the Court of Appeal held that the only defect in the 1999 EIR was that it tiered off the

Monterey Agreement EIR, which was later decertified. This defect has now been remedied by the preparation of a revised EIR that did not tier off the Monterey Agreement EIR. Third, the Monterey Amendments settlement agreement expressly authorizes the operation of the SWP in accordance with the Monterey Amendments, which authorized the transfer. Fourth, the Court of Appeal refused to enjoin the transfer, and instead required preparation of a revised EIR. Fifth, the transfer contracts remain in full force and effect, and no court has ever questioned their validity or enjoined the use of this portion of CLWA's Table A amount. It is, therefore, reasonable to conclude that if a court finds the revised EIR legally deficient, that court, like all others before it, will again refuse to enjoin the transfer, and will instead require further revisions to the EIR. Therefore, the pending challenges litigation should have no impact upon the amount of water available to CLWA as a result of the transfer.

3.3 GROUNDWATER

This section presents information about CLWA's and the purveyor's groundwater supplies, including a summary of the adopted GWMP.

3.3.1 Santa Clara River Groundwater Basin – East Subbasin

The sole source of local groundwater for urban water supply in the Valley is the groundwater Basin identified in the DWR Bulletin 118, 2003 Update as the Santa Clara River Valley Groundwater Basin, East Subbasin (Basin) (Basin No. 4-4.07). The Basin is comprised of two aquifer systems, the Alluvium and the Saugus Formation. The Alluvium generally underlies the Santa Clara River and its several tributaries, and the Saugus Formation underlies practically the entire Upper Santa Clara River area. There are also some scattered outcrops of Terrace deposits in the Basin that likely contain limited amounts of groundwater. Since these deposits are located in limited areas situated at elevations above the regional water table and are also of limited thickness, they are of no practical significance as aquifers and consequently have not been developed for any significant water supply. Figure 3-1 illustrates the mapped extent of the Santa Clara River Valley East Subbasin in DWR Bulletin 118 (2003), which approximately coincides with the outer extent of the Alluvium and Saugus Formation. The service area for CLWA and the purveyors is also shown on Figure 3-1.

3.3.2 Adopted Groundwater Management Plan

As part of legislation authorizing CLWA to provide retail water service to individual municipal customers, Assembly Bill (AB) 134 (2001) included a requirement that CLWA prepare a groundwater management plan in accordance with the provisions of Water Code Section 10753, which was originally enacted by AB 3030. The general contents of CLWA's groundwater management plan were outlined in 2002, and a detailed plan was drafted and adopted in 2003 to satisfy the requirements of AB 134. The plan both complements and formalizes a number of existing water supply and water resource planning and management activities in CLWA's service area, which effectively encompasses the East Subbasin of the Santa Clara River Valley Groundwater Basin.

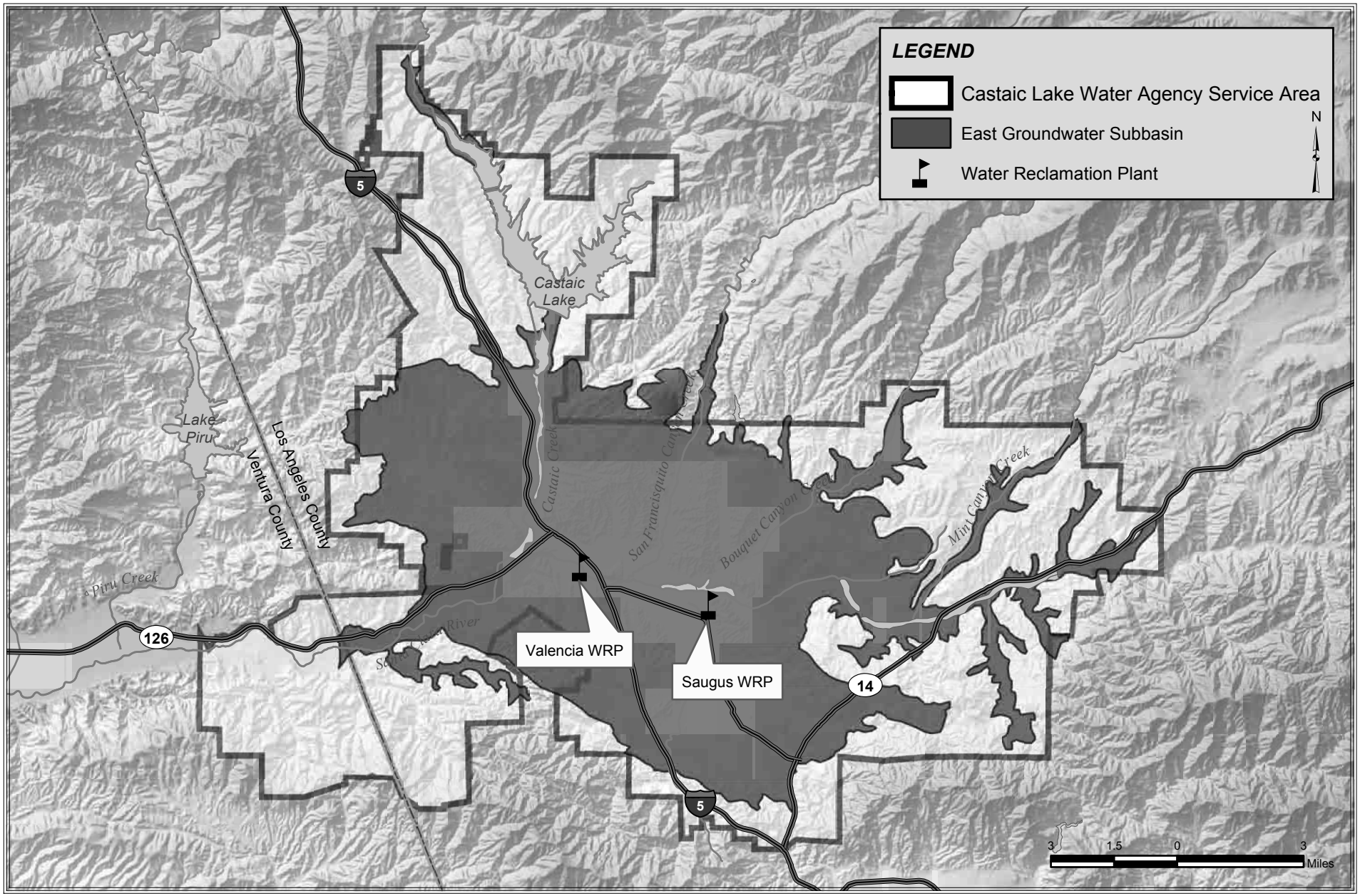


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Figure 3-1
Santa Clara River Valley
East Groundwater Subbasin

CLWA adopted the GWMP on December 10, 2003. The GWMP contains four management objectives, or goals, for the Basin including (1) development of an integrated surface water, groundwater, and recycled water supply to meet existing and projected demands for municipal, agricultural, and other water uses; (2) assessment of groundwater basin conditions to determine a range of operational yield values that use local groundwater conjunctively with supplemental SWP supplies and recycled water to avoid groundwater overdraft; (3) preservation of groundwater quality, including active characterization and resolution of any groundwater contamination problems; and (4) preservation of interrelated surface water resources, which includes managing groundwater to not adversely impact surface and groundwater discharges or quality to downstream basin(s).

Prior to preparation and adoption of the GWMP, a local Memorandum of Understanding (MOU) process among CLWA, the purveyors, and United Water Conservation District (UWCD) in neighboring Ventura County had produced the beginning of local groundwater management, now embodied in the GWMP. In 2001, out of a willingness to seek opportunities to work together and develop programs that mutually benefit the region as well as their individual communities, those agencies prepared and executed the MOU. The agreement is a collaborative and integrated approach to several of the aspects of water resource management included in the GWMP. UWCD manages surface water and groundwater resources in seven groundwater basins, all located in Ventura County, downstream of the East Subbasin of the Santa Clara River Valley (Basin). UWCD is a partner in cooperative management efforts to accomplish the objectives (goals) for the Basin, particularly as they relate to preservation of surface water resources that flow through the respective basins. As a result of the MOU, the cooperating agencies have undertaken the following measures: integrated their database management efforts, developed and utilized a numerical groundwater flow model for analysis of groundwater basin yield and containment of groundwater contamination, and continued to monitor and report on the status of Basin conditions, as well as on geologic and hydrologic aspects of the overall stream-aquifer system.

The adopted GWMP includes 14 elements intended to accomplish the Basin management objectives listed above. In summary, the plan elements include:

- Monitoring of groundwater levels, quality, production and subsidence
- Monitoring and management of surface water flows and quality
- Determination of Basin yield and avoidance of overdraft
- Development of regular and dry-year emergency water supply
- Continuation of conjunctive use operations
- Long-term salinity management
- Integration of recycled water
- Identification and mitigation of soil and groundwater contamination, including involvement with other local agencies in investigation, cleanup, and closure
- Development and continuation of local, state and federal agency relationships
- Groundwater management reports

- Continuation of public education and water conservation programs
- Identification and management of recharge areas and wellhead protection areas
- Identification of well construction, abandonment, and destruction policies
- Provisions to update the groundwater management plan

Work on a number of the GWMP elements had been ongoing for some time prior to the formal adoption of the GWMP and continues on an ongoing basis. The results of some of that work are reflected in this Plan.

3.3.2.1 Available Groundwater Supplies

The groundwater component of overall water supply in the Valley derives from a groundwater operating plan developed over the last 20 years to meet water requirements (municipal, agricultural, small domestic) while maintaining the Basin in a sustainable condition (i.e., no long-term depletion of groundwater or interrelated surface water). This operating plan also addresses groundwater contamination issues in the Basin, all consistent with both the MOU and the GWMP described above. The groundwater operating plan is based on the concept that pumping can vary from year to year to allow increased groundwater use in dry periods and increased recharge during wet periods and to collectively assure that the groundwater Basin is adequately replenished through various wet/dry cycles. As described in the MOU and subsequently formalized in the GWMP, the operating yield concept has been quantified as ranges of annual pumping volumes.

The ongoing work of the MOU has produced two formal reports. The first report, dated April 2004, documents the construction and calibration of the groundwater flow model for the Valley. The second report, dated August 2005, presents the modeling analysis of the purveyors' groundwater operating plan, described below. The primary conclusion of the modeling analysis is that the groundwater operating plan will not cause detrimental short or long term effects to the groundwater and surface water resources in the Valley and is therefore, sustainable[4]. The analysis of sustainability for groundwater and interrelated surface water is described in Appendix C.

The groundwater operating plan, summarized in Table 3-6, is as follows:

> **Alluvium** – Pumping from the Alluvial Aquifer in a given year is governed by local hydrologic conditions in the eastern Santa Clara River watershed. Pumping ranges between 30,000 and 40,000 afy during normal and above-normal rainfall years. However, due to hydrogeologic constraints in the eastern part of the Basin, pumping is reduced to between 30,000 and 35,000 afy during locally dry years.
>
> **Saugus Formation** – Pumping from the Saugus Formation in a given year is tied directly to the availability of other water supplies, particularly from the SWP. During average-year conditions within the SWP system, Saugus pumping ranges between 7,500 and 15,000 afy. Planned dry-year pumping from the Saugus Formation ranges between

[4] From "Analysis of Groundwater Basin Yield, Upper Santa Clara River Basin, Eastern Subbasin, Los Angeles County, California," prepared by CH2M Hill and Luhdorff and Scalmanini Consulting Engineers, August 2005.

15,000 and 25,000 afy during a drought year and can increase to between 21,000 and 25,000 afy if SWP deliveries are reduced for two consecutive years and between 21,000 and 35,000 afy if SWP deliveries are reduced for three consecutive years. Such high pumping would be followed by periods of reduced (average-year) pumping, at rates between 7,500 and 15,000 afy, to further enhance the effectiveness of natural recharge processes that would recover water levels and groundwater storage volumes after the higher pumping during dry years.

Table 3-6
Groundwater Operating Plan for the Santa Clarita Valley

Aquifer	Groundwater Production (af)			
	Normal Years	Dry Year 1	Dry Year 2	Dry Year 3
Alluvium	30,000 to 40,000	30,000 to 35,000	30,000 to 35,000	30,000 to 35,000
Saugus	7,500 to 15,000	15,000 to 25,000	21,000 to 25,000	21,000 to 35,000
Total	**37,500 to 55,000**	**45,000 to 60,000**	**51,000 to 60,000**	**51,000 to 70,000**

Within the groundwater operating plan, three factors affect the availability of groundwater supplies: sufficient source capacity (wells and pumps); sustainability of the groundwater resource to meet pumping demand on a renewable basis; and protection of groundwater sources (wells) from known contamination, or provisions for treatment in the event of contamination. The first two factors are briefly discussed as follows, and more completely addressed in Appendix C. Protection of groundwater sources and provisions for treatment in the event of contamination are developed further in Chapter 5.

For reference to the Groundwater Operating Plan, recent historical and projected groundwater pumping by the retail water purveyors is summarized in Tables 3-7 and 3-8, respectively.

Table 3-7
Historical Groundwater Production by the Retail Water Purveyors[1]

Basin Name	Groundwater Pumped (af) [2]				
	2000	2001	2002	2003	2004
Santa Clara River Valley East Subbasin					
CLWA Santa Clarita Water Division	*11,529*	*9,896*	*9,513*	*6,424*	*7,146*
Alluvium	11,529	9,896	9,513	6,424	7,146
Saugus Formation	0	0	0	0	0
LA County Waterworks District 36	*0*	*0*	*0*	*0*	*380*
Alluvium	0	0	0	0	380
Saugus Formation	0	0	0	0	0
Newhall County Water District	*3,694*	*4,073*	*4,376*	*3,779*	*5,321*
Alluvium	1,508	1,641	981	1,266	1,582
Saugus Formation	2,186	2,432	3,395	2,513	3,739
Valencia Water Company	*13,186*	*11,353*	*12,568*	*12,775*	*11,824*
Alluvium	12,179	10,518	11,603	11,707	9,862
Saugus Formation	1,007	835	965	1,068	1,962
Total	*28,409*	*25,322*	*26,457*	*22,978*	*24,671*
Alluvium	25,216	22,055	22,097	19,397	18,970
Saugus Formation	3,193	3,267	4,360	3,581	5,701
% of Total Municipal Water Supply	**47%**	**42%**	**39%**	**34%**	**34%**

Notes:

(1) From 2004 Santa Clarita Valley Water Report (May 2005).

(2) Pumping for municipal and industrial uses only. Does not include pumping for agricultural and miscellaneous uses.

Table 3-8
Projected Groundwater Production (Normal Year)

Basin Name	Range of Groundwater Pumping (af) [1][2][3]				
	2010	2015	2020	2025	2030
Santa Clara River Valley East Subbasin					
CLWA Santa Clarita Water Division					
Alluvium	6,000-14,000	6,000-14,000	6,000-14,000	6,000-14,000	6,000-14,000
Saugus Formation	3,000	3,000	3,000	3,000	3,000
LA County Waterworks District 36					
Alluvium	0	0	0	0	0
Saugus Formation	500-1,000	500-1,000	500-1,000	500-1,000	500-1,000
Newhall County Water District					
Alluvium	1,500-3,000	1,500-3,000	1,500-3,000	1,500-3,000	1,500-3,000
Saugus Formation	3,000-6,000	3,000-6,000	3,000-6,000	3,000-6,000	3,000-6,000
Valencia Water Company					
Alluvium	12,000-20,000	12,000-20,000	12,000-20,000	12,000-20,000	12,000-20,000
Saugus Formation	2,500-5,000	2,500-5,000	2,500-5,000	2,500-5,000	2,500-5,000

Notes:

(1) The range of groundwater production capability for each purveyor varies based on a number of factors which include each purveyor's capacity to produce groundwater, the location of its wells within the Alluvium and Saugus Formation, local hydrology, availability of imported water supplies and water demands.

(2) To ensure sustainability, the purveyors have committed that the annual use of groundwater pumped collectively in any given year will not exceed the purveyors' operating plan as described in the Basin Yield Study and reported annually in the SCV Water Report. As noted in the discussion of the purveyors' operating plan for groundwater in Table 3-6 of this Plan, the "normal" year quantities of groundwater pumped from the Alluvium and Saugus Formation are 30,000 to 40,000 afy and 7,500 to 15,000 afy, respectively.

(3) Groundwater pumping shown for purveyor municipal and industrial uses only.

The groundwater operating plan recognizes ongoing Alluvial pumping for both municipal and agricultural water supply, as well as other small private domestic and related pumping. During preparation of this Plan, the Santa Clarita Valley Well Owners' Association submitted some limited information about the nature and magnitude of private well pumping. This included a detailed estimate of private well pumping in the San Francisquito Canyon portion of the Basin: a total of 85 afy by 73 individual private pumpers, or nearly 1.2 afy per private well pumper. As a result of that input, it is now better recognized that total private pumping is likely well within the 500 afy estimates of small private well pumping in recent annual Water Reports, or about 1 percent of typical Alluvial Aquifer pumping by the purveyors and other known private well owners, e.g. agricultural pumpers, combined. Thus, while the small private wells are not explicitly modeled in the Basin yield analysis described herein because their locations and operations are not known, their operation creates a pumping stress that is essentially negligible at the scale of the regional model. Ultimately, the intent to maintain overall pumping within the operating plan, including private pumping, will result in sustainable groundwater conditions to support the combination of municipal (purveyor), agricultural, and small private groundwater use on an ongoing basis.

3.3.2.1.1 Alluvium

Based on a combination of historical operating experience and recent groundwater modeling analysis, the Alluvial Aquifer can supply groundwater on a long-term sustainable basis in the overall range of 30,000 to 40,000 afy, with a probable reduction in dry years to a range of 30,000 to 35,000 afy. Both of those ranges include about 15,000 afy of Alluvial pumping for current agricultural water uses and an estimated pumping of up to about 500 afy by small private pumpers. The dry year reduction is a result of practical constraints in the eastern part of the Basin, where lowered groundwater levels in dry periods have the effect of reducing pumping capacities in that shallower portion of the aquifer.

Adequacy of Supply

For municipal water supply, with existing wells and pumps, the three retail water purveyors with Alluvial wells (NCWD, SCWD, and VWC) have a combined pumping capacity from active wells (not contaminated by perchlorate) of 36,120 gpm, which translates into a current full-time Alluvial source capacity of approximately 58,000 afy. Alluvial pumping capacity from all the active municipal supply wells is summarized in Table 3-9. The locations of the various municipal Alluvial wells throughout the Basin are illustrated on Figure 3-2. These capacities do not include one Alluvial Aquifer well that has been temporarily inactivated due to perchlorate contamination: the SCWD Stadium well, which represents another 800 gpm of pumping capacity, or full-time source capacity of about 1,290 afy.

In terms of adequacy and availability, the combined active Alluvial groundwater source capacity of municipal wells is approximatley 58,000 afy. This is more than sufficient to meet the municipal, or urban, component of groundwater supply from the Alluvium, which is currently 20,000 to 25,000 afy of the total planned Alluvial pumping of 30,000 to 40,000 afy. (The balance of Alluvial pumping in the operating plan is for agricultural and other, including small private, pumping.)

Sustainability

Until recently, the long-term renewability of Alluvial groundwater was empirically determined from approximately 60 years of recorded experience. Generally, it consists of long-term stability in groundwater levels and storage, with some dry period fluctuations in the eastern part of the Basin, over a historical range of total Alluvial pumpage from as low as about 20,000 afy to as high as about 43,000 afy. Those empirical observations have now been complemented by the development and application of a numerical groundwater flow model, which has been used to predict aquifer response to the planned operating ranges of pumping. The numerical groundwater flow model has also been used to analyze the control of perchlorate contaminant migration under selected pumping conditions that would restore, with treatment, pumping capacity inactivated due to perchlorate contamination detected in some wells in the Basin. The latter use of the model is described in Chapter 5, which addresses the Saugus Formation and the overall approach to the perchlorate contamination issue.

Table 3-9
Active Municipal Groundwater Source Capacity—Alluvial Aquifer Wells

Wells	Pump Capacity (gpm)	Max Annual Capacity (af)	Normal Year Production [1] (af)	Dry-Year Production (af)
Newhall CWD				
Castaic 1	600	960	385	345
Castaic 2	425	680	166	125
Castaic 4	270	430	100	45
Pinetree 1	300	480	164	N/A
Pinetree 3	550	880	545	525
Pinetree 4	500	800	300	N/A
NCWD Subtotal	2,645	4,230	1,660	1,040
Santa Clarita WD				
Clark	600	960	782	700
Guida	1,000	1,610	1,320	1,230
Honby	950	1,530	696	870
Lost Canyon 2	850	1,370	741	640
Lost Canyon 2A	825	1,330	1,034	590
Mitchell 5B	700	1,120	557	N/A
N. Oaks Central	1,000	1,610	822	1,640
N. Oaks East	950	1,530	1,234	485
N. Oaks West	1,400	2,250	898	N/A
Sand Canyon	750	1,200	930	195
Sierra	1,500	2,410	846	N/A
SCWD Subtotal	10,525	16,920	9,860	6,350
Valencia WC				
Well D	1,050	1,690	690	690
Well E-15	1,400	2,260	N/A	N/A
Well N	1,250	2,010	620	620
Well N7	2,500	4,030	1,160	1,160
Well N8	2,500	4,030	1,160	1,160
Well Q2	1,200	1,930	985	985
Well S6	2,000	3,220	865	865
Well S7	2,000	3,220	865	865
Well S8	2,000	3,220	865	865
Well T2	800	1,290	460	460
Well T4	700	1,120	460	460
Well U4	1,000	1,610	935	935
Well U6	1,250	2,010	825	825
Well W9	800	1,290	600	600
Well W10	1,500	2,410	865	865
Well W11	1,000	1,610	350	350
VWC Subtotal	22,950	36,950	11,705	11,705
Total Purveyors	**36,120**	**58,100** [2]	**23,225** [2]	**19,095** [2]

Notes:
(1) Based on recent annual pumping.
(2) Currently active wells only; capacity will slightly increase by restoration of contaminated wells.

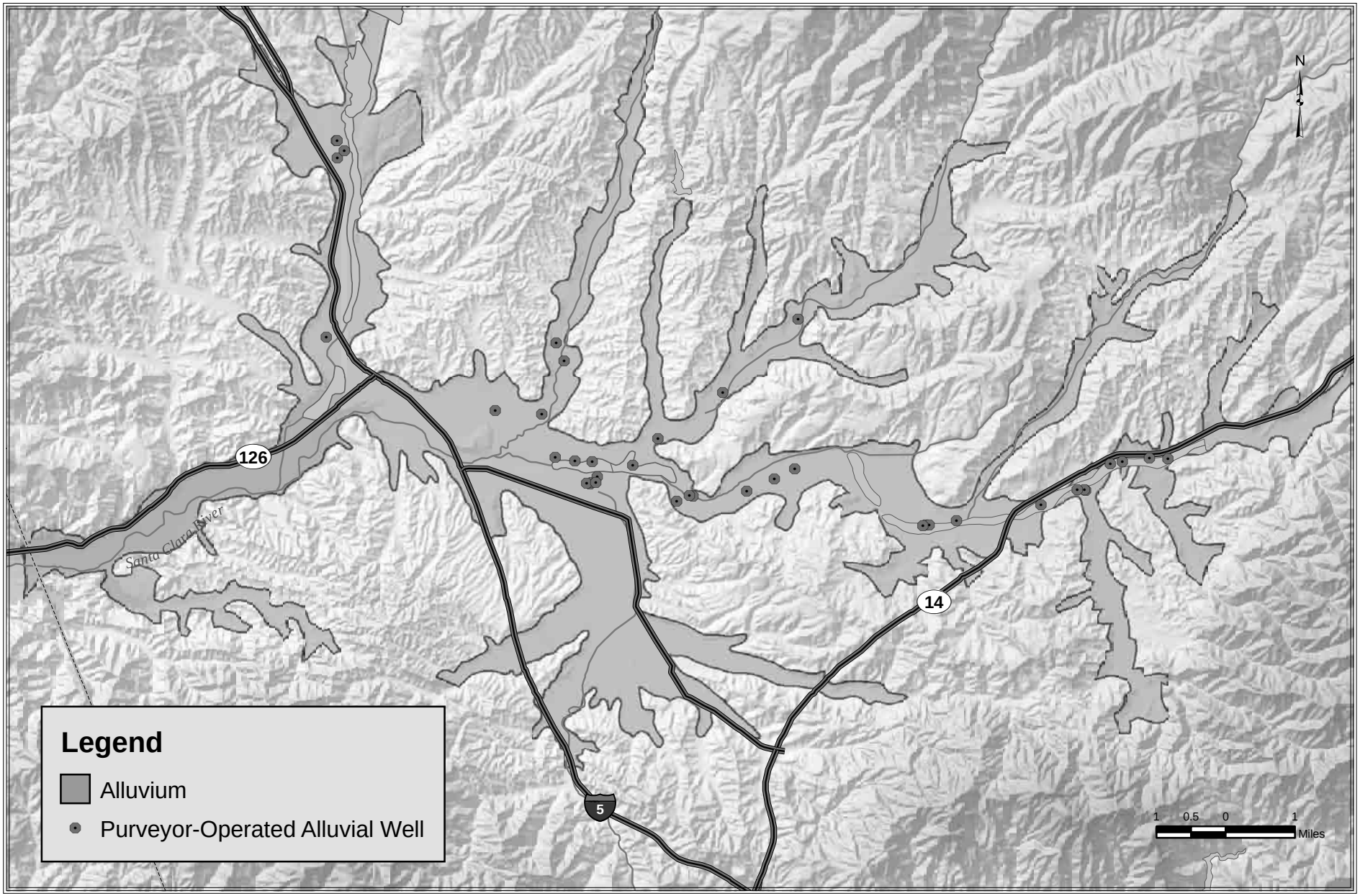

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Figure 3-2
Municipal Alluvial Well Locations
Santa Clara River Valley, East Groundwater Subbasin

To examine the yield of the Alluvium or, the sustainability of the Alluvium on a renewable basis, the groundwater flow model was used to examine the long-term projected response of the aquifer to pumping for municipal and agricultural uses in the 30,000 to 40,000 afy range under average/normal and wet conditions, and in the 30,000 to 35,000 afy range under locally dry conditions. To examine the response of the entire aquifer system, the model also incorporated pumping from the Saugus Formation in accordance with the normal (7,500-15,000 afy) and dry year (15,000-35,000 afy) operating plan for that aquifer. The model was run over a 78-year hydrologic period, which was selected from actual historical precipitation to examine a number of hydrologic conditions expected to affect both groundwater pumping and groundwater recharge. The selected 78-year simulation period was assembled from an assumed recurrence of 1980 to 2003 conditions, followed by an assumed recurrence of 1950 to 2003 conditions. The 78-year period was analyzed to define both local hydrologic conditions (normal and dry), which affect the rate of pumping from the Alluvium, and hydrologic conditions that affect SWP operations, which in turn affect the rate of pumping from the Saugus. The resultant simulated pumping cycles included the distribution of pumping for each of the existing Alluvial Aquifer wells, for normal and dry years respectively, as shown in Table 3-9.

Simulated Alluvial Aquifer response to the range of hydrologic conditions and pumping stresses is essentially a long-term repeat of the historical conditions that have resulted from similar pumping over the last several decades. The resultant response consists of: (1) generally constant groundwater levels in the middle to western portion of the Alluvium and fluctuating groundwater levels in the eastern portion as a function of wet and dry hydrologic conditions, (2) variations in recharge that directly correlate with wet and dry hydrologic conditions, and (3) no long-term decline in groundwater levels or storage. The Alluvial Aquifer is considered a sustainable water supply source to meet the Alluvial portion of the operating plan for the groundwater Basin. This is based on the combination of actual experience with Alluvial Aquifer pumping at capacities similar to those planned for the future and the resultant sustainability (recharge) of groundwater levels and storage, and further based on modeled projections of aquifer response to planned pumping rates that also show no depletion of groundwater.

3.3.2.1.2 Saugus Formation

Based on historical operating experience and extensive recent testing and groundwater modeling analysis, the Saugus Formation can supply water on a long-term sustainable basis in a normal range of 7,500 to 15,000 afy, with intermittent increases to 25,000 to 35,000 af in dry years. The dry-year increases, based on limited historical observation and modeled projections, demonstrate that a small amount of the large groundwater storage in the Saugus Formation can be pumped over a relatively short (dry) period. This would be followed by recharge (replenishment) of that storage during a subsequent normal-to-wet period when pumping would be reduced.

Adequacy of Supply

For municipal water supply with existing wells, the three retail water purveyors with Saugus wells (NCWD, SCWD, and VWC) have a combined pumping capacity from active wells (not contaminated by perchlorate) of 14,900 gpm, which translates into a full-time Saugus source capacity of 24,000 afy. Saugus pumping capacity from all the active municipal supply wells is summarized in Table 3-10; the locations of the various active municipal Saugus wells are illustrated on Figure 3-3. These capacities do not include the four Saugus wells contaminated by

perchlorate, although they indirectly reflect the capacity of one of the contaminated wells, VWC's Well 157, which has been sealed and abandoned, and replaced by VWC's Well 206 in a non-impacted part of the Basin. The four contaminated wells, one owned by NCWD and two owned by SCWD, in addition to the VWC well, represent a total of 7,900 gpm of pumping capacity (or full-time source capacity of about 12,700 afy) inactivated due to perchlorate contamination.

Table 3-10
Active Municipal Groundwater Source Capacity—Saugus Formation Wells

Wells	Pump Capacity (gpm)	Max Annual Capacity (af)	Normal Year Production [(1)] (af)	Dry-Year Production (af)
Newhall CWD				
12	2,300	3,700	1,315	2,044
13	2,500	4,030	1,315	2,044
NCWD Subtotal	4,800	7,730	2,630	4,088
Valencia WC				
159	500	800	50	50
160	2,000	3,220	1,000	1,330
201	2,400	3,870	100	3,577
205	2,700	4,350	1,000	3,827
206	2,500	4,030	1,175	3,500
VWC Subtotal	10,100	16,270	3,325	12,284
Total Purveyors	**14,900**	**24,000** [(2)]	**5,955** [(2)]	**16,372** [(2)]

Notes:
(1) Based on recent annual pumping.
(2) Currently active wells only; additional capacity to meet dry-year operating plan would be met by restoration of contaminated wells and new well construction.

In terms of adequacy and availability, the combined active Saugus groundwater source capacity of municipal wells of 24,000 afy, is more than sufficient to meet the planned use of Saugus groundwater in normal years of 7,500 to 15,000 afy. During the currently scheduled two-year time frame for restoration of impacted Saugus capacity (as discussed further in Chapter 5), this currently active capacity is more than sufficient to meet water demands, in combination with other sources, if both of the next two years are dry. At that time, the combination of currently active capacity and restored impacted capacity, through a combination of treatment at two of the impacted wells and replacement well construction, will provide sufficient total Saugus capacity to meet the planned use of Saugus groundwater during multiple dry-years of 35,000 af, if that third year is also a dry year.

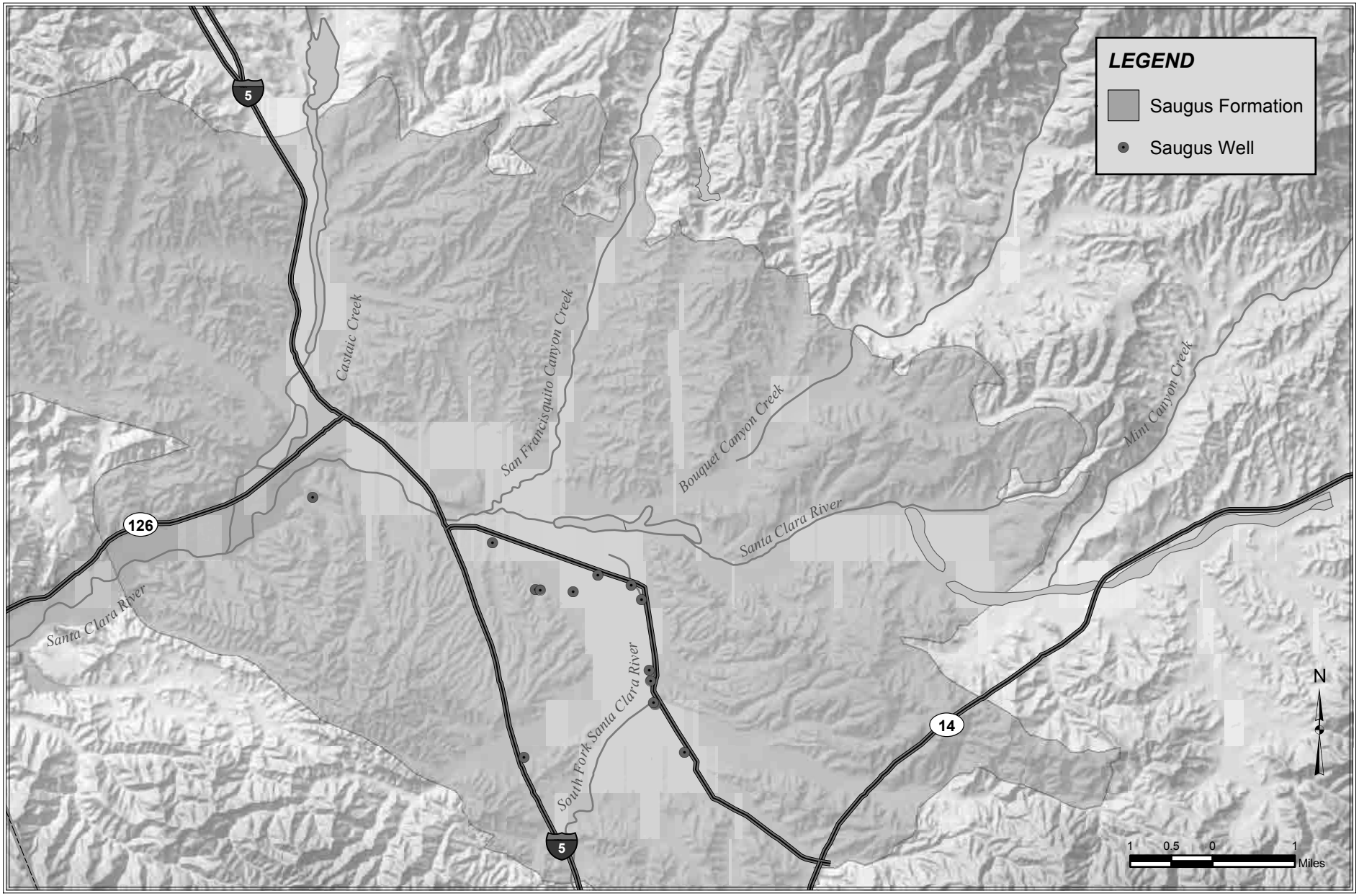

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Figure 3-3
Saugus Well Locations
Santa Clara River Valley, East Groundwater Subbasin

Sustainability

Until recently, the long-term sustainability of Saugus groundwater was empirically determined from limited historical experience. The historical record shows fairly low annual pumping in most years, with one four-year period of increased pumping up to about 15,000 afy that produced no long-term depletion of the substantial groundwater storage in the Saugus. Those empirical observations have now been complemented by the development and application of the numerical groundwater flow model, which has been used to examine aquifer response to the operating plan for pumping from both the Alluvium and the Saugus and also to examine the effectiveness of pumping for both contaminant extraction and control of contaminant migration within the Saugus Formation. The latter aspects of Saugus pumping are discussed in Chapter 5.

To examine the yield of the Saugus Formation or, its sustainability on a renewable basis, the groundwater flow model was used to examine long-term projected response to pumping from both the Alluvium and the Saugus over the 78-year period of hydrologic conditions using alternating wet and dry periods as have historically occurred. The pumping simulated in the model was in accordance with the operating plan for the Basin. For the Saugus, simulated pumpage included the planned restoration of recent historic pumping from the perchlorate-impacted wells. In addition to assessing the overall recharge of the Saugus, that pumping was analyzed to assess the effectiveness of controlling the migration of perchlorate by extracting and treating contaminated water close to the source of contamination.

Simulated Saugus Formation response to the ranges of pumping under assumed recurrent historical hydrologic conditions is consistent with actual experience under smaller pumping rates. The response consists of (1) short-term declines in groundwater levels and storage near pumped wells during dry-period pumping, (2) rapid recovery of groundwater levels and storage after cessation of dry-period pumping, and (3) no long-term decreases or depletion of groundwater levels or storage. The combination of actual experience with Saugus pumping and recharge up to about 15,000 afy, now complemented by modeled projections of aquifer response that show long-term utility of the Saugus at 7,500 to 15,000 afy in normal years and rapid recovery from higher pumping rates during intermittent dry periods, shows that the Saugus Formation can be considered a sustainable water supply source to meet the Saugus portion of the operating plan for the groundwater Basin.

3.3.3 Potential Supply Inconsistency

A small group of wells that have been impacted by perchlorate represent a temporary loss of well capacity within CLWA's service area. Of the six wells that were initially removed from active water supply service upon the detection of perchlorate, four wells with a combined capacity of 10,000 af remain out of service, as discussed further in Chapter 5. However, CLWA and the purveyors have developed an implementation plan that would restore this well capacity. The implementation plan includes a combination of treatment facilities and replacement wells. Treatment facilities for several of the impacted wells will be operational in 2006 and the production restoration (replacement) wells will be operational by 2010. Additional information on the treatment technology and schedule for restoration of the impacted wells is provided in Chapter 5. Additional information concerning water quality issues and replacement capacity is also provided in Chapter 5.

3.4 TRANSFERS, EXCHANGES, AND GROUNDWATER BANKING PROGRAMS

Additional water supplies can be purchased from other water agencies and sources, and CLWA is currently exploring opportunities. An important element to enhancing the long-term reliability of the total mix of supplies currently available to meet the needs of the Valley is the use of transfers, exchanges, and groundwater banking programs, such as those described below.

3.4.1 Transfers and Exchanges

An opportunity available to CLWA to increase water supplies is to participate in voluntary water transfer programs. Since the drought of 1987-1992, the concept of water transfer has evolved into a viable supplemental source to improve supply reliability. The initial concept for water transfers was codified into law in 1986 when the California Legislature adopted the "Katz" Law (California Water Code, Sections 1810-1814) and the Costa-Isenberg Water Transfer Law of 1986 (California Water Code, Sections 470, 475, 480-483). These laws help define parameters for water transfers and set up a variety of approaches through which water or water rights can be transferred among individuals or agencies.

Up to 27 million af of water are delivered for agricultural use every year. Over half of this water use is in the Central Valley, and much of it is delivered by, or adjacent to, SWP and Central Valley Project (CVP) conveyance facilities. This proximity to existing water conveyance facilities could allow for the voluntary transfer of water to many urban areas, including CLWA, via the SWP. Such water transfers can involve water sales, conjunctive use and groundwater substitution, and water sharing and usually occur as a form of spot, option, or core transfers agreement. The costs of a water transfer would vary depending on the type, term, and location of the transfer. The most likely voluntary water transfer programs would probably involve the Sacramento or southern San Joaquin Valley areas.

One of the most important aspects of any resource planning process is flexibility. A flexible strategy minimizes unnecessary or redundant investments (or stranded costs). The voluntary purchase of water between willing sellers and buyers can be an effective means of achieving flexibility. However, not all water transfers have the same effectiveness in meeting resource needs. Through the resource planning process and ultimate implementation, several different types of water transfers could be undertaken.

3.4.1.1 Core Transfers

Core transfers are agreements to purchase a defined quantity of water every year. These transfers have the benefit of more certainty in costs and supply, but in some years can be surplus to imported water (available in most years) that is already paid for.

3.4.1.2 Spot Market Transfers

Spot market transfers involve water purchased only during the time of need (usually a drought). Payments for these transfers occur only when water is actually requested and delivered, but there is usually greater uncertainty in terms of costs and availability of supply. Examples of such transfers were the Governor's Drought Water Banks of 1991 and 1992. An additional risk of spot

market transfers is that the purchases may be subject to institutional limits or restricted access (e.g., requiring the purchasing agency to institute rationing before it is eligible to participate in the program).

3.4.1.3 Option Contracts

Option contracts are agreements that specify the amount of water needed and the frequency or probability that the supply will be called upon (an option). Typically, a relatively low up-front option payment is required and, if the option is actually called upon, a subsequent payment would be made for the amount called. These transfers have the best characteristics of both core and spot transfers. With option contracts, the potential for redundant supply is minimized, as are the risks associated with cost and supply availability.

3.4.1.4 Future Market Transfers

The most viable types of water transfers are core and option transfers and, as such, represent CLWA's long-term strategy. The costs for these types of transfers have been estimated to be about $60 to $110 per af (equivalent to $1,100 to $2,000 per af for Table A Amount) for core transfers and $250 per af for option transfers. Although the option transfer costs might seem high, the equivalent average annual cost is much less - about $65 to $112 per af. Average annual option transfer costs are much lower due to the variable likelihood that the transfers will be needed. Currently, CLWA is proceeding with environmental compliance to acquire a core transfer of an additional 11,000 afy of surface water from the Buena Vista Water Storage District and Rosedale-Rio Bravo Water Storage District, both located in Kern County.

3.4.2 Groundwater Banking Programs

With recent developments in conjunctive use and groundwater banking, significant opportunities exist to improve water supply reliability for CLWA. Conjunctive use is the coordinated operation of multiple water supplies to achieve improved supply reliability. Most conjunctive use concepts are based on storing groundwater supplies in times of surplus for use during dry periods and drought when surface water supplies would likely be reduced.

Groundwater banking programs involve storing available SWP surface water supplies during wet years in groundwater basins in, for example, the San Joaquin Valley. Water would be stored either directly by surface spreading or injection, or indirectly by supplying surface water to farmers for their use in lieu of their intended groundwater pumping. During water shortages, the stored water could be pumped out and conveyed through the California Aqueduct to CLWA as the banking partner, or used by the farmers in exchange for their surface water allocations, which would be delivered to CLWA as the banking partner through the California Aqueduct. Several conjunctive use and groundwater banking opportunities are available to CLWA.

In 2003, CLWA produced a Draft Water Supply Reliability Plan. The plan outlines primary elements that CLWA should include in its water supply mix to obtain maximum overall supply reliability enhancement. These elements include both conjunctive use and groundwater banking programs, as well as water acquisitions. The Plan also contains a recommended implementation plan and schedule.

The reliability plan recommends that CLWA obtain total banking storage capacity of 50,000 af, with pumpback capacity of 20,000 af per year, by 2005. For the long-term, CLWA should obtain a total of 183,000 af of storage capacity, with total pumpback capacity of 70,000 af per year by 2050. Table 3-11, taken from the 2003 Draft Water Supply Reliability Report, presents an implementation schedule recommended for both storage and pumpback capacity beginning in 2005 and incrementally increasing through 2050.

Table 3-11
Recommended Schedule for Water Banking Capacity(1)

Year	Total Pumpback (afy)	Total Storage (afy)
2005	20,000	50,000
2010	20,000	50,000
2020	40,000	100,000
2030	60,000	150,000
2040	70,000	183,000
2050	70,000	183,000

Notes:
(1) Reference "Draft Report – CLWA Water Supply Reliability Plan", Kennedy/Jenks Consultants, 2003.

3.4.2.1 Semitropic Water Banking

Semitropic Water Storage District (Semitropic) provides SWP water to farmers for irrigation. Semitropic is located in the San Joaquin Valley in the northern part of Kern County immediately east of the California Aqueduct. Using its available groundwater storage capacity (approximately one million af), Semitropic has developed a groundwater banking program, which it operates by taking available SWP supplies in wet years and returning the water in dry years. As part of this dry-year return, Semitropic can leave its SWP water in the Aqueduct for delivery to a banking partner and increase its groundwater production for its farmers. Semitropic constructed facilities so that groundwater can be pumped into a Semitropic canal and, through reverse pumping plants, be delivered to the California Aqueduct. Semitropic currently has six banking partners: the Metropolitan Water District of Southern California (Metropolitan), Santa Clara Valley Water District, Alameda County Water District, Alameda County Flood Control and Water Conservation District Zone 7, Vidler Water Company, and The Newhall Land and Farming Company. The total amount of storage under contract is approximately 1 million af.

In 2002, CLWA stored an available portion of its Table A Amount (24,000 af) in an account in Semitropic's program.[5] In 2004, 32,522 af of available 2003 Table A Amount water was stored in a second Semitropic account.[6] In accordance with the terms of CLWA's storage agreements with Semitropic, 90 percent of the banked amount, or a total of 50,870 af, is recoverable through 2013 to meet CLWA water demands when needed. Each account has a term of ten years for the

[5] CLWA's approval of this project and of its negative declaration was challenged under the California Environmental Quality Act ("CEQA") in the Ventura County Superior Court (i.e., California Water Network v. Castaic Lake Water Agency [Ventura County Superior Court Case No. CIV 215327]). Finding that CLWA's approval of this project and of its negative declaration did not violate CEQA, the trial entered judgment in favor of CLWA. Petitioners have, however, filed an appeal with the California Court of Appeal, Second Appellate District, Division 6 Court of Appeal Case No. B177978.
[6] No legal challenge was made to CLWA's approval of this project or to the negative declaration for this project.

water to be withdrawn and delivered to CLWA.[7] Current operational planning includes use of the water stored in Semitropic for dry-year supply. Accordingly, it is reflected in the available supplies delineated in this section, and it is also reflected in contributing to short-term (prior to 2013) reliability in Chapter 6.

3.4.2.2 Rosedale-Rio Bravo Water Storage District Water Banking

Also located in Kern County, immediately adjacent to the Kern Water Bank, Rosedale-Rio Bravo Water Storage District has completed environmental documentation for a Water Banking and Exchange Program. The initial offering from the program is storage and pumpback capacity of 20,000 afy, with up to 100,000 af of storage capacity. This banking program would meet the total pumpback and exceed the total storage capacity in 2010 recommended in the implementation schedule provided in the 2003 Draft Water Supply Reliability Report. This program is available for subscription and, in 2004, CLWA signed an MOU with Rosedale-Rio Bravo to begin preliminary non-binding negotiations on the possible terms for participation in the program. Such terms would define a project that would then be subject to subsequent environmental analysis. In April 2005, CLWA and Rosedale-Rio Bravo executed a deposit agreement for the exclusive right to negotiate, and CLWA approved an EIR in October 2005. This project is a water management program to improve the reliability of CLWA's existing dry-year supplies; it is not, and should not be considered, an annual supply that could support growth. CLWA anticipates that, upon completion of CEQA documentation, this program will be operational by 2006.

3.4.2.3 Other Opportunities

The Draft Water Supply Reliability Plan recommends water banking storage and pumpback capacity both north and south of CLWA's service area, the latter of which would provide an emergency supply in case of catastrophic outage along the California Aqueduct. With short-term storage now existing in the Semitropic program and negotiations underway with Rosedale-Rio Bravo, CLWA is assessing southern water banking opportunities. These include potential programs with the Chino Basin Watermaster (with whom CLWA signed an MOU in 2003), Calleguas Municipal Water District, and San Gorgonio Pass Water Agency.

Groundwater banking and conjunctive-use programs enhance the reliability of both the existing and future supplies. Table 3-12 summarizes CLWA's future reliability enhancement programs.

Table 3-12
Future Reliability Enhancement Programs

Project Name	Year Available	Proposed Quantities (af)		
		Average/ Normal Year	Single Dry Year	Multiple Dry Years (1)
Rosedale-Rio Bravo Water Banking Program	2006	0	20,000	20,000
Additional Planned Banking Programs	2014	0	20,000	20,000

Notes:
(1) Supplies shown are maximum withdrawal capacity for each of four consecutive dry years.

[7] Thereafter, the remaining amount of project water is forfeited from the account.

3.5 PLANNED WATER SUPPLY PROJECTS AND PROGRAMS

The 2003 Draft Water Supply Reliability Plan also discusses the potential for acquiring additional water supplies to meet future demands (the plan refers to these as "water transfer opportunities"). Table 3-13 summarizes CLWA's transfer and exchange opportunities.

Table 3-13
Transfer and Exchange Opportunities

Source Transfer Agency	Transfer/ Exchange	Year Available	Short/Long Term	Proposed Quantity (afy)
Buena Vista-Rosedale (1)	Transfer	2006	Long Term	11,000

Notes:
(1) CLWA is in the process of acquiring this supply, primarily to meet the potential demands of future annexations to the CLWA service area. This acquisition is consistent with CLWA's annexation policy under which it will not approve potential annexations unless additional water supplies are acquired. Currently proposed annexations have a demand for about 4,000 afy of this supply which, if approved, would leave the remaining 7,000 afy available for potential future annexations. Unless and until any such annexations are actually approved, this supply will be available to meet demands within the existing CLWA service area.

Buena Vista Water Storage District/Rosedale-Rio Bravo Water Storage District Water Storage and Recovery Program

These two districts, both located in Kern County, have joined together to develop a program that provides both a firm water supply and a water banking component. Both districts are member agencies of the Kern County Water Agency (KCWA), an SWP contractor, and both districts have contracts with KCWA for SWP Table A Amounts. Environmental documentation has been completed for this program, which envisions a single partner purchasing a firm annual water supply, which can then be banked in years when it is not needed for withdrawal and delivery in later years. The supply is based on existing long-standing Kern River water rights, which would be delivered by exchange of SWP Table A Amount. In 2004, CLWA signed an MOU with both districts to begin preliminary non-binding negotiations on the possible terms for participation in the program. Such terms would define a project subject to subsequent environmental analysis. The initial offering from the program is up to 11,000 afy of firm supply. In December 2004, CLWA, Buena Vista, and Rosedale-Rio Bravo executed a deposit agreement for the exclusive right to negotiate, and CLWA started preparing an EIR. CLWA anticipates that, upon completion of CEQA documentation, this program will be operational during 2006.

3.6 DEVELOPMENT OF DESALINATION

The California UWMP Act requires a discussion of potential opportunities for use of desalinated water (Water Code Section 10631[i]). CLWA has explored such opportunities, and they are described in the following section, including opportunities for desalination of brackish water, groundwater, and seawater. However, at this time, none of these opportunities is practical or economically feasible for CLWA, and CLWA has no current plans to pursue them. Therefore, desalinated supplies are not included in the supply summaries in this Plan (e.g., Tables 3-1, 6-2, 6-3, and 6-4).

3.6.1 Opportunities for Brackish Water and/or Groundwater Desalination

As discussed in Chapter 5, the two sources of groundwater in the Valley are water drawn from the Alluvial Aquifer and from the Saugus Formation. Neither of these supplies can be considered brackish in nature, and desalination is not required.

However, CLWA and the retail water purveyors could team up with other SWP contractors and provide financial assistance in construction of other regional groundwater desalination facilities in exchange for SWP supplies. The desalinated water would be supplied to users in communities near the desalination plant, and a similar amount of SWP supplies would be exchanged and allocated to CLWA from the SWP contractor. A list summarizing the groundwater desalination plans of other SWP contractors is not available; however, CLWA would begin this planning effort should the need arise.

In addition, should an opportunity emerge with a local agency other than an SWP contractor, an exchange of SWP deliveries would most likely involve a third party, such as Metropolitan. Most local groundwater desalination facilities would be projects implemented by retailers of SWP contractors and, if an exchange program was implemented, would involve coordination and wheeling of water through the contractor's facilities to CLWA.

3.6.2 Opportunities for Seawater Desalination

Because the Valley is not in a coastal area, it is neither practical nor economically feasible for CLWA and its purveyors to implement a seawater desalination program. However, similar to the brackish water and groundwater desalination opportunities described above, CLWA and the purveyors could provide financial assistance to other SWP contractors in the construction of their seawater desalination facilities in exchange for SWP supplies.

CLWA and the purveyors have been following the existing and proposed seawater desalination projects along California's coast. In March 2004, the California Coastal Commission released the "Seawater Desalination and the California Coastal Act." This Act provides a summary and status of the existing and proposed seawater desalination plants along California's coast. Tables 3-14 and 3-15 provide a summary of several of California's existing and proposed municipal/domestic seawater desalination facilities, respectively.

As shown in the tables, most of the existing and proposed seawater desalination facilities are/would be operated by agencies that are not SWP contractors. However, in these cases as described above, an exchange for SWP deliveries would most likely involve a third party (SWP contractor), the local water agency (retailer), and CLWA.

Table 3-14
Existing Seawater Desalination Facilities Along the California Coast[1]

Operator/Location	Maximum Capacity (gpd/afy[2])	Status
City of Morro Bay	830,000/930	Intermittent Use
City of Santa Barbara	N/A	Inactive
Marina Coast Water District	300,000/335	Active

Notes:
(1) Reference "Seawater Desalination and the California Coastal Act," California Coastal Commission, March 2004.
(2) gpd = gallons per day; afy = acre-feet per year

Although not listed in Table 3-15, the Bay Area Regional Desalination Partnership, made up of four agencies collaborating on a Regional Desalination Project in the San Francisco Bay Area, is working to develop desalination as a water supply for the region. This partnership, comprised of San Francisco Public Utilities Commission, Santa Clara Valley Water District, East Bay Municipal Utilities District, and Contra Costa Water District, is in the process of planning regional seawater/brackish water desalination facilities. This regional desalination project is an example of the type of project that CLWA could participate in on an exchange basis.

Table 3-15
Proposed Seawater Desalination Facilities Along the California Coast[1]

Operator/Location	Maximum Capacity (gpd/afy[2])	Status
Cambria Community Services District	500,000/560	Planning
City of Santa Cruz	2,500,000/2,800	Planning
Marina Coast Water District/Fort Ord	2,680,000/3,000	Planning
Long Beach	10,000,000/11,000	Planning
Los Angeles Dept. of Water & Power	10,000,000/11,000	Planning
Monterey Peninsula Water Mgmt. District/Sand City	7,500,000/8,400	Planning
Cal-Am/Moss Landing Power Plant	9,000,000/10,000	Planning
Municipal Water District of Orange County/Dana Point	27,000,000/30,000	Planning
Poseidon Resources/Huntington Beach	50,000,000/55,000	Draft EIR Complete
San Diego County Water Authority/San Onofre	TBD	Planning
San Diego County Water Authority/South County	50,000,000/55,000	Planning
San Diego County Water authority/Poseidon/Carlsbad	50,000,000/55,000	Planning
West Basin Municipal Water District	20,000,000/22,000	Planning

Notes:
(1) Reference "Seawater Desalination and the California Coastal Act," California Coastal Commission, March 2004.
(2) gpd = gallons per day; afy = acre-feet per year

Chapter 4
WATER RECYCLING

Chapter 4.0
RECYCLED WATER

4.1 OVERVIEW

This section of the Plan describes the existing and future recycled water opportunities available to the CLWA service area. The description includes estimates of potential supply and demand for 2005 to 2030 in five year increments, as well as CLWA's proposed incentives and optimization plan.

4.2 RECYCLED WATER MASTER PLAN

The four retail water purveyors provide water to M&I customers. In normal years, approximately 60 percent of the M&I demand within CLWA's service area is met with imported water. However, the reliability of the imported SWP supply is variable (due to its dependence on current year hydrology in northern California and prior year storage in SWP reservoirs). When sufficient imported water is not available, the balance is met with local groundwater provided by the purveyors.

It is anticipated that water demands will continue to increase. Accordingly, additional reliable sources of water are necessary to meet projected water demands. CLWA recognizes that recycled water is an important and reliable source of additional water. Recycled water would enhance reliability in that it would provide an additional source of supply and allow for more effective utilization of CLWA's water supplies. A Draft Reclaimed Water System Master Plan for the CLWA service area was completed in 1993, and a Draft Recycled Water Master Plan update was completed in 2002. Table 4-1 provides a list of the agencies that participated in the Recycled Water Master Plan update.

Table 4-1
Participating Agencies

Participating Agencies	Role in Plan Development
Castaic Lake Water Agency	Wholesale water provider
Newhall County Water District	Retail water purveyor
Santa Clarita Water Division	Retail water purveyor
Valencia Water Company	Retail water purveyor
Los Angeles County Waterworks District 36	Retail water purveyor
Los Angeles County Sanitation District 26	Recycled water supplier
Los Angeles County Sanitation District 32	Recycled water supplier
Berry Petroleum	Potential recycled water supplier

The Sanitation Districts of Los Angeles County (LACSD) own and operate two water reclamation plants (WRPs): Saugus WRP and Valencia WRP, within the CLWA service area. The water is treated to tertiary levels and discharged to the Santa Clara River. The Newhall Ranch development is also planning to construct a water recycling facility, and non-potable

water from this source may be incorporated into the CLWA's recycled water system. Additionally, Berry Petroleum has expressed interest in treating oilfield produced water from the Placerita Oilfield for sale to CLWA for non-potable uses. Oilfield produced water is a by-product of petroleum extraction, however, and would only be available on a short-term basis. By utilizing the effluent from the WRPs and oilfield produced water for irrigation and other non-potable purposes, CLWA can more efficiently allocate its potable water and increase the overall reliability of water supplies in the Valley.

4.3 POTENTIAL SOURCES OF RECYCLED WASTEWATER

LACSD provides wastewater collection, treatment, and disposal services to residents of two sanitation districts in the Valley: District Nos. 26 and 32, which serve the eastern and western portions of the Valley, respectively. The majority of the two districts' service areas lies within the City of Santa Clarita.

4.3.1 Existing and Planned Wastewater Treatment Facilities

4.3.1.1 Existing Facilities

LACSD's Saugus and Valencia WRPs operated independently until 1980, at which time the two plants were linked by a bypass interceptor. The interceptor was installed to transfer a portion of flows received at the Saugus WRP to the Valencia WRP. In order to improve operating efficiencies and because a shortage of space at the Saugus WRP limits future expansion of wastewater facilities in District No. 26, a joint powers agreement was enacted in 1984, creating the Santa Clarita Valley Joint Sewerage System. Through use of wastewater and sludge connecting lines, future expansions of treatment works, including sludge handling and disposal operations, will be provided at the larger Valencia WRP.

The primary sources of wastewater to the Saugus and Valencia WRPs are domestic. Both plants are tertiary treatment facilities and produce high quality effluent. Historically, the effluent from the two WRPs has been discharged to the Santa Clara River. The Saugus WRP effluent outfall is located approximately 400 feet downstream (west) of Bouquet Canyon Road. Effluent from the Valencia WRP is discharged to the Santa Clara River at a point approximately 2,000 feet downstream (west) of The Old Road Bridge.

Together, the Valencia and Saugus WRPs have a design capacity of 28.1 million gallons per day (mgd). In fiscal year 2002-2003 (FY 02/03), they produced an average of 18.33 mgd, none of which was used for recycled water purposes.

Located within District No. 26, the Saugus WRP, completed in 1962, is southeast of the intersection of Bouquet Canyon Road and Soledad Canyon Road. Two subsequent expansions and flow equalization facilities brought its current design capacity to 6.5 mgd. The treatment process was brought up to a tertiary level with the addition of dual-media pressure filters in 1987. However, no future expansions are possible due to space limitations at the site. In FY 02/03, the Saugus WRP produced an average effluent flow of 5.28 mgd (5,914 afy). Use of recycled water from this facility is permitted under Regional Water Quality Control Board (RWQCB) Order No. 87-49; however, LACSD staff has expressed concern about diverting these discharges due to potential impacts to downstream habitat. Until more detailed habitat

investigations are conducted, it is assumed that only recycled water from the Valencia WRP will be used.

The Valencia WRP is located within District No. 32 and is on The Old Road near Magic Mountain Amusement Park. The Valencia WRP was completed in 1967. The existing capacity is 21.6 mgd following three subsequent expansions: construction of a 4.4 million gallon flow equalization tank in February 1995, the Stage 4 expansion completed in June 1996, and the Joint Sewerage System Phase I expansion of 9 mgd in 2002. In FY 02/03, the Valencia WRP produced an average effluent flow of 13.05 mgd (14,628 afy). Use of recycled water from the Valencia WRP is permitted under RWQCB Order No. 87-48. On July 24, 1996, CLWA executed an agreement with LACSD to purchase up to 1,700 afy of recycled water from the Valencia WRP. In 2002, CLWA constructed the facilities to utilize this supply and initiated deliveries in 2003 to the Westridge Golf Course.

Recycled water from Valencia WRP has been used in the past by the City of Santa Clarita for landscape irrigation and by Pacific Pipeline and Oberg Construction for construction applications, delivered via tanker truck. In April 2000, a contract was signed with TransCoast Financial for use of up to 20,000 gallons per day (gpd) for dust control at a nearby composting facility. When recycled water is requested, it is transported via tanker truck.

4.3.2 Planned Improvements and Expansions

To accommodate anticipated growth in the Valley and to ensure compliance with discharge requirements from the RWQCB, LACSD has begun an expansion of the Valencia WRP as part of the 2015 Joint Sewerage System Facilities Plan. The ultimate capacity of the WRP is planned to be 27.6 mgd. The Phase I expansion (9 mgd increase) was completed in 2002. Phase 2 is expected to be completed in 2010 and involves an additional 6 mgd increase. No expansion is planned at the Saugus WRP. Thus, the ultimate total capacity for both WRPs is 34.1 mgd (38,200 afy). Table 4-2 provides the projected wastewater flow for the combined Valencia and Saugus WRP planning area.

Table 4-2
Wastewater Collection and Capacity

Type of Wastewater	Capacity (af)						
	2002	2005	2010	2015	2020	2025	2030
Wastewater Collected and Treated in Service Area	20,542	31,500	38,200	38,200	38,200	38,200	38,200
Quantity that Meets Recycled Water Standard	20,542	31,500	38,200	38,200	38,200	38,200	38,200

Note:
(1) Information collected from LACSD and Draft 2002 Recycled Water Master Plan.

4.3.3 Water Rights

The ability of CLWA to use recycled water is constrained by its rights to use the water available. While there are few regulatory limitations on the use of oilfield produced water, the use of wastewater effluent is limited by various state water laws, codes, and court decisions. These

regulatory limitations are described in greater detail in the 2002 Draft Recycled Water Master Plan.

CLWA has been approved to use 1,700 afy, but the ultimate recycled water use is governed by the availability of native versus foreign water as shown in Table 4-3. According to the Water Code Section 1211, downstream water rights holders are protected if the source of return flow is "native water." Native water is water that under natural conditions would contribute to a given stream or other body of water (i.e., surface water or percolating groundwater). Thus, if the source of water is "foreign" (e.g., imported or SWP water), downstream water rights holders are not protected under the code. Groundwater extracted from and used in the Valley and then discharged to the Santa Clara River as wastewater effluent may be considered a "native water" to the river; whereas, SWP water imported into and used in the Valley and then discharged to the Santa Clara River as wastewater effluent may be considered a "foreign water." Furthermore, while existing discharges may have a permanent public use (i.e., habitat), only the "foreign water" percentage within the effluent flows can be diverted for recycling purposes.

In 2005, the Valley's potable water supply is projected to consist of approximately 36 percent groundwater (native water) and 64 percent imported water (foreign water). Projected potable water demand for the year 2030 is approximately 112,500 af, 65 percent derived from foreign water and 35 percent derived from native sources. The projected recycled water component would consist of approximately 65 percent (72,800 af foreign / 112,500 total) of projected wastewater generation. Therefore, CLWA's future recycled water system is limited to the foreign water portion of wastewater. This volume is determined by multiplying the percentage of foreign water by the wastewater flow. As shown in Table 4-3, the future foreign water portion of wastewater is 24,830 afy (65 percent times 38,200 afy). It is important to note that these percentages are of potable water demand (i.e., they do not include the use of recycled water in the calculation) and as such are not percentages of total water demand. Although the foreign water percentage of potable water demand only increases by one percent from 2005 to 2030, actual use of foreign water increases by approximately 58 percent.

Table 4-3
Use of Native Water vs. Foreign Water

	Native Water Demand (afy)	Foreign Water Demand (afy)[(1)]	Recycled Water Demand (afy)	Potable Water Demand Total (afy)	Wastewater Flow[(2)] (afy)	Foreign Water Percentage of Potable Water Demand	Foreign Water Portion of Wastewater (afy)
Projected (2005)	25,500	46,100	800	71,600	31,500	64%	20,100
Future (2030)	39,700	72,800	17,391	112,500	38,200	65%	24,830

Note:
(1) Foreign water includes SWP water, water transfers, and desalination.
(2) From Table 4-2.

In order to maintain native water rights, and assuming the ultimate capacities and recycled water demand (as discussed in Section 4.3), the existing and planned methods of wastewater effluent discharge and use are as summarized in Table 4-4.

Table 4-4
Disposal of Wastewater (non-recycled)

Method of Disposal	Treatment Level	Wastewater Discharge and Use (af)					
		2005	2010	2015	2020	2025	2030
Discharge to Santa Clara River	Disinfected, tertiary	30,700	36,600	34,900	30,200	25,500	20,800
Recycled Water Users	Disinfected Tertiary	800	1,600	3,300	8,000	12,700	17,400
Total		**31,500**	**38,200**	**38,200**	**38,200**	**38,200**	**38,200**

4.3.4 Other Potential Sources of Recycled Water

4.3.4.1 Newhall Ranch Water Reclamation Plant

A third Valley reclamation plant is proposed as part of the Newhall Ranch project. This proposed facility would be located near the western edge of the development project along the south side of State Route 126. The plant will be constructed in stages, with an ultimate capacity of 7.7 mgd. Effluent from the proposed water reclamation plant would be used to meet non-potable water demand within the development area. According to the Newhall Ranch Draft Additional Analyses, this plant is projected to produce 5,344 afy on average. During the dry months, all of the recycled water would be used for non-potable uses within Newhall Ranch, supplemented by additional recycled water from CLWA. During the wet winter months when demands are low, the Newhall Ranch WRP would on average have approximately 286 afy excess recycled water. In order for the WRP to be non-discharging (i.e., have production equal demand), this recycled water would be transferred into CLWA's recycled water system for use and/or storage. Any excess demand would need a National Pollutant Discharge Elimination System (NPDES) permit prior to discharge. NPDES permits could place stricter regulatory limitation on the effluent, which may increase treatment costs. Furthermore, the discharge could be subject to additional environmental review prior to approval.

4.3.4.2 Oilfield Produced Water

Oilfield produced water is a by-product of oil production generated when oil is extracted from the oil reservoir. It is generally of poor quality and unsuitable for potable, industrial, or irrigation use without treatment. Because of the poor water quality, reinjection has often been the most cost-effective disposal option.

Treatment processes can produce potable quality water; yet, because of the poor initial water quality and the organic constituents, it is often more appropriate for treated oilfield produced water to be used for irrigation or industrial purposes to offset potable water demand. Pilot studies performed at the Placerita Oilfield have indicated that, even with reverse osmosis (RO) treatment, some organic compounds such as naphthalene, 2-butanone, and ethylbenzene, can be detected in the RO effluent.

The economics of oil production are market-driven and are different from those of drinking water supplies. As oil prices rise or drop, oilfields go into and out of production depending on the costs of production. Also, oilfields are eventually depleted of supply and abandoned. Therefore, while oilfield produced water should be considered as long-term, it is not a completely firm supply and is not permanent.

Studies of the potential reuse of treated oilfield produced water from the Placerita Oilfield have indicated that approximately 44,000 barrels per day (1.8 mgd) of treated oilfield produced water may be available. For irrigation reuse, the produced water would need to be cooled and treated to remove hardness, silica, total dissolved solids (TDS), boron, ammonia, and total organic carbon (TOC).

4.3.5 Summary of Available Source Water Flows

As discussed previously, the non-potable water system has four potential sources of water. The flows projected to be available are shown in Table 4-5. For planning purposes, only recycled water from LACSD is considered available to meet the projected recycled water demands due to the level of evaluation still needed on the alternative sources.

Table 4-5
Summary of Available Source Water Flows

Source	Current Capacity (mgd)	Projected Capacity (mgd)	Projected to be Available for Non-Potable Use (afy)
LACSD Total	28.1	34.1	19,995
Valencia WRP	*21.6*	*27.6*	*19,995*
Saugus WRP	*6.5*	*6.5*	*0*
Oilfield Produced Water	0	1.8	1,980
Newhall Ranch WRP	0	7.7	5,344
Total			**27,319**

4.4 RECYCLED WATER DEMAND

In this section, current recycled water use is discussed, and potential recycled water users within CLWA's service area are identified as determined from the 2002 Draft Recycled Water Master Plan. For each potential user, estimates are provided for annual demand, peak monthly demand, peak daily demand, and the hourly distribution of water demand during peak months. The requirements for potential users to convert their existing water potable systems to recycled water are also discussed.

4.4.1 Current Use

Currently, Recycled water is served to landscape irrigation customers, including the Westridge Golf Course. Table 4-6 provides a summary of existing recycled water use.

Table 4-6
Actual Recycled Water Uses

Type of Use	Treatment Level	Actual 2004 Use (af)
Landscape	Disinfected tertiary	448
Total		**448**

4.4.2 Potential Users

Potential recycled water users were identified through a number of sources including:

- 1993 Recycled Water Master Plan
- Water consumption records for LACWD No. 36, NCWD, SCWD, and VWC
- Land use maps
- General Plans and Specific Plans for the City of Santa Clarita and County of Los Angeles
- Discussions with City, County, water purveyor, and land developer staff
- "Windshield" survey of CLWA service area
- Draft 2002 Recycled Water Master Plan

In order to be considered as a potential recycled water user, the user had to be located within CLWA's service area and have a potential non-potable water demand of at least 4 afy. A total potential demand for existing and future recycled water users is 34,500 afy as identified in the Draft 2002 Recycled Water Master Plan for 2015. As this volume is already greater than the anticipated source of recycled water supply, additional future recycled users were not identified at this time. However, CLWA may reevaluate the list of recycled users after 2015 to consider future users not included in the Draft Master Plan. Table 4-7 provides a summary of the demands by user type.

Table 4-7
Potential Recycled Water Uses

Type of Use	Treatment Level	Potential Use (af)				
		2010	2015	2020	2025	2030
Landscape	Disinfected tertiary	34,500	34,500	34,500	34,500	34,500
Total		**34,500**	**34,500**	**34,500**	**34,500**	**34,500**

The initial list of potential recycled water users was reduced by evaluating the potential users that would be most expensive to serve until potential uses were approximately 17,000 afy. The unit cost to serve each user was calculated using the capital costs for pipelines, reservoirs, and pump stations as well as operational costs for pumping. The areas retained for recycled water service have costs per af ranging from $120 to $5,000. Areas eliminated from service had costs as high as $13,000/af. However, only two of the proposed phases in the Draft Master Plan had costs above $1,000 per af. The resulting proposed recycled water service area encompasses a large portion of CLWA's western service area.

4.4.3 Potential Recycled Water Demand

Potential annual recycled water demands were estimated from historical water use records for existing users and the proposed irrigated area and expected water use per acre for future users. Demands for recycled water are seasonal, with the highest demands occurring during the hot, dry summer months when irrigation requirements are greatest.

The total potential annual recycled water demand that is cost effective to serve is approximately 17,400 afy. Implementation of the recycled water system is expected to occur over the next 25 years. Table 4-8 summarizes the projected future use by user type.

Table 4-8
Projected Potential Future Use of Recycled Water in Service Area

Type of Use	Projected Use (af)				
	2010	2015	2020	2025	2030
Landscape	1,600	3,300	8,000	12,700	17,400
Total	1,600	3,300	8,000	12,700	17,400

4.4.4 Recycled Water Comparison

CLWA's 2000 UWMP projected a total recycled water demand of 19,612 afy by the year 2010. Although it did not specifically state a projected 2005 demand, CLWA had approval for 1,700 afy of recycled water use and was in the process of constructing the necessary facilities to deliver this amount at the time the 2000 UWMP was written. Approximately 448 afy was served in 2004 to landscape irrigation customers, including the Westridge Golf Course. Current demand is lower than originally predicted due to delays in the necessary environmental documentation and funding availability to expand the recycled water distribution system. Table 4-9 provides a comparison of the 2000 projected demand versus the actual 2004 demand.

Table 4-9
Recycled Water Uses - 2000 Projection Compared with 2004 Actual

User Type	2000 Projection for 2005 (af)	2004 Actual Use (af)
Landscape	1,700	448
Total	**1,700**	**448**

4.5 METHODS TO ENCOURAGE RECYCLED WATER USE

In order to provide an incentive to recycled water users, it was recommended in the Draft 2002 Recycled Water Master Plan that the CLWA issue a monthly rebate directly to each recycled water user. However, CLWA is currently considering utilizing a two-fold approach to encourage recycled water use. CLWA plans on making recycled water available at a reduced rate and to work with the City of Santa Clarita and Los Angeles County to adopt a Recycled Water Ordinance, mandating recycled use for certain applications. A Draft Ordinance is currently

being developed and is anticipated to be ready for review in late 2005. The recycled water incentives are summarized in Table 4-10.

Table 4-10
Methods To Encourage Recycled Water Use

Actions	Use Projected to Result From This Action [(1)] (af)				
	2010	2015	2020	2025	2030
Reduced Rate/Recycled Water Ordinance	800	1,600	3,980	6,340	8,700
Total	800	1,600	3,980	6,340	8,700

Note:
(1) Estimated as the projected use due to future customers and assuming future customer use is half of projected recycled water demand for the given years.

CLWA may consider providing financial assistance to retail water providers to offset the costs of extending the recycled water conveyance system or to existing customers to cover a portion of or all of the costs to convert their potable water system to receive recycled water.

4.6 OPTIMIZATION PLAN

Production from the WRPs is not anticipated to be adequate to meet the total demands of the system. However, as potable water demands increase and, consequently, recycled water production increases, the water available to meet system demands would also increase. Therefore, it is recommended that construction of the recycled water system be phased to utilize the increases in plant production.

Oilfield produced water would also not be available immediately, nor would it be available as a permanent source of supply. Instead, this alternative water source would be used as an interim supply when the field is in operation and inadequate recycled water is available from Valencia WRP. Oilfield produced water is anticipated to be available as a long-term supply, available for approximately the next 20 years. The phasing considers when this water source would be available. A detailed discussion of the recommended phasing plan is provided in the Draft Master Plan.

Phasing implementation of the recycled water system is recommended for the following reasons:

- A number of the potential recycled water users are future users that do not yet need recycled water.
- The current flow of the Valencia WRP is not adequate to meet the total demands of the recycled water users.
- Capital requirements would be spread over CLWA's current planning period through 2030.
- Oilfield produced water is not immediately (nor permanently) available.
- Demand is increasing due to development of Newhall Ranch

The recycled water system is divided into implementation phases based primarily on service zone boundaries.

In general, the following factors were considered in developing a phasing plan:

- Ease or willingness of customers to connect to recycled water
- Retrofit costs
- Regulatory requirements
- Community impacts and development requirements
- Water utility involvement/cooperation
- Funding availability
- Reliability and operational costs considerations
- System flexibility

The implementation phases are prioritized based on the status of the users (existing or future), the anticipated construction schedule of future users, and the proximity of the users to the non-potable water source (e.g., Valencia WRP, Placerita Oilfield).

Chapter 5
WATER QUALITY

Chapter 5.0
WATER QUALITY

5.1 OVERVIEW

The quality of any natural water is dynamic in nature. This is true for the SWP and the local groundwater of the Basin. During periods of intense rainfall or snowmelt, routes of surface water movement are changed; new constituents are mobilized and enter the water while other constituents are diluted or eliminated. The quality of water changes over the course of a year. These same basic principles apply to groundwater. Depending on water depth, groundwater will pass through different layers of rock and sediment and leach different materials from those strata. Water depth is a function of local rainfall and snowmelt. During periods of drought, the mineral content of groundwater increases. Water quality is not a static feature of water, and these dynamic variables must be recognized.

Water quality regulations also change. This is the result of the discovery of new contaminants, changing understanding of the health effects of previously known as well as new contaminants, development of new analytical technology, and the introduction of new treatment technology. All water purveyors are subject to drinking water standards set by the Federal Environmental Protection Agency (EPA) and the California Department of Health Services (DHS). Additionally, investor-owned water utilities, such as VWC, are also subject to water quality regulation by the PUC. CLWA provides surface water from the SWP while local retail water purveyors combine local groundwater with treated SWP water from CLWA for delivery to their customers. (LACWWD #36 is an exception and during most years receives water from SWP.) An annual Consumer Confidence Report (CCR) is provided to all Valley residents who receive water from CLWA and one of the four retail water purveyors. That report includes detailed information about the results of quality testing of the water supplied during the preceding year (CCR, 2005).

The quality of water received by individual customers will vary depending on whether they receive SWP water, groundwater, or a blend. Some will receive only SWP water at all times, while others will receive only groundwater. Others may receive water from one well at one time, water from another well at a different time, different blends of well and SWP water at other times, and only SWP water at yet other times. These times may vary over the course of a day, a week, or a year.

This section provides a general description of the water quality of both imported water and groundwater supplies. A discussion of potential water quality impacts on the reliability of these supplies is also provided.

5.2 IMPORTED WATER QUALITY

CLWA provides SWP water to the Valley. The source of SWP water is rain and snow of the Sierra Nevada, Cascade, and Coastal mountain ranges. This water travels to the Delta through a series of rivers and various SWP structures. There it is pumped into a series of canals and reservoirs, which provides water to urban and agricultural users throughout the San Francisco

Bay Area and central and southern California. The most southern reservoir on the West Branch of the SWP California Aqueduct is Castaic Lake. CLWA receives water from Castaic Lake and distributes it to the purveyors following treatment.

Perhaps the most important difference in quality between surface water and groundwater is the presence of microbes in surface water. Surface water is exposed to a variety of microbial contaminants while groundwater in general is not. As a result, there are considerably more water quality regulations for surface water providers. CLWA has two surface water treatment plants, the Rio Vista Water Treatment Plant and the Earl Schmidt Water Filtration Plant, whose function is to ensure the safety of the water by eliminating microbial contaminants. Both of these plants have a multi-barrier strategy. The first barrier is the application of ozone, a powerful disinfectant, which has the ability to kill a broad range of microbes. The second barrier is the addition of chemicals to remove particles from the water, which can hide and protect microbes. Removing particles improves the anti-microbial action of the disinfectants. The water is then passed through two sets of filters, and chloramines are then added to the water. Chloramines are similar to chlorine and prevent the growth of bacteria in the distribution system, which delivers water from the treatment plants to the retail water purveyors.

An important property of SWP water is the chemical make up caused by its passage through the Delta. The Delta is basically a very large marsh (or estuary) with large masses of plants and peat soils. These contribute organic materials (TOC) to the water. Salt water can also move into the Delta from San Francisco Bay and the Pacific Ocean. This brings in salts, notably bromide and chloride. None of these chemicals are harmful in and of themselves; however, when bromide and TOC react with disinfectants such as ozone, chlorine, or chloramines, a reaction occurs forming substances known as disinfection by-products (DBPs). A variety of health-based concerns are associated with DBPs (CCR, 2005).

Another important property of SWP water is the mineral content. SWP water is generally low in dissolved minerals, such as calcium, magnesium, sodium, potassium, iron, manganese, nitrate, and sulfate. Most of these minerals do not have health based concerns, but “hard” water (water high in calcium, magnesium, and iron) can cause a number of problems for consumers, such as the formation of white crusts in plumbing fixtures, water spots, damage to water heaters, and excess use of soaps. Nitrate is the main exception, as it has significant health effects for infants; however, the nitrate content of SWP water is very low. Also of significance is the chloride content. Although not a human health risk, chloride can have a negative impact on agricultural activities and regulatory compliance for local sanitation agencies. The chloride content of SWP water varies widely from well over 100 milligrams per liter (mg/L) to below 40 mg/L, depending on Delta conditions.

All surface waters can have taste and odor problems caused by the growth of algae in reservoirs, such as Castaic Lake. Under certain conditions, algae can grow in large mats, which then die, releasing foul smelling chemicals. Although harmless, the taste and odor causing chemicals can generally be very unpleasant for consumers.

5.3 GROUNDWATER QUALITY

The Basin has two sources of groundwater. Most local wells draw water from the Alluvial Aquifer. A smaller portion of the Valley's water supply is drawn from the Saugus Formation, a much deeper aquifer than the Alluvial Aquifer. The quality components of these aquifers differ with changing rainfall conditions. The two aquifers' water quality changes at different rates and much more slowly than surface water.

Local groundwater generally does not have microbial water quality problems. Parasites, bacteria, and viruses are filtered out as the water percolates through the soil, sand, and rock on its way to the aquifer. Even so, disinfectants are added to local groundwater when it is pumped by wells to protect public health. Local groundwater has very little TOC and generally has very low concentrations of bromide, minimizing potential for DPB formation. Taste and odor problems from algae are not an issue with groundwater.

The mineral content of local groundwater is very different from SWP water. The groundwater is very "hard," that is, it has high concentrations of calcium and magnesium (approximately 250-600 mg/L, as developed in the CLWA et al 2005 Annual Water Quality Report). Groundwater may also contain higher concentrations of nitrates and chlorides when compared to SWP water. However, all groundwater meets or exceeds drinking water standards.

The following sections describe the groundwater quality of the Alluvium and Saugus Formation.

5.3.1 Groundwater Quality – Alluvium

Groundwater quality is a key factor in assessing the Alluvial Aquifer as a municipal and agricultural water supply. In terms of the aquifer system, there is no convenient long-term record of water quality, i.e., water quality data in one or more single wells that spans several decades and continues to the present. Thus, in order to examine a long-term record of water quality in the Alluvium, individual records have been integrated from several wells completed in the same aquifer materials and in close proximity to each other to examine historical trends in general mineral groundwater quality throughout the Basin. Based on these records of groundwater quality, wells within the Alluvium have experienced historical fluctuations in general mineral content, as indicated by specific conductance (or electrical conductivity [EC]), which correlates with fluctuations of individual constituents that contribute to EC. The historic water quality data indicates that, on a long-term basis, there has not been a notable trend and, specifically, there has not been a decline in water quality within the Alluvium.

Specific conductance within the Alluvium exhibits a westward gradient, corresponding with the direction of groundwater flow in the Alluvium. EC is lowest in the easternmost portion of the Basin and highest in the west. Water quality in the Alluvium generally exhibits an inverse correlation with precipitation and streamflow, with a stronger correlation in the easternmost portion of the Basin, where groundwater levels fluctuate the most. Wet periods have produced substantial recharge of higher quality (low EC) water, and dry periods have resulted in declines in groundwater levels, with a corresponding increase in EC (and individual contributing constituents) in the deeper parts of the Alluvium.

Specific conductance throughout the Alluvium is currently below the Secondary (aesthetic) Upper Maximum Contaminant Level of 1,600 micromhos per centimeter (umhos/cm). The presence of long-term consistent water quality patterns, although intermittently affected by wet and dry cycles, supports the conclusion that the Alluvial aquifer is a viable ongoing water supply source in terms of groundwater quality.

The most notable groundwater quality issue in the Alluvium is perchlorate contamination. In 2002, one Alluvial well located near the former Whittaker-Bermite facility was inactivated for municipal water supply due to detection of perchlorate slightly below the Notification Level. In early 2005, perchlorate was detected in a second Alluvial well, VWC's Well Q2. In response, VWC removed the well from active service and commissioned an analysis and report assessing the impact of, and response to, the perchlorate contamination of that well. Sections 5.4 and 5.5 present additional information on the results of the Q2 analysis and report and VWC's response plan for Well Q2 to pursue permitting and installation of wellhead treatment, which resulted in returning the well to water supply service in October 2005.

5.3.2 Groundwater Quality – Saugus Formation

Similar to the Alluvium, groundwater quality in the Saugus Formation is a key factor in assessing that aquifer as a municipal and agricultural water supply. As with groundwater level data, long-term Saugus groundwater quality data is not sufficiently extensive (few wells) to permit any basin-wide analysis or assessment of pumping-related impacts on quality. As with the Alluvium, EC has been chosen as an indicator of overall water quality, and records have been combined to produce a long-term depiction of water quality. Water quality in the Saugus Formation has not historically exhibited the precipitation-related fluctuations seen in the Alluvium. Based on the historical record over the last 50 years, groundwater quality in the Saugus has exhibited a slight overall increase in EC. More recently, several wells within the Saugus Formation have exhibited an additional increase in EC similar to that seen in the Alluvium. In 2004, monthly data collected by VWC for two Saugus wells shows that the overall level of EC remained fairly stable during the year. Levels of EC in the Saugus Formation remain below the Secondary (aesthetic) Upper Maximum Contaminant Level for EC. Groundwater quality within the Saugus will continue to be monitored to ensure that degradation that presents concern relative to the long-term viability of the Saugus as an agricultural or municipal water supply does not occur.

As with the Alluvium, the most notable groundwater quality issue in the Saugus Formation is prechlorate contamination. Perchlorate was originally detected in four Saugus wells operated by the retail water purveyors in the eastern part of the Saugus Formation in 1997, near the former Whittaker-Bermite facility. Since then, the four Saugus municipal supply wells have been out of water supply service due to the presence of perchlorate. While the inactivation of those wells does not limit the ability of the purveyors to meet water requirements, there is an ongoing effort to restore impacted pumping capacity and contain potential perchlorate migration in the Saugus Formation by 2006 as discussed in Sections 5.4 and 5.5.

The local retail water purveyors continue to test for perchlorate in active water supply wells near the Whittaker-Bermite site, and there has been no additional detection of perchlorate in any other municipal Saugus well. Details are provided below on the various aspects of ongoing

perchlorate-related work, including investigation of the extent of contamination, development of an interrelated program for control and extraction of perchlorate by restoring impacted capacity (wells), treatment technology and its planned application for restoration of impacted wells, regulatory aspects of utilizing impacted wells with treatment for domestic water supply, and the current state of planning and implementation of perchlorate control and clean-up, including restoration of contaminated municipal water supply as part of that control and clean-up.

5.4 AQUIFER PROTECTION

As introduced in Chapter 3, three factors affect the availability of groundwater: sufficient source capacity (wells and pumps); sustainability of the groundwater resource to meet pumping demand on a renewable basis; and protection of groundwater sources (wells) from known contamination, or provisions for treatment in the event of contamination. The first two of those factors are addressed in Chapter 3. The third factor, the impact and resolution of contamination, is being addressed in the Valley's two aquifers as follows.

5.4.1 Alluvium

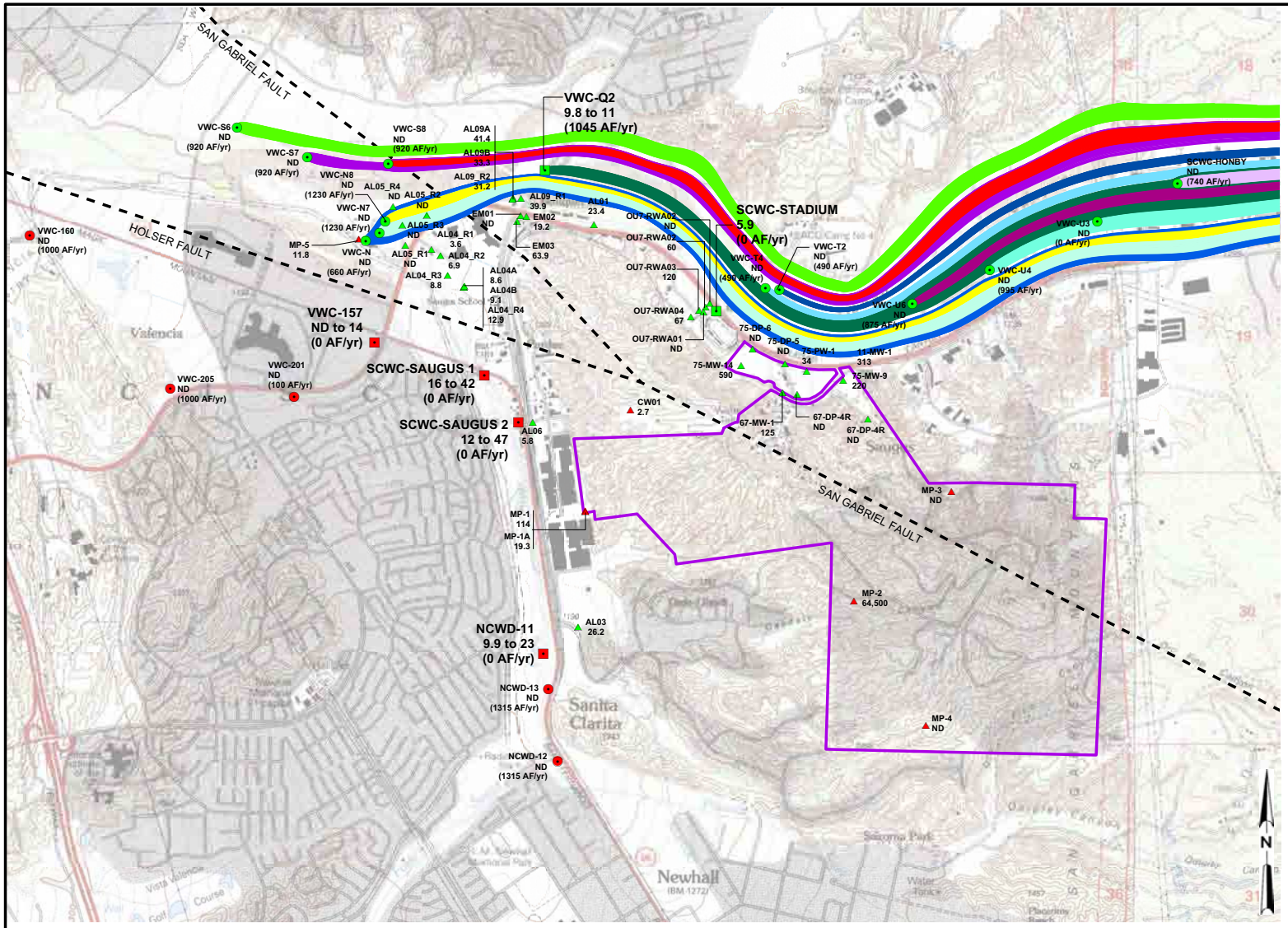
Details of the overall perchlorate contamination issue, which has had a larger impact on the Saugus Formation (four impacted wells with a total pumping capacity of 7,900 gpm) than on the Alluvium (one impacted well with a total pumping capacity of 800 gpm), are discussed in Appendix D of this Plan. As detailed in that Appendix, there has been extensive investigation of the extent of perchlorate contamination which, in combination with the groundwater modeling previously described, has led to the current plan for integrated control of contamination migration and restoration of impacted pumping (well) capacity in 2006. While most of the perchlorate contamination control and restoration plan is focused on the Saugus Formation, part of that plan includes potential capture of contaminated groundwater in the Alluvium by pumping of selected Saugus wells. Specific long-term resolution of perchlorate contamination in the Alluvium, which impacted two water supply wells, is focused on a combination of wellhead treatment at one well, the VWC's Well Q2, and several source control methods such as on-site pumping and treatment in the northern Alluvium (at the northerly portion of the former Whittaker-Bermite site) and subsequent restoration of the impacted Stadium well. In the interim, i.e., through 2006, a key challenge is protection of active Alluvial wells that could be impacted, including what effect that might have on adequacy of Alluvial groundwater pumping capacity and what response will be taken.

In April 2005, perchlorate was detected in VWC's Well Q2. VWC's response was to remove the well from active water supply service and to rapidly seek approval for installation of wellhead treatment and return of the well to service. As part of outlining its plan for treatment and return of the well to service, VWC analyzed the impact of the temporary inactivation of the well on its water supply capability; the analysis determined that VWC's other sources are sufficient to meet demand and that the inactivation of Well Q2 thus had no impact on VWC's water supply capability (LSCE, 2005). VWC proceeded through mid-2005 to gain approval for installation of wellhead treatment (ion-exchange as described below), including environmental review, and completed the installation of the wellhead treatment facilities in September 2005. Well Q2 was returned to active water supply service in October 2005.

Ongoing monitoring of all active municipal wells near the Whittaker-Bermite site has shown no detections of perchlorate in any active Alluvial wells. However, based on a combination of proximity to the Whittaker-Bermite site and prevailing groundwater flow directions, complemented by findings in the ongoing on-site and off-site investigations by Whittaker-Bermite and the Army Corps of Engineers (ACOE) (See Appendix D), there is logical concern that perchlorate could impact nearby, downgradient Alluvial wells. As a result, provisions are in place to respond to perchlorate contamination if it should occur. The groundwater model was used to examine capture zones around Alluvial wells under planned operating conditions (pumping capacities and volumes) for the time period through currently scheduled restoration of impacted wells in 2006 (Technical Memorandum "Analysis of Near-Term Groundwater Capture Areas for Production Wells Located Near the Whittaker-Bermite Property (Santa Clarita, California)", CH2M Hill, November 2004). The capture zone analysis of Alluvial wells generally near the Whittaker-Bermite site, shown on Figure 5-1, suggests that inflow to those wells will either be upgradient of the contamination site, or will be from the Alluvium beyond where perchlorate is most likely to be transported, with the possible exception of the VWC's Pardee wellfield, which includes Wells N, N7, and N8. Although the capture zone analysis does not show the Pardee wells to be impacted, they are considered to be at some potential risk due to the proximity of their capture zone to the Whittaker-Bermite site.

The combined pumping capacity of VWC's Pardee wells is 6,200 gpm, which equates to about 10,000 af of maximum annual capacity. However, in the operating plan for both normal and dry-year Alluvial pumping, the planned use of those wells represents 2,940 afy of the total 30,000 to 40,000 afy Alluvial groundwater supply. Thus, if the wells were to become contaminated with perchlorate, they would represent an amount of the total Alluvial supply that could be readily replaced, on a short-term interim basis, by utilizing an equivalent amount of imported water from CLWA or by utilizing existing capacity from other Alluvial wells (see Table 3-9 in Chapter 3.0). However, if the Pardee wells were to become contaminated by perchlorate contamination, VWC has made site provisions at its Pardee wellfield for installation of wellhead treatment. Such treatment would be the same methodology as installed at its Well Q2.

In addition to the preceding, on-site investigation by Whittaker-Bermite since late 2003 has resulted in the completion, in June 2005, of a Workplan for a Pilot Remediation Pumping Program in the Northern Alluvium and certain on-site sub-areas east/southeast, or generally upgradient, of the impacted Stadium well. That program basically involves the establishment of containment, generally along the northern boundary of the Whittaker-Bermite site, upgradient of the Stadium well, by continuous pumping of a former Whittaker-Bermite facility well, at a continuous low capacity, complemented by pumping at several groundwater "hot spots" also generally upgradient of the Stadium well. Due to the low conductivity nature of the aquifer materials at the various "hot spots," pumping for containment at those locations would be from several wells at low pumping capacities. Extracted water would be treated at Whittaker-Bermite's existing on-site treatment system. Generally consistent with the Saugus restoration concept, the Northern Alluvium pumping program would have the concurrent objectives of preventing site-related contaminants from leaving the site and removing some contamination from groundwater such that it can be removed in the on-site treatment process prior to discharge of the water back to the groundwater Basin.



LEGEND

CONTAMINATED PRODUCTION WELL
- ALLUVIUM
- SAUGUS

UNCONTAMINATED PRODUCTION WELL
- ALLUVIUM
- SAUGUS

MONITORING WELL
- ALLUVIUM
- SAUGUS

TWO-YEAR GROUNDWATER CAPTURE ZONE
- SCWC-HONBY
- VWC-N
- VWC-N7
- VWC-N8
- VWC-Q2
- VWC-S6
- VWC-S7
- VWC-S8
- VWC-T2
- VWC-T4
- VWC-U4
- VWC-U6
- WHITTAKER-BERMITE PROPERTY BOUNDARY

NOTES:

1. VALUES PRESENTED UNDER WELL SYMBOLS REPRESENT PERCHLORATE CONCENTRATION IN GROUNDWATER (µg/L).
2. PUMPING VALUES IN PARENTHESES ARE ANNUAL PUMPING VOLUMES
3. ND = PERCHLORATE NOT DETECTED IN GROUNDWATER SAMPLE.
4. µg/L = MICROGRAMS PER LITER; AF/yr = acre feet per year
5. FLOWPATHS ARE DELINEATED USING AN EFFECTIVE POROSITY OF 0.10 IN THE ALLUVIAL AQUIFER AND 0.05 IN THE SAUGUS FORMATION.

FIGURE 5-1
FORECASTED TWO-YEAR GROUNDWATER CAPTURE ZONES FOR ACTIVE ALLUVIAL PRODUCTION WELLS LOCATED CLOSEST TO THE WHITTAKER-BERMITE PROPERTY
SANTA CLARITA, CALIFORNIA

CH2MHILL

5.4.2 Saugus Formation

Details of the overall nature and extent of perchlorate contamination are discussed in Appendix D. The program and schedule involves the ultimate installation of treatment facilities to both extract contaminated water and control migration in the aquifer, such that the impacted capacity is restored and perchlorate migration is controlled in 2006.

In the interim, the question of whether existing active Saugus wells are likely to be contaminated by perchlorate migration prior to the installation of treatment and pumping for perchlorate contamination control has been evaluated by using the groundwater flow model to analyze capture zones of existing active wells through 2006, the scheduled period for permitting, installation of treatment, and restoration of impacted capacity. For that analysis, recognizing current hydrologic conditions and available supplemental SWP supplies, the rate of Saugus pumping was conservatively projected to be in the normal range (7,500 to 15,000 afy) for the near-term. The results of the capture zone analysis, illustrated on Figure 5-2, were that the two nearest downgradient Saugus wells, VWC's Wells 201 and 205, would draw water from very localized areas around the wells and would not draw water from locations where perchlorate has been detected in the Saugus. As shown on the figure, the capture zone analysis projected Well 201 would potentially draw Saugus groundwater from areas located up to 450 feet east of the well, but was unlikely to draw water from areas farther to the east through that time period. During the same time, Well 205 would potentially draw Saugus groundwater from areas as much as 650 feet to the east and northeast of this well.

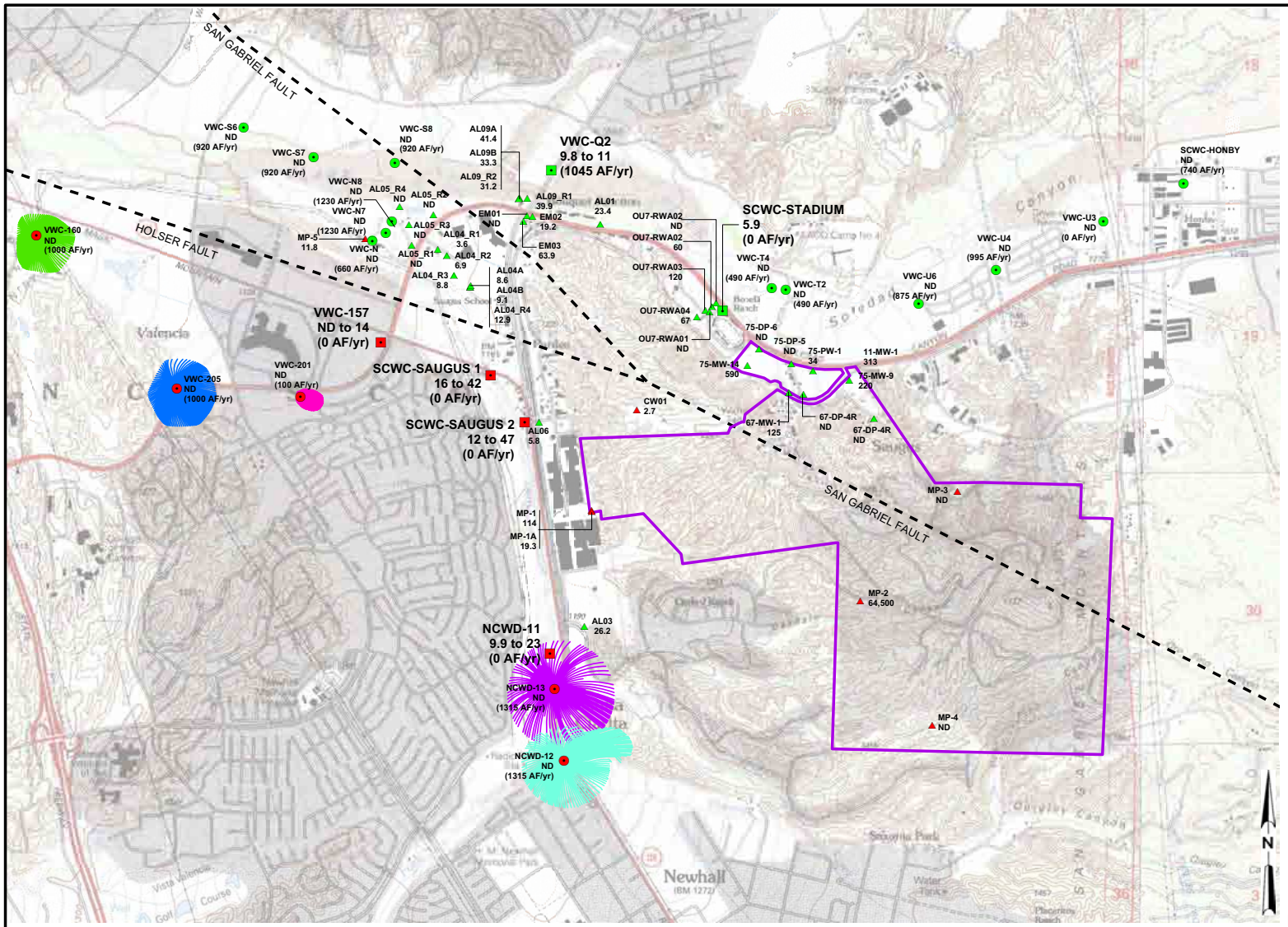
As a result, the currently active downgradient Saugus wells are expected to remain active as sources of water supply in accordance with the overall operating plan for the Saugus Formation, given the generally low planned pumping from the nearest downgradient Saugus wells in the operating plan through 2006, after which restored capacity and resultant aquifer hydraulic control are scheduled to be in place.

5.5 WATER QUALITY IMPACTS ON RELIABILITY

5.5.1 Groundwater Contamination (Perchlorate)

The detection of perchlorate in Valley groundwater supplies has raised concerns over the reliability of those supplies, in particular the Saugus Formation, where four wells have been removed from active service as a result of perchlorate. As discussed below and in Appendix D, planning for remediation of the perchlorate and restoration of the impacted well capacity is substantially underway. While that work is being completed, non-impacted production facilities can be relied upon for the quantities of water projected to be available from the Alluvial Aquifer and Saugus Formation during the time necessary to restore perchlorate-impacted wells. CLWA, the local retail water purveyors, the California Department of Toxic Substances Control (DTSC), and the ACOE continue to work closely on the perchlorate contamination issue.

The following is a summary of the status of perchlorate remediation and restoration of perchlorate-impacted groundwater supply. A more detailed discussion of pertinent events related



LEGEND

CONTAMINATED PRODUCTION WELL
- ALLUVIUM
- SAUGUS

UNCONTAMINATED PRODUCTION WELL
- ALLUVIUM
- SAUGUS

MONITORING WELL
- ALLUVIUM
- SAUGUS

TWO-YEAR GROUNDWATER CAPTURE ZONE
- NC-12
- NC-13
- VWC-160
- VWC-201
- VWC-205
- WHITTAKER-BERMITE PROPERTY BOUNDARY

NOTES:

1. VALUES PRESENTED UNDER WELL SYMBOLS REPRESENT PERCHLORATE CONCENTRATION IN GROUNDWATER (µg/L).
2. PUMPING VALUES IN PARENTHESES ARE ANNUAL PUMPING VOLUMES.
3. ND = PERCHLORATE NOT DETECTED IN GROUNDWATER SAMPLE.
4. µg/L = MICROGRAMS PER LITER; AF/yr = acre feet per year
5. FLOWPATHS ARE DELINEATED USING AN EFFECTIVE POROSITY OF 0.10 IN THE ALLUVIAL AQUIFER AND 0.05 IN THE SAUGUS FORMATION.

FIGURE 5-2
FORECASTED TWO-YEAR GROUNDWATER CAPTURE ZONES FOR ACTIVE SAUGUS PRODUCTION WELLS LOCATED CLOSEST TO THE WHITTAKER-BERMITE PROPERTY
SANTA CLARITA, CALIFORNIA

CH2MHILL

to perchlorate contamination, containment, remediation, and water supply restoration is included in Appendix D. These discussions are provided to illustrate that work toward the ultimate remediation of the perchlorate contamination, including the reactivation of impacted groundwater supply wells, has progressed on several integrated fronts over the last five years.

5.5.2 Perchlorate Impacted Water Purveyor Wells

As introduced above, perchlorate was detected in four Saugus Formation production wells near the former Whittaker-Bermite site in 1997. As a result, these wells (SCWD's Wells Saugus 1 and Saugus 2, NCWD's Well NC-11, and VWC's Well V-157) were removed from service. In 2002, perchlorate was detected in the SCWD Stadium well located directly adjacent to the Whittaker-Bermite site. This Alluvial well also has been removed from service.

Since the detection of perchlorate and resultant inactivation of impacted wells, the purveyors have been conducting regular monitoring of active wells near the Whittaker-Bermite site. In April 2005, that monitoring detected the presence of perchlorate in VWC's Well Q2, an Alluvial well located immediately northwest of the confluent of Bouquet Creek and the Santa Clara River. The location of this well is also shown on Figures 5-1 and 5-2. As a result of the detection and confirmation of perchlorate in its Well Q2, VWC removed the well from active service and pursued rapid permitting and installation of wellhead treatment in order to return the well to water supply service as described in Section 5.4.1.

In January 2005, VWC permanently closed well V-157 and in September 2005 completed the construction of new Saugus well V-206 located in an area of the Saugus Formation not impacted by perchlorate. VWC's V-206 is operational and replaces the pumping capacity temporarily impacted by the detection of perchlorate at V-157. In October 2005, VWC restored the pumping capacity of well Q2 with the start-up of wellhead treatment designed to effectively remove perchlorate. In summary, four wells (Saugus 1 and 2, NC-11, and Stadium well) remain temporarily offline due to perchlorate contamination.

Locations of the impacted wells, and other nearby non-impacted wells, relative to the Whittaker-Bermite site are shown on Figures 5-1 and 5-2.

5.5.3 Restoration of Perchlorate Impacted Water Supply

Since the detection of perchlorate in the four Saugus wells in 1997, CLWA and the retail water purveyors have recognized that one element of an overall remediation program would most likely include pumping from impacted wells, or from other wells in the immediate area, to establish hydraulic conditions that would control the migration of contamination from further impacting the aquifer in a downgradient (westerly) direction. Thus, CLWA and the retail water purveyors expect that the overall perchlorate remediation program could include dedicated pumping from some or all of the impacted wells, with appropriate treatment, such that two objectives could be achieved. The first objective is control of subsurface flow and protection of downgradient wells, and the second is restoration of some or all of the contaminated water supply. Not all impacted capacity is required for control of groundwater flow. The remaining capacity would be replaced by construction of replacement wells at non-impacted locations.

In cooperation with state regulatory agencies and investigators working for Whittaker-Bermite, CLWA and the local retail water purveyors developed an off-site plan that focuses on the concepts of groundwater flow control and restored pumping capacity and is compatible with on-site and possibly other off-site remediation activities. Specifically relating to water supply, the plan includes the following:

- Constructing and operating a water treatment process that removes perchlorate from two impacted wells such that the produced water can be used for municipal supply.
- Hydraulically containing the perchlorate contamination that is moving from the Whittaker-Bermite site toward the impacted wells by pumping the wells at rates that will capture water from all directions around them.
- Protecting the downgradient non-impacted wells through the same hydraulic containment that results from pumping two of the impacted wells.
- Restoring the annual volumes of water pumped from the impacted wells before they were inactivated and also restoring the wells' total capacity to produce water in a manner consistent with the retail water purveyors' operating plan for groundwater supply described above.

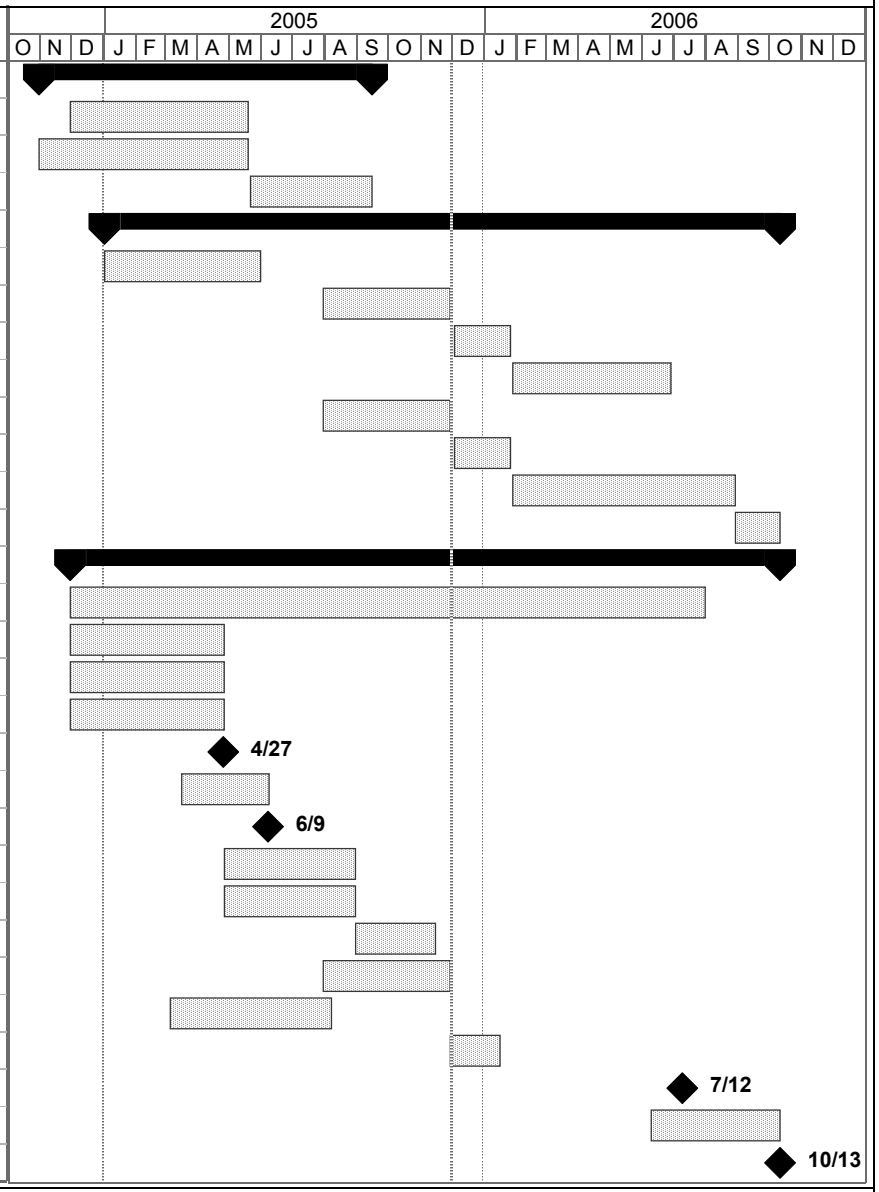
The current schedule for implementation of the plan to restore contaminated water supply (wells) is illustrated on Figure 5-3. Included in the schedule is a planned extended test of the wells that will be returned to service as part of restoring contaminated water supply and that will also be operated to extract contaminated water and control the migration of contamination in the aquifer. Concurrent with the testing of the wells, several specific ion exchange resins will also be tested to evaluate their performance and longevity. The two key activities that comprise the majority of effort required for implementation of the plan are general facilities-related work (design and construction of well facilities, treatment equipment, pipelines, etc.) and permitting work. Both activities are planned and scheduled concurrently, resulting in planned completion (i.e., restoration of all impacted capacity) in 2006. Notable recent accomplishments toward implementation include completion of the Final Draft Interim Remedial Action Plan (RAP) in August 2005 and completion of environmental review with the adoption of a Mitigated Negative Declaration in September 2005.

In light of the preceding, with regard to the adequacy of groundwater as the local component of water supply in this Plan, the impacted capacity will remain unavailable through early to mid-2006, during which time the non-impacted groundwater supply will be sufficient to meet near-term water requirements as described in Chapter 3, Water Resources. Afterwards, the total groundwater capacity will be sufficient to meet the full range of normal and dry-year conditions as provided in the operating plan for groundwater supply.

Returning the contaminated Saugus wells to municipal water supply service by installing treatment requires issuance of permits from DHS before the water can be considered potable and safe for delivery to customers. The permit requirements are contained in DHS Policy Memo 97-005 for direct domestic use of impaired water sources.

Figure 5-3
Preliminary 97-005 Implementation Schedule
Castaic Lake Water Agency

ID	Task Name	Duration	Start	Finish
1	**DTSC Approval Activities**	**230 days**	**Mon 11/1/04**	**Fri 9/16/05**
2	Feasibility Study	6.15 mons	Wed 12/1/04	Fri 5/20/05
3	Draft RAP	29 wks	Mon 11/1/04	Fri 5/20/05
4	Final RAP	4.25 mons	Mon 5/23/05	Fri 9/16/05
5	**Implementation Activities**	**465 days**	**Mon 1/3/05**	**Fri 10/13/06**
6	Easements and ROW	5.4 mons	Mon 1/3/05	Wed 6/1/05
7	Treatment Design	4.4 mons	Mon 8/1/05	Wed 11/30/05
8	Treatment Bidding & Contracting	2 mons	Mon 12/5/05	Fri 1/27/06
9	Treatment Construction	5.5 mons	Mon 1/30/06	Fri 6/30/06
10	Pipeline Design	4.4 mons	Mon 8/1/05	Wed 11/30/05
11	Pipeline Bidding & Contracting	2 mons	Mon 12/5/05	Fri 1/27/06
12	Pipeline Construction	7.7 mons	Mon 1/30/06	Thu 8/31/06
13	System Startup	1.55 mons	Fri 9/1/06	Fri 10/13/06
14	**DHS Approval Activities (97-005)**	**488 days**	**Wed 12/1/04**	**Fri 10/13/06**
15	DHS Coordination	21.8 mons	Wed 12/1/04	Wed 8/2/06
16	TM1: Source Water Assessment	5.3 mons	Wed 12/1/04	Wed 4/27/05
17	TM2: Raw Water Quality Characterization	5.3 mons	Wed 12/1/04	Wed 4/27/05
18	TM3: Source Water Protection	5.3 mons	Wed 12/1/04	Wed 4/27/05
19	DHS Workshop No. 1	0 days	Wed 4/27/05	Wed 4/27/05
20	TM4: Effective Monitoring & Treatment	3 mons	Fri 3/18/05	Thu 6/9/05
21	DHS Workshop No. 2	0 days	Thu 6/9/05	Thu 6/9/05
22	TM5: Human Health Risk Assessment	4.5 mons	Thu 4/28/05	Wed 8/31/05
23	TM6: Alternative Source Assessment	4.5 mons	Thu 4/28/05	Wed 8/31/05
24	DHS Review of TMs 5 & 6	2.75 mons	Thu 9/1/05	Wed 11/16/05
25	Prepare 97-005 Engineer's Report	4.4 mons	Mon 8/1/05	Wed 11/30/05
26	CEQA Initial Study and Draft MND	5.55 mons	Mon 3/7/05	Mon 8/8/05
27	Permit Application	1.7 mons	Thu 12/1/05	Tue 1/17/06
28	Public Hearing	0 days	Wed 7/12/06	Wed 7/12/06
29	DHS Evaluation	4.5 mons	Mon 6/12/06	Fri 10/13/06
30	Obtain DHS Permit	0 days	Fri 10/13/06	Fri 10/13/06



Project: CLWA 97-005_r2
Date: Thu 12/1/05

Task
Split
Progress
Milestone
Summary
Project Summary
External Tasks
External Milestone
Deadline

Before issuing a permit to a water utility for use of an impaired source as part of the utility's overall water supply permit, DHS requires that studies and engineering work be performed to demonstrate that pumping the wells and treating the water will be protective of public health for users of the water. The 97-005 Policy Memo requires that DHS review the local retail water purveyor's plan, establish appropriate permit conditions for the wells and treatment system, and provide overall approval of returning the impacted wells to service for potable use. Ultimately, CLWA's and the local retail water purveyor's plan and the DHS requirements are intended to ensure that the water introduced to the potable water distribution system has no detectable concentration of perchlorate.

The DHS 97-005 Policy Memo requires, among other things, the completion of a source water assessment for the impacted wells intended to be returned to service. The purpose of the assessment is to determine the extent to which the aquifer is vulnerable to continued migration of perchlorate and other contaminants of interest from the Whittaker-Bermite site. The assessment includes the following:

- Delineation of the groundwater capture zone caused by operating the impacted wells
- Identification of contaminants found in the groundwater at or near the impacted wells
- Identification of chemicals or contaminants used or generated at the Whittaker-Bermite facility
- Determination of the vulnerability of pumping the impacted wells to these contaminant sources

CLWA is currently working directly with the retail water purveyors and its consultants on development of the DHS 97-005 Policy Memo permit application. Two coordination workshops have already been held with DHS. Drafts of all six elements of the 97-005 Policy Memo have been submitted to DHS and the retail purveyors for review, including: the Source Water Assessment, Raw Water Quality Characterization, Source Protection Plan, Effective Monitoring and Treatment Evaluation, Human Health Risk Assessment, and the Alternatives Sources Evaluation. The Engineer's Report, which summarizes these six elements for the 97-005 process, is anticipated to be complete by the end of November 2005.

The CEQA process for the "CLWA Groundwater Containment, Treatment, and Restoration Project," for which the 97-005 process is being conducted, was completed in August 2005. The Project Description from the project's CEQA Initial Study is included in Appendix E.

As listed above, DHS 97-005 Policy Memo requires an analysis to demonstrate contaminant capture and protection of other nearby water supply wells. The development and calibration of a numerical groundwater flow model of the entire basin had been initiated as a result of a 2001 MOU among the Upper Basin Water Purveyors (CLWA, CLWA SCWD, LACWWD #36, NCWD, and VWC) and the United Water Conservation District in Ventura County.

The groundwater model was initially intended for use in analyzing the operating yield and sustainability of groundwater in the Basin. Use of the model for that analysis is described in Chapter 3. However, the model was adaptable to analyze both the sustainability of groundwater under an operational scenario that includes full restoration of perchlorate-contaminated supply

and the containment of perchlorate near the Whittaker-Bermite property (i.e., by pumping some of the contaminated wells). In 2004, DTSC reviewed and approved the construction and calibration of the regional model as described in the final model report, "Regional Groundwater Flow Model for the Santa Clarita Valley, Model Development and Calibration" (CH2M Hill, April 2004).

After DTSC approval, the model was used to simulate the capture and control of perchlorate by restoring impacted wells, with treatment. The results of that work are summarized in a second report, "Analysis of Perchlorate Containment in Groundwater Near the Whittaker-Bermite Property, Santa Clarita, California" (CH2M Hill, December 2004). The modeling analysis indicates that the pumping of impacted wells SCWD-Saugus 1 and SCWD-Saugus 2 on a nearly continual basis will effectively contain perchlorate migrating westward in the Saugus Formation from the Whittaker-Bermite property. The analysis also indicates that (1) no new production wells are needed in the Saugus Formation to meet the perchlorate containment objective, (2) impacted well NCWD-11 is not a required component of the containment program, and (3) pumping at SCWD-Saugus 1 and SCWD-Saugus 2 is necessary to prevent migration of perchlorate to other portions of the Saugus Formation.

The perchlorate containment report also includes the general design of a sentinel groundwater monitoring network and program required by DHS as part of its 97-005 Policy Memo permitting. The perchlorate containment report was approved by DTSC in November 2004. With that approval, the model is now being used to support the source water assessment and the balance of the permitting process required by DHS under its 97-005 Policy Memo.

Chapter 6
RELIABILITY PLANNING

Chapter 6.0
RELIABILITY PLANNING

6.1 OVERVIEW

The Act requires urban water suppliers to assess water supply reliability that compares total projected water used with the expected water supply over the next twenty years in five year increments. The Act also requires an assessment for a single dry year and multiple dry years. This chapter presents the reliability assessment for CLWA's service area.

It is the stated goal of CLWA and the retail water purveyors to deliver a reliable and high quality water supply for their customers, even during dry periods. Based on conservative water supply and demand assumptions over the next 25 years in combination with conservation of non-essential demand during certain dry years, the Plan successfully achieves this goal.

6.2 RELIABILITY OF WATER SUPPLIES

Each water supply source has its own reliability characteristics. In any given year, the variability in weather patterns around the state may affect the availability of supplies to the Valley differently. For example, from 2000 through 2002, southern California experienced dry conditions in all three years. During the same period, northern California experienced one dry year and two normal years. The Valley is typical in terms of water management in southern California; local groundwater supplies are used to a greater extent when imported supplies are less available due to dry conditions in the north, and larger amounts of imported water supplies are used during periods when northern California has wetter conditions. This pattern of "conjunctive use" has been in effect since SWP supplies first came to the Valley in 1980. SWP supplies have supplemented the overall supply of the Valley, which previously depended solely on local groundwater supplies.

To supplement these local groundwater supplies, CLWA contracted with DWR for delivery of SWP water, providing an imported water supply to the Valley. However, the variability in SWP supplies affects the ability of the agencies to meet the overall water supply needs for the service area. While each of the Valley's available supply sources has some variability, the variability in SWP supplies has the largest effect on overall supply reliability.

As discussed in Section 3.2 of Chapter 3, each SWP contractor's Water Supply Contract contains a Table A Amount that identifies the maximum amount of water that contractor may request. However, the amount of SWP water actually allocated to contractors each year is dependent on a number of factors than can vary significantly from year to year. The primary factors affecting SWP supply availability include hydrologic conditions in northern California, the amount of water in SWP storage reservoirs at the beginning of the year, regulatory and operational constraints, and the total amount of water requested by the contractors. The availability of SWP supplies to CLWA and the other SWP contractors is generally less than their full Table A amounts in many years and can be significantly less in very dry years.

DWR's SWP Delivery Reliability Report, issued in May 2003, assists SWP contractors in assessing the reliability of the SWP component of their overall supplies. DWR is currently in the process of updating this report and, on May 25, 2005, provided excerpts from this update that includes updated reliability analyses and a recommendation for which set of analyses to use in preparation of 2005 UWMPs. DWR provided these updated delivery reliability estimates to the SWP contractors in its "Excerpts from the Working Draft of 2005 State Water Project Delivery Reliability."

The amount of SWP water projected to be available to CLWA in this Plan is based on DWR's draft reliability report update. In its report, DWR presents the results of its analysis of the reliability of SWP supplies, based on model studies of SWP operations. In general, DWR model studies show the anticipated amount of SWP supply that would be available for a given SWP water demand, given an assumed set of physical facilities and operating constraints, based on 73 years of historic hydrology. The results are interpreted as the capability of the SWP to meet the assumed SWP demand, over a range of hydrologic conditions, for that assumed set of physical facilities and operating constraints.

DWR's draft report presents the results of model studies for years 2005 and 2025. In these model studies, DWR assumed existing SWP facilities and operating constraints for both the 2005 and 2025 studies. The primary differences between the two studies are an increase in projected SWP contractor demands and an increase in projected upstream demands (which affects SWP supplies by reducing the amount of inflows available for the SWP). In the report, DWR presents the SWP delivery capability resulting from these studies as a percent of full contractor Table A Amounts. To estimate supply capability in intermediate years between 2005 and 2025, DWR interpolates between the results of those studies.

6.3 NORMAL, SINGLE-DRY, AND MULTIPLE-DRY YEAR PLANNING

CLWA has various water supplies available to meet demands during normal, single-dry, and multiple-dry years. The following sections elaborate on the different supplies available to CLWA including groundwater, recycled water, and SWP supplies.

6.3.1 Groundwater

Supplies from the Alluvial Aquifer are projected to be 30,000 to 40,000 afy in average years and 30,000 to 35,000 afy in dry years; supplies from the Saugus Formation are projected to be 7,500 to 15,000 afy in average years and 15,000 to 35,000 afy in dry years. Groundwater modeling of the aquifers has shown that short-term, dry-year supply from the Saugus Formation could increase to up to 35,000 afy. This amount of Saugus Formation pumping can be achieved through pumping from a combination of existing wells at about 15,000 afy, restored capacity from perchlorate-impacted wells of about 10,000 afy, and new wells at 10,000 afy.

The projected groundwater supplies used in this Plan are generally the midpoints of the ranges mentioned above, with the exception of dry-period pumping from the Saugus Formation. Given the large amount of groundwater storage within the Saugus Formation, it was assumed that single-dry year pumping on an intermittent basis would be limited primarily by well capacity, to 35,000 afy. For the multiple-dry year period, it was assumed that pumping from the Saugus

Formation would be governed by the groundwater operating plan summarized in Table 3-6, with average pumping over the 4-year dry period of about 21,500 afy.

6.3.2 Recycled Water

Recycled water is available from two existing water reclamation plants operated by LACSD. CLWA has completed environmental review on the construction of Phase I of its Reclaimed Water System Master Plan, a multi-phased program to deliver recycled water in the Valley. As described in Chapter 4, the ability of CLWA to use recycled water is constrained by its rights to use the water available. CLWA currently has rights to use 1,700 afy of recycled water, and Phase I provides for the delivery of this amount. While actual use of recycled water currently totals approximately 500 afy, the amount of this supply currently available is 1,700 afy. In this Plan, the existing supply of recycled water assumed to be available is 1,700 afy in an average year, a single-dry year, and in each year of a multiple-dry year period. CLWA projects an increase of 15,700 afy in the supply of recycled water by 2030, for a total of 17,400 afy. Similar to the existing recycled water supply, the 15,700 afy of planned recycled water supply is assumed to be available in an average year, a single-dry year, and in each year of a multiple-dry year period.

6.3.3 State Water Project Table A Supply

For this Plan, the availability of SWP supplies to CLWA was estimated by multiplying CLWA's 95,200 afy of Table A Amount by the delivery percentages from DWR's draft report.[1] For the three hydrologic conditions evaluated, the delivery percentages used were taken from DWR's report based on the 73-year average, 1977, and the 1931-1934 average, for the average year, single-dry year, and multiple-dry year conditions, respectively.

In DWR's 73-year model studies, the lowest single-year SWP delivery results from 1977 hydrologic conditions, and the lowest delivery over any four-year period results from the hydrologic conditions from 1931 to 1934. Thus, the estimates of SWP dry-year supply availability used in this assessment were based on the worst case hydrologic conditions in DWR's report.

6.3.3.1 Flexible Storage Account

Under the Water Supply Contracts with DWR for SWP water, the contractors that share in the repayment of Castaic Lake may access a portion of the storage in that reservoir. This accessible storage is referred to as "flexible storage." The contractors may withdraw water from flexible storage, in addition to their allocated Table A supplies, on an as-needed basis. A contractor must replace any water it withdraws from this storage within five years. As one of the three contractors sharing in the repayment of Castaic Lake, CLWA has access to this flexible storage. Its share of the total flexible storage is currently 4,684 af. After recent negotiations with Ventura

[1] Of CLWA's 95,2000 af annual Table A Amount, 41,000 afy was permanently transferred to CLWA in 1999 by Wheeler Ridge-Maricopa Water Storage District, a member unit of the Kern County Water Agency. CLWA's Environmental Impact Report ("EIR") prepared in connection with the 41,000 afy water transfer was challenged in *Friends of the Santa Clara River v. Castaic Lake Water Agency* (Los Angeles County Superior Court, Case Number BS056954) ("*Friends*"). A more detailed discussion of these new challenges and the reasons the challenges will have no impact on the amount of water available to CLWA can be found at Section 3.2.2.

County water agencies, CLWA has gained access to an additional 1,376 af of flexible storage for ten years beginning in 2006.

CLWA plans to use this supply only in dry years. For the single-dry year condition, it was assumed the entire amount would be used. For the multiple-dry year condition, it was assumed that the entire amount would be used sometime during the four-year period, so the average annual supply during that period would be one fourth of the total. Any water withdrawn was assumed to be replaced in intervening average and wet years and would be available again for use in the next dry year.

6.3.3.2 Semitropic Water Bank

In 2002, CLWA stored 24,000 af of its allocated SWP Table A supply through a groundwater banking agreement with Semitropic. In 2004, CLWA stored 32,522 af of its 2003 allocated SWP Table A supply in a second Semitropic storage account. Under the terms of these agreements, and after consideration for losses within the groundwater basin, CLWA may withdraw up to 50,870 af when needed within ten years of when the water was stored. In addition to this short-term storage for CLWA, Semitropic has a long-term groundwater banking program with several other partners. The facilities that Semitropic may use in the return of CLWA's banked water supply are the same facilities that Semitropic may use to return banked water to its long-term banking program partners. As a result, there may be competition for use of those facilities in a particularly dry year, which could limit CLWA's ability to access the water in that year.

CLWA plans to use this supply only in dry years. For the single dry year, it was assumed that competition among Semitropic's banking partners for use of return facilities would limit CLWA's supply to about one third of the storage available, or about 17,000 af. For the multiple-dry year period, it was assumed that the entire amount would be accessible and used sometime during the four-year period, so the average annual supply during that period would be one fourth of the total available, or about 12,700 af. Since the stored water must be withdrawn within ten years of when it was stored, it was assumed that this supply is available only through 2013.

6.3.4 Buena Vista-Rosedale

The Buena Vista Water Storage District and the Rosedale-Rio Bravo Water Storage District, both member districts of KCWA, have jointly developed a program that provides both a firm water supply and a water banking component. This planned supply program would provide a firm annual water supply based on existing and long-standing Kern River water rights, which would be delivered by exchange of their SWP Table A supplies. In years when this supply is not needed, it can be banked for withdrawal and delivery in later years. The supply from this program is up to 11,000 afy of firm supply, which will be available in every year.

6.3.5 Rosedale-Rio Bravo Bank

Rosedale-Rio Bravo Water Storage District has also developed a water banking and exchange program. The initial offering from the program is for storage and withdrawal capacity of 20,000 afy, with up to 100,000 af of storage capacity. Withdrawals from the program can be made by exchange of Rosedale's Table A supply, or by pumpback into the California Aqueduct. CLWA issued a draft EIR on its participation in this program in August 2005, and plans to use this

supply only in dry years. For the single-dry year, supplies were assumed at the program's maximum withdrawal capacity of 20,000 af. For the multiple-dry year period, it was assumed in the first five-year increment the program is available that supplies would be limited to an average of 5,000 afy and that 20,000 af of water would be stored in one wet year prior to the dry period. In later years, it was assumed that supplies would average at least 15,000 afy over the dry period and that additional supplies would be banked during wetter years to allow withdrawal of at least this amount.

6.3.6 Additional Planned Banking

CLWA's Draft Water Supply Reliability Plan identifies a need for additional banking programs to firm up the dry-year reliability of service area supplies. While a specific banking program has not yet been identified, the amount of the additional dry-year supply needed was estimated as equivalent to the storage and withdrawal capacity of the Rosedale-Rio Bravo Bank. The supply amounts needed from this additional banking program were assumed to be the same as for the Rosedale-Rio Bravo Bank, with the exception that the program was not assumed to be available until 2015.

6.4 SUPPLY AND DEMAND COMPARISONS

The available supplies and water demands for CLWA's service area were analyzed to access the region's ability to satisfy demands during three scenarios: a normal water year, single-dry year, and multiple-dry years. The tables in this section present the supplies and demands for the various drought scenarios for the projected planning period of 2010-2030 in five year increments. Table 6-1 presents the base years for the development of water year data. Tables 6-2, 6-3, and 64 at the end of this section summarize, respectively, Normal Water Year, Single-Dry Water Year, and Multiple-Dry Year supplies.

Table 6-1
Basis of Water Year Data

Water Year Type	Base Years	Historical Sequence
Normal Water Year	Average	1922-1994
Single-Dry Water Year	1977	--
Multiple-Dry Water Years	1931-1934	--

6.4.1 Normal Water Year

Table 6-2 summarizes CLWA's water supplies available to meet demands over the 20-year planning period during an average/normal year. As presented in the table, CLWA's water supply is broken down into existing and planned water supply sources, including wholesale (imported) water, local supplies, transfers, and banking programs. Demands are shown with and without the effects of an assumed 10 percent urban demand reduction resulting from conservation best management practices.

6.4.2 Single-Dry Year

The water supplies and demands for CLWA's service area over the 20-year planning period were analyzed in the event that a single-dry year occurs, similar to the drought that occurred in California in 1977. Table 6-3 summarizes the existing and planned supplies available to meet demands during a single-dry year. Demand during dry years was assumed to increase by 10 percent.

6.4.3 Multiple-Dry Year

The water supplies and demands for CLWA's service area over the 20-year planning period were analyzed in the event that a four-year multiple-dry year event occurs, similar to the drought that occurred during the years 1931 to 1934. Table 6-4 summarizes the existing and planned supplies available to meet demands during multiple-dry years. Demand during dry years was assumed to increase by 10 percent.

6.4.4 Summary of Comparisons

As shown in the analyses above, CLWA and the retail purveyors have adequate supplies to meet demands during normal, single-dry, and multiple-dry years throughout the 20-year planning period.

Table 6-2
Projected Average/Normal Year Supplies and Demands

Water Supply Sources	Supply (af)				
	2010	2015	2020	2025	2030
Existing Supplies					
Wholesale (Imported)	*67,600*	*69,500*	*71,400*	*73,300*	*73,300*
SWP Table A Supply (1)	67,600	69,500	71,400	73,300	73,300
Flexible Storage Account (CLWA) (2)	0	0	0	0	0
Flexible Storage Account (Ventura County) (2)	0	0	0	0	0
Local Supplies					
Groundwater	*46,000*	*46,000*	*46,000*	*46,000*	*46,000*
Alluvial Aquifer	35,000	35,000	35,000	35,000	35,000
Saugus Formation	11,000	11,000	11,000	11,000	11,000
Recycled Water	1,700	1,700	1,700	1,700	1,700
Total Existing Supplies	115,300	117,200	119,100	121,000	121,000
Existing Banking Programs					
Semitropic Water Bank (2)	0	0	0	0	0
Total Existing Banking Programs	0	0	0	0	0
Planned Supplies					
Local Supplies					
Groundwater	*0*	*0*	*0*	*0*	*0*
Restored wells (Saugus Formation) (2)	0	0	0	0	0
New Wells (Saugus Formation) (2)	0	0	0	0	0
Recycled Water (3)	0	1,600	6,300	11,000	15,700
Transfers					
Buena Vista-Rosedale (4)	11,000	11,000	11,000	11,000	11,000
Total Planned Supplies	11,000	12,600	17,300	22,000	26,700
Planned Banking Programs					
Rosedale-Rio Bravo (2)	0	0	0	0	0
Additional Planned Banking (2)	0	0	0	0	0
Total Planned Banking Programs	0	0	0	0	0
Total Existing and Planned Supplies and Banking	126,300	129,800	136,400	143,000	147,700
Total Estimated Demand (w/o conservation) (5)	100,050	109,400	117,150	128,400	138,300
Conservation (6)	(8,600)	(9,700)	(10,700)	(11,900)	(12,900)
Total Adjusted Demand	91,450	99,700	106,450	116,500	125,400

Notes:

(1) SWP supplies are calculated by multiplying CLWA's Table A Amount of 95,200 af by percentages of average deliveries projected to be available (71% in 2010 and 77% in 2025/2030), taken from Table 6-5 of DWR's "Excerpts from Working Draft of 2005 State Water Project Delivery Reliability Report" (May 2005).

(2) Not needed during average/normal years.

(3) Recycled water supplies based on projections provided in Chapter 4, Recycled Water.

(4) CLWA is in the process of acquiring this supply, primarily to meet the potential demands of future annexations to the CLWA service area. This acquisition is consistent with CLWA's annexation policy under which it will not approve potential annexations unless additional water supplies are acquired. Currently proposed annexations have a demand for about 4,000 afy of this supply which, if approved, would leave the remaining 7,000 afy available for potential future annexations. Unless and until any such annexations are actually approved, this supply will be available to meet demands within the existing CLWA service area.

(5) Demands are for uses within the existing CLWA service area. Demands for any annexations to the CLWA service area will be added if and when such annexations are approved. Currently proposed annexations have a demand for about 4,000 afy and, given supplies CLWA is in the process of acquiring, potential future annexations with demands up to an additional 7,000 afy could eventually be approved (see Footnote 4).

(6) Assumes 10 percent reduction on urban portion of total demand resulting from conservation best management practices, as discussed in Chapter 7.

Table 6-3
Projected Single-Dry Year Supplies and Demands

Water Supply Sources	Supply (af)				
	2010	2015	2020	2025	2030
Existing Supplies					
Wholesale (Imported)	*9,860*	*9,860*	*8,480*	*9,480*	*9,480*
SWP Table A Supply (1)	3,800	3,800	3,800	4,800	4,800
Flexible Storage Account (CLWA)	4,680	4,680	4,680	4,680	4,680
Flexible Storage Account (Ventura County) (2)	1,380	1,380	0	0	0
Local Supplies					
Groundwater	*47,500*	*47,500*	*47,500*	*47,500*	*47,500*
Alluvial Aquifer	32,500	32,500	32,500	32,500	32,500
Saugus Formation	15,000	15,000	15,000	15,000	15,000
Recycled Water	1,700	1,700	1,700	1,700	1,700
Total Existing Supplies	59,060	59,060	57,680	58,680	58,680
Existing Banking Programs					
Semitropic Water Bank (3)	17,000	0	0	0	0
Total Existing Banking Programs	17,000	0	0	0	0
Planned Supplies					
Local Supplies					
Groundwater	*10,000*	*10,000*	*20,000*	*20,000*	*20,000*
Restored wells (Saugus Formation)	10,000	10,000	10,000	10,000	10,000
New Wells (Saugus Formation)	0	0	10,000	10,000	10,000
Recycled Water (4)	0	1,600	6,300	11,000	15,700
Transfers					
Buena Vista-Rosedale (5)	11,000	11,000	11,000	11,000	11,000
Total Planned Supplies	21,000	22,600	37,300	42,000	46,700
Planned Banking Programs					
Rosedale-Rio Bravo (6)	20,000	20,000	20,000	20,000	20,000
Additional Planned Banking (7)	0	20,000	20,000	20,000	20,000
Total Planned Banking Programs	20,000	40,000	40,000	40,000	40,000
Total Existing and Planned Supplies and Banking	117,060	121,660	134,980	140,680	145,380
Total Estimated Demand (w/o conservation) (8) (9)	110,100	120,300	128,900	141,200	152,100
Conservation (10)	(9,500)	(10,700)	(11,700)	(13,100)	(14,200)
Total Adjusted Demand	100,600	109,600	117,200	128,100	137,900

Notes:

(1) SWP supplies are calculated by multiplying CLWA's Table A Amount of 95,200 af by percentages of single dry deliveries projected to be available for the worst case single dry year of 1977 (4% in 2010 and 5% in 2025/2030), taken from Table 6-5 of DWR's "Excerpts from Working Draft of 2005 State Water Project Delivery Reliability Report" (May 2005).

(2) Initial term of the Ventura County entities' flexible storage account is ten years (from 2006 to 2015).

(3) The total amount of water currently in storage is 50,870 af, available through 2013. Withdrawals of up to this amount are potentially available in a dry year, but given possible competition for withdrawal capacity with other Semitropic banking partners in extremely dry years, it is assumed here that about one third of the total amount stored could be withdrawn.

(4) Recycled water supplies based on projections provided in Chapter 4, Recycled Water.

(5) CLWA is in the process of acquiring this supply, primarily to meet the potential demands of future annexations to the CLWA service area. This acquisition is consistent with CLWA's annexation policy under which it will not approve potential annexations unless additional water supplies are acquired. Currently proposed annexations have a demand for about 4,000 afy of this supply which, if approved, would leave the remaining 7,000 afy available for potential future annexations. Unless and until any such annexations are actually approved, this supply will be available to meet demands within the existing CLWA service area.

(6) Rosedale-Rio Bravo Water Banking and Recovery Program online in 2006, based on completing CEQA and subsequent adoption by CLWA Board of Directors.

(7) Assumes additional planned banking supplies available by 2014.

(8) Assumes increase in total demand of 10 percent during dry years.

(9) Demands are for uses within the existing CLWA service area. Demands for any annexations to the CLWA service area will be added if and when such annexations are approved. Currently proposed annexations have a demand for about 4,000 afy and, given supplies CLWA is in the process of acquiring, potential future annexations with demands up to an additional 7,000 afy could eventually be approved (see Footnote 5).

(10) Assumes 10 percent reduction on urban portion of total normal year demand resulting from conservation best management practices ([urban portion of total normal year demand x 1.10] * 0.10), as discussed in Chapter 7.

Table 6-4
Projected Multiple-Dry Year Supplies and Demands [1]

Water Supply Sources	2010	2015	2020	2025	2030
Existing Supplies					
Wholesale (Imported)	*32,010*	*32,910*	*32,570*	*32,570*	*32,570*
SWP Table A Supply (2)	30,500	31,400	31,400	31,400	31,400
Flexible Storage Account (CLWA) (3)	1,170	1,170	1,170	1,170	1,170
Flexible Storage Account (Ventura County) (3)	340	340	0	0	0
Local Supplies					
Groundwater	*47,500*	*47,500*	*47,500*	*47,500*	*47,500*
Alluvial Aquifer	32,500	32,500	32,500	32,500	32,500
Saugus Formation (4)	15,000	15,000	15,000	15,000	15,000
Recycled Water	1,700	1,700	1,700	1,700	1,700
Total Existing Supplies	81,210	82,110	81,770	81,770	81,770
Existing Banking Programs					
Semitropic Water Bank (3)	12,700	0	0	0	0
Total Existing Banking Programs	12,700	0	0	0	0
Planned Supplies					
Local Supplies					
Groundwater	*6,500*	*6,500*	*6,500*	*6,500*	*6,500*
Restored wells (Saugus Formation) (4)	6,500	6,500	5,000	5,000	5,000
New Wells (Saugus Formation) (4)	0	0	1,500	1,500	1,500
Recycled Water (5)	0	1,600	6,300	11,000	15,700
Transfers					
Buena Vista-Rosedale (6)	11,000	11,000	11,000	11,000	11,000
Total Planned Supplies	17,500	19,100	23,800	28,500	33,200
Planned Banking Programs					
Rosedale-Rio Bravo (7) (8)	5,000	15,000	15,000	15,000	15,000
Additional Planned Banking (8) (9)	0	5,000	15,000	15,000	15,000
Total Planned Banking Programs	5,000	20,000	30,000	30,000	30,000
Total Existing and Planned Supplies and Banking	116,410	121,210	135,570	140,270	144,970
Total Estimated Demand (w/o conservation) (10) (11)	110,100	120,300	128,900	141,200	152,100
Conservation (12)	(9,500)	(10,700)	(11,700)	(13,100)	(14,200)
Total Adjusted Demand	100,600	109,600	117,200	128,100	137,900

Notes:

(1) Supplies shown are annual averages over four consecutive dry years (unless otherwise noted).

(2) SWP supplies are calculated by multiplying CLWA's Table A Amount of 95,200 af by percentages of deliveries projected to be available for the worst case four-year drought of 1931-1934 (32% in 2010 and 33% in 2025/2030), taken from Table 6-5 of DWR's "Excerpts from Working Draft of 2005 State Water Project Delivery Reliability Report" (May 2005).

(3) Based on total amount of storage available divided by 4 (4-year dry period). Initial term of the Ventura County entities' flexible storage account is ten years (from 2006 to 2015).

(4) Total Saugus pumping is the average annual amount that would be pumped under the groundwater operating plan, as summarized in Table 3-6 ([11,000+15,000+25,000+35,000]/4).

(5) Recycled water supplies based on projections provided in Chapter 4, Recycled Water.

(6) CLWA is in the process of acquiring this supply, primarily to meet the potential demands of future annexations to the CLWA service area. This acquisition is consistent with CLWA's annexation policy under which it will not approve potential annexations unless additional water supplies are acquired. Currently proposed annexations have a demand for about 4,000 afy of this supply which, if approved, would leave the remaining 7,000 afy available for potential future annexations. Unless and until any such annexations are actually approved, this supply will be available to meet demands within the existing CLWA service area.

(7) Rosedale-Rio Bravo Water Banking and Recovery Program online in 2006, assuming CEQA complete and adoption by CLWA Board of Directors.

(8) Average dry year period supplies could be up to 20,000 af for each program depending on storage amounts at the beginning of the dry period.

(9) Assumes additional planned banking supplies available by 2014.

(10) Assumes increase in total demand of 10 percent during dry years.

(11) Demands are for uses within the existing CLWA service area. Demands for any annexations to the CLWA service area will be added if and when such annexations are approved. Currently proposed annexations have a demand for about 4,000 afy and, given supplies CLWA is in the process of acquiring, potential future annexations with demands up to an additional 7,000 afy could eventually be approved (see Footnote 6).

(12) Assumes 10 percent reduction on urban portion of total normal year demand resulting from conservation best management practices ([urban portion of total normal year demand x 1.10] * 0.10), as discussed in Chapter 7.

Chapter 7
DEMAND MANAGEMENT MEASURES

Chapter 7.0
WATER DEMAND MANAGEMENT MEASURES

7.1 OVERVIEW

This section describes the water Demand Management Measures (DMMs) and the Best Management Practices (BMPs) implemented by CLWA as a part of water conservation programs to result in quantifiable water savings for the Valley.

7.2 WATER DEMAND MANAGEMENT MEASURES AND BEST MANAGEMENT PRACTICES

Establishing goals and choosing water conservation measures is a continuing planning process. Goals are developed, adopted, and then evaluated periodically. Specific conservation measures are phased in and then evaluated for their effectiveness, achievement of desired results, and customer satisfaction. Water conservation can achieve a number of goals such as:

- Meeting legal mandates
- Reducing average annual potable water demands
- Reducing wastewater flows
- Reducing urban runoff
- Reducing demands during peak seasons
- Meeting drought restrictions

The Act specifies 14 DMMs. The Act was revised in 2000 to relate the DMMs to the 14 BMPs of the California Urban Water Conservation Council (CUWCC).

The CUWCC was formed in 1991 through the "Memorandum of Understanding Regarding Urban Water Conservation in California." The urban water conservation BMPs included in the MOU are intended to reduce California's long-term urban water demands. The BMPs are currently implemented by the signatories to the MOU on a voluntary basis. However, the CALFED Bay-Delta Program (now the California Bay-Delta Authority) included mandatory implementation of the BMPs and certification of water use efficiency programs in its final Environmental Impact Statement/Report and Record of Decision. Work toward this certification requirement has taken place during the five year planning period since 2000, but to date a final decision on such a requirement has not been made by the Bay-Delta Authority. Therefore, implementation of the BMPs/DMMs continues to be voluntary.

After adoption of the 2000 UWMP, CLWA signed the urban MOU in February 2001 on its own behalf as a water wholesaler and on behalf of the local retail water purveyors, thus meeting one of the recommendations of the 2000 UWMP. NCWD signed the MOU separately on its own behalf in September 2002. Los Angeles County signed the MOU prior to the 2000 UWMP on

behalf of all its Waterworks Districts. The retail purveyors have voluntarily complied with those BMPs considered locally cost-effective, as discussed in Section 7.3.

7.3 IMPLEMENTATION LEVELS OF DMMs/BMPs

The CUWCC is composed of over 150 urban water suppliers and 30 environmental organizations, as well as other interested companies and organizations. It has spent much of its existence determining the methodology by which savings from various water conservation measures (BMPs) can be quantified. The CUWCC has published "Guidelines to Preparing Cost-effectiveness Analysis" and a "BMP Cost and Savings Study," which assigns the water savings that can be ascribed to specific devices and activities when making cost-effectiveness evaluations for specific BMPs.

The BMP Cost and Savings Study recognizes two categories of BMPs: device-based and activity-based. Device-based BMPs, such as showerhead and toilet replacement programs, are intended to alter water use patterns through the actual installation of water-saving appliances. Activity-based BMPs, such as school education and public information programs, are intended to modify social behaviors to encourage people to save water. The savings from device-based BMPs can be directly quantified and attributed, whereas savings from activity-based BMPs are usually not possible to quantify. Device-based BMPs will result in quantifiable water savings for the Valley.

CLWA has been implementing the following BMPs, which pertain to wholesalers and retailers (with the exception of BMP 10), for the past several years (both prior to and after signing the urban MOU):

BMP 3	System Water Audits, Leak Detection and Repair
BMP 7	Public Information
BMP 8	School Education
BMP 10	Wholesale Agency Assistance
BMP 11	Conservation Pricing
BMP 12	Conservation Coordinator

CLWA implements BMP 8 on behalf of all the retailers.

In addition, since signing the urban MOU, CLWA has been assisting the purveyors by implementing BMPs 2 (Residential Plumbing Retrofit) and 14 (Residential Ultra Low Flush Toilet Replacement Programs). CLWA and VWC also undertook a pilot program to assess the cost-effectiveness of BMP 5 (Large Landscape Conservation Programs and Incentives) and BMP 9 (Conservation Programs for Commercial, Industrial, and Institutional Accounts). These two BMPs will see increased focus during the next five year planning period of this Plan. NCWD has been implementing all cost-effective BMPs since it signed the MOU.

Three BMPs are undergoing revision by the CUWCC and their implementation will be re-assessed during this planning period.

Signatories to the urban MOU are allowed by Water Code Section 10631(j) to include their biennial CUWCC BMP reports in an UWMP to meet the requirements of the DMMs sections of the UWMP Act. As a wholesaler MOU signatory, CLWA assists with BMP implementation and reporting for two retail purveyors: SCWD and VWC. NCWD, as a separate MOU signatory, is responsible for BMP implementation and reporting for its own retail service area. LACWWD #36 BMP implementation and reporting is done by the County of Los Angeles on behalf of all its Waterworks Districts. For the purposes of this Plan, the most recent BMP reports (2003 and 2004) as required by the urban MOU are attached as Appendix F. This appendix includes the reports for CLWA (wholesale), SCWD, and VWC. NCWD's separate report is also included in Appendix F.

7.4 SUMMARY OF CONSERVATION

CLWA will continue to implement the BMPs applicable to a wholesale water agency (BMPs 3, 7, 8, 10, 11, and 12), as well as other BMPs found to be locally cost-effective. NCWD will continue to implement all locally cost-effective BMPs for its service area. VWC, while not a signatory, will also continue to implement all cost-effective BMPs in its service territory.

CLWA, in cooperation with the retail purveyors, continues development and implementation of a comprehensive water conservation program. The program will expand existing water conservation activities and BMP implementation. These efforts will be tied to water conservation programs in adjoining urban areas making appropriate improvements to meet the unique conditions of the Valley.

Chapter 8
WATER SHORTAGE CONTINGENCY PLANNING

Chapter 8.0
WATER SHORTAGE CONTINGENCY PLANNING

8.1 OVERVIEW

Water supplies may be interrupted or reduced significantly in a number of ways, such as a drought which limits supplies, an earthquake which damages water delivery or storage facilities, a regional power outage, or a toxic spill that affects water quality. This chapter of the Plan describes how CLWA and the retail water purveyors plan to respond to such emergencies so that emergency needs are met promptly and equitably.

To date, both a Water Shortage Contingency Plan and a Drought Emergency Water Sharing Agreement have been prepared by CLWA and the retail purveyors. Prohibitions, penalties and financial impacts of shortages have recently been developed by CLWA SCWD, NCWD, and VWC and are summarized in this chapter.

8.2 COORDINATED PLANNING

CLWA and the purveyors have coordinated efforts in the past to meet water shortages. During 1991 (the fifth year of a six-year drought), the purveyors and CLWA prepared a Water Shortage Contingency Plan. Since this plan was first prepared, the Valley has experienced two water shortages: in 1991-1992 due to the continuation of the 1987-1992 drought and in 1994 due to the January 17, 1994, Northridge earthquake. The plan worked extremely well in both instances, and minor updates were made to incorporate what was actually experienced during these two periods. It is envisioned that the Water Shortage Contingency Plan will be implemented whenever needed on a contingency basis.

8.2.1 CLWA and the Water Purveyors

During times of normal supply, the water agencies meet periodically to review total water supply and demand in the Valley and any new regulations affecting the water industry.

During 1991, the local agencies met about once per month. Monthly water production and demand reports were produced and shared with the City of Santa Clarita Drought Committee. Also, after the 1987-1992 drought, CLWA and the retail purveyors cooperated in sharing available water from all sources without regard to contractual or other water rights for the duration of the emergency, and to facilitate among themselves water transfers, exchanges, and arrangements to use each others distribution facilities. Should water shortage conditions similar to the 1987-1992 drought occur again, it is expected that similar coordinated planning between the local agencies would be conducted.

8.2.2 City of Santa Clarita Drought Committee

The City of Santa Clarita Drought Committee was created by the City's Ordinance No. 91-16, adopted on March 13, 1991. The committee was made up of five appointees representing the

public, a representative of the City Staff, purveyor representatives, and a representative from CLWA. The function was to:

- Review all available data on water consumption, water supply and groundwater conditions
- Evaluate the level of compliance with the terms of the ordinance
- Evaluate the level of achievement of the stated water consumption reductions
- Make recommendations to the City Council concerning the timing of and need for implementation of future additional water restrictions as may be developed
- Make recommendations to the water purveyors serving the City of Santa Clarita concerning additional measures to encourage water conservation

From its inception and through the crucial summer months of 1991, the group met twice monthly. In the event of another drought or water shortage crisis, such a committee could be reinstituted. The 1991 ordinances, resolutions and agreements in Appendix G will be used as the model for the water shortage contingency resolution/ordinance package.

8.3 STAGES OF ACTION TO RESPOND TO WATER SHORTAGES

The Saugus Formation has underground storage of approximately 1.65 million acre-feet. In times of continued drought, the Saugus Formation can be pumped for temporary periods above its normal-year production. During an extended drought, the purveyors would consider upgrading the pumping capacity of their wells in the Saugus Formation and possibly drill additional wells to enable temporary pumping above the normal-year production of 7,500 to 15,000 afy. As developed in the Valley's groundwater operating plan and presented in Table 3-6, production in the Saugus Formation can be as high as 25,000-35,000 afy during multiple-dry year periods.

The Alluvium would be most affected by a continued local drought. As developed in the Valley's groundwater operating plan and further presented in Table 3-6, sustainable production during normal years can range from 30,000 to 40,000 afy. However, due to operational constraints in the eastern part of the Basin, production would be reduced to approximately 30,000 to 35,000 afy during locally dry years.

Table 8-1 presents the four-stage rationing and demand reduction goals for the Valley.

Table 8-1
Rationing and Reduction Goals

Deficiency	Stage	Demand Reduction Goal	Type of Program
Up to 15%	1	15% reduction	Voluntary
15-25%	2	25% reduction	Mandatory
25-35%	3	35% reduction	Mandatory
35-50%	4	50+% reduction	Mandatory

Priorities for use of available water, based on Chapter 3 of the California Water Code, are:

- Health and Safety—Interior residential, sanitation and fire protection
- Commercial, Industrial, and Governmental—Maintain jobs and economic base
- Existing Landscaping—Especially trees and shrubs
- New Demand—Projects with permits when shortage declared

Water quantity calculations used to determine the interior household gpcd requirements for health and safety are provided in Table 8-2. As developed in Table 8-2, the California Water Code Stage 2, 3, and 4 health and safety allotments are 68 gpcd, or 33 ccf (100 cubic feet) per person per year. When considering this allotment and the 2005 Valley Planning Area population of 249,343, as presented in Table 2-7, the total annual water supply required to meet the first priority use during a water shortage is approximately 19,000 afy.

Table 8-2
Per Capita Health and Safety Water Quantity Calculations

	Non-Conserving Fixtures		Habit Changes		Conserving Fixtures	
Toilets	5 flushes x 5.5 gpf =	27.5	3 flushes x 5.5 gpf =	16.5	5 flushes x 1.6 gpf =	8.0
Showers	5 min x 4.0 gpm =	20.0	4 min x 3.0 gpm =	12.0	5 min x 2.0 gpm =	10.0
Washers	12.5 gpcd (1/3 load) =	12.5	11.5 gpcd (1/3 load) =	11.5	11.5 gpcd (1/3 load) =	11.5
Kitchens	4 gpcd =	4.0	4 gpcd =	4.0	4 gpcd =	4.0
Other	4 gpcd =	4.0	4 gpcd =	4.0	4 gpcd =	4.0
Total gpcd		68.0		48.0		37.5
CCF per capita per year		33.0		23.0		18.0

8.4 MINIMUM WATER SUPPLY AVAILABLE DURING NEXT THREE YEARS

The minimum water supply available during the next three years would occur during a three-year multiple-dry year event between the years 2006 and 2008. As shown in Table 8-3, the total supplies and banking range from approximately 103,500 afy to 120,500 afy during the next three years. When comparing these supplies to the demand projections provided in Chapters 2 and 6 of this Plan, CLWA and the purveyors have adequate supplies available to meet projected demands should a multiple-dry year period occur during the next three years.

Table 8-3
Estimate of Minimum Supply for the Next Three Years

Source	Supply (af)		
	2006	2007	2008
Wholesale Imported	*29,620*	*29,620*	*29,620*
SWP Table A Supply (1)	27,600	27,600	27,600
Flexible Storage Account (CLWA) (2)	1,560	1,560	1,560
Flexible Storage Account (Ventura County) (2)	460	460	460
Local Supply			
Groundwater	*37,500*	*54,500*	*54,500*
Alluvial Aquifer	32,500	32,500	32,500
Saugus Formation	5,000	22,000	22,000
Recycled Water	1,700	1,700	1,700
Transfers			
Buena Vista-Rosedale (3)	11,000	11,000	11,000
Banking Programs	*23,600*	*23,600*	*23,600*
Semitropic Water Bank (4)	16,900	16,900	16,900
Rosedale-Rio Bravo (5) (6)	6,700	6,700	6,700
Total Supplies	**103,420**	**120,420**	**120,420**

Notes:

(1) SWP supplies are calculated by multiplying CLWA's Table A Amount of 95,200 af by percentages of total deliveries projected to be available for the worst case three-year drought of 1990-1992, calculated from data in Table B-8 of DWR's "Excerpts from Working Draft of 2005 State Water Project Delivery Reliability Report" (May 2005). The average of total SWP deliveries over this three year period was 29 percent of total Table A Amounts.

(2) Based on total amount of storage available divided by 3 (3-year dry period).

(3) CLWA is in the process of acquiring this supply, primarily to meet the potential demands of future annexations to the CLWA service area. This acquisition is consistent with CLWA's annexation policy under which it will not approve potential annexations unless additional water supplies are acquired. Currently proposed annexations have a demand for about 4,000 afy of this supply which, if approved, would leave the remaining 7,000 afy available for potential future annexations. Unless and until any such annexations are actually approved, this supply will be available to meet demands within the existing CLWA service area.

(4) Based on total amount of storage available (50,870 af) divided by 3 (3-year dry period) and rounded down to the nearest 100.

(5) Assumes Rosedale-Rio Bravo Water Banking and Recovery Program on line in 2006, based on completion of CEQA and subsequent adoption by CLWA Board of Directors.

(6) Based on total amount of storage available (20,000 af) divided by 3 (3-year dry period).

8.5 ACTIONS TO PREPARE FOR CATASTROPHIC INTERRUPTION

8.5.1 General

The Valley is located approximately 20 miles southwest of the San Andreas Fault. A major earthquake along the southern portion of the San Andreas Fault would affect the Valley. The California Division of Mines and Geology has stated two of the aqueduct systems that import

water to southern California could be ruptured by displacement on the San Andreas Fault, and supply may not be restored for a three to six week period. The situation would be further complicated by physical damage to pumping equipment and local loss of electrical power.

DWR has a contingency aqueduct outage plan for restoring the California Aqueduct to service should a major break occur, which it estimates would take approximately four months to repair.

Experts agree it may be at least three days after the earthquake before outside help could get to the Valley. Extended supply shortages of both groundwater and imported water, due to power outages and/or equipment damage, would be severe until the water supply could be restored.

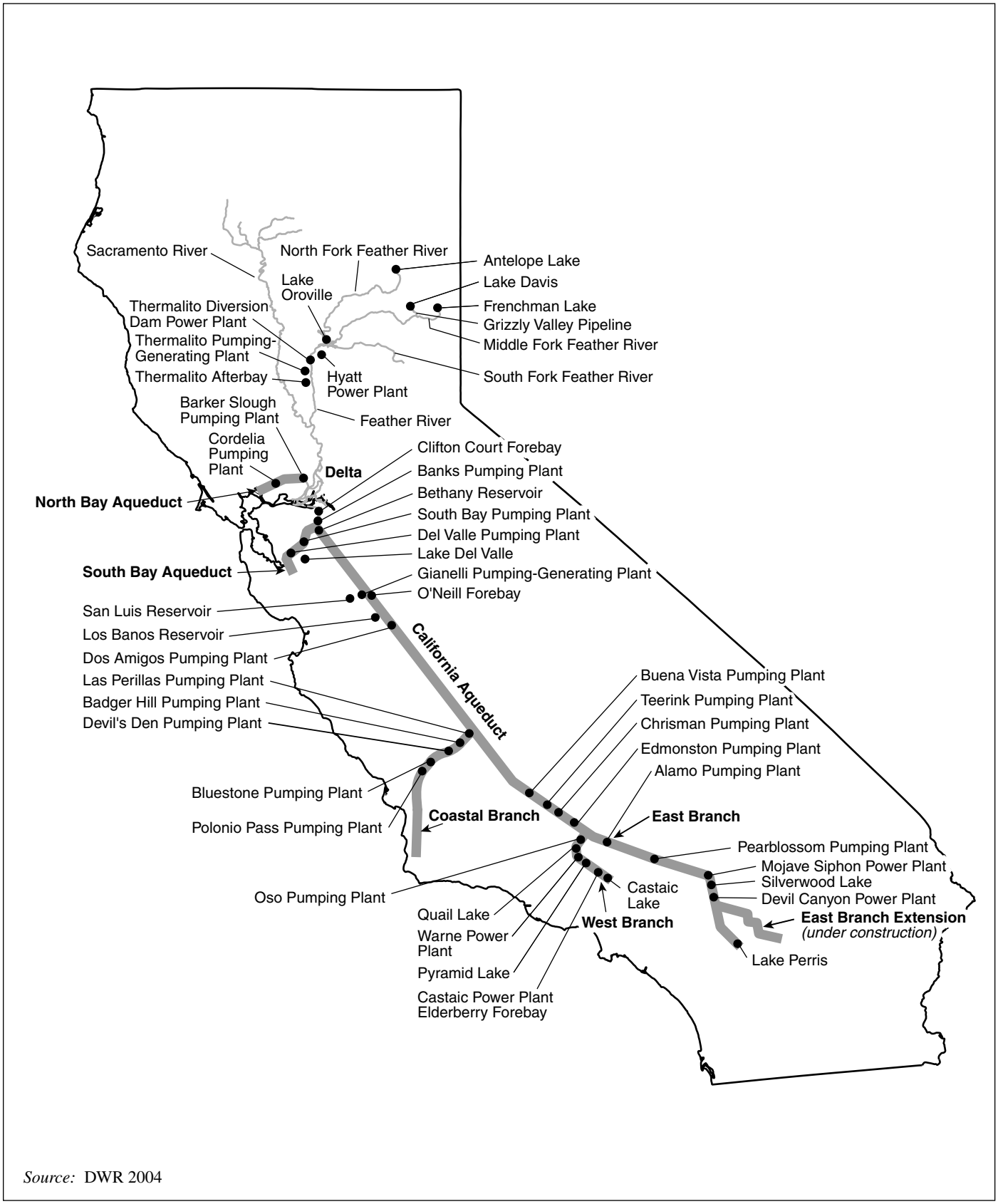
Combined water storage of the local agencies totals approximately 190 million gallons of water in storage tanks, which can be gravity fed to Valley residences, even if there is a power outage. In addition, since the 1994 Northridge earthquake, storage tanks have been fitted with flexible couplings, which should reduce damage to local storage facilities. The public would be asked to reduce consumption to minimum health and safety levels, extending the supply to seven days. This would provide sufficient time to restore a significant amount of groundwater production. After the groundwater supply is restored, the pumping capacity of the four retail purveyors, along with CLWA's proportionate share of storage from Pyramid and Castaic Lakes, could meet the reduced demand until such time that the imported water supply was reestablished. Updates on the water situation would be made as often as necessary.

The Valley's water sources are generally of good quality, and no insurmountable problems resulting from industrial or agricultural contamination are foreseen. If contamination did result from a toxic spill or similar accident, the contamination would be isolated and should not significantly impact the total water supply. In addition, such an event would be covered by the purveyors' emergency response plan. The recent detection of perchlorate in the Saugus Formation and Alluvial Aquifer is an example of prior contamination due to industrial chemical processes. The few affected wells have been shut down; design of the treatment process to remove the perchlorate is near completion; and the wells are expected to return to service in 2006.

8.5.2 SWP Emergency Outage Scenarios

In addition to earthquakes, the SWP could experience other emergency outage scenarios. Past examples include slippage of aqueduct side panels into the California Aqueduct near Patterson in the mid-1990s, the Arroyo Pasajero flood event in 1995 (which also destroyed part of Interstate 5 near Los Banos), and various subsidence repairs needed along the East Branch of the Aqueduct since the 1980s. All these outages were short-term in nature (on the order of weeks), and DWR's Operations and Maintenance Division worked diligently to devise methods to keep the Aqueduct in operation while repairs were made. Thus, the SWP contractors experienced no interruption in deliveries.

One of the SWP's important design engineering features is the ability to isolate parts of the system. The Aqueduct is divided into "pools." Thus, if one reservoir or portion of the California Aqueduct is damaged in some way, other portions of the system can still remain in operation. The Primary SWP facilities are shown on Figure 8-1.



Source: DWR 2004

Figure 8-1. Primary SWP Facilities

Other events could result in significant outages and potential interruption of service. Examples of possible nature-caused events include a levee breach in the Delta near the Harvey O. Banks Pumping Plant, a flood or earthquake event that severely damaged the Aqueduct along its San Joaquin Valley traverse, or an earthquake event along either the West or East Branches. Such events could impact some or all SWP contractors south of the Delta.

The response of DWR, CLWA, and other SWP contractors to such events would be highly dependent on the type and location of any such event. In typical SWP operations, water flowing through the Delta is diverted at the SWP's main pumping facility, located in the southern Delta, and is pumped into the California Aqueduct. During the relatively heavier runoff period in the winter and early spring, Delta diversions generally exceed SWP contractor demands, and the excess is stored in San Luis Reservoir. Storage in SWP aqueduct terminal reservoirs, such as Pyramid and Castaic Lakes, is also refilled during this period. During the summer and fall, when diversions from the Delta are generally more limited and less than contractor demands, releases from San Luis Reservoir are used to make up the difference in deliveries to contractors. The SWP share of maximum storage capacity at San Luis Reservoir is 1,062,000 af.

CLWA receives its SWP deliveries through the West Branch of the California Aqueduct at Castaic Lake. The only other contractors receiving deliveries from the West Branch are Metropolitan and Ventura County Watershed Protection District (formerly known as the Ventura County Flood Control District). The West Branch has two terminal reservoirs, Pyramid Lake and Castaic Lake, which were designed to provide emergency storage and regulatory storage (i.e., storage to help meet peak summer deliveries) for CLWA and the other two West Branch contractors. Maximum operating capacity at Pyramid and Castaic lakes is 169,900 af and 323,700 af, respectively.

In addition to SWP storage south of the Delta in San Luis and the terminal reservoirs, a number of contractors have stored water in groundwater banking programs in the San Joaquin Valley, and many also have surface and groundwater storage within their own service areas.

Three scenarios that could impact the delivery to CLWA of its SWP supply, previously banked supplies, or other supplies delivered to it through the California Aqueduct are described below. For each of these scenarios, it was assumed that an outage of six months could occur. CLWA's ability to meet demands during the worst of these scenarios is presented following the scenario descriptions.

Scenario 1: Levee Breach Near Banks Pumping Plant

As demonstrated by the June 2004 Jones Tract levee breach and previous levee breaks, the Delta's levee system is fragile. The SWP's main pumping facility, Banks Pumping Plant, is located in the southern Delta. Should a major levee in the Delta near these facilities fail catastrophically, salt water from the eastern portions of San Francisco Bay would flow into the Delta, displacing the fresh water runoff that supplies the SWP. All pumping from the Delta would be disrupted until water quality conditions stabilized and returned to pre-breach conditions. The re-freshening of Delta water quality would require large amounts of additional Delta inflows, which might not be immediately available, depending on the timing of the levee

breach. The Jones Tract repairs took several weeks to accomplish and months to complete; a more severe breach could take much longer, during which time pumping from the Delta might not be available on a regular basis.

Assuming that the Banks Pumping Plant would be out of service for six months, DWR could continue making at least some SWP deliveries to all southern California contractors from water stored in San Luis Reservoir. The water available for such deliveries would be dependent on the storage in San Luis Reservoir at the time the outage occurred and could be minimal if it occurred in the late summer or early fall when San Luis Reservoir storage is typically low. In addition to supplies from San Luis Reservoir, water from the West Branch terminal reservoirs would also be available to the three West Branch contractors, including CLWA. CLWA water stored in groundwater banking programs in the San Joaquin Valley may also be available for withdrawal and delivery to CLWA.

Scenario 2: Complete Disruption of the California Aqueduct in the San Joaquin Valley

The 1995 flood event at Arroyo Pasajero demonstrated vulnerabilities of the California Aqueduct (the portion that traverses the San Joaquin Valley from San Luis Reservoir to Edmonston Pumping Plant). Should a similar flood event or an earthquake damage this portion of the aqueduct, deliveries from San Luis Reservoir could be interrupted for a period of time. DWR has informed the SWP contractors that a four-month outage could be expected in such an event. CLWA's assumption is a six-month outage.

Arroyo Pasajero is located downstream of San Luis Reservoir and upstream of the primary groundwater banking programs in the San Joaquin Valley. Assuming an outage at a location near Arroyo Pasajero that resulted in the California Aqueduct being out of service for six months, supplies from San Luis Reservoir would not be available to those SWP contractors located downstream of that point. However, CLWA water stored in groundwater banking programs in the San Joaquin Valley could be withdrawn and delivered to CLWA, and water from the West Branch terminal reservoirs would also be available to the three West Branch contractors, including CLWA. Assuming an outage at a location on the California Aqueduct south of the groundwater banking programs in the San Joaquin Valley, these supplies would not be available to CLWA, but water from the West Branch terminal reservoirs would be available to the three West Branch contractors, including CLWA.

Scenario 3: Complete Disruption of the West Branch of the California Aqueduct

The West Branch of the California Aqueduct begins at a bifurcation of the Aqueduct south of Edmonston Pumping Plant, which pumps SWP water through and across the Tehachapi Mountains. From the point of bifurcation, the West Branch is an open canal through Quail Lake, a small flow regulation reservoir, to the Peace Valley Pipeline, which carries water into Pyramid Lake. From Pyramid Lake, water is released into the Angeles Tunnel, through Castaic Powerplant into Elderberry Forebay, and then into Castaic Lake.

If a major earthquake (an event similar to or greater than the 1994 Northridge earthquake) were to damage a portion of the West Branch, deliveries could be interrupted. The exact location of

such damage along the West Branch would be key to determining emergency operations by DWR and the three West Branch SWP contractors. For this scenario, it was assumed that the West Branch would suffer a single-location break and deliveries of SWP water from north of the Tehachapi Mountains or of CLWA water stored in groundwater banking programs in the San Joaquin Valley would not be available. It was also assumed that Pyramid and Castaic dams would not be damaged by the event and that water in Pyramid and Castaic Lakes would be available to the three West Branch SWP contractors, including CLWA.

In any of these three SWP emergency outage scenarios, DWR and the SWP contractors would coordinate operations to minimize supply disruptions. Depending on the particular outage scenario or outage location, some or all of the SWP contractors south of the Delta might be affected. But even among those contractors, potential impacts would differ given each contractor's specific mix of other supplies and available storage. During past SWP outages, the SWP contractors have worked cooperatively to minimize supply impacts among all contractors. Past examples of such cooperation have included certain SWP contractors agreeing to rely more heavily on alternate supplies, allowing more of the outage-limited SWP supply to be delivered to other contractors; and exchanges among SWP contractors, allowing delivery of one contractor's SWP or other water to another contractor, with that water being returned after the outage was over.

Of these three SWP outage scenarios, the West Branch outage scenario presents the worst-case scenario for CLWA. In this scenario, CLWA would rely on local supplies and water available from Pyramid and Castaic Lakes. An assessment of the supplies available to meet demands in CLWA's service area during a six-month West Branch outage and the additional levels of conservation projected to be needed are presented in Table 8-4 for 2005 through 2030.

During an outage, the local supplies available would consist of groundwater from the Alluvial Aquifer and the Saugus Formation, as well as recycled water. It was assumed that local well production would be unimpaired by the outage and that the outage would occur during a year when average/normal supplies would be available from the Alluvial Aquifer. Pumping from the Saugus was assumed to be one-half of the annual supplies available in a single dry year. Note that adequate well and aquifer capacity exists to pump at levels higher than those assumed in this assessment, particularly during a temporary period such as an outage. However, to be conservative, groundwater production was assumed to be one-half of annual supplies. Based on the assumption that additional voluntary conservation could reduce the amount of waste discharge, and therefore the amount of recycled water available, the amount of recycled water assumed to be available would be reduced by 25 percent.

The water available to CLWA from Pyramid and Castaic Lakes includes flexible storage available to CLWA at Castaic Lake and emergency and potentially regulatory storage available in both Pyramid and Castaic Lakes. Regulatory storage, which is used to help meet high peak summer deliveries, may or may not be available depending on what time of year an outage occurs. For this assessment, regulatory storage was assumed to be unavailable. The amount of emergency storage assumed to be available to CLWA was based on CLWA's proportionate share of usable storage in each reservoir, where usable storage is maximum operating storage, less regulatory and dead pool storage. At Castaic Lake, this usable storage determination also

excludes the three West Branch contractors' total flexible storage. CLWA's proportionate share of usable storage was assumed to be slightly less than three percent, based on its share of capital cost repayment at each reservoir. On this cost repayment basis, the proportionate shares of the Metropolitan and Ventura County Flood Control District are about 96 percent and one percent, respectively.

Table 8-4 shows that, for a six-month emergency outage, additional conservation beyond the conservation BMPs described in Chapter 7 would be required, with the additional demand reductions ranging from three to 16 percent of the urban portion of total demand. It is likely that potential cooperation among SWP contractors and/or temporarily increased purveyor groundwater production during such an outage could increase supplies so that lower amounts, or even no amount, of additional conservation would be needed. However, even without such supply increases, these levels of additional conservation would be readily achievable. In an emergency such as this, these levels of additional conservation would likely be achieved through voluntary conservation, but mandatory measures would be enacted if needed.

Table 8-4
Projected Supplies and Demands During
Six-Month Disruption of Imported Supply System [1]

	Supply / Demand (af)					
	2005	**2010**	**2015**	**2020**	**2025**	**2030**
Local Supplies						
Existing Supplies						
Groundwater						
Alluvial Aquifer (2)	17,500	17,500	17,500	17,500	17,500	17,500
Saugus Formation (3)	5,000	7,500	7,500	7,500	7,500	7,500
Recycled Water (4) (5)	190	600	640	640	640	640
Planned Supplies						
Groundwater (3)						
Restored wells (Saugus Formation)	0	5,000	5,000	5,000	5,000	5,000
New Wells (Saugus Formation)	0	0	0	5,000	5,000	5,000
Recycled Water (5)	0	0	600	2,360	4,130	5,890
Total Existing and Planned Local Supplies	22,690	30,600	31,240	38,000	39,770	41,530
SWP West Branch Storage Available						
Flexible Storage (at Castaic Lake)						
Existing (CLWA)	4,680	4,680	4,680	4,680	4,680	4,680
Existing (Ventura County) (6)	0	1,380	1,380	0	0	0
Emergency Storage						
Pyramid Lake (7)	4,370	4,370	4,370	4,370	4,370	4,370
Castaic Lake (8)	3,370	3,370	3,370	3,370	3,370	3,370
Total West Branch Storage	12,420	13,800	13,800	12,420	12,420	12,420
Total Local Supplies and West Branch Storage	35,110	44,400	45,040	50,420	52,190	53,950
Demands (9)						
Total Estimated Demand (w/o Conservation) (10)	44,700	50,000	54,700	58,600	64,200	69,100
Conservation (11)	(3,700)	(4,300)	(4,900)	(5,300)	(6,000)	(6,500)
Total Demand (w/ Conservation)	41,000	45,700	49,800	53,300	58,200	62,600
Additional Conservation Required	5,900	1,300	4,800	2,900	6,000	8,700
Additional Conservation as Percent of Demand (12)	16%	3%	10%	5%	10%	13%

Notes:

(1) Assumes complete disruption in SWP supplies and in deliveries through the California Aqueduct for six months.

(2) Pumping from the Alluvial Aquifer is assumed to be one-half of average/normal year supplies (see Table 6-2).

(3) Pumping from the Saugus Formation is assumed to be one-half of single dry year supplies (see Table 6-3).

(4) Existing recycled water supply is based on one-half of current actual use of about 500 af for 2005, projected demand of 1,600 af for 2010, and existing supply of 1,700 af from 2015 on, as adjusted for the reduction described in Footnote 5.

(5) Assumes 25 percent reduction in waste discharge, and therefore in recycled water availability, due to additional voluntary conservation.

(6) Initial term of the Ventura County entities' flexible storage account is ten years (from 2006 to 2015).

(7) CLWA's share of usable storage at Pyramid Lake, based on its 2.817 percent proportionate share of capital cost repayment of the reservoir. Usable storage is assumed to be 165,100 af (maximum operating storage of 169,900 af, less regulatory storage of 10,000 af for making peak summer deliveries and dead pool storage of 4,800 af).

(8) CLWA's share of usable storage at Castaic Lake, based on its 2.927 percent proportionate share of capital cost repayment of the reservoir. Usable storage is assumed to be 115,100 af (maximum operating storage of 323,700 af, less regulatory storage of 30,000 af for making peak summer deliveries, total SWP contractor flexible storage of 160,000 af, and dead pool storage of 18,600 af).

(9) Demands are assumed to be one-half of average/normal year demands (see Table 2-2).

(10) Demands are for uses within the existing CLWA service area. Demands for any annexations to the CLWA service area will be added if and when such annexations are approved. During a six-month outage, currently proposed annexations would have a demand for about 2,000 afy and, given supplies CLWA is in the process of acquiring, potential future annexations with demands up to an additional 3,500 afy could eventually be approved.

(11) Assumes 10 percent reduction on urban portion of total demand resulting from conservation best management practices, as discussed in Chapter 7.

(12) Additional Conservation is expressed as percent of urban portion of total demand, since an outage would result in shortfall only to purveyors' customers (i.e., urban users).

8.5.3 Regional Power Outage Scenarios

For a major emergency such as an earthquake, Southern California Edison (Edison) has declared that in the event of an outage, power would be restored within a 24 hour period. Following the Northridge earthquake, Edison was able to restore power within 19 hours. Edison experienced extensive damage to several key power stations, yet was still able to recover within a 24 hour timeframe.

CLWA

To specifically address the concern of water outages due to loss of power, CLWA has equipped its two treatment plants with generators to produce power for treating water to comply with the State of California Safe Drinking Water Act and the Health and Safety Code. The Rio Vista Water Treatment Plant and Intake Pump Station emergency generator system provides electrical power to treat 30 mgd for 72 hours without fuel replacement. The Earl Schmidt Filtration Plant emergency generator system provides electrical power to treat 33 mgd for 72 hours without fuel replacement.

CLWA SCWD

SCWD is committed to providing regular service and meeting the needs of the community during any emergency situation. SCWD is obligated to respond to emergencies by using all available resources in the most effective way possible. SCWD has prepared an Emergency Response Plan that provides emergency operations procedures for the effective use of resources during various emergency situations. Emergency situations include but are not limited to: earthquakes, major fire emergencies, water outages due to loss of power, localized flooding, water contamination, and acts of sabotage.

To specifically address the concerns of water outages due to loss of power, SCWD has purchased and maintains one mobile generator and has the ability to obtain emergency access to others. The current generator is trailer mounted and has the capability of supplying 180 Kilovolt-Amperes (KVA). This capacity provides the capability to run any facility within the service area of SCWD. Most primary pumping facilities are equipped with emergency transfer switches, and SCWD employees are trained regularly to install and operate the generators in the most efficient and safe manner. The generator's run time is only limited by the amount of available diesel fuel. SCWD has an above ground diesel fuel storage tank with a capacity of 1,000 gallons located at its Warehouse at 21110 West Golden Triangle Road in the City of Santa Clarita. SCWD maintains one carrier truck, which is equipped with the capability of dispensing 100 gallons of diesel as necessary in refilling the generators. In addition, SCWD maintains a trailer-mounted 100 gallon diesel tank that will be deployed as required to preserve services. SCWD will respond to power outages on a prioritized basis and will continue its response to the power emergency as long as necessary. In addition to the generators, SCWD has a gas driven pump capable of delivering a maximum 2,000 gallons per minute (gpm). This pump can be installed at select facilities and run as required.

NCWD

NCWD fully understands its role in providing a vital service to the community. NCWD is obligated to respond to emergencies by using all available resources in the most effective way possible. NCWD has prepared an Emergency Response Plan that provides emergency operations procedures for the effective use of NCWD resources during various emergency situations. Emergency situations meant to be addressed by this plan are: earthquakes, major fire emergencies, water outages due to loss of power, localized flooding, water contamination, and acts of sabotage. To specifically address the concerns of water outages due to loss of power, NCWD has purchased and maintains three mobile generators. The generators are trailer mounted and have the following capacities: 600 KVA; 300 KVA; and 180 KVA.

These capacities provide the capability to run any facility within NCWD's service area. All primary pumping facilities are equipped with emergency transfer switches, and NCWD employees are trained regularly to maximize the speed to install and operate the generators. The generator run time is only limited by the amount of available diesel fuel. NCWD has an above ground diesel fuel storage tank with a capacity of 1,000 gallons located at its main office at 23780 N. Pine Street in the City of Santa Clarita. Multiple crew trucks are equipped with 100 gallon diesel tanks and the necessary fueling equipment to refill the generators. NCWD would respond to power outages on a prioritized basis and would continue its response to the power emergency as long as necessary. In addition to the generators, NCWD has a gas driven pump capable of delivering 600 gpm. This pump can be installed at select facilities as needed.

The NCWD Emergency Response Plan should be referenced for a more detailed description of specific actions NCWD plans to take in the event of a major power failure.

VWC

In the event that a power outage occurs, VWC has one mobile generator capable of powering either one of VWC's Saugus wells or two Alluvial wells that are in close proximity to one another. VWC would use the generator as a back-up to ensure water service remained until Edison was able to restore power. For regional power outages, VWC would rely on Edison's reliability criteria for restoring service with the longest outage assumed not to exceed 24 hours. This length of outage would not have a significant impact on water service.

The VWC Emergency Response Plan should be referenced for a more detailed description of specific actions VWC plans to take in the event of a major power failure.

8.6 MANDATORY PROHIBITIONS DURING SHORTAGES

All Valley residents live within the boundaries of the City of Santa Clarita or Los Angeles County. Several ordinances were passed in 1991, during the last long-term drought, by the various governmental entities in the Santa Clarita Valley outlawing wasteful water practices. It is expected that, if the Valley experienced another dry-year period, the same ordinances would be reactivated.

On February 11, 1991, the CLWA Board of Directors adopted Resolution No. 804 mandating a program of water conservation in the Santa Clarita Valley.

On February 14, 1991, the NCWD Board of Directors adopted Resolution No. 101 outlawing wasteful water practices. The ordinance was amended on October 15, 1991, with the adoption of Ordinance No. 102 and further amended on July 14, 2005, with the adoption of Ordinance No. 112.

On March 13, 1991, the City of Santa Clarita adopted Ordinance No. 91-16 outlawing wasteful water practices and calling for voluntary water conservation. The ordinance was amended on October 8, 1991 by the adoption of Ordinance No. 91-48.

On March 21, 1991, the Los Angeles County Board of Supervisors adopted Ordinance No. 91-0046U, which prohibits wasteful water practices.

Most of the ordinances mentioned above had sunset provisions that were effective January 1, 1992; however, these ordinances could be reinstituted as needed.

8.7 CONSUMPTIVE REDUCTION METHODS DURING RESTRICTIONS

8.7.1 Supply Shortage Triggering Levels

The agencies will manage water supplies to minimize the social and economic impact of water shortages. The Plan is designed to provide a minimum 50 percent of normal supply during a severe or extended water shortage.

Demand reduction stages may be triggered by a shortage in any one of the water sources in the Valley or by shortages in a combination of supplies. The guidelines for triggering the stages are listed in Table 8-5. However, circumstances may arise where the purveyors may deviate from these guidelines, such as in a case where the Governor declares a water shortage emergency and/or institutes a statewide rationing program.

Table 8-5
Water Deficiency Triggering Levels

Stage	Percent Shortage
1	Up to 15 percent water deficiency
2	15 to 25 percent water deficiency
3	25 to 35 percent water deficiency
4	35 to 50+ percent water deficiency

8.7.2 Consumption Limits

The Valley-wide consumption allocation method for each customer type is as follows:

Single Family	Hybrid of Per-capita and Percentage Reduction
Multi Family	Hybrid of Per-capita and Percentage Reduction

Commercial	Percentage Reduction
Industrial	Percentage Reduction
Governmental	Percentage Reduction
Recreational	Percentage Reduction
Irrigation	Percentage Reduction

The percentage reductions at each stage and for each customer type correspond to the figures listed in Table 8-4. In a drought situation (multiple-dry year period), individual customer allotments will be based on a normal year consumption table. The water agencies will classify each customer and calculate each customer's allotment according to Table 8-4. Each customer will be notified of its classification and allotment by mail before the implementation of a mandatory program. New customers and connections will be notified at the time service commences if a mandatory program is in effect. Any customer may appeal its classification on the basis of use or the allotment on the basis of incorrect calculation.

In a disaster, prior notice of allotment may not be possible. Notice will be provided by the most efficient means available, if necessary, through the terms of the CLWA's Emergency Response Plan.

8.7.3 New Demand

During any declared water shortage emergency requiring mandatory rationing, the retail purveyors recommend that the City and County building departments continue to process applications for grading and building permits, but not issue the actual permits until mandatory rationing is rescinded. In Stages 3 and 4, it may be necessary to discontinue all use of grading water, even if permits have been issued, and consider banning all use of water for non-essential uses, such as new landscaping and pools.

8.8 PENALTIES FOR EXCESSIVE USE

The following section provides a summary of the penalties, if any, that are implemented for excessive water use for CLWA SCWD, NCWD, and VWC.

8.8.1 CLWA Santa Clarita Water Division

The SCWD has one commodity rate for all customer classes, so no excessive use penalties are in place.

8.8.2 Newhall County Water District

In July 2005, NCWD's Board of Directors adopted Ordinance No. 112, which addresses water conservation, shortage, drought, and emergency response procedures. NCWD's Water Conservation Action Plan states that no water user shall waste water or make, cause, or permit the use of water for any purpose contrary to any provision of Ordinance No. 112, or in quantities in excess of the use permitted by the conservation stage in effect. If excessive use (water leaks and/or waste) is detected from any water user, the following enforcement plan will be followed:

Efficient Water Use and Stage 1 Enforcement:

- Any sign of water leaks and/or waste will be documented.
- NCWD will then determine the appropriate level of action to inform the water user of the guidelines in Ordinance No. 112 and will encourage more efficient water use.

Stages 2, 3, and 4 Enforcement:

- First Violation: NCWD shall issue a verbal warning to the water user and recommend corrective action.
- Second Violation: NCWD shall issue a written warning to the water user, and a fine of $40 shall be added to the water user's bill if the corrective action is not taken within 30 days after receiving the written warning.
- Third Violation: A fine of $100 shall be added to the water user's bill if the corrective action is not taken within 30 days after receiving the written warning. In addition, the NCWD Board or General Manager may require installation of a flow-restricting device on the water user's service connection.
- Fourth Violation: For the fourth and any additional violations, a fine of $250 shall be added to the water user's bill at the property where the violation occurred. NCWD may also discontinue the water user's water service at the property where the violation occurred. Reconnection shall be permitted only when there is reasonable protection against future violations, such as a flow-restricting device on the customer's service connection, as determined at NCWD's discretion.

NCWD Enforcement Costs: NCWD shall be reimbursed for its costs and expenses in enforcing the provisions of Ordinance No. 112, including costs incurred for staff to investigate and monitor the water user's compliance with the terms of the Ordinance. Charges for installation of flow-restricting devices or for discontinuing or restoring water service, as NCWD incurs those charges, shall be added to the water user's bill at the property where the enforcement costs were incurred.

8.8.3 Valencia Water Company

VWC is regulated by the PUC. During times of threatened or actual water shortage, the PUC will require that VWC apportion its available water supply among its customers. In the absence of direction from the PUC, VWC will apportion the supply in the manner that appears most equitable under circumstances then prevailing and with the cooperation of the Valley water purveyors with due regard to public health and safety.

The PUC's methodology for water utilities to implement Water Conservation Plans is documented in Standard Practice U-40-W, "Instructions for Water Conservation, Rationing, and Service Connection Moratoria." Water shortage contingency plans must be approved by the PUC prior to implementation by VWC. As stated in the Standard Practice U-40-W, the PUC shall

authorize mandatory conservation and rationing by approving Schedule No. 14.1, Mandatory Water Conservation and Rationing. Schedule No. 14.1 sets forth water use violation fines, charges for removal of flow restrictors, and the period during which mandatory conservation and rationing measures will be in effect.

8.9 FINANCIAL IMPACTS OF ACTIONS DURING SHORTAGES

The following section addresses the financial impacts of actions during water shortages for CLWA SCWD, NCWD, and VWC.

8.9.1 CLWA Santa Clarita Water Division

Approximately 45 percent of SCWD's expenses are variable and will be reduced proportionately with any reduction in sales due to voluntary or mandatory conservation. The remaining 55 percent of expenses are fixed and will not decrease as a result of reduced sales. Also, only 50 percent of the fixed expenses are included in the meter charge, and 70 percent of SCWD's revenues are generated by the commodity and energy charge.

As a result of the 1987-1992 drought, the Valley's retail water purveyors asked their retail customers to voluntarily reduce water use in 1992. The customers temporarily achieved a 25 percent reduction in usage. Approximately 70 percent of SCWD's revenues are derived from the commodity charge. A reduction of 25 percent could dramatically affect the financial stability of SCWD and impact its ability to meet its payment obligations and fund its capital program. Rather than being faced with the necessity of raising rates during a drought period, the Board directed staff to establish and maintain a Water Conservation Rate Stabilization Fund to be used in years when actual consumption drops 10 percent or more below average consumption. The Rate Stabilization Fund, established to address the financial impacts of water shortages, was approved by the Board in 2004.

8.9.2 Newhall County Water District

NCWD's rates are designed with the intent that NCWD will generate adequate revenues to meet the costs of operating the water system. For the 2005-06 budget year, it is expected that 26 percent of NCWD's total water revenues will come from the service charge and about 74 percent of the total revenues will come from the commodity charge. The service charge is based on meter size and the commodity charge is based on the quantity of water consumed.

The nature of NCWD's operation (as with any water utility) is that the majority of the operating costs are "fixed" in nature and do not increase or decrease in direct proportion with increases or decreases in water use by customers. For example, if water availability issues or shortages cause NCWD to request a voluntary reduction in the customer's water use, two-thirds of the operating costs will remain the same even though less water is sold. This would result in a major revenue shortfall.

In an effort to address this shortfall, NCWD established a reserve policy (Resolution 2005-26), that includes a "rate stabilization" fund to be used in situations where actual consumption of

water is reduced as a direct result of a water shortage situation as defined in Table 8-1 of this Plan.

In the event of a declaration of a water shortage situation, NCWD's Board of Directors will consider options and actions intended to replenish the rate stabilization reserve to its ideal level. These actions may include but are not limited to rate increases or surcharges, per customer assessments, and utilization of other reserve funds.

8.9.3 Valencia Water Company

The PUC allows the investor owned water utilities it regulates to track and seek recovery of lost revenues and expense increases due to mandatory or voluntary water rationing during a drought. PUC regulated utilities' rates are set based on an assumed level of customer water usage during normal weather conditions. Therefore, when a drought occurs and customers conserve water, a utility's revenue declines, and it is difficult for the utility to fund its operating expenses. In order to provide an incentive for utilities to promote water conservation during periods of drought, the PUC developed a mechanism whereby utilities can track lost revenues as well as increases in expenses due to drought. Utilities can then recover a portion of their lost revenues and expense increases via a surcharge to customers. This reduces the financial strain conservation programs place on investor owned utilities while furthering the statewide goal of water conservation during periods of drought.

8.10 WATER SHORTAGE CONTINGENCY RESOLUTION

If a water shortage crisis reoccurs, such as the 1987-1992 drought, the water agencies will call a public hearing to declare a water shortage pursuant to Sections 351 and 352 of the California Water Code.

The Los Angeles County Board of Supervisors (on behalf of LACWWD #36) and NCWD's and CLWA's respective Boards of Directors would adopt ordinances, similar to those adopted in 1991, implementing the Water Shortage Contingency Plan. As stated in Section 8.6, in February 1991, the CLWA Board of Directors adopted Resolution No. 804, which recognized reductions in requested delivery of SWP supply and mandated water conservation in the Valley.

VWC would file an advice letter with the CPUC implementing the Water shortage Contingency Plan.

8.11 MECHANISM TO DETERMINE REDUCTIONS IN WATER USE

Demand

NCWD, SCWD, and VWC bill their customers on a monthly basis. The prior year's consumption is included on most customer bills. This allows comparison of the total consumption from each billing period to the same billing period from the prior year.

Production

Under normal conditions, CLWA, NCWD, SCWD, and VWC prepare monthly production reports, which are reviewed and compared to production reports and pumping statistics from the same period of the prior year. Under water shortage conditions, these production reports could be prepared as often as daily.

Stage 1 and 2 Water Shortages

During Stage 1 and 2 Water Shortages, retail purveyors will review selected production reports on a daily basis, and CLWA will provide each retail purveyor with a copy of its daily production report. The water agencies will meet on a more frequent basis to review water supply and demand in the Valley. Billing reports will be reviewed to identify users who are not abiding by the plan.

Stage 3 and 4 Water Shortages

During Stage 3 and 4 Water Shortages, the retail purveyors will review all production reports and pumping statistics on a daily basis. The water agencies will continue to monitor the supply and demand in the Valley. Water transfers and agreements to use each other's distribution facilities will be implemented as needed. Billing reports will be reviewed to identify users who are not abiding by the plan.

Disaster Shortage

During a disaster shortage, management will continually monitor production figures. The water agencies will work to transfer water and use each other's distribution facilities where feasible.

Appendix A
UWMP Checklist

Appendix A
2005 Urban Water Management Plan Checklist

Yes	No			
Coordination with Appropriate Agencies				**(Water Code §10620 (d)(1)(2))**
✓		Participated in area, regional, watershed or basin wide plan		1-2 Page or Chapter
✓		Describe the coordination of the plan preparation and anticipated benefits.		1-2 thru 1-4 Page or Chapter
Describe resource maximization / import minimization plan				**(Water Code §10620 (f))**
✓		Describe how water management tools / options maximize resources & minimize need to import water		1-5 Page or Chapter
Plan Updated in Years Ending in Five and Zero				**(Water Code § 10621(a))**
✓		Date updated and adopted plan received	*Adopted Nov. 9th, 2005*	1-2 thru 1-4 Page or Chapter
City and County Notification and Participation				**(Water Code § 10621(b))**
✓		Notify any city or county within service area of UWMP of plan review & revision		1-3 thru 1-5 Page or Chapter
✓		Consult and obtain comments from cities and counties within service area		1-3 thru 1-5 Page or Chapter
Service Area Information				**(Water Code § 10631 (a))**
✓		Include current and projected population		2-7 Page or Chapter
✓		Population projections were based on data from state, regional or local agency		2-7 Page or Chapter
✓		Describe climate characteristics that affect water management		1-8; 1-9; 2-9; 2-10 Page or Chapter
✓		Describe other demographic factors affecting water management		1-9 Page or Chapter
Water Sources				**(Water Code § 10631 (b))**
✓		Identify existing and planned water supply sources		3-1; chapter 3 Page or Chapter
✓		Provide current water supply quantities		3-1; chapter 3 Page or Chapter
✓		Provide planned water supply quantities		3-1; chapter 3 Page or Chapter
If Groundwater identified as existing or planned source				**(Water Code §10631 (b)(1-4))**
✓		Has management plan		3-6 thru 3-9 Page or Chapter
✓		Attached management plan (b)(1)		[attached to adopted plan] Page or Chapter
✓		Description of basin(s) (b)(2)		3-6 Page or Chapter
		Basin is adjudicated		-- Page or Chapter
		If adjudicated, attached order or decree (b)(2)		-- Page or Chapter
		Quantified amount of legal pumping right (b)(2)		-- Page or Chapter
✓		Analysis of location, amount & sufficiency, last five years (b)(3)		3-9 thru 3-18 Page or Chapter
✓		Analysis of location & amount projected, 20 years (b)(4)		3-9 thru 3-18 Page or Chapter
Reliability of Supply				**(Water Code §10631 (c) (1-3)**
✓		Describes the reliability of the water supply and vulnerability to seasonal or climatic shortage		Chapter 6 Page or Chapter
Water Sources Not Available on a Consistent Basis				**(Water Code §10631 (c))**
✓		Describe the reliability of the water supply due to seasonal or climatic shortages		3-3, 3-8, Chapter 6 Page or Chapter
✓		Describe the vulnerability of the water supply to seasonal or climatic shortages		1-8; 1-9; Chapter 6 Page or Chapter
✓		Describe plans to supplement/replace inconsistent sources with alternative sources/DMMs		3-17; 5-5; 5-10 Page or Chapter
Transfer or Exchange Opportunities				**(Water Code §10631 (d))**
✓		Describe short term and long term exchange or transfer opportunities		3-19; 3-23 Page or Chapter
Water Use Provisions				**(Water Code §10631 (e) (1-2))**
✓		Quantify past water use by sector		2-4; 2-5 Page or Chapter
✓		Quantify current water use by sector		2-4; 2-5 Page or Chapter
✓		Project future water use by sector		2-4; 2-5 Page or Chapter
✓		Identify and quantify sales to other agencies		3-2, 3-3 Page or Chapter
✓		Identify and quantify additional water uses		Chapter 3 & 4 Page or Chapter
Demand Management Measures				**(Water Code §10631 (f)(g))**
✓		Agency is a CUWCC member		Chapter 7 Page or Chapter
✓		Annual BMP reports provided and considered completed by CUWCC website		Appendix F Page or Chapter
Planned Water Supply Projects and Programs				**(Water Code §10631 (h))**
✓		Detailed description of expected future supply projects & programs		3-22; 3-23 Page or Chapter
✓		Timeline for each proposed project		3-20 thru 3-23 Page or Chapter
✓		Quantification of each projects normal yield (AFY)		3-22; 3-23 Page or Chapter
✓		Quantification of each projects single dry-year yield (AFY)		3-22; 3-23 Page or Chapter
✓		Quantification of each projects multiple dry-year yield (AFY)		3-22; 3-23 Page or Chapter

Appendix A
2005 Urban Water Management Plan Checklist

Yes	No			
Opportunities for development of desalinated water			**(Water Code §10631 (i))**	
✓		Describes opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply	3-23 thru 3-25	Page or Chapter
If Supplier receives or projects receiving water from a wholesale supplier			**(Water Code §10631 (k))**	
✓		Agency receives, or projects receiving, wholesale water	3-2 thru 3-6	Page or Chapter
✓		Agency provided written demand projections to wholesaler, 20 years	3-3	Page or Chapter
✓		Wholesaler provided written water availability projections, by source, to agency, 20 years (if agency served by more than one wholesaler, duplicate this table and provide the source availability for each wholesaler)	3-4	Page or Chapter
✓		Reliability of wholesale supply provided in writing by wholesale agency (if agency served by more than one wholesaler, duplicate this table and provide the source availability for each wholesaler)	3-5; chapter 6	Page or Chapter
Water Shortage Contingency Plan Section			**(Water Code § 10632)**	
Stages of Action			**(Water Code § 10632 (a))**	
✓		Provide stages of action	8-2	Page or Chapter
✓		Provide the water supply conditions for each stage	8-2	Page or Chapter
✓		Includes plan for 50 percent supply shortage	8-2	Page or Chapter
Three-Year Minimum Water Supply			**(Water Code §10632 (b))**	
✓		Identifies driest 3-year period	8-3; 8-4	Page or Chapter
✓		Minimum water supply available by source for the next three years	8-3	Page or Chapter
Preparation for catastrophic water supply interruption			**(Water Code §10632 (c))**	
✓		Provided catastrophic supply interruption plan	8-4 thru 8-13	Page or Chapter
Prohibitions			**(Water Code § 10632 (d))**	
✓		List the mandatory prohibitions against specific water use practices during water shortages	8-13; 8-14	Page or Chapter
Consumption Reduction Methods			**(Water Code § 10632 (e))**	
✓		List the consumption reduction methods the water supplier will use to reduce water use in the most restrictive stages with up to a 50% reduction.	8-14; 8-15	Page or Chapter
Penalties			**(Water Code § 10632 (f))**	
✓		List excessive use penalties or charges for excessive use	8-15 thru 8-17	Page or Chapter
Revenue and Expenditure Impacts			**(Water Code § 10632 (g))**	
✓		Describe how actions and conditions impact revenues	8-17; 8-18	Page or Chapter
✓		Describe how actions and conditions impact expenditures	8-17; 8-18	Page or Chapter
✓		Describe measures to overcome the revenue and expenditure impacts	8-17; 8-18	Page or Chapter
Water Shortage Contingency Ordinance/Resolution			**(Water Code § 10632 (h))**	
✓		Attach a copy of the draft water shortage contingency resolution or ordinance.	Appendix G	Page or Chapter
Reduction Measuring Mechanism			**(Water Code § 10632 (i))**	
✓		Provided mechanisms for determining actual reductions	8-18	Page or Chapter
Recycling Plan Agency Coordination			**(Water Code § 10633)**	
✓		Describe the coordination of the recycling plan preparation information to the extent available.	4-1	Page or Chapter
Wastewater System Description			**(Water Code § 10633 (a))**	
✓		Describe the wastewater collection and treatment systems in the supplier's service area	4-2; 4-3	Page or Chapter
✓		Quantify the volume of wastewater collected and treated	4-3	Page or Chapter
Wastewater Disposal and Recycled Water Uses			**(Water Code § 10633 (a - d))**	
✓		Describes methods of wastewater disposal	4-5	Page or Chapter
✓		Describe the current type, place and use of recycled water	4-6; 4-7	Page or Chapter
✓		Describe and quantify potential uses of recycled water	4-7; 4-8	Page or Chapter
✓		Determination of technical and economic feasibility of serving the potential uses	4-7; 4-8	Page or Chapter
Projected Uses of Recycled Water			**(Water Code § 10633 (e))**	
✓		Projected use of recycled water, 20 years	4-8	Page or Chapter
✓		Compare UWMP 2000 projections with UWMP 2005 actual (§ 10633 (e))	4-8	Page or Chapter

Appendix A
2005 Urban Water Management Plan Checklist

Yes	No			
Plan to Optimize Use of Recycled Water			**(Water Code § 10633 (f))**	
✓		Describe actions that might be taken to encourage recycled water uses	4-8, 4-9	Page or Chapter
✓		Describe projected results of these actions in terms of acre-feet of recycled water used per year	4-9	Page or Chapter
✓		Provide a recycled water use optimization plan which includes actions to facilitate the use of recycled water (dual distribution systems, promote recirculating uses)	4-9, 4-10	Page or Chapter
Water quality impacts on availability of supply			**(Water Code §10634)**	
✓		Discusses water quality impacts (by source) upon water management strategies and supply reliability	Chapter 5	Page or Chapter
Supply and Demand Comparison to 20 Years			**(Water Code § 10635 (a))**	
✓		Compare the projected normal water supply to projected normal water use over the next 20 years, in 5-year increments.	6-7	Page or Chapter
Supply and Demand Comparison: Single-dry Year Scenario			**(Water Code § 10635 (a))**	
✓		Compare the projected single-dry year water supply to projected single-dry year water use over the next 20 years, in 5-year increments.	6-8	Page or Chapter
Supply and Demand Comparison: Multiple-dry Year Scenario			**(Water Code § 10635 (a))**	
✓		Project a multiple-dry year period (as identified in Table 9) occurring between 2006-2010 and compare projected supply and demand during those years	6-9	Page or Chapter
✓		Project a multiple-dry year period (as identified in Table 9) occurring between 2011-2015 and compare projected supply and demand during those years	6-9	Page or Chapter
✓		Project a multiple-dry year period (as identified in Table 9) occurring between 2016-2020 and compare projected supply and demand during those years	6-9	Page or Chapter
✓		Project a multiple-dry year period (as identified in Table 9) occurring between 2021-2025 and compare projected supply and demand during those years	6-9	Page or Chapter
Provision of Water Service Reliability section to cities/counties within service area			**(Water Code § 10635(b))**	
✓		Provided Water Service Reliability section of UWMP to cities and counties within which it provides water supplies within 60 days of UWMP submission to DWR	[to be complied w/ adopted Plan]	Page or Chapter
Does the Plan Include Public Participation and Plan Adoption			**(Water Code § 10642)**	
✓		Attach a copy of adoption resolution	[attached to adopted Plan]	Page or Chapter
✓		Encourage involvement of social, cultural & economic community groups	1-3 thru 1-5; Appendix B	Page or Chapter
✓		Plan available for public inspection	1-3 thru 1-5; Appendix B	Page or Chapter
✓		Provide proof of public hearing	1-3 thru 1-5; Appendix B	Page or Chapter
✓		Provided meeting notice to local governments	1-3 thru 1-5; Appendix B	Page or Chapter
Review of implementation of 2000 UWMP			**(Water Code § 10643)**	
✓		Reviewed implementation plan and schedule of 2000 UWMP	Chapter 1	Page or Chapter
✓		Implemented in accordance with the schedule set forth in plan	Chapter 1	Page or Chapter
Provision of 2005 UWMP to local governments			**(Water Code § 10644 (a))**	
✓		Provide 2005 UWMP to DWR, and cities and counties within 30 days of adoption	[to be complied w/ upon adoption of Plan]	Page or Chapter
Does the plan or correspondence accompanying it show where it is available for public review			**(Water Code § 10645)**	
✓		Does UWMP or correspondence accompanying it show where it is available for public review	1-3	Page or Chapter

Appendix B
Public Outreach Materials

UWMP 2005 Workshop and Public Hearing Schedule	
Date	**Meeting**
April 7, 2005	Community Workshop #1
June 29, 2005	Community Workshop #2
August 31, 2005	Community Workshop #3
September 28, 2005	First Joint Public Hearing
October 26, 2005	Second Joint Public Hearing

UWMP 2005 Outreach Meeting Schedule	
Date	**Meeting**
May 17, 2005	City of Santa Clarita Planning and Government Relations Staff
July 13, 2005	Building Industry Association Executive Director
August 3, 2005	Building Industry Association Government Affairs Committee
August 9, 2005	Santa Clarita Valley Government Affairs Committee
September 20, 2005	Santa Clarita Valley Chamber of Commerce Board
September 21, 2005	Castaic Town Council
September 22, 2005	Santa Clarita Valley Chamber of Commerce Environmental Committee

The Signal
3/29/05

SANTA CLARITA VALLEY

URBAN WATER MANAGEMENT PLAN

2005

CASTAIC LAKE WATER AGENCY AND THE SANTA CLARITA VALLEY WATER COMMUNITY ANNOUNCE THE PREPARATION OF THE 2005 URBAN WATER MANAGEMENT PLAN

The Urban Water Management Plan, mandated by the State of California, presents a picture of the Valley's water situation through the year 2030. It describes the long-range water needs of the community, and the means that will be used to supply the necessary water. We encourage your interest and involvement.

Kick-Off Community Workshop

Date: Thursday, April 7, 2005

Time: 6:00 pm

Location: Castaic Lake Water Agency,
Administration Building,
27234 Bouquet Canyon Road

Purpose: At this Kick-Off Community Workshop we will present an overview of the state requirements and an outline of the contents of the 2005 Urban Water Management Plan. Our team of experts will provide an overview and answer any questions. We will also provide an overview of the many opportunities for public comment during the preparation of the 2005 Urban Water Management Plan.

CASTAIC LAKE WATER AGENCY

Please call (661) 297-1600
for information.

Castaic Lake Water Agency
CLWA Santa Clarita Water Division
Newhall County Water District
Valencia Water Company

Daily News
3/31/05

SANTA CLARITA VALLEY

URBAN WATER MANAGEMENT PLAN

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Date: Thursday, April 7, 2005

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CASTAIC LAKE WATER AGENCY

Please call (661) 297-1600 for information.

Castaic Lake Water Agency
CLWA Santa Clarita Water Division
Newhall County Water District
Valencia Water Company

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The Signal
Daily News
6/22/05

SANTA CLARITA VALLEY
URBAN WATER MANAGEMENT PLAN
2005

CASTAIC LAKE WATER AGENCY AND
THE SANTA CLARITA VALLEY WATER COMMUNITY
ANNOUNCE THE PREPARATION OF THE
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YOU ARE CORDIALLY INVITED TO ATTEND OUR NEXT WORKSHOP
JUNE 29, 2005
5:30 P.M.

June 2005	Preliminary Draft UWMP release for public comment
June 2005	Community Workshop to review UWMP and seek input
August 2005	Follow up Community Workshop – release Draft UWMP, review contents with the public
September 2005	First CLWA Public Hearing
October 2005	Second CLWA Public Hearing
October 2005	Final UWMP considered for approval by the CLWA Board and NCWD Board (at a joint meeting)

CASTAIC LAKE WATER AGENCY

All meetings will be held at
Castaic Lake Water Agency, Administration Building
27234 Bouquet Canyon Road, at times TBA.
Please call (661) 297-1600 for information.

Castaic Lake Water Agency
CLWA Santa Clarita Water Division
Newhall County Water District
Valencia Water Company

Breakfast, Lunch and Dinner only $175.00.
All Golfers get a chance at the Hole In One contest for a car sponsored by Frontier Toyota as well as many other raffles and prizes.
Musical sendoff provided by Canyon High Marching Band and Happy Hour Jazz, by the Canyon High Jazz Band.
Register online at www.goldstarbrigade.org or call (661) 252-7076.
This is a Non-Profit event. For sponsorship information log onto our website or call the number above.

SANTA CLARITA VALLEY
URBAN WATER MANAGEMENT PLAN
2005

CASTAIC LAKE WATER AGENCY AND
THE SANTA CLARITA VALLEY WATER COMMUNITY
ANNOUNCE THE PREPARATION OF THE
2005 URBAN WATER MANAGEMENT PLAN

The Urban Water Management Plan, mandated by the State of California, presents a picture of the Valley's water situation through 2030. It describes the long-range water needs of the community, and the means that will be used to supply the necessary water. We encourage your interest and involvement.

YOU ARE CORDIALLY INVITED TO ATTEND
OUR NEXT WORKSHOP
AUGUST 31, 2005
6:30 P.M.

June 2005	Preliminary Draft UWMP release for public comment
June 2005	Community Workshop to review UWMP and seek input
August 2005	Follow up Community Workshop – release Draft UWMP, review contents with the public
September 2005	First CLWA Public Hearing
October 2005	Second CLWA Public Hearing - UWMP considered for approval by the CLWA Board and NCWD Board (at a joint meeting)

CASTAIC LAKE WATER AGENCY

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Castaic Lake Water Agency
CLWA Santa Clarita Water Division
Newhall County Water District
Valencia Water Company

SANTA CLARITA VALLEY
URBAN WATER MANAGEMENT PLAN
2005

CASTAIC LAKE WATER AGENCY AND
THE SANTA CLARITA VALLEY WATER COMMUNITY
ANNOUNCE THE PREPARATION OF THE
2005 URBAN WATER MANAGEMENT PLAN

The Urban Water Management Plan, mandated by the State of California, presents a picture of the Valley's water situation through 2030. It describes the long-range water needs of the community, and the means that will be used to supply the necessary water. We encourage your interest and involvement.

YOU ARE CORDIALLY INVITED TO ATTEND OUR NEXT WORKSHOP

AUGUST 31, 2005
6:30 P.M.

June 2005	Preliminary Draft UWMP release for public comment
June 2005	Community Workshop to review UWMP and seek input
August 2005	Follow up Community Workshop – release Draft UWMP, review contents with the public
September 2005	First CLWA Public Hearing
October 2005	Second CLWA Public Hearing - UWMP considered for approval by the CLWA Board and NCWD Board (at a joint meeting)

CASTAIC LAKE WATER AGENCY

All meetings will be held at
Castaic Lake Water Agency, Administration Building
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Please call (661) 297-1600 for information.

Castaic Lake Water Agency
CLWA Santa Clarita Water Division
Newhall County Water District
Valencia Water Company

The Signal
Monday
10-17-05
3 of 3

SANTA CLARITA VALLEY
URBAN WATER MANAGEMENT PLAN
2005

CASTAIC LAKE WATER AGENCY AND
THE SANTA CLARITA VALLEY WATER COMMUNITY
ANNOUNCE THE PREPARATION OF THE
2005 URBAN WATER MANAGEMENT PLAN

The Urban Water Management Plan, mandated by the State of California, presents a picture of the Valley's water situation through 2030. It describes the long-range water needs of the community, and the means that will be used to supply the necessary water. We encourage your interest and involvement.

YOU ARE CORDIALLY INVITED TO ATTEND OUR NEXT PUBLIC HEARING

OCTOBER 26, 2005

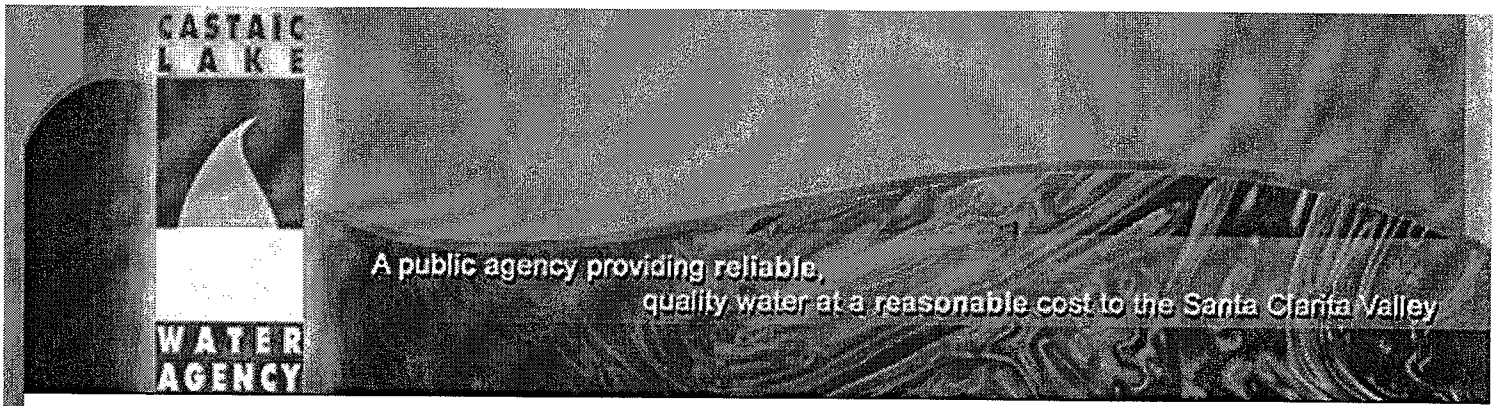
7:00 P.M.

June 2005	Preliminary Draft UWMP release for public comment
June 2005	Community Workshop to review UWMP and seek input
August 2005	Follow up Community Workshop – release Draft UWMP, review contents with the public
September 23, 2005	First CLWA Public Hearing
October 26, 2005	Second CLWA Public Hearing - UWMP considered for approval by the CLWA Board and NCWD Board (at a joint meeting)

CASTAIC LAKE WATER AGENCY

Hearing will be held at
Castaic Lake Water Agency, Administration Building
27234 Bouquet Canyon Road
Please call (661) 297-1600 for information.

Castaic Lake Water Agency
CLWA Santa Clarita Water Division
Newhall County Water District
Valencia Water Company



Publications (Newsletters, etc.)

Important Notices

This is where new items, important notices and information on upcoming events are posted.

IMPORTANT: The Draft 2005 Urban Water Management Plan for the Santa Clarita Valley is available for review. PLEASE SCROLL TO THE BOTTOM OF THIS PAGE FOR MORE INFORMATION.

Draft 2005 Urban Water Management Plan for the Santa Clarita Valley

The Draft 2005 Urban Water Management Plan is prepared in accordance with the requirements of the Urban Water Management Planning Act (Water Code sections 10630 et seq.). Every five years, in years ending in "5" and "0," water suppliers having more th 3,000 service connections or selling at least 3,000 acre-feet of water per year must prepare a plan.

Castaic Lake Water Agency, CLWA Santa Clarita Water Division, Newhall County Water District and Valencia Water Company ha prepared a joint regional plan for the Santa Clarita Valley, as encouraged by the Act. Los Angeles County Waterworks District No. 36 is participating on an ad hoc basis.

Two public hearings will be held to review the plan. Both hearings will he held during joint meetings of the CLWA and NCWD Boar of Directors, and will take place in the CLWA Board Room at the address shown below.

Wednesday, September 28, 2005 7:00 p.m.

Wednesday, October 26, 2005 7:00 p.m.

Written comments should be submitted to CLWA by 5:00 p.m., Wednesday, October 21, 2005. Comments should be directed to:

Mary Lou Cotton
Water Resources Manager
CLWA
27234 Bouquet Canyon Road
Santa Clarita, CA 91350
Fax: 661/297-1611

- Draft 2005 UWMP Introduction and Table of Contents
- Draft 2005 UWMP Chapters 1 through 4
- Draft 2005 UWMP Chapters 5 through 8
- Draft 2005 UWMP Appendix A
- Draft 2005 UWMP Appendix B
- Draft 2005 UWMP Appendix C
- Draft 2005 UWMP Appendix D
- Draft 2005 UWMP Appendix E

CASTAIC LAKE WATER AGENCY

Vital News About Water Issues in the Santa Clarita Valley Summer 2005

Water Currents

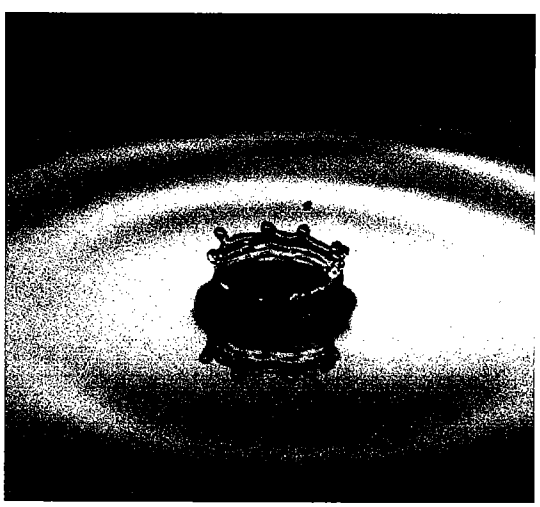
Urban Water Management Plan to Address SCV Water Demand and Supply

CLWA and the local water retailers are preparing a draft of the Santa Clarita Valley 2005 Urban Water Management Plan (UWMP) for review this summer and fall. All California urban water suppliers having more than 3,000 service connections or selling more than 3,000 acre-feet of water annually are required by the California Water Code to prepare a UWMP every five years. About 450 water suppliers statewide are affected. CLWA, CLWA Santa Clarita Water Division, Newhall County Water District (NCWD), and Valencia Water Company are working jointly to prepare a draft of a 2005 plan for the Santa Clarita Valley. Los Angeles County Waterworks District No. 36 is participating on an *ad hoc* basis, as the Los Angeles County Department of Public Works must prepare its own UWMP.

A UWMP must consider projected demands and supplies for a 20-year period, in five-year increments. It must also assess water supply and demand scenarios for average/normal water years (i.e., periods of normal precipitation), a single dry year, and multiple dry years.

The draft 2005 UWMP for the Santa Clarita Valley will identify current local and imported water supply sources, as well as potential future sources. Current sources include the State Water Project, local groundwater and recycled water. Future potential sources include all of these plus water transfers, additional recycled water, groundwater banking, water conservation and desalination.

The plan will identify future demand based on growth projections. By assessing projected demand along with projected supply, the 2005 UWMP will show how the Santa Clarita Valley will meet its water needs through 2030.



CLWA and the retailers published an amended 2000 UWMP this past January, which addresses in detail the issue of perchlorate contamination first detected in 1997 in certain groundwater wells adjacent to the former Whittaker-Bermite site. It describes plans for returning the contaminated wells to service.

Years of negotiations between CLWA, the local water retailers and the current and former owners of the site, in an effort to reach agreement on clean-up, were unproductive. In November 2000 CLWA and the retailers filed suit to compel the

Continued, page 4

CASTAIC LAKE WATER AGENCY

Vital News About Water Issues in the Santa Clarita Valley Fall 2005

Water Currents

CLWA and Retailers Seek Public Comment on 2005 Urban Water Management Plan

The California Urban Water Planning Act requires water utilities to update and submit an Urban Water Management Plan (UWMP) every five years. CLWA is one of California's approximately 450 water suppliers now preparing such a plan. CLWA, CLWA Santa Clarita Water Division, Newhall County Water District (NCWD), and Valencia Water Company have worked together to prepare a draft of a 2005 plan for the Santa Clarita Valley. (Los Angeles County Waterworks District No. 36 is participating on an *ad hoc* basis, as the Los Angeles County Department of Public Works must prepare its own UWMP.)

A UWMP must consider projected demands and supplies for a 20-year period, in five-year increments. It must also assess water supply and demand scenarios for average/normal water years (i.e., periods of normal precipitation), a single dry year, and multiple dry years.

The draft 2005 UWMP for the Santa Clarita Valley is available for public review and comment. The Plan identifies current local and imported water supply sources, as well as potential future sources. Current sources include the State Water Project, local ground- water and recycled water. Future potential sources include all of these sources plus water transfers, additional recycled water, groundwater banking, water conservation and desalination.

The Plan identifies future demand based on growth projections. By assessing projected demand along with projected supply, the 2005 UWMP shows how the Santa Clarita Valley will meet its water needs through 2030.

Two public hearings to discuss the 2005 UWMP have been scheduled, the first of which was held on Wednesday, September 28, 2005, during a joint meeting of the CLWA and NCWD Boards of Directors . A second public hearing is scheduled for 7 p.m. on Wednesday, October 26, 2005. The hearing will be held in the CLWA Boardroom at 27234 Bouquet Canyon Road, Santa Clarita, CA 91350.

JEFFREY LAMBERT, AICP
Planning / Government Relations

March 26, 2005

Sand Canyon Area Well Owners Association
c/o 27363 Sand Canyon Road
Santa Clarita, CA 91387-3632

Subject: 2005 Santa Clarita Valley Urban Water Manager Plan

Dear Sand Canyon Well Owners Association:

We have begun to prepare the 2005 Santa Clarita Valley Urban Water Management Plan. In an effort to ensure all interested parties are fully informed and involved in our process, we have scheduled the first of many community workshops.

Date:	Thursday, April 7, 2005
Time:	6:00 pm
Location:	Castaic Lake Water Agency, Administration Building, 27234 Bouquet Canyon Road

The purpose of this Kick-Off Community Workshop is to present an overview of the state requirements and an outline of the contents of the 2005 Santa Clarita Valley Urban Water Management Plan.

I have enclosed a flyer for this workshop and encourage you to attend.

Sincerely,

Jeffrey Lambert, AICP
Public Outreach Manager, 2005 SCV UWMP

4603 Morse Avenue, Sherman Oaks, CA 91423, (818) 907-0294
Jeffrey@Jeffrey-Lambert.com

Ms. Dana Wisehart
United Water Conservation District
106 N. 8th Street
Santa Paula, California 93060

Stephan C. Volker
436 14th Street, Suite 1300
Oakland, California 94612

Sierra Club Angeles Chapter
3435 Wilshire Boulevard, Suite 320
Los Angeles, California 90010-1904

Friends of the Santa Clara River
660 Randy Drive
Newbury Park, California 91320-4323

Mr. Steve Cole
Acting General Manager
Newhall Country Water District
P.O. Box 220970
Newhall, California 91322-0970

Mr. Dennis Slivinski, Assistant County Counsel
County of Ventura
800 South Victoria Avenue
Ventura, California 93009-1830

Mr. David Todd
Office of Water Use Efficiency
CA Department of Water Resources
P.O. Box 942836
Sacramento, CA 94236-0001

Mr. Gerald Johns, Deputy Director
CA Department of Water Resources
P.O. Box 942836
Sacramento, CA 94236-0001

Jeffrey M. Smith, AICP
Southern CA Association of Governments
818 West Seventh Street, 12th Floor
Los Angeles, CA 90017-3435

McCormick, Kidman & Behrens, LLP
Russ Behrens, Esq.
695 Town Center Drive
Suite 400
Costa Mesa, California 92626-7187

Mr. Chris Stephens, Planning Director
Resource Management Agency
County of Ventura
800 South Victoria Avenue
Ventura, California 93009-1600

Mr. James Hartl
Director, Regional Planning
County of Los Angeles
320 West Temple Street
Los Angeles, CA 90012

Mr. Michael Murphy
Inter-Government Relations Officer
City of Santa Clarita
23920 Valencia Blvd.
Santa Clarita, CA 91355

Ms. Judy Reinsma, President
Santa Clarita Valley Well Owners Association
P.O. Box 800085
Santa Clarita, CA 91380

Sand Canyon Area Well Owners Association
c/o 27363 Sand Canyon Road
Santa Clarita, CA 91387-3632

Paul Fancett
Castaic Area Town Council
P.O. Box 325
Castaic, CA 91310

Paul Ash, President
Westranch Town Council
Hanger, Levine and Steinberg
21031 Ventura Blvd., Suite 800
Woodland Hills, CA 91364

Santa Clarita Sierra Club
21827 Parvin Dr.
Saugus, CA 91350

Santa Clarita Organization for Planning the Environment **SCOPE**
P.O. Box 1182
Canyon Country, CA
91386-1182

NOTE:
Those shaded addresses were sent Return Receipt (only Judy Reinsma was returned without evidence of receipt)

JEFFREY LAMBERT, AICP
Planning / Government Relations

June 21, 2005

Subject: 2005 Santa Clarita Valley Urban Water Management Plan

Dear:

As you know, we are preparing the 2005 Santa Clarita Valley Urban Water Management Plan. In an effort to ensure all interested parties are fully informed and involved in the process, we have scheduled the second community workshop.

Date:	Wednesday, June 29, 2005
Time:	5:30 pm
Location:	Castaic Lake Water Agency, Administration Building, 27234 Bouquet Canyon Road

The purpose of this Community Workshop is to present the Preliminary Draft 2005 UWMP and to seek your feedback. The Draft 2005 UWMP is scheduled to be released in August with public hearings scheduled for September and October.

I encourage you to attend and learn more about the 2005 Santa Clarita Valley Urban Water Management Plan.

Sincerely,

Jeffrey Lambert, AICP
Public Outreach Manager, 2005 SCV UWMP

4603 Morse Avenue, Sherman Oaks, CA 91423, (818) 907-0294
Jeffrey@Jeffrey-Lambert.com

JEFFREY LAMBERT, AICP
Planning / Government Relations
4603 Morse Avenue, Sherman Oaks, CA 91423, (818) 907-0294
Jeffrey@Jeffrey-Lambert.com

August 22, 2005

Subject: 2005 Santa Clarita Valley Urban Water Management Plan

Dear Interested Party:

As you know, the Santa Clarita Valley water suppliers are preparing the 2005 Santa Clarita Valley Urban Water Management Plan. This letter is intended to provide you with advanced information on upcoming public meetings. We have scheduled the third community workshop and have tentatively scheduled two public hearings at joint meetings of the Castaic Lake Water Agency and Newhall County Water District Boards of Directors. These meetings have been scheduled as follows:

What:	**Third Community Workshop**
Date:	Wednesday, August 31, 2005
Time:	6:30 pm
Location:	Castaic Lake Water Agency, Administration Building, 27234 Bouquet Canyon Road
What:	**Joint Public Hearing**
Date:	Wednesday, September 28, 2005 (tentative)
Time:	7:00 pm
Location:	Castaic Lake Water Agency, Administration Building, 27234 Bouquet Canyon Road
What:	**Joint Public Hearing (Second)**
Date:	Wednesday, October 26, 2005 (tentative)
Time:	7:00 pm
Location:	Castaic Lake Water Agency, Administration Building, 27234 Bouquet Canyon Road

The Draft 2005 UWMP is scheduled for release in mid- to late-August. The Draft 2005 UWMP will be available on the CLWA and NCWD web sites.

I encourage you to attend and be involved in the review and adoption of the 2005 Santa Clarita Valley Urban Water Management Plan.

Sincerely,

Jeffrey Lambert, AICP
Public Outreach Manager, 2005 SCV UWMP

Ms. Dana Wisehart
United Water Conservation District
106 N. 8th Street
Santa Paula, California 93060

Stephan C. Volker
436 14th Street, Suite 1300
Oakland, California 94612

Sierra Club Angeles Chapter
3435 Wilshire Boulevard, Suite 320
Los Angeles, California 90010-1904

Friends of the Santa Clara River
660 Randy Drive
Newbury Park, California 91320-4323

Mr. Steve Cole
Acting General Manager
Newhall Country Water District
P.O. Box 220970
Newhall, California 91322-0970

Mr. Dennis Slivinski, Assistant County Counsel
County of Ventura
800 South Victoria Avenue
Ventura, California 93009-1830

Mr. David Todd
Office of Water Use Efficiency
CA Department of Water Resources
P.O. Box 942836
Sacramento, CA 94236-0001

Mr. Gerald Johns, Deputy Director
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P.O. Box 942836
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Southern CA Association of Governments
818 West Seventh Street, 12th Floor
Los Angeles, CA 90017-3435

McCormick, Kidman & Behrens, LLP
Russ Behrens, Esq.
695 Town Center Drive
Suite 400
Costa Mesa, California 92626-7187

Mr. Chris Stephens, Planning Director
Resource Management Agency
County of Ventura
800 South Victoria Avenue
Ventura, California 93009-1600

Mr. James Hartl
Director, Regional Planning
County of Los Angeles
320 West Temple Street
Los Angeles, CA 90012

Mr. Michael Murphy
Inter-Government Relations Officer
City of Santa Clarita
23920 Valencia Blvd.
Santa Clarita, CA 91355

Ms. Judy Reinsma, President
Santa Clarita Valley Well Owners Association
P.O. Box 800085
Santa Clarita, CA 91380

Sand Canyon Area Well Owners Association
c/o 27363 Sand Canyon Road
Santa Clarita, CA 91387-3632

Paul Fancett
Castaic Area Town Council
P.O. Box 325
Castaic, CA 91310

Paul Ash, President
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Hanger, Levine and Steinberg
21031 Ventura Blvd., Suite 800
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Santa Clarita Sierra Club
21827 Parvin Dr.
Saugus, CA 91350

Santa Clarita Organization for Planning the Environment SCOPE
P.O. Box 1182
Canyon Country, CA
91386-1182

NOTE:
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Jeffrey Lambert, AICP
Planning / Government Relations

July 20, 2005

Santa Clarita Organization for Planning the Environment **SCOPE**
P.O. Box 1182
Canyon Country, CA
91386-1182

Dear SCOPE:

As you know, the Santa Clarita Valley water agencies are preparing the 2005 Urban Water Management Plan. I have been asked to manage the public outreach component of this effort. This includes seeking opportunities to talk with interested community groups about the 2005 UWMP. We released the Preliminary Draft 2005 UWMP on June 27, 2005 and are working toward the release of the Draft 2005 UWMP in August.

With this in mind, I am requesting an opportunity to meet with you at your convenience. We would like to present the most recent version of the 2005 UWMP and answer any questions you may have.

I look forward to meeting with you. Please contact me via my cell phone at (818) 605-1506 to arrange a meeting.

Sincerely,

Jeffrey Lambert, AICP

Jeffrey Lambert, AICP
Planning / Government Relations

July 20, 2005

Santa Clarita Sierra Club
21827 Parvin Dr.
Saugus, CA 91350

Dear Santa Clarita Sierra Club:

As you know, the Santa Clarita Valley water agencies are preparing the 2005 Urban Water Management Plan. I have been asked to manage the public outreach component of this effort. This includes seeking opportunities to talk with interested community groups about the 2005 UWMP. We released the Preliminary Draft 2005 UWMP on June 27, 2005 and are working toward the release of the Draft 2005 UWMP in August.

With this in mind, I am requesting an opportunity to meet with you at your convenience. We would like to present the most recent version of the 2005 UWMP and answer any questions you may have.

I look forward to meeting with you. Please contact me via my cell phone at (818) 605-1506 to arrange a meeting.

Sincerely,

Jeffrey Lambert, AICP

Jeffrey Lambert, AICP
Planning / Government Relations

July 20, 2005

Paul Ash, President
Westranch Town Council
Hanger, Levine and Steinberg
21031 Ventura Blvd., Suite 800
Woodland Hills, CA 91364

Dear Mr. Ash:

As you know, the Santa Clarita Valley water agencies are preparing the 2005 Urban Water Management Plan. I have been asked to manage the public outreach component of this effort. This includes seeking opportunities to talk with interested community groups about the 2005 UWMP. We released the Preliminary Draft 2005 UWMP on June 27, 2005 and are working toward the release of the Draft 2005 UWMP in August.

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I look forward to meeting with you. Please contact me via my cell phone at (818) 605-1506 to arrange a meeting.

Sincerely,

Jeffrey Lambert, AICP

Jeffrey Lambert, AICP
Planning / Government Relations

July 20, 2005

Paul Fancett
Castaic Area Town Council
P.O. Box 325
Castaic, CA 91310

Dear Mr. Fancett:

As you know, the Santa Clarita Valley water agencies are preparing the 2005 Urban Water Management Plan. I have been asked to manage the public outreach component of this effort. This includes seeking opportunities to talk with interested community groups about the 2005 UWMP. We released the Preliminary Draft 2005 UWMP on June 27, 2005 and are working toward the release of the Draft 2005 UWMP in August.

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I look forward to meeting with you. Please contact me via my cell phone at (818) 605-1506 to arrange a meeting.

Sincerely,

Jeffrey Lambert, AICP

Jeffrey Lambert, AICP
Planning / Government Relations

July 20, 2005

Sand Canyon Area Well Owners Association
c/o 27363 Sand Canyon Road
Santa Clarita, CA 91387-3632

Dear Sand Canyon Area Well Owners Association:

As you know, the Santa Clarita Valley water agencies are preparing the 2005 Urban Water Management Plan. I have been asked to manage the public outreach component of this effort. This includes seeking opportunities to talk with interested community groups about the 2005 UWMP. We released the Preliminary Draft 2005 UWMP on June 27, 2005 and are working toward the release of the Draft 2005 UWMP in August.

With this in mind, I am requesting an opportunity to meet with you at your convenience. We would like to present the most recent version of the 2005 UWMP and answer any questions you may have.

I look forward to meeting with you. Please contact me via my cell phone at (818) 605-1506 to arrange a meeting.

Sincerely,

Jeffrey Lambert, AICP

Jeffrey Lambert, AICP
Planning / Government Relations

July 20, 2005

Ms. Judy Reinsma, President
Santa Clarita Valley Well Owners Association
P.O. Box 800085
Santa Clarita, CA 91380

Dear Ms. Reinsma:

As you know, the Santa Clarita Valley water agencies are preparing the 2005 Urban Water Management Plan. I have been asked to manage the public outreach component of this effort. This includes seeking opportunities to talk with interested community groups about the 2005 UWMP. We released the Preliminary Draft 2005 UWMP on June 27, 2005 and are working toward the release of the Draft 2005 UWMP in August.

With this in mind, I am requesting an opportunity to meet with you at your convenience. We would like to present the most recent version of the 2005 UWMP and answer any questions you may have.

I look forward to meeting with you. Please contact me via my cell phone at (818) 605-1506 to arrange a meeting.

Sincerely,

Jeffrey Lambert, AICP

Jeffrey Lambert, AICP
Planning / Government Relations

July 20, 2005

Mr. Michael Murphy
Inter-Government Relations Officer
City of Santa Clarita
23920 Valencia Blvd.
Santa Clarita, CA 91355

Dear Mr. Murphy:

As you know, the Santa Clarita Valley water agencies are preparing the 2005 Urban Water Management Plan. I have been asked to manage the public outreach component of this effort. This includes seeking opportunities to talk with interested community groups about the 2005 UWMP. We released the Preliminary Draft 2005 UWMP on June 27, 2005 and are working toward the release of the Draft 2005 UWMP in August.

With this in mind, I am requesting an opportunity to meet with you at your convenience. We would like to present the most recent version of the 2005 UWMP and answer any questions you may have.

I look forward to meeting with you. Please contact me via my cell phone at (818) 605-1506 to arrange a meeting.

Sincerely,

Jeffrey Lambert, AICP

Jeffrey Lambert, AICP
Planning / Government Relations

July 20, 2005

Mr. James Hartl
Director, Regional Planning
County of Los Angeles
320 West Temple Street
Los Angeles, CA 90012

Dear Mr. Hartl:

As you know, the Santa Clarita Valley water agencies are preparing the 2005 Urban Water Management Plan. I have been asked to manage the public outreach component of this effort. This includes seeking opportunities to talk with interested community groups about the 2005 UWMP. We released the Preliminary Draft 2005 UWMP on June 27, 2005 and are working toward the release of the Draft 2005 UWMP in August.

With this in mind, I am requesting an opportunity to meet with you at your convenience. We would like to present the most recent version of the 2005 UWMP and answer any questions you may have.

I look forward to meeting with you. Please contact me via my cell phone at (818) 605-1506 to arrange a meeting.

Sincerely,

Jeffrey Lambert, AICP

Jeffrey Lambert, AICP
Planning / Government Relations

July 20, 2005

Mr. Chris Stephens, Planning Director
Resource Management Agency
County of Ventura
800 South Victoria Avenue
Ventura, California 93009-1600

Dear Mr. Stephens:

As you know, the Santa Clarita Valley water agencies are preparing the 2005 Urban Water Management Plan. I have been asked to manage the public outreach component of this effort. This includes seeking opportunities to talk with interested community groups about the 2005 UWMP. We released the Preliminary Draft 2005 UWMP on June 27, 2005 and are working toward the release of the Draft 2005 UWMP in August.

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Sincerely,

Jeffrey Lambert, AICP

Jeffrey Lambert, AICP
Planning / Government Relations

July 20, 2005

Jeffrey M. Smith, AICP
Southern CA Association of Governments
818 West Seventh Street, 12th Floor
Los Angeles, CA 90017-3435

Dear Mr. Smith:

As you know, the Santa Clarita Valley water agencies are preparing the 2005 Urban Water Management Plan. I have been asked to manage the public outreach component of this effort. This includes seeking opportunities to talk with interested community groups about the 2005 UWMP. We released the Preliminary Draft 2005 UWMP on June 27, 2005 and are working toward the release of the Draft 2005 UWMP in August.

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Sincerely,

Jeffrey Lambert, AICP

Jeffrey Lambert, AICP
Planning / Government Relations

July 20, 2005

Mr. Gerald Johns, Deputy Director
CA Department of Water Resources
P.O. Box 942836
Sacramento, CA 94236-0001

Dear Mr. Johns:

As you know, the Santa Clarita Valley water agencies are preparing the 2005 Urban Water Management Plan. I have been asked to manage the public outreach component of this effort. This includes seeking opportunities to talk with interested community groups about the 2005 UWMP. We released the Preliminary Draft 2005 UWMP on June 27, 2005 and are working toward the release of the Draft 2005 UWMP in August.

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Jeffrey Lambert, AICP

Jeffrey Lambert, AICP
Planning / Government Relations

July 20, 2005

Mr. David Todd
Office of Water Use Efficiency
CA Department of Water Resources
P.O. Box 942836
Sacramento, CA 94236-0001

Dear Mr. Todd:

As you know, the Santa Clarita Valley water agencies are preparing the 2005 Urban Water Management Plan. I have been asked to manage the public outreach component of this effort. This includes seeking opportunities to talk with interested community groups about the 2005 UWMP. We released the Preliminary Draft 2005 UWMP on June 27, 2005 and are working toward the release of the Draft 2005 UWMP in August.

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Sincerely,

Jeffrey Lambert, AICP

Jeffrey Lambert, AICP
Planning / Government Relations

July 20, 2005

Mr. Dennis Slivinski, Assistant County Counsel
County of Ventura
800 South Victoria Avenue
Ventura, California 93009-1830

Dear Mr. Slivinski:

As you know, the Santa Clarita Valley water agencies are preparing the 2005 Urban Water Management Plan. I have been asked to manage the public outreach component of this effort. This includes seeking opportunities to talk with interested community groups about the 2005 UWMP. We released the Preliminary Draft 2005 UWMP on June 27, 2005 and are working toward the release of the Draft 2005 UWMP in August.

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Sincerely,

Jeffrey Lambert, AICP

Jeffrey Lambert, AICP
Planning / Government Relations

July 20, 2005

Friends of the Santa Clara River
660 Randy Drive
Newbury Park, California 91320-4323

Dear Friends of the Santa Clara River:

As you know, the Santa Clarita Valley water agencies are preparing the 2005 Urban Water Management Plan. I have been asked to manage the public outreach component of this effort. This includes seeking opportunities to talk with interested community groups about the 2005 UWMP. We released the Preliminary Draft 2005 UWMP on June 27, 2005 and are working toward the release of the Draft 2005 UWMP in August.

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Sincerely,

Jeffrey Lambert, AICP

Jeffrey Lambert, AICP
Planning / Government Relations

July 20, 2005

Sierra Club Angeles Chapter
3435 Wilshire Boulevard, Suite 320
Los Angeles, California 90010-1904

Dear Sierra Club:

As you know, the Santa Clarita Valley water agencies are preparing the 2005 Urban Water Management Plan. I have been asked to manage the public outreach component of this effort. This includes seeking opportunities to talk with interested community groups about the 2005 UWMP. We released the Preliminary Draft 2005 UWMP on June 27, 2005 and are working toward the release of the Draft 2005 UWMP in August.

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Sincerely,

Jeffrey Lambert, AICP

Jeffrey Lambert, AICP
Planning / Government Relations

July 20, 2005

Stephan C. Volker
436 14th Street, Suite 1300
Oakland, California 94612

Dear Mr. Volker:

As you know, the Santa Clarita Valley water agencies are preparing the 2005 Urban Water Management Plan. I have been asked to manage the public outreach component of this effort. This includes seeking opportunities to talk with interested community groups about the 2005 UWMP. We released the Preliminary Draft 2005 UWMP on June 27, 2005 and are working toward the release of the Draft 2005 UWMP in August.

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Sincerely,

Jeffrey Lambert, AICP

Jeffrey Lambert, AICP
Planning / Government Relations

July 20, 2005

Ms. Dana Wisehart
United Water Conservation District
106 N. 8th Street
Santa Paula, California 93060

Dear Ms Wisehart:

As you know, the Santa Clarita Valley water agencies are preparing the 2005 Urban Water Management Plan. I have been asked to manage the public outreach component of this effort. This includes seeking opportunities to talk with interested community groups about the 2005 UWMP. We released the Preliminary Draft 2005 UWMP on June 27, 2005 and are working toward the release of the Draft 2005 UWMP in August.

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Sincerely,

Jeffrey Lambert, AICP

Jeffrey Lambert, AICP
Planning / Government Relations

July 20, 2005

Paul Ash, President
Westranch Town Council
Hanger, Levine & Steinberg
21031 Ventura Blvd, Suite 800
Woodland Hills, CA 91364-6512

Dear Mr. Ash:

As you know, the Santa Clarita Valley water agencies are preparing the 2005 Urban Water Management Plan. I have been asked to manage the public outreach component of this effort. This includes seeking opportunities to talk with interested community groups about the 2005 UWMP. We released the Preliminary Draft 2005 UWMP on June 27, 2005 and are working toward the release of the Draft 2005 UWMP in August.

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Jeffrey Lambert, AICP

Appendix C
Groundwater Resources and Yield In the Santa Clarita Valley

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Introduction

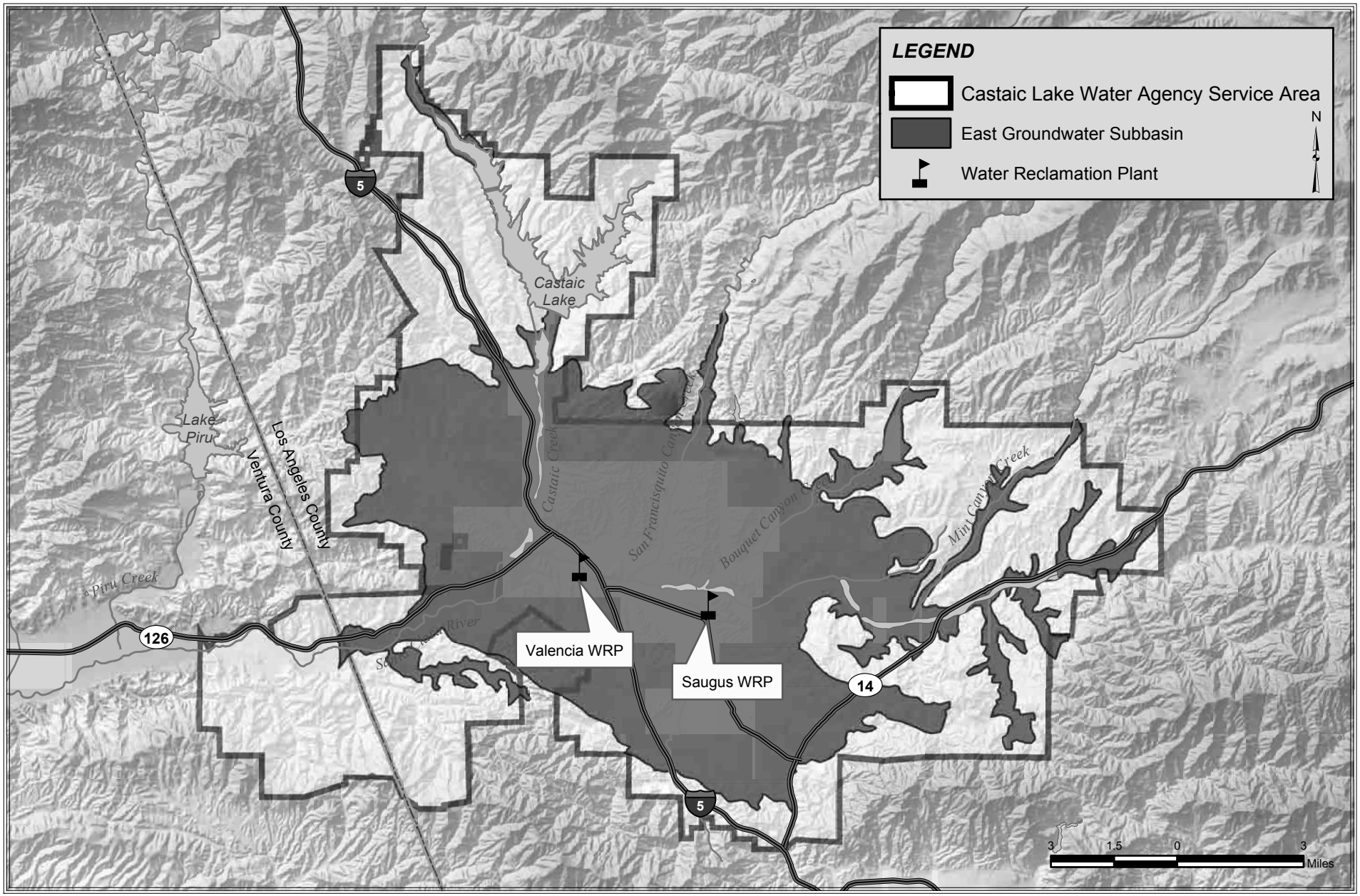
Beginning in the early part of the twentieth century, and continuing through the 1970s, local groundwater extracted from the two aquifers that comprise the local groundwater basin was the Santa Clarita Valley's sole source of water supply. Since 1980, local groundwater supplies have been supplemented with imported surface water from the State Water Project (SWP). In 2003, augmentation of those water supplies began with the initiation of deliveries from Castaic Lake Water Agency's (CLWA) recycled water system, which is anticipated to increase with time.

Santa Clara River Valley Groundwater Basin – East Subbasin

The groundwater basin generally beneath the Santa Clarita Valley, identified in the California Department of Water Resources' (DWR) Bulletin 118, 2003 Update as the Santa Clara River Valley Groundwater Basin, East Subbasin (Basin) (Basin No. 4-4.07), is comprised of two aquifer systems. The Alluvium generally underlies the Santa Clara River and its several tributaries and the Saugus Formation underlies practically the entire Upper Santa Clara River area. There are also some scattered outcrops of Terrace deposits in the Basin that likely contain limited amounts of groundwater; however, since these deposits are located in limited areas that are situated at elevations above the regional water table and are also of limited thickness, they are of no practical significance as aquifers and consequently have not been developed for any significant water supply. Figure C-1 illustrates the mapped extent of the Basin in DWR Bulletin 118 (2003), which approximately coincides with the outer extent of the Alluvium and Saugus Formation, and its relationship to the extent of the CLWA service area.

A 2001 Update Report on both the Alluvium and Saugus Formation Aquifers was completed by Richard C. Slade and Associates, Consulting Groundwater Geologists (Slade, 2002). That report updated the analyses and interpretation of hydrogeologic conditions from earlier reports (Slade, 1986 and 1988), including extensive detail on major aspects of the groundwater Basin. Notable parts of the 2001 Update Report includes:

- Description of the extensive additional data available since the original Alluvium and Saugus Formation reports were prepared in 1986 and 1988, respectively
- Organization of historic data into a Geographic Information System (GIS) database
- Description of the overall groundwater basin in conformance with that being mapped by the Department of Water Resources in Bulletin 118 (2003)



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CONSULTING ENGINEERS

Figure C-1
Santa Clara River Valley
East Groundwater Subbasin

- Analysis of historical groundwater levels and production, and conclusions that there have been no conditions that would be illustrative of groundwater overdraft
- Suggestion that utilization of operational yield (as opposed to perennial yield) as a basis for managing groundwater production would be more applicable in this basin to reflect
- Fluctuating utilization of groundwater in conjunction with utilization of imported SWP water
- Conclusion that operational yield of the Alluvium is 30,000 to 40,000 acre-feet per year (afy) for wet and average/normal rainfall years, with an expected reduction into the range of 30,000 to 35,000 afy in dry years
- Conclusion that operational yield of the Saugus Formation would be in the range of 7,500 to 15,000 afy on a long-term basis, with short-term increases during dry periods into a range of 15,000 to 25,000 afy, and to 35,000 afy if dry year conditions continue

Groundwater Management Plan

As part of legislation authorizing CLWA to provide retail water service to individual municipal customers in addition to its ongoing wholesale water supply, Assembly Bill 134 (2001) included a requirement that CLWA prepare a groundwater management plan in accordance with the provisions of Water Code Section 10753, which was originally enacted by, and is commonly known as, Assembly Bill 3030. The general contents of CLWA's groundwater management plan were outlined in 2002, and a detailed plan was drafted and adopted in 2003 to satisfy the requirements of AB 134. The plan both complements and formalizes a number of existing water supply and water resource planning and management activities in CLWA's service area, which effectively encompasses the East Subbasin of the Santa Clara River Valley Groundwater Basin.

CLWA adopted the Groundwater Management Plan (GWMP) in December 2003. As part of the GWMP, four management objectives, or goals, were established for the Basin including: (1) development of an integrated surface water, groundwater, and recycled water supply to meet existing and projected demands for municipal, agricultural, and other water uses; (2) assessment of groundwater Basin conditions to determine a range of operational yield values that will make use of local groundwater conjunctively with supplemental SWP supplies and recycled water to avoid groundwater overdraft, (3) preservation of groundwater quality, including active characterization and solution of any groundwater contamination problems, and (4) preservation of interrelated surface water resources, which includes managing groundwater to not adversely impact surface and groundwater discharges or quality to downstream basin(s).

The adopted GWMP includes 14 elements that are intended to accomplish the Basin management objectives listed above. In summary, the plan elements include:

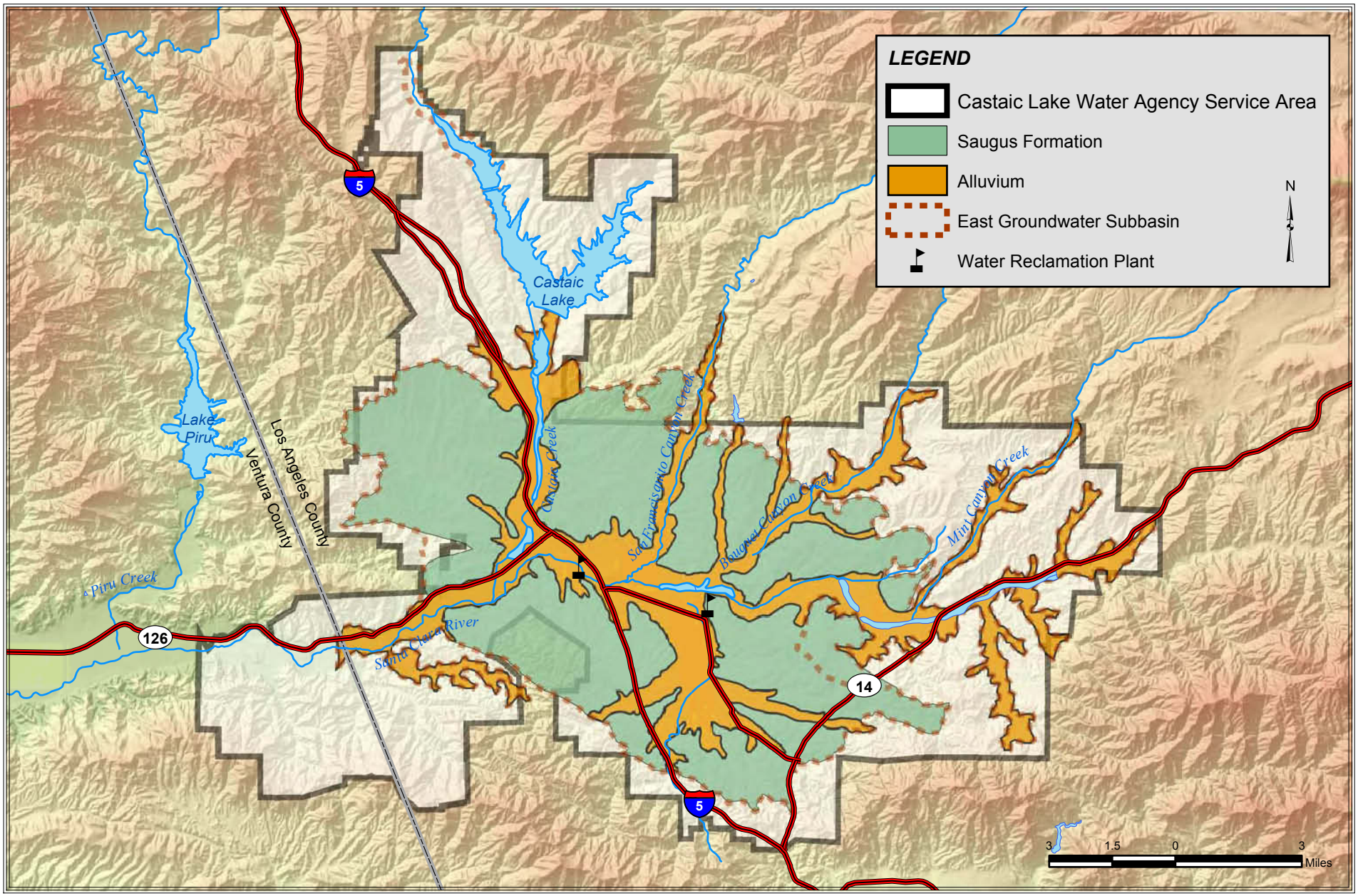
- Monitoring of groundwater levels, quality, production and subsidence
- Monitoring and management of surface water flows and quality
- Determination of Basin yield and avoidance of overdraft

- Development of regular and dry-year emergency water supply
- Continuation of conjunctive use operations
- Long-term salinity management
- Integration of recycled water
- Identification and mitigation of soil and groundwater contamination, including involvement with other local agencies in investigation, cleanup, and closure
- Development and continuation of local, state and federal agency relationships
- Groundwater management reports
- Continuation of public education and water conservation programs
- Identification and management of recharge areas and wellhead protection areas
- Identification of well construction, abandonment, and destruction policies
- Provisions to update the groundwater management plan

Alluvium – General

The Alluvial Aquifer system, of Quaternary to Holocene (recent) geologic age, consists primarily of stream channel and flood plain deposits of the Santa Clara River and its tributaries. The Alluvium is deepest along the center of the present river channel, with a maximum thickness of about 200 feet near the Saugus area. It thins toward the flanks of the adjoining hills and toward the eastern and western boundaries of the Basin and, in the tributaries, becomes a mere veneer in their upper reaches. The spatial extent of the Alluvium throughout the Basin is illustrated in Figure C-2.

Groundwater generally moves westward toward the outlet of the Basin, which is also the outlet of the Upper Santa Clara River Hydrologic Area. Thus, groundwater movement in the Alluvium beneath the tributaries is toward their confluence with the Santa Clara River and then westward in the Alluvium. From about Castaic Junction to Blue Cut, the Alluvium thins and narrows. This configuration forces groundwater to rise, keeping the depth to water at or close to the land surface. As discussed in more detail below, the general groundwater flow direction has remained unchanged whether groundwater levels are high or intermittently depressed. The San Gabriel and Holser faults traverse the Basin but neither fault measurably affects groundwater levels or flows in the Alluvium.

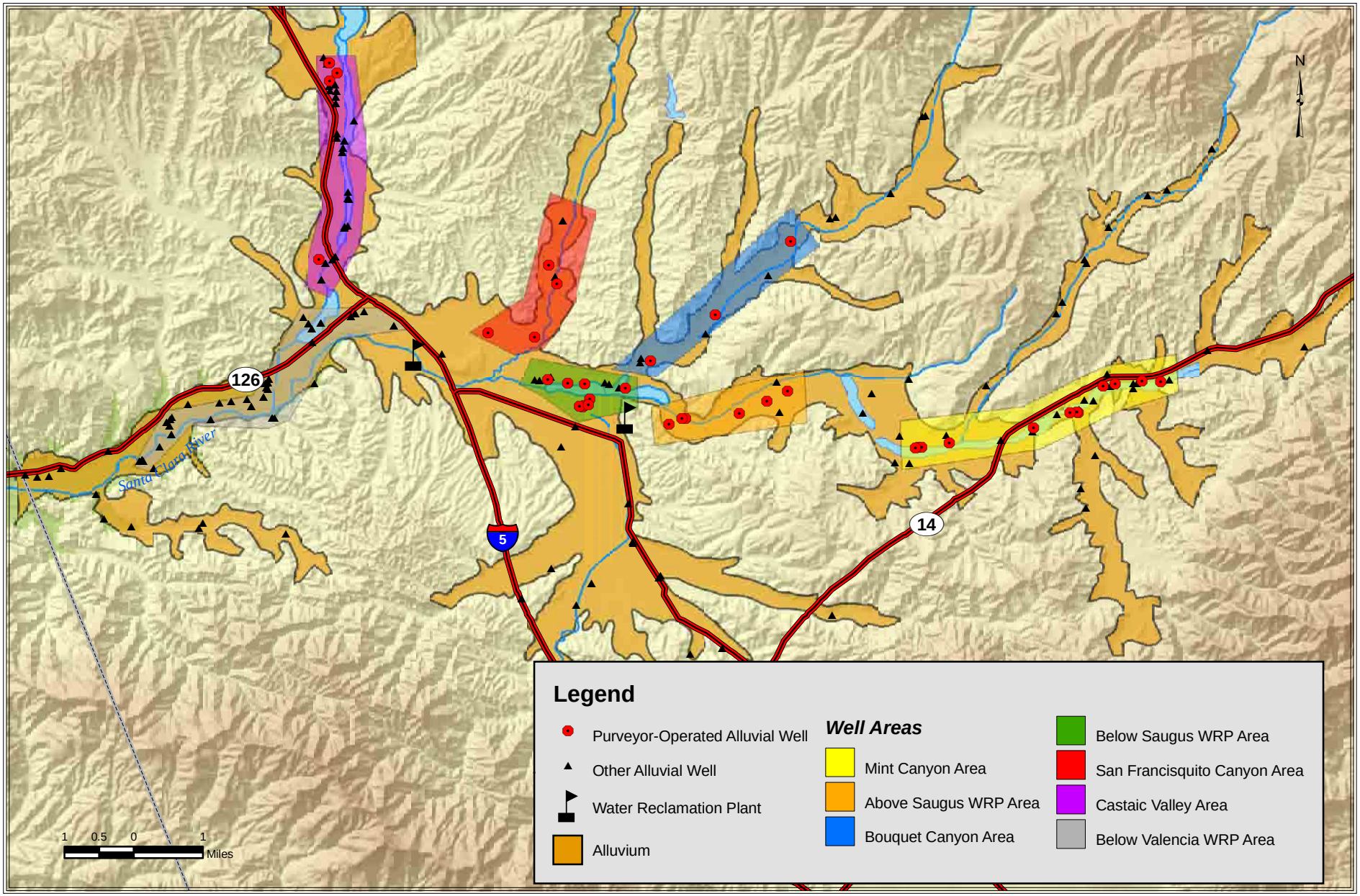


LUHDORFF & SCALMANINI CONSULTING ENGINEERS

Figure C-2
Alluvial and Saugus Formations
Santa Clara River Valley East Groundwater Subbasin

Alluvial wells are distributed throughout the basin along the Santa Clara River and its southwest draining tributaries. Figure C-3 illustrates the location of the wells operated by retail water purveyors and other known Alluvial wells in the Basin. The Alluvium is the most permeable of the local aquifer units. Based on well yields and aquifer testing, estimated transmissivity values of 50,000 to 500,000 gallons per day per foot have been reported for the Alluvium, with the higher values where the Alluvium is thickest in the center of the Valley and generally west of Bouquet Canyon. The amount of groundwater in storage in the Alluvium can vary because of the effects of recharge, discharge, and pumping from the aquifer. The maximum storage capacity of the Alluvium has been estimated to be 240,000 acre-feet (af).

Consistent with the 2001 Update Report (Slade, 2002), the current management practice of the local retail water purveyors is to continue a groundwater operating plan that generally results in total Alluvial pumping in the range of 30,000 to 40,000 afy, slightly reduced to 30,000 to 35,000 afy in dry periods. This operating plan maximizes use of the Alluvium because of the aquifer's ability to store and produce good quality water on a perennial basis, and because the Alluvium is capable of rapid recovery of water levels and storage in wet periods. As with many groundwater basins, it is possible to intermittently exceed the long-term average yield for one or more years without long-term adverse effects. In the eastern part of the Alluvial Aquifer system, pumping during dry periods results in intermittently lower water levels in that portion of the aquifer. However, management of pumping during dry periods limits the lowering of water levels, and normal-to-wet period recharge results in a rapid return of groundwater levels to historic highs. Historical groundwater data collected from the Alluvium over many hydrologic cycles provides assurance that groundwater elevations return to normal in average or wet years following periods during which the groundwater elevations have declined. In addition, high rainfall totals in only one to two years generally will cause water levels within the Alluvium to rise quickly and by a relatively large amount. Such water level response to rainfall is a significant characteristic of permeable, porous, alluvial aquifer systems that occur within large watersheds.



LUHDORFF & SCALMANINI
CONSULTING ENGINEERS

Figure C-3
Alluvial Well Locations
Santa Clara River Valley, East Groundwater Subbasin

Alluvium – Historical and Current Conditions

Total pumpage from the Alluvium in 2004 was about 33,800 af, of which about 56 percent (19,000 af) was for municipal water supply, and the balance, about 44 percent (14,800 af), was for agriculture and other (minor) miscellaneous uses.

Alluvial pumpage has been recorded intermittently since the mid-1940s, and consistently since 1980. When pumpage records are unavailable (e.g., in the 1970s), data has been approximated to obtain a continuous historic record (Figure C-4). Alluvial pumpage from private wells, estimated to be at most 500 afy, has been included in the total Alluvial pumpage. Since the inception of SWP deliveries to CLWA in 1980, total pumpage from the Alluvium has ranged from a low of about 20,000 afy (in 1983) to slightly more than 43,000 afy (in 1999). Agricultural pumpage remained stable from the mid-1940's through about 1960, generally ranging from 33,000 to 37,000 afy, with annual pumpage as high as 41,000 af. From 1960 through the late 1970's, agricultural pumpage declined in a nearly linear trend, and has fluctuated slightly since then, between approximately 10,000 and 16,000 afy. As agricultural pumpage declined, municipal pumpage from the Alluvium increased from less than 4,000 afy in the 1950s to approximately 17,000 af in 1980. Beginning in 1980 with the importation of SWP water, municipal pumpage from the Alluvium declined to about 12,500 afy and remained stable throughout the 1980's. Municipal pumpage has subsequently increased to the current range of approximately 20,000 to 25,000 afy. Overall, there has been a change in municipal/agricultural pumping distribution since 1980, toward a slightly higher fraction for municipal water supply (from about 50 percent to nearly 60 percent of Alluvial pumpage), which reflects the general land use changes in the Valley.

The most recent analysis of the Alluvium (Slade, 2002) suggested that the operational yield of the Alluvium is 30,000 to 40,000 afy in average/normal and wet years, with a reduction to 30,000 to 35,000 afy in dry years. On a long-term basis since the importation of SWP water, total Alluvial pumpage has been about 30,500 afy (31,300 af in years with less than average precipitation, and 29,400 af in years with greater than average precipitation). These amounts are at the lower end of the range of operational yield of the Alluvium.

Groundwater Production - Alluvium

Santa Clara River Valley, East Groundwater Subbasin

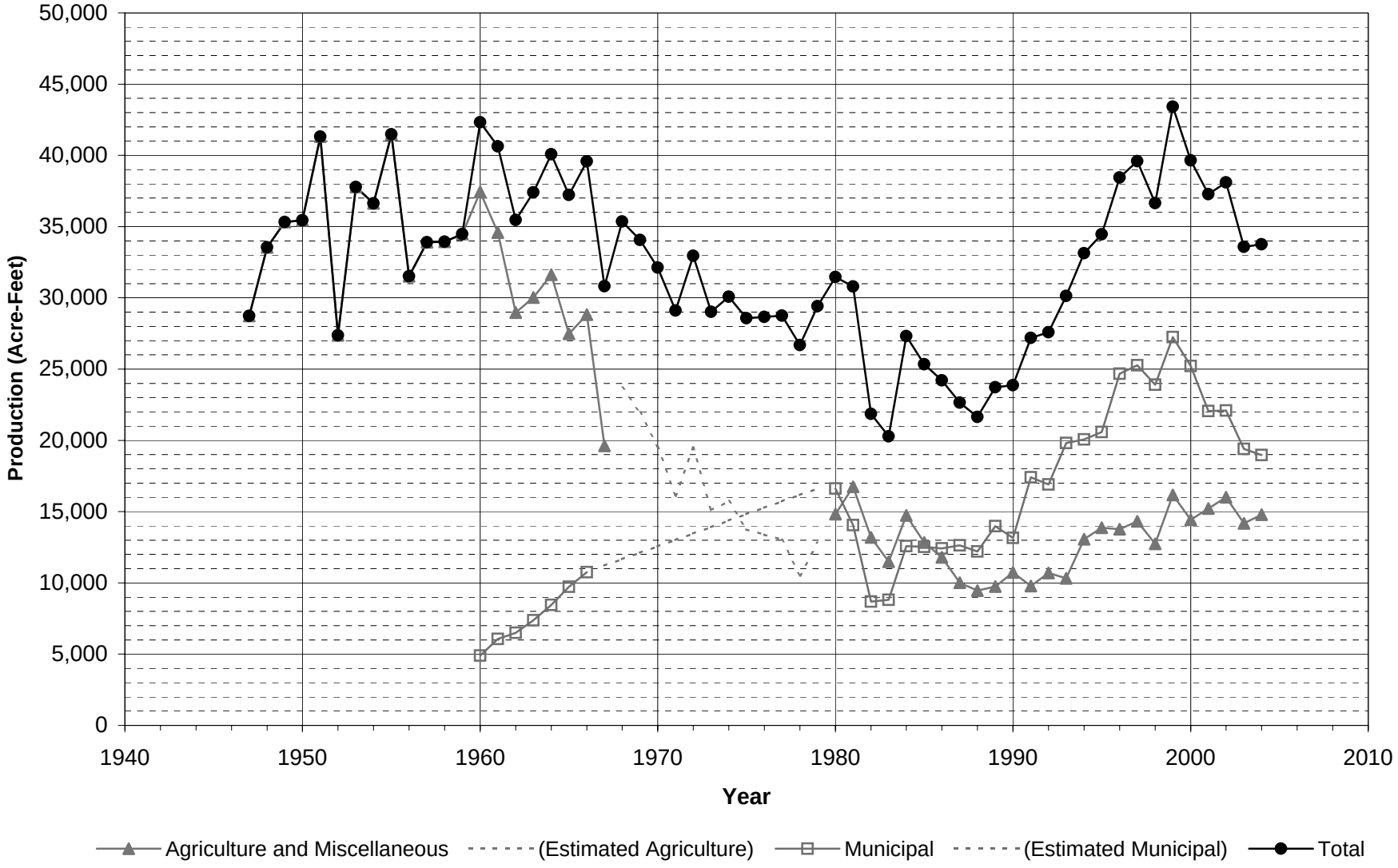


Figure C-4

Groundwater levels in various parts of the Basin have historically exhibited different responses to both pumpage and climatic fluctuations. During the last 20 to 30 years, in essentially all the alluvial portions of the Basin, groundwater levels have fluctuated from near the ground surface when the Basin is full, to as much as 100 feet lower when the Basin is pumped during intermittent dry periods of reduced recharge. Figure C-3 groups the Alluvial wells into areas with similar groundwater level fluctuations. Figures C-5 and C-6 present historical groundwater levels organized into hydrograph form (groundwater elevation vs. time) for four of these areas in the Basin. The other areas shown in Figure C-3 exhibit groundwater level responses similar to those in these four areas.

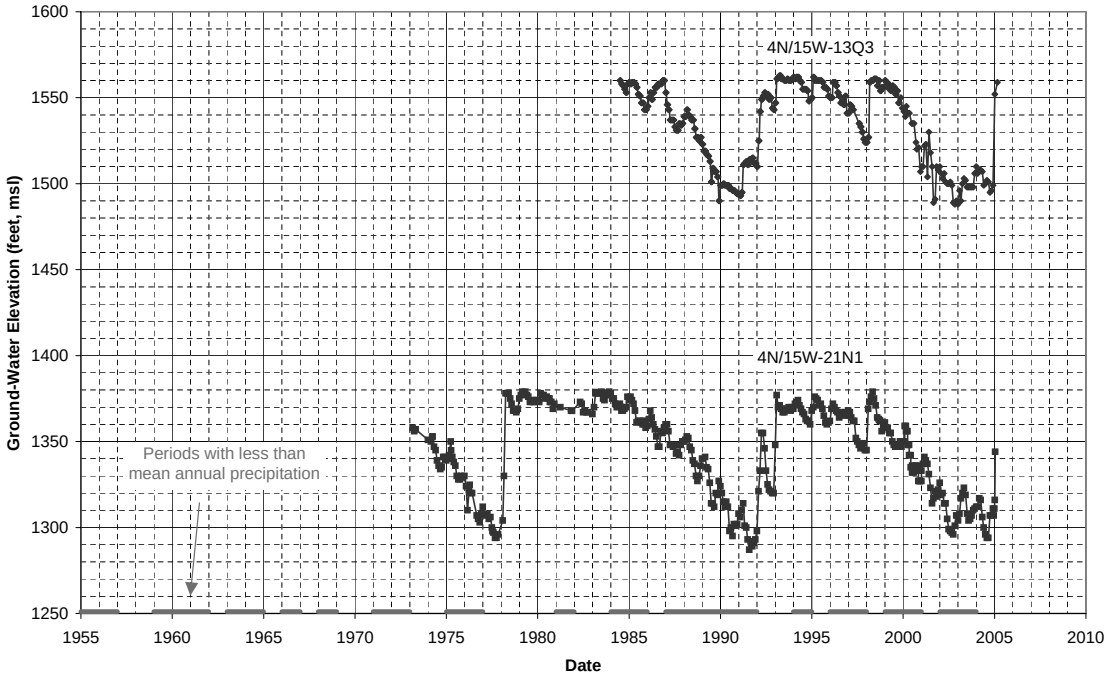
The 'Mint Canyon' area is located at the far eastern end of the Basin along the Santa Clara River. In this area, the Alluvium is shallower than in the western parts of the Basin; consequently, the area has historically exhibited the most dramatic responses to climatic fluctuations. The 'Above Saugus WRP' and 'Bouquet Canyon' areas generally exhibit groundwater level responses that are similar to those in the 'Mint Canyon' area.

The 'Below Saugus WRP' area is located along the Santa Clara River immediately downstream of the Saugus Water Reclamation Plant (WRP). This area has shown a dramatic increase in groundwater levels (30 to 60 feet) since the 1960s. The area now receives recharge from the treated wastewater discharged from the Saugus WRP to the Santa Clara River, and is located in one of the thickest areas of the Alluvium. The 'Below Saugus WRP' area exhibits groundwater level responses to climatic fluctuations, but these responses are much smaller than those further east in the Basin. The 'San Francisquito Canyon' area generally exhibits groundwater level responses that are similar to those in the 'Below Saugus WRP' area.

The 'Castaic Valley' area is located along Castaic Creek below Castaic Lake. Groundwater levels in this area have remained fairly constant, with slight responses to climatic fluctuations, since the 1950s.

The 'Below Valencia' WRP area is located along the Santa Clara River downstream of the Valencia WRP, and receives recharge from the treated wastewater discharged from the Valencia WRP to the Santa Clara River. Groundwater levels in this area exhibit slight, if any, response to climatic fluctuations, and have remained fairly constant since the 1950s.

Groundwater Elevation for 'Mint Canyon' Area Alluvial Wells
(lowest and highest for area shown)



Groundwater Elevation for 'Below Saugus WRP' Area Alluvial Wells
(lowest and highest for area shown)

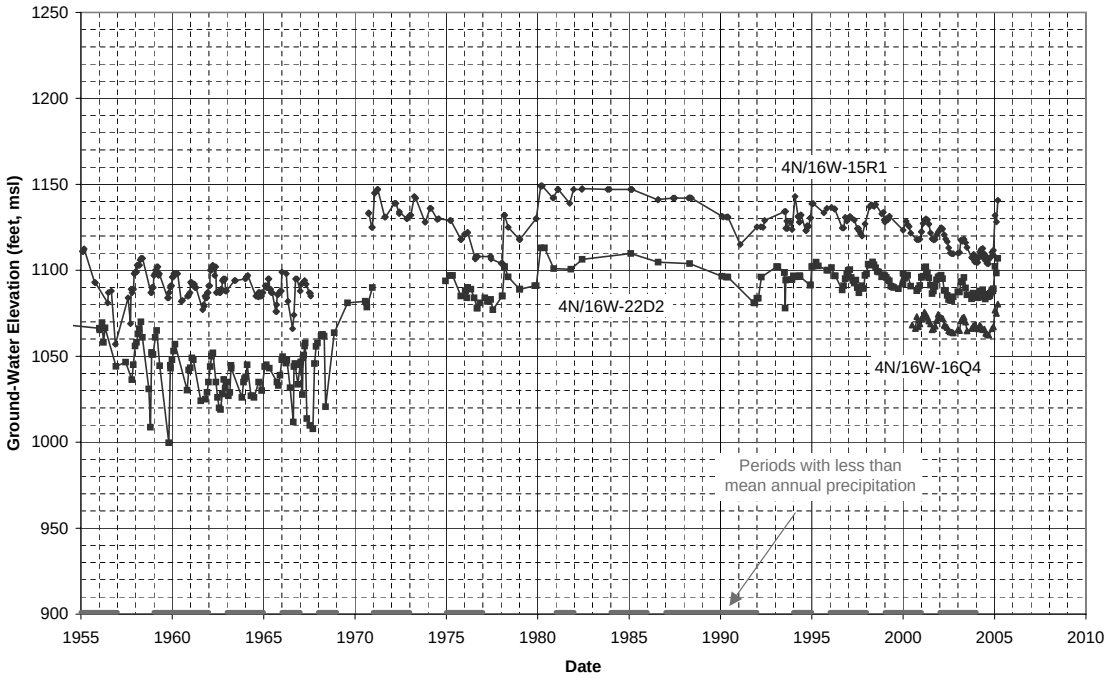
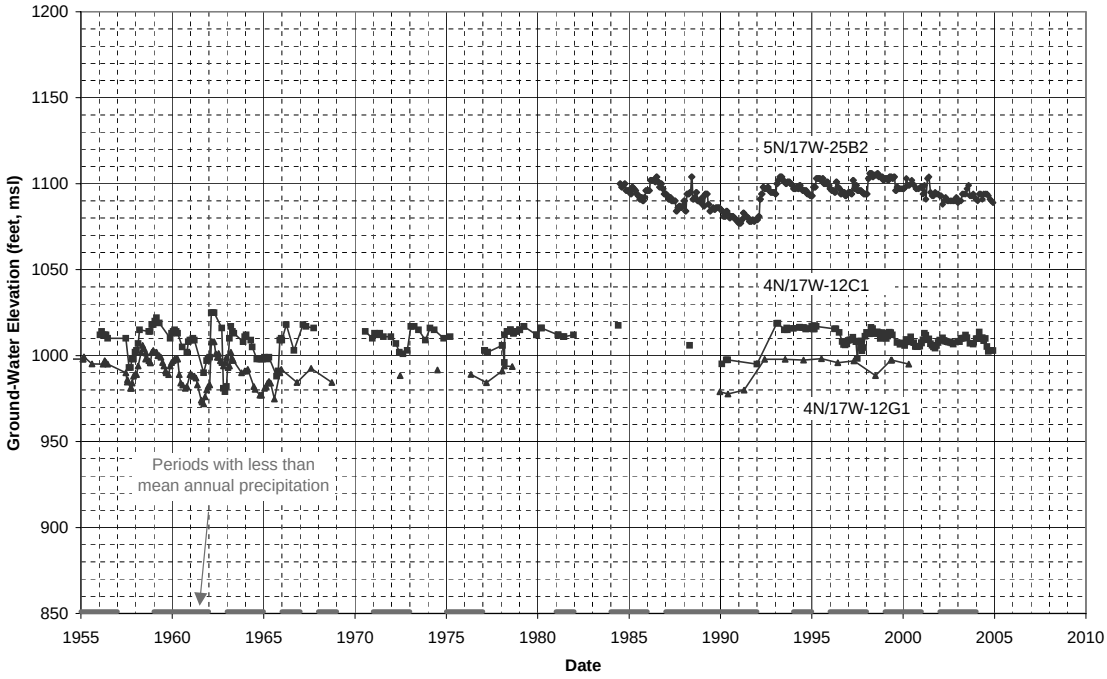


Figure C-5

Groundwater Elevation for 'Castaic Valley' Area Alluvial Wells
(lowest and highest for area shown)



Groundwater Elevation for 'Below Valencia WRP' Area Alluvial Wells
(lowest and highest for area shown)

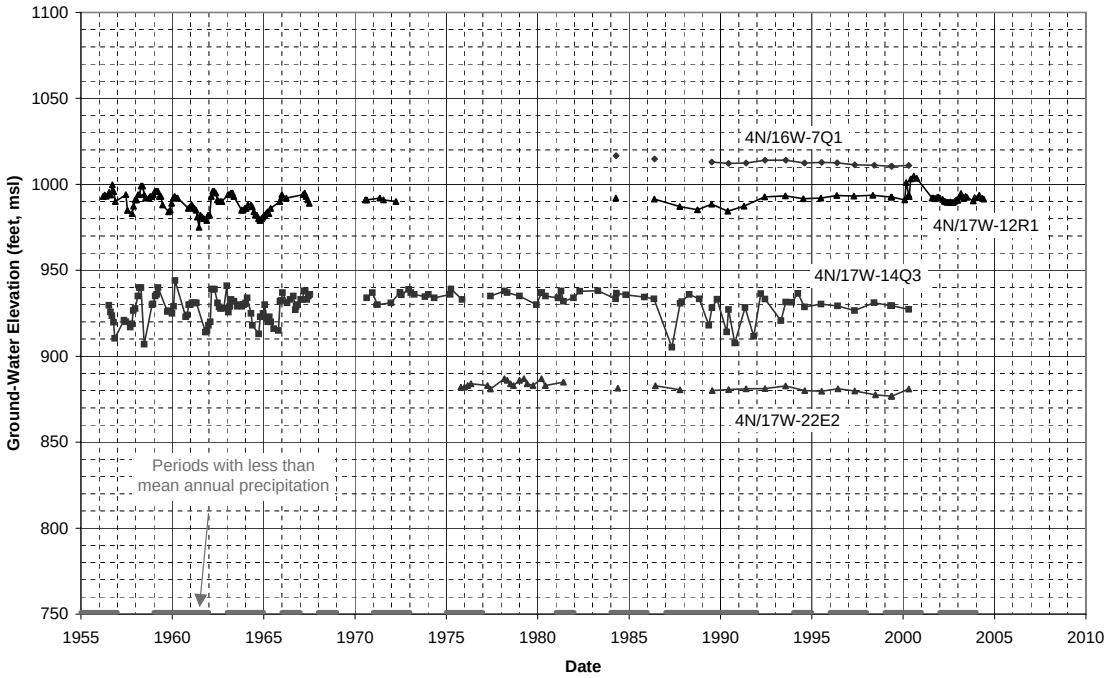


Figure C-6

Groundwater fluctuations in the 'Mint Canyon' area (illustrated in Figure C-5) represent the most substantial intermittent changes in the Basin. As described and discussed above, the Alluvium has historically experienced a number of alternating wet and dry hydrologic conditions during which groundwater level declines are followed by returns to historic highs. Since the Alluvium is thinner to the east, the resulting groundwater fluctuations are most dramatic in this area, up to 75 to 100 feet. When water levels are low, well yields and pumping capacities in this area can be impacted. The affected retail water purveyors respond by decreasing pumping and increasing use of Saugus Formation and imported SWP supplies. The purveyors also shift a fraction of the Alluvial pumpage that would normally be supplied by 'Mint Canyon' area wells to areas further west, where well yields and pumping capacities remain fairly constant because of smaller groundwater level fluctuations. As shown in Figure C-7, the purveyors have decreased the percent of total Alluvial pumpage from the 'Mint Canyon' area steadily beginning in 2000, and have offset these decreases by increasing pumpage in the 'Below Saugus WRP' and 'Below Valencia WRP' areas. This allows the purveyors to maximize the available supply from the Alluvium during dry periods to best meet demand. In spite of the current period of below average precipitation, groundwater levels in the 'Mint Canyon' area have ceased to decline in the last two years. This is illustrative of the purveyors' integrated use of surface water and groundwater to maintain local groundwater resources within their overall yield.

Depending on the period of available data, all the hydrographs of groundwater levels in the Alluvium show the same general picture: recent (last 30 years) groundwater levels have exhibited historic highs; in some locations, there are intermittent dry-period declines (and an associated use of some groundwater from storage) followed by wet-period recoveries (and associated natural refilling of storage space). On a long-term basis, the Alluvium shows no signs of water level-related overdraft (i.e., no trend toward decreasing water levels and storage). Since there is no evidence of any historic or recent trend toward permanent groundwater level or storage decline, pumpage from the Alluvium has been, and continues to be, within the operational yield of that aquifer.

As previously mentioned, it is possible to intermittently pump the aquifer by exceeding its average yield for one or more years without long-term impacts. This utilizes some water from storage in the aquifer, and is evidenced by lowered groundwater levels, which subsequently recover during periods of reduced pumpage or higher than average precipitation. Records of groundwater levels, pumpage and precipitation suggest that declines and subsequent rises in groundwater levels are influenced more by fluctuations in the availability of water for recharge than by pumpage. When less water is available for recharge, during periods of lower than average precipitation and streamflow, groundwater levels decline even when pumpage remains

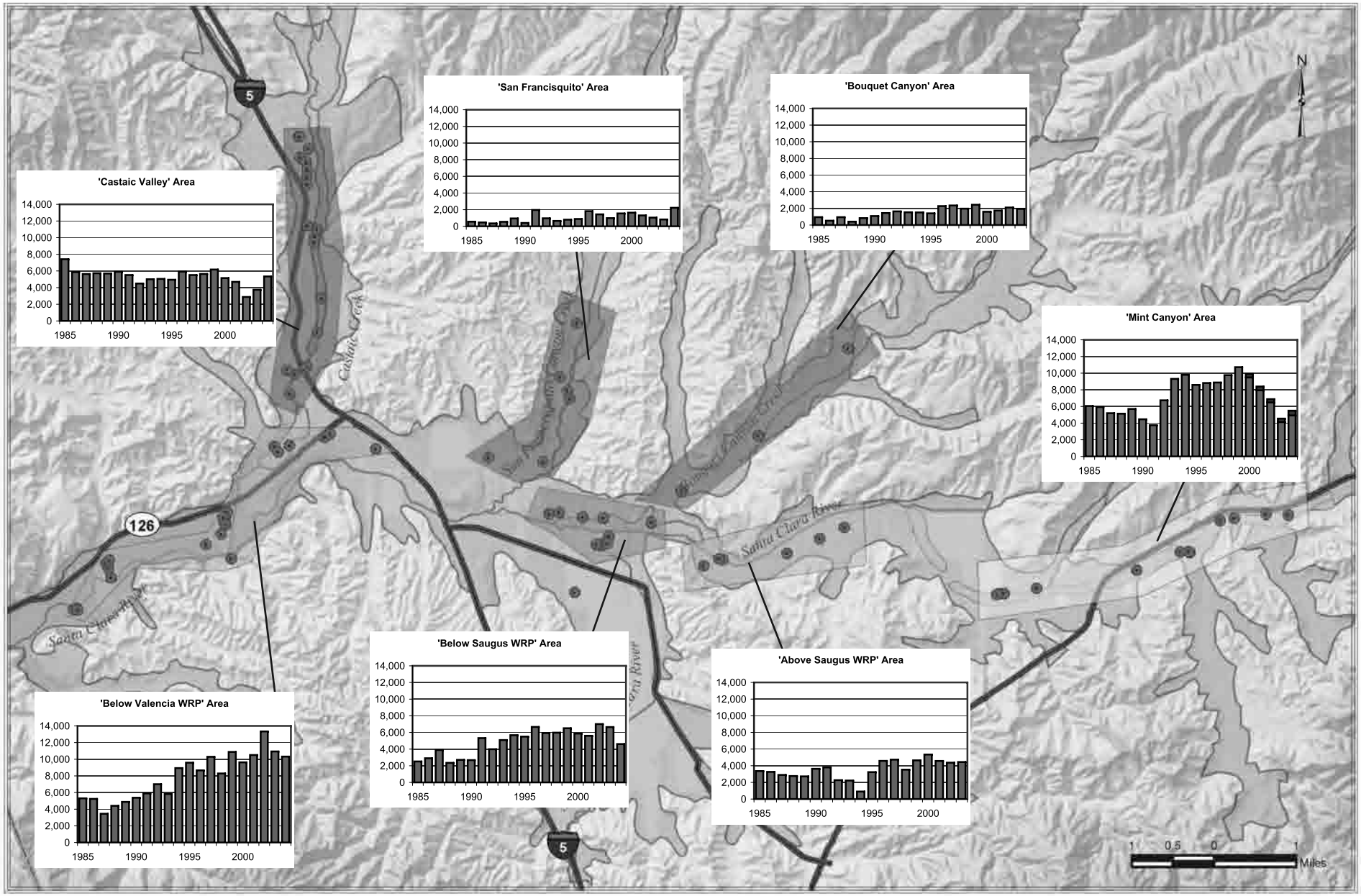


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Figure C-7
Annual Groundwater Production from Alluvium by Area (Acre-feet)
Santa Clara River Valley, East Groundwater Subbasin

constant. Conversely, when an abundance of water is available for recharge because of wet conditions, pumpage can increase significantly without affecting groundwater levels. Overall, long-term experience with Alluvial Aquifer response to pumping in the ranges now considered to be its operational yield shows that such ranges can be considered reliable components of future supply. Recently completed numerical groundwater flow modeling, discussed in detail below, has been used to project Alluvial Aquifer response to the same ranges of pumping over multiple decades of varying hydrologic conditions; groundwater levels are projected to essentially repeat what has historically occurred since the importation of supplemental SWP water.

Saugus Formation – General

The Saugus Formation, of Pliocene to Pleistocene geologic age, has traditionally been divided into two stratigraphic units: the lowermost, geologically older Sunshine Ranch Member, which is of mixed marine to terrestrial (non-marine) origin; and the overlying, or upper, portion of the Formation which is entirely terrestrial in origin. The Sunshine Ranch Member of the Saugus Formation has a maximum thickness of about 3,000 to 3,500 feet in the central part of the Valley; however, due to its marine origin and fine-grained nature, it is not considered to be a viable source of groundwater for municipal or other water supply. Above the Sunshine Ranch Member, the upper portion of the Saugus Formation is coarser grained, consisting mainly of lenticular beds of sandstone and conglomerate that are interbedded with lesser amounts of sandy mudstone, which were deposited in stream channels, flood plains, and alluvial fans by one or more ancestral drainage systems in the Valley. The sand and gravel units that represent aquifer materials in the upper part of the Saugus Formation are generally located between depths of about 300 and 2,500 feet. The spatial extent of the Saugus Formation throughout the Basin is illustrated on Figure C-8.

The Saugus Formation is much thicker and more spatially extensive throughout the Basin when compared to the Alluvium. It is also significant in terms of groundwater storage and individual well capacity. However, the Saugus Formation has typically lower values of transmissivity, in the range of 80,000 to 160,000 gpd/ft, with the higher values in the upper portions of the Formation. The storage capacity of the Saugus has most recently been estimated to be 1.65 million af between depths of 300 feet and approximately 2,500 feet (to the base of the Saugus, or to the base of fresh water if shallower than 2,500 feet). Groundwater in the Saugus Formation generally moves north along the South Fork of the Santa Clara River, towards the Santa Clara River and the outlet of the Basin. Saugus wells operated by the retail water purveyors (shown in Figure C-8) are located in the southern portion of the Basin, south of the Santa Clara River.

For long-term planning purposes, the operating plan includes pumping from the Saugus in the range of 7,500 to 15,000 afy in average/normal years, a conservative estimate in light of historical estimates of potential recharge to the Saugus complemented by observations of high groundwater levels in the overlying Alluvium over the last 30 years. The operating plan also

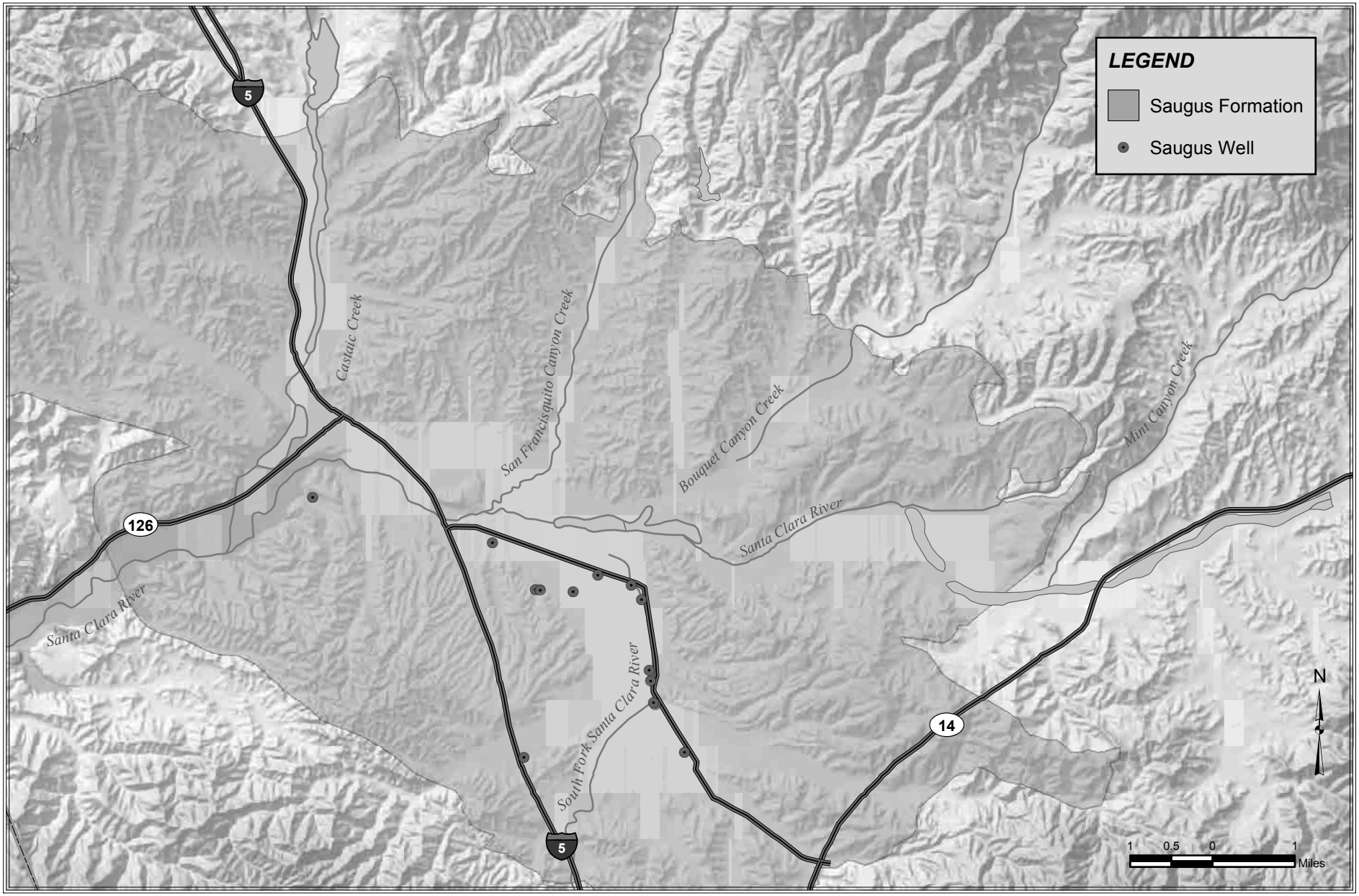

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Figure C-8
Saugus Well Locations
Santa Clara River Valley, East Groundwater Subbasin

includes planned dry-year pumping of 15,000 to 35,000 afy for one to three consecutive dry years, when shortages to other water supplies could occur. Such high pumping would be followed by periods of lower pumpage (7,500 to 15,000 afy in average/normal years as noted above) to allow recharge to recover water levels and storage in the Saugus. Maintaining the substantial volume of water in the Saugus Formation is an important strategy to help provide water supplies in the Valley during dry periods.

Saugus Formation – Historical and Current Conditions

Total pumpage from the Saugus Formation in 2004 was 6,500 af, of which most (5,700 af) was for municipal water supply, and the balance (800 af) was for agricultural and other (minor) uses. Historically, groundwater pumpage from the Saugus peaked in the early 1990s and then declined steadily. Pumpage has remained generally stable, at an average of about 4,600 afy, since 1998.

Historical pumpage records for the Saugus Formation are limited prior to 1980, but suggest that pumpage from the Saugus was minimal at that time. When pumpage records are unavailable, data have been approximated to obtain a continuous historic record (Figure C-9). The records indicate that there was almost no pumping from the Saugus prior to 1960 (about 100 af in most years, beginning in 1948), and that some increased pumping for agricultural water supply (about 900 af) began in about 1962. The largest amount of agricultural pumping from the Saugus was during the mid-1960s, when annual pumpage was about 3,000 af. Agricultural pumping from the Saugus declined to near zero by the late 1970s, but has generally ranged from 500 to 1,000 afy since 1982. Municipal pumping records from the Saugus are incomplete prior to 1980. There was no Saugus pumpage for municipal supply in the early 1960s. Despite the lack of pre-1980 records, post-1980 data suggests that municipal pumping from the Saugus began in the 1970s, and reached nearly 5,000 afy by 1980-81.

The first historical investigation of the Saugus (Slade, 1988) suggested that the recharge potential of the Saugus was in the range of 11,000 to 22,000 afy, depending on precipitation and groundwater levels in the partially overlying Alluvium. Recent updating of that original work (Slade, 2002) suggested that the operational yield of the Saugus Formation is in the range of 7,500 to 15,000 afy in average years, with an increase to as much as 35,000 afy in multiple dry year periods. On a long-term average basis since the importation of SWP water, total pumpage from the Saugus Formation has ranged from a low of about 3,700 afy (in 1999) to a high of nearly 15,000 afy (in 1991); average pumpage from 1980 to present has been about 6,700 afy. These numbers are at the lower end of the estimated range of the operational yield of the Saugus Formation.

Unlike the Alluvium, which has an abundance of wells with extensive water level records, the water level data for the Saugus Formation is limited by the distribution of the wells in this Formation and the periods of record. The wells that do have water level records extending back

Groundwater Production - Saugus Formation
Santa Clara River Valley, East Groundwater Subbasin

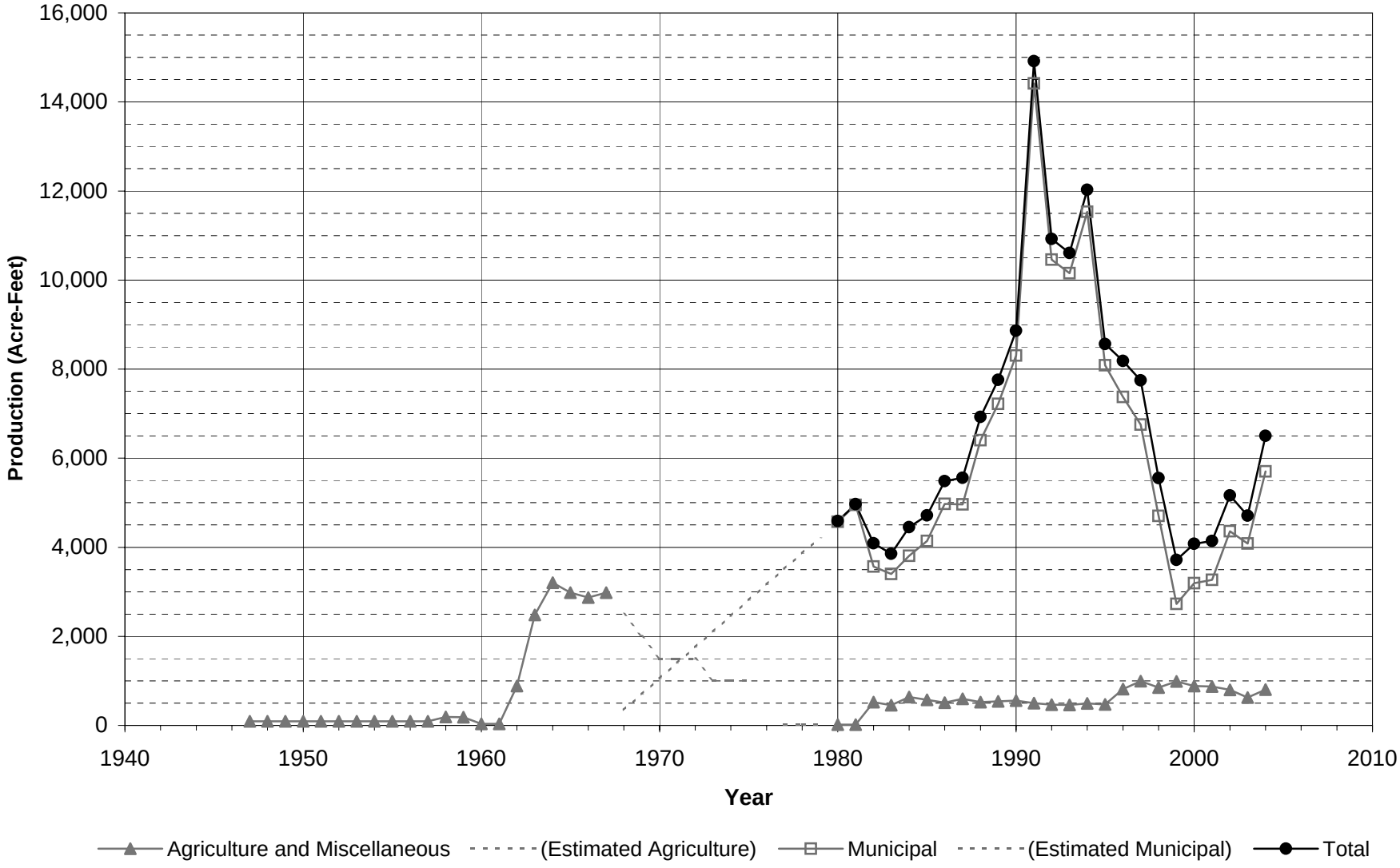


Figure C-9

to the mid-1960s indicate that groundwater levels in the Saugus Formation were highest in the mid-1980s and are currently higher than they were in the mid-1960s (Figure C-10). Based on these data, there is no evidence of any historic or recent trend toward permanent water level or storage decline.

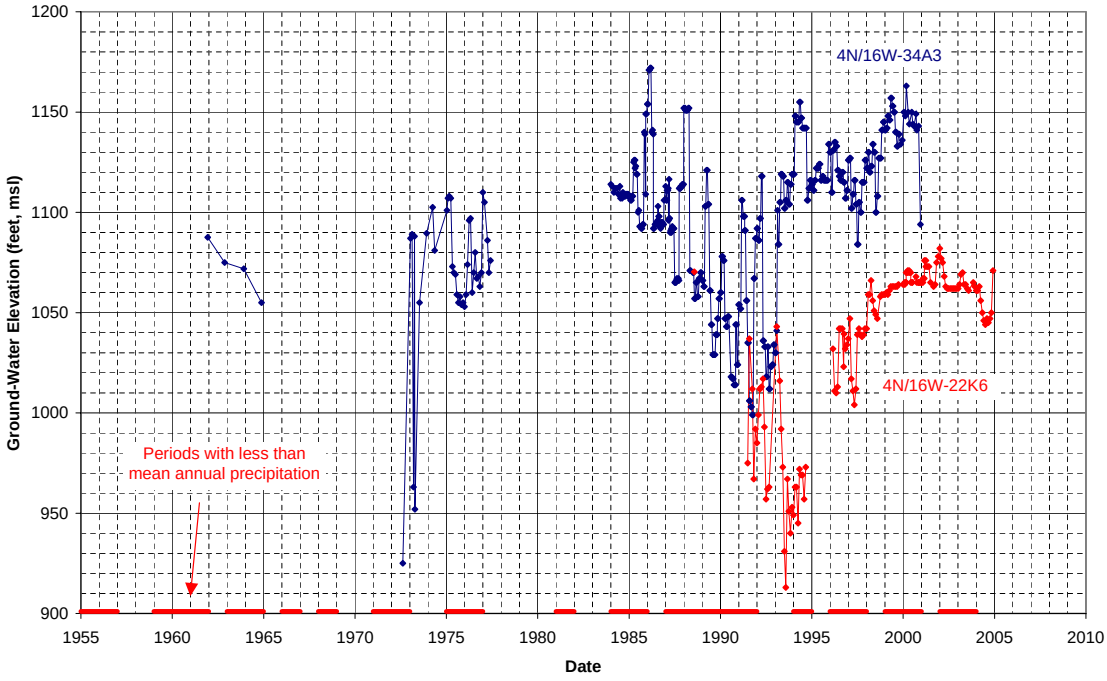
Records of groundwater levels, pumpage and precipitation suggest that declines and subsequent rises in groundwater levels in the Saugus Formation are more influenced by pumpage than by climatic fluctuations. Water levels in wells in the Saugus Formation are highly dependent on pumping in the respective wells. As opposed to the Alluvium, where pumpage is fairly evenly distributed among a number of wells in a given area, there are fewer active wells in the Saugus Formation. Consequently, pumping at one well can create a localized pumping depression that is evident in groundwater level hydrographs. Water levels in the Saugus Formation also exhibit stronger seasonal pumping fluctuations over a year than in the Alluvium (generally more than 20 feet in active Saugus wells, as opposed to generally less than ten feet in Alluvial wells). These responses to pumping are characteristic of the lower transmissivity of the Saugus Formation.

During the period from 1985 through 1991, which experienced consecutive years of lower than average precipitation (with one average year in the middle), pumpage from the Saugus increased from 4,700 afy to nearly 15,000 afy, and groundwater levels declined more than 100 feet in some cases. The subsequent rise in water levels at an individual well depended on pumping at that well. For example (as illustrated on Figure C-10), pumping of Saugus wells declined dramatically beginning between 1993 and 1995, and water levels in individual wells subsequently rose when pumping decreased. Since 1999, water levels in the Saugus have been stable and have exhibited very slight, if any, response to current less-than-average precipitation. A slight pumping depression is evident around active wells. Water levels in the Saugus remain at or above historic levels, and there is no trend toward a sustained decline in Saugus water levels or storage that would be indicative of overdraft.

Consistent with the 2001 Update Report (Slade, 2002), the current management practice of the retail water purveyors is to preserve the Saugus Formation so this supply is available during drought periods, when Alluvial groundwater and SWP supplies are anticipated to decrease. The period of increased pumpage during the late 1980s and early 1990s is a good example of this management strategy. Most notably, in 1991, when SWP deliveries were substantially reduced, increased pumpage from the Saugus made up almost half of the decrease in SWP deliveries. This increased Saugus pumpage resulted in a short-term decline in water levels reflecting the use of stored water. However, the water levels subsequently rose when pumping was reduced, reflecting recovery of groundwater storage in the Saugus Formation.

As with the Alluvial aquifer as introduced above, the response of the Saugus Formation to pumping in the operational yield ranges has been projected by use of a recently completed numerical groundwater flow model. Results of those projections, discussed in detail below,

Groundwater Elevation for Saugus Wells
(lowest and highest shown)



Groundwater Elevation for Saugus Wells
(long-term record)

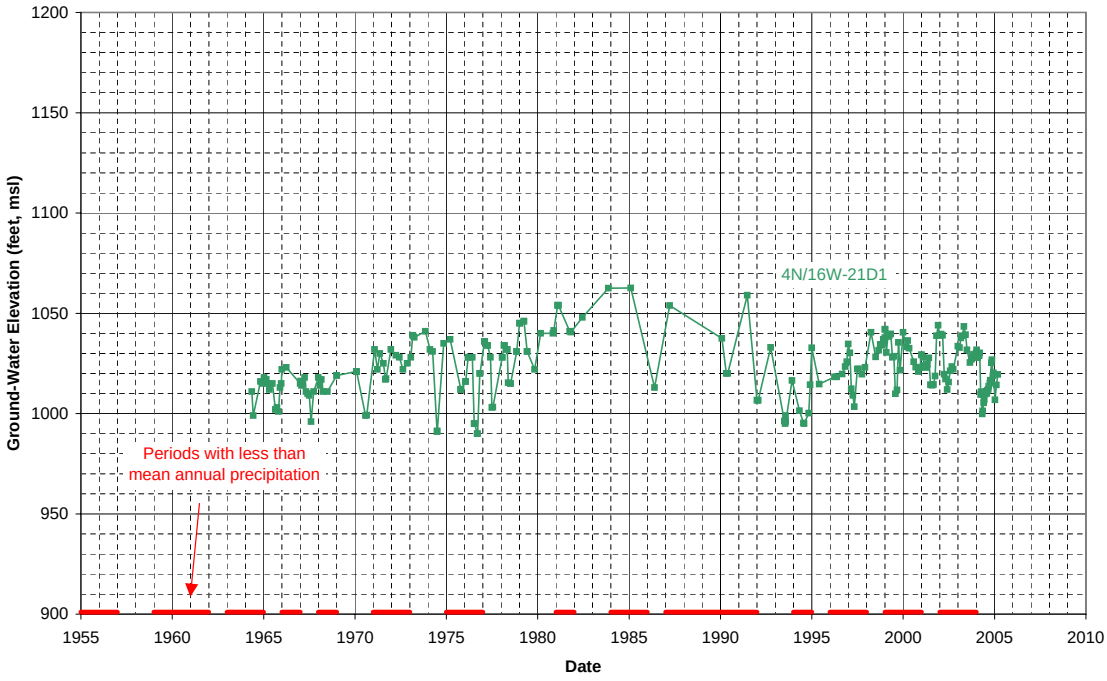


Figure C-10

show that fluctuations in pumping over multiple decades of varying hydrologic conditions will cause fluctuations in groundwater levels similar to what has historically occurred. Short-term declines during dry periods when Saugus pumping is temporarily increased are followed by recovery of water levels when pumping is reduced during wet/normal periods. The lack of any projected permanent decline in Saugus groundwater levels supports the reliability of the Saugus Formation as a long-term water supply at the capacities included in its operational yield.

Sustainability of Groundwater Supplies

Alluvial Aquifer – Based in part on historical operating experience, complemented by recent groundwater modeling work as described herein, it is planned that the Alluvial Aquifer can supply water on a long-term sustainable basis in the overall range of 30,000 to 40,000 afy, with a probable reduction in dry years to a range of 30,000 to 35,000 afy. Both of those ranges include about 15,000 afy of Alluvial pumping for current agricultural water uses and about 500 afy for small private water supply. The dry year reduction is a result of practical constraints in the eastern part of the Basin where lowered groundwater levels in dry periods have the effect of reducing pumping capacities in that shallower portion of the aquifer.

Until recently, the long-term renewability of Alluvial groundwater was empirically determined from approximately 60 years of recorded experience as previously described: long-term stability in groundwater levels and storage, with some dry period fluctuations in the eastern part of the Basin, over a historical range of Alluvial pumpage from as low as about 20,000 afy to as high as about 43,000 afy. Over the last couple of years, those empirical observations have been complemented by the development and application of a numerical groundwater flow model, has been used to predict aquifer response to the planned operating ranges of pumping. The numerical groundwater flow model has also been used to analyze the control of contaminant migration under selected pumping conditions that would restore, with treatment, pumping capacity that has been inactivated due to perchlorate contamination detected in some wells in the Basin.

To examine the yield of the Alluvium or, in other words, the sustainability of Alluvium on a renewable basis, the groundwater flow model was used to examine long-term projected response of the aquifer to pumping for municipal and agricultural uses in the 30,000 to 40,000 afy range under average/normal and wet conditions, and in the 30,000 to 35,000 afy range under locally dry conditions. To examine the response of the entire aquifer system, the model also incorporated pumping from the Saugus Formation in accordance with the normal (7,500-15,000 afy) and dry year (15,000-35,000 afy) operating plan for that aquifer. The model was run over a 78 year hydrologic period which was selected from actual historical hydrology (i.e., precipitation) to examine a number of hydrologic conditions that would be expected to affect both groundwater pumping and groundwater recharge. The selected 78-year simulation period was assembled from an assumed recurrence of 1980 to 2003 conditions, followed by an assumed

recurrence of 1950 to 2003 conditions. The 78-year period was analyzed to define both local hydrologic conditions (normal vs. dry), which affect the rate of pumping from the Alluvium, and hydrologic conditions that affect SWP operations, which in turn affect the rate of pumping from the Saugus. The resultant simulated pumping cycles included the distribution of pumping around the Basin for each of the existing wells, for normal and dry years respectively, shown in Tables C-1 and C-2.

The resultant pumping cycles are summarized as follows:

- Twenty-four years of dry year Alluvial pumping at 30,000 to 35,000 afy
- One drought of four consecutive dry years of Alluvial pumping at 30,000 to 35,000 afy
- Two droughts of three consecutive dry years each, with Alluvial pumping at 30,000 to 35,000 afy
- Three selected years with assigned dry-year Alluvial pumping despite near-normal or above-normal rainfall because each selected year was preceded by a multi-year drought
- Eighteen years of dry-year pumping from the Saugus, or an average of one dry year approximately every four years
- Two droughts lasting three years, plus (in both cases) a dry year that occurs two years before the beginning of each three-year drought and another dry year that begins one year after each three-year drought has ended; Saugus pumping was increased into the 15,000 to 35,000 afy range in all those years
- Two droughts lasting two years; Saugus pumping was increased into the 15,000 to 25,000 afy range in those years
- Sixty years of normal-year Saugus pumping, 7,500 to 15,000 afy

Simulated Alluvial aquifer response to the preceding range of hydrologic conditions and pumping stresses was essentially a long-term repeat of the historical conditions that have resulted from similar pumping over the last several decades. The resultant response consisted of (1) generally constant groundwater levels in the middle to western portion of the Alluvium, and fluctuating groundwater levels in the eastern portion of the Alluvium as a function of wet and dry hydrologic conditions, (2) variations in recharge that directly correlate with wet and dry hydrologic conditions, and (3) no long-term decline in groundwater levels or storage. Examples of projected groundwater levels and storage in various parts of the basin are illustrated in Figures C-11 through C-15. Based on the combination of actual experience with Alluvial aquifer pumping at capacities similar to those planned for the future and the resultant sustainability (recharge) of groundwater levels and storage, complemented by modeled projections of aquifer response to planned pumping rates that also show no depletion of groundwater, the Alluvial Aquifer is considered a sustainable water supply source to meet the Alluvial portion of the operating plan for the groundwater Basin.

TABLE C-1

Recent and Simulated Future Annual Groundwater Pumping Volumes from the Alluvial Aquifer

Analysis of Groundwater Basin Yield, Upper Santa Clara River Groundwater Basin, East Subbasin, Los Angeles County, California

		Historical Pumping			UWMP Pumping	
Well Name	**Location[a]**	**2001**	**2002**	**2003**	**Normal Years**	**Dry Years**
NCWD-Castaic 1	Castaic Valley	345	385	561	385	345
NCWD-Castaic 2	Castaic Valley	166	0	123	166	125
NCWD-Castaic 3	Castaic Valley	0	0	0	0	0
NCWD-Castaic 4	Castaic Valley	100	47	56	100	45
NCWD-Pinetree 1	Mint Canyon	164	0	0	164	0
NCWD-Pinetree 2	Mint Canyon	0	0	0	0	0
NCWD-Pinetree 3	Mint Canyon	566	544	525	545	525
NCWD-Pinetree 4	Mint Canyon	300	5	0	300	0
NCWD Total		**1,641**	**981**	**1,265**	**1,660**	**1,040**
NLF-161	Downstream of Valencia WRP	496	485	2,021	485	485
NLF-B10	Downstream of Valencia WRP	1,240	534	344	344	344
NLF-B11	Downstream of Valencia WRP	205	232	271	232	232
NLF-B5	Downstream of Valencia WRP	1,680	2,280	1,582	1,582	1,582
NLF-B6	Downstream of Valencia WRP	1,312	2,175	1,766	1,766	1,766
NLF-B7	Downstream of Valencia WRP	474	584	402	584	584
NLF-C	Downstream of Valencia WRP	1,319	1,720	1,373	1,373	1,373
NLF-C3	Downstream of Valencia WRP	93	192	186	192	192
NLF-C4	Downstream of Valencia WRP	1,028	809	764	809	809
NLF-C5	Downstream of Valencia WRP	680	850	622	850	850
NLF-C6	Downstream of Valencia WRP	231	241	108	241	241
NLF-C7	Downstream of Valencia WRP	741	866	443	866	866
NLF-C8	Downstream of Valencia WRP	293	594	408	594	594
NLF-E	Castaic Valley	1,691	16	28	16	16
NLF-E2	Castaic Valley	141	55	14	55	55
NLF-E4	Downstream of Valencia WRP	0	0	0	0	0
NLF-E5	Downstream of Valencia WRP	172	679	537	679	679
NLF-E9	Downstream of Valencia WRP	238	814	47	814	814
NLF-G45	Downstream of Valencia WRP	291	283	60	283	283
NLF-W4	San Francisquito Canyon[b]	46	1	0	0	0
NLF-W5	San Francisquito Canyon	276	104	23	107	107
NLF-X3	Downstream of Valencia WRP	12	0	0	0	0
NLF Total		**12,659**	**13,514**	**10,999**	**11,872**	**11,872**
SCWD-Clark	Bouquet Canyon	696	782	712	782	700
SCWD-Guida	Bouquet Canyon	1,047	1,320	1,230	1,320	1,230
SCWD-Honby	Above Saugus WRP	721	696	874	696	870
SCWD-Lost Canyon 2	Mint Canyon	741	730	644	741	640
SCWD-Lost Canyon 2A	Mint Canyon	1,034	905	593	1,034	590
SCWD-Mitchell #5A	Mint Canyon	407	143	19	0	0
SCWD-Mitchell #5B	Mint Canyon	0	150	0	557	0
SCWD-N. Oaks Central	Mint Canyon	822	1,646	1,641	822	1,640
SCWD-N. Oaks East	Mint Canyon	1,234	448	485	1,234	485
SCWD-N. Oaks West	Mint Canyon	898	1,123	31	898	0
SCWD-Sand Canyon	Mint Canyon	930	705	195	930	195
SCWD-Sierra	Mint Canyon	846	87	0	846	0
SCWD-Stadium	Above Saugus WRP	565	778	0	800	800
SCWD Total		**9,941**	**9,513**	**6,424**	**10,660**	**7,150**

TABLE C-1

Recent and Simulated Future Annual Groundwater Pumping Volumes from the Alluvial Aquifer

Analysis of Groundwater Basin Yield, Upper Santa Clara River Groundwater Basin, East Subbasin, Los Angeles County, California

		Historical Pumping			UWMP Pumping	
Well Name	**Location[a]**	**2001**	**2002**	**2003**	**Normal Years**	**Dry Years**
VWC-D	Castaic Valley	645	772	687	690	690
VWC-I	San Francisquito Canyon	0	0	0	0	0
VWC-K2	Downstream of Saugus WRP[c]	669	955	364	0	0
VWC-L2	Downstream of Saugus WRP[d]	349	490	71	0	0
VWC-N	Downstream of Saugus WRP	591	700	622	620	620
VWC-N3	Downstream of Saugus WRP[e]	226	857	255	0	0
VWC-N4	Downstream of Saugus WRP[f]	458	909	248	0	0
VWC-N7	Downstream of Saugus WRP				1,160	1,160
VWC-N8	Downstream of Saugus WRP				1,160	1,160
VWC-Q2	Downstream of Saugus WRP	923	1,167	1,451	985	985
VWC-S6	Downstream of Saugus WRP	1,490	1,320	2,134	865	865
VWC-S7	Downstream of Saugus WRP	564	419	1,095	865	865
VWC-S8	Downstream of Saugus WRP	327	190	409	865	865
VWC-T2	Above Saugus WRP	900	696	1,014	460	460
VWC-T4	Above Saugus WRP	690	831	799	460	460
VWC-U3	Above Saugus WRP[g]	956	572	823	0	0
VWC-U4	Above Saugus WRP	942	796	934	935	935
VWC-U6	Above Saugus WRP	0	0	0	825	825
VWC-W10	San Francisquito Canyon	182	0		0	0
VWC-W11	San Francisquito Canyon	806	939	764	600	600
VWC-W6	San Francisquito Canyon[h]	0	0	36	865	865
VWC-W9	San Francisquito Canyon				350	350
VWC Total		**10,718**	**11,613**	**11,706**	**11,705**	**11,705**
Robinson Ranch	Mint Canyon				932	400
WHR (All Wells)	Castaic Valley	1,604	1,602	2,273	1,600	1,600
Total Alluvial Aquifer Pumping		**36,563**	**37,223**	**32,667**	**38,429**	**33,767**

[a]See Figure 2-4 for well locations.

[b]Former well NLF-W4 was located approximately 900 feet west of existing production well VWC-11.

[c]Former well VWC-K2 was located approximately 210 feet south of existing production well VWC-N7.

[d]Former well VWC-L2 was located approximately 150 feet southeast of existing production well VWC-N7.

[e]Former well VWC-N3 was located approximately 440 feet northeast of existing production well VWC-N8.

[f]Former well VWC-N4 was located approximately 430 feet southeast of existing production well VWC-N8.

[g]Former well VWC-U3 was located approximately 2,300 feet northeast of existing production well VWC-U4.

[h]Former well VWC-W6 was located approximately 575 feet northeast of existing production well VWC-11.

Notes:

All pumping volumes are listed in AF/yr. Blank entries for historical pumping indicate that the well did not exist at that time.

Wells that are not listed are assumed to not be pumping in the future.

NLF = Newhall Land & Farming Company

UWMP = Urban Water Management Plan

VWC = Valencia Water Company

WHR = Wayside Honor Rancho, whose wells are owned by the Los Angeles County Waterworks District No. 36

TABLE C-2

Simulated Annual Groundwater Pumping from the Saugus Formation for the 78-year Simulation

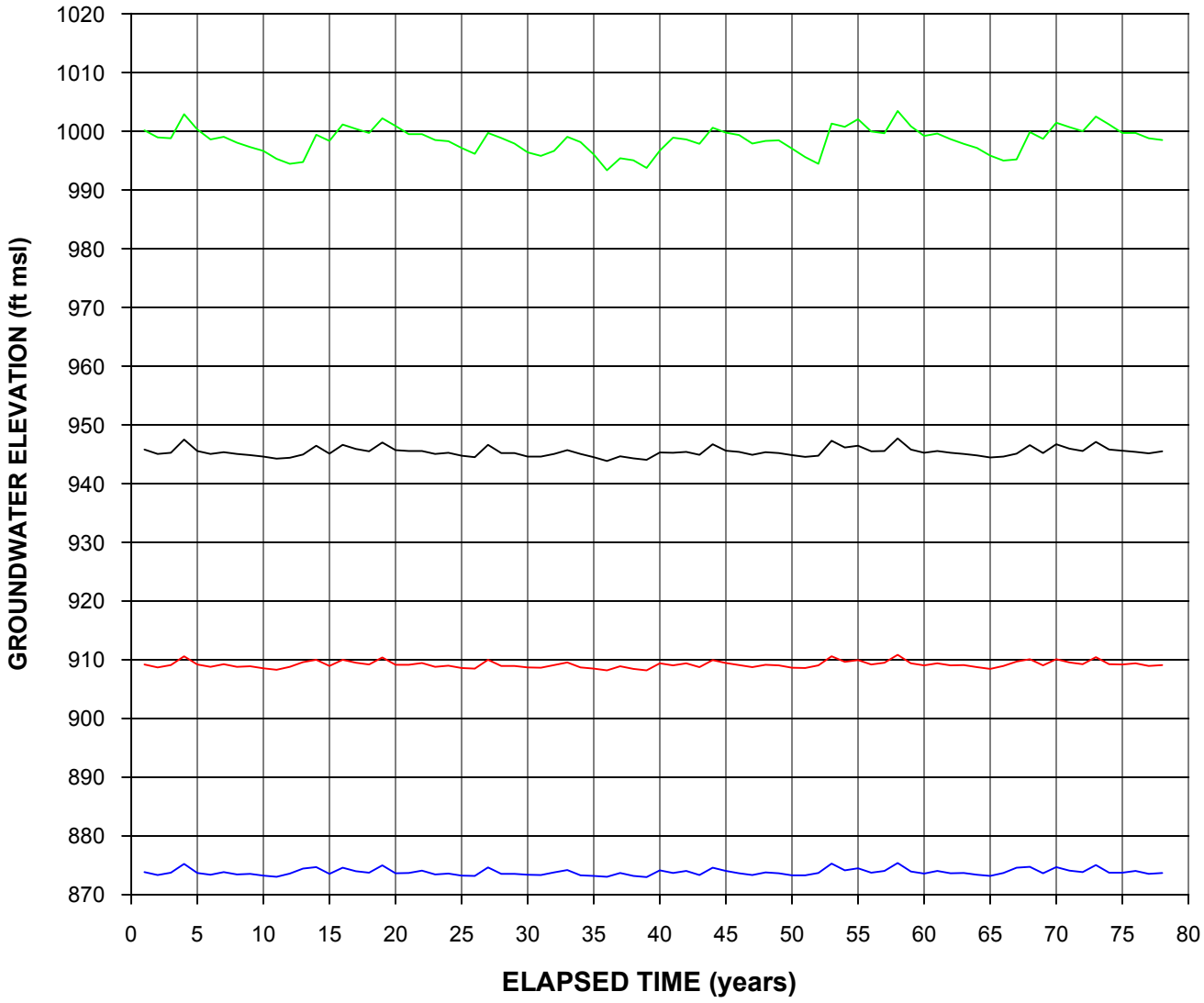
Analysis of Groundwater Basin Yield, Upper Santa Clara River Groundwater Basin, East Subbasin, Los Angeles County, California

Owner	Well Name	Normal Years	Dry Year 1	Dry Year 2	Dry Year 3
NCWD	11	811	811	811	811
	12	1,315	2,044	2,044	2,044
	13	1,315	2,044	2,044	2,044
Total Pumping (NCWD)		**3,441**	**4,899**	**4,899**	**4,899**
NLF	156	369	369	369	369
Total Pumping (NLF)		**369**	**369**	**369**	**369**
SCWC	Saugus1	1,772	1,772	1,772	1,772
	Saugus2	1,772	1,772	1,772	1,772
Total Pumping (SCWC)		**3,544**	**3,544**	**3,544**	**3,544**
VWC	159	50	50	50	50
	160 (Municipal)	500	830	830	830
	160 (Valencia Country Club)	500	500	500	500
	201	100	100	3,577	3,577
	205	1,000	2,734	3,827	3,827
	206	1,175	2,734	3,500	3,500
Total Pumping (VWC)		**3,325**	**6,948**	**12,284**	**12,284**
To Be Determined	Future #1	0	0	3,250	3,250
	Future #2	0	0	0	3,250
	Future #3	0	0	0	3,250
	Future #4	0	0	0	3,250
Total Pumping (Future)		**0**	**0**	**3,250**	**13,000**
Total Saugus Formation Pumping		**10,679**	**15,760**	**24,346**	**34,096**

Notes:

All pumping volumes are listed in acre-feet.

Wells VWC-157 and NCWD-7, 8, 9, and 10 are assumed to no longer operate in the future.



NOTE:

1. SEE FIGURE 2-4 FOR LOCATIONS OF WELLS. WELL NLF-TOPCO1 IS LOCATED 210 feet SOUTHWEST OF WELL NLF-B11.

FIGURE C-11
SIMULATED AVERAGE ANNUAL GROUNDWATER ELEVATIONS IN THE ALLUVIAL AQUIFER WEST OF INTERSTATE 5
ANALYSIS OF GROUNDWATER BASIN YIELD
UPPER SANTA CLARA RIVER GROUNDWATER BASIN
EAST SUBBASIN, LOS ANGELES COUNTY, CALIFORNIA

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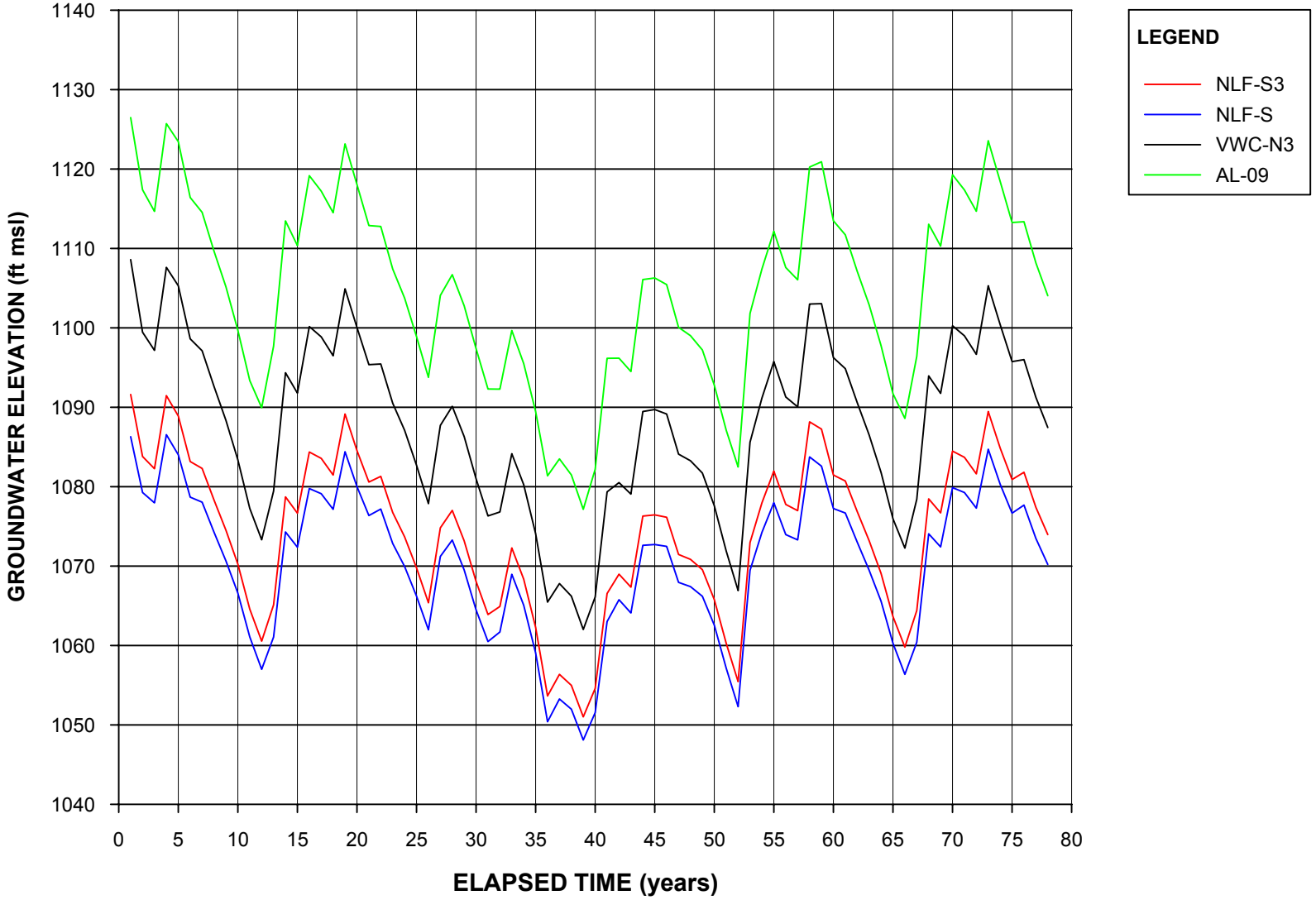

NOTES:

1. AL09 IS A CLUSTER OF OBSERVATION WELLS LOCATED 845 feet SOUTHWEST OF PRODUCTION WELL VWC-Q2.

2. THE REMAINING HYDROGRAPHS REPRESENT FORMER ALLUVIAL AQUIFER WELLS THAT HAVE BEEN ABANDONED AND THEREFORE ARE NOT PUMPED IN THE MODEL SIMULATIONS. RELATIVE TO EXISTING WELLS SHOWN ON FIGURE 2-4, THESE FORMER WELLS WERE LOCATED AS FOLLOWS:

   – WELL NLF-S3 WAS LOCATED 305 feet EAST OF WELL VWC-S6
   – WELL NLF-S WAS LOCATED 940 feet SOUTHWEST OF WELL VWC-S6
   – WELL VWC-N3 WAS LOCATED 435 feet NORTHEAST OF WELL VWC-N8

FIGURE C-12
SIMULATED AVERAGE ANNUAL GROUNDWATER ELEVATIONS IN THE ALLUVIAL AQUIFER EAST OF INTERSTATE 5
ANALYSIS OF GROUNDWATER BASIN YIELD
UPPER SANTA CLARA RIVER GROUNDWATER BASIN
EAST SUBBASIN, LOS ANGELES COUNTY, CALIFORNIA

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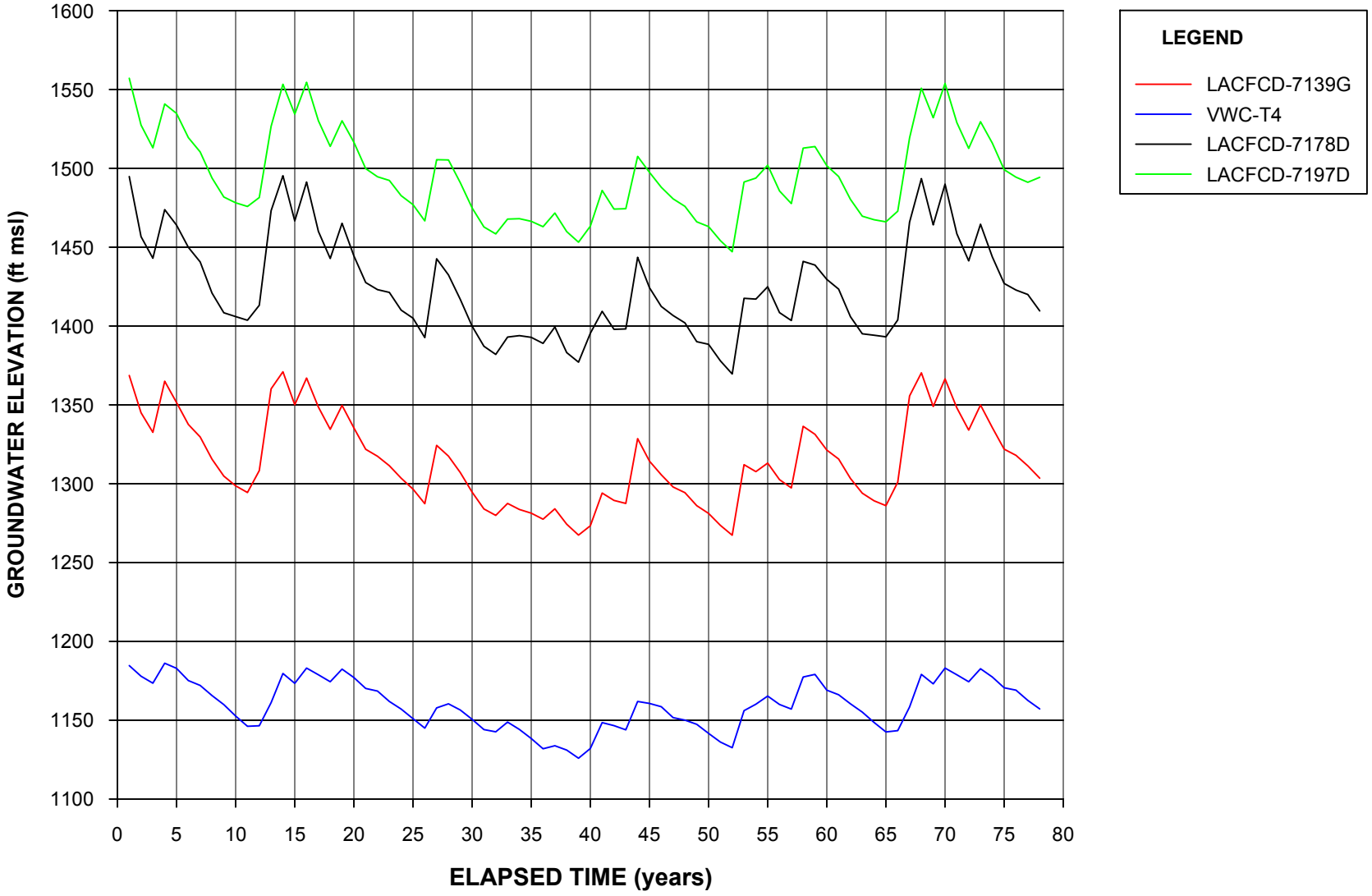

NOTES:

1. SEE FIGURE 2-4 FOR LOCATIONS OF WELLS.
2. LOWEST HISTORICAL GROUNDWATER ELEVATION FOR VWC- T4 = 1101 ft msl; ALLUVIUM BOTTOM ELEVATION ~1050 TO 1065 ft msl.
3. LOWEST HISTORICAL GROUNDWATER ELEVATION FOR LACFCD-7139G = 1289 ft msl; ALLUVIUM BOTTOM ELEVATION ~1256 ft msl OR LOWER.
4. LOWEST HISTORICAL GROUNDWATER ELEVATION FOR LACFCD-7178D = 1463 ft msl; ALLUVIUM BOTTOM ELEVATION ~1398 TO 1425 ft msl.
5. LOWEST HISTORICAL GROUNDWATER ELEVATION FOR LACFCD-7197D = 1474 ft msl; ALLUVIUM BOTTOM ELEVATION ~1423 TO 1447 ft msl.

FIGURE C-13
SIMULATED AVERAGE ANNUAL GROUNDWATER ELEVATIONS IN THE ALLUVIAL AQUIFER IN SOLEDAD CANYON
ANALYSIS OF GROUNDWATER BASIN YIELD
UPPER SANTA CLARA RIVER GROUNDWATER BASIN
EAST SUBBASIN, LOS ANGELES COUNTY, CALIFORNIA

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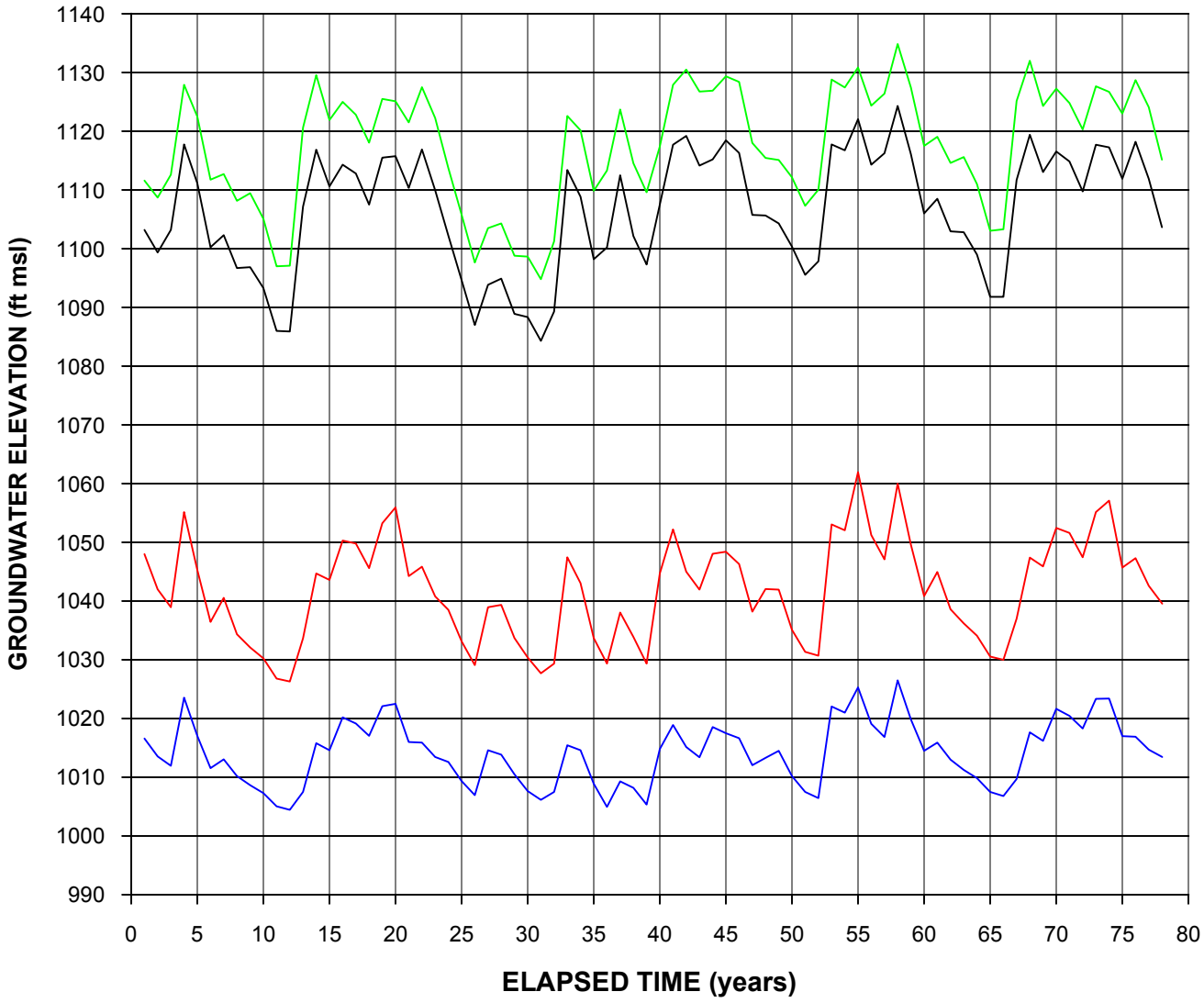
CH2MHILL



LEGEND

- LACFCD-6993A
- VWC-D
- LACFCD-6981D
- LACFCD-6980E

NOTE:

1. SEE FIGURE 2-4 FOR LOCATIONS OF WELLS.

FIGURE C-14
SIMULATED AVERAGE ANNUAL GROUNDWATER ELEVATIONS IN THE ALLUVIAL AQUIFER ALONG CASTAIC CREEK
ANALYSIS OF GROUNDWATER BASIN YIELD
UPPER SANTA CLARA RIVER GROUNDWATER BASIN
EAST SUBBASIN, LOS ANGELES COUNTY, CALIFORNIA

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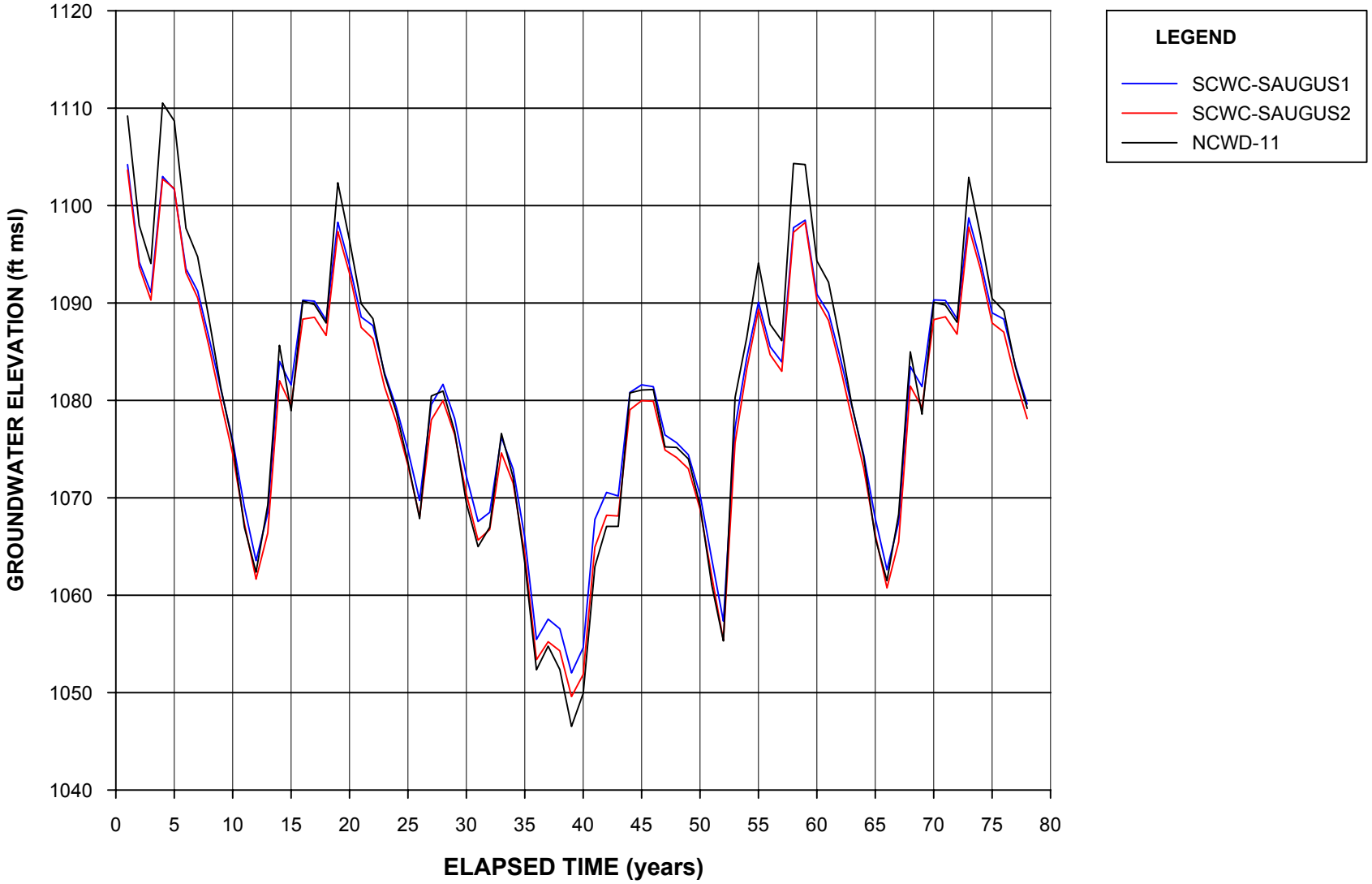

NOTES:

1. SEE FIGURE 2-4 FOR LOCATIONS OF WELLS.
2. THESE WELLS ARE CONSTRUCTED IN THE SAUGUS FORMATION AND ARE NOT OPEN TO THE ALLUVIAL AQUIFER. THE SIMULATED HYDROGRAPHS AT THESE WELL LOCATIONS ARE FOR GROUNDWATER LEVELS IN THE ALLUVIAL AQUIFER, ABOVE THE OPEN INTERVALS OF THESE WELLS.

FIGURE C-15
SIMULATED AVERAGE ANNUAL GROUNDWATER ELEVATIONS IN THE ALLUVIAL AQUIFER ALONG THE SOUTH FORK SANTA CLARA RIVER
ANALYSIS OF GROUNDWATER BASIN YIELD
UPPER SANTA CLARA RIVER GROUNDWATER BASIN
EAST SUBBASIN, LOS ANGELES COUNTY, CALIFORNIA

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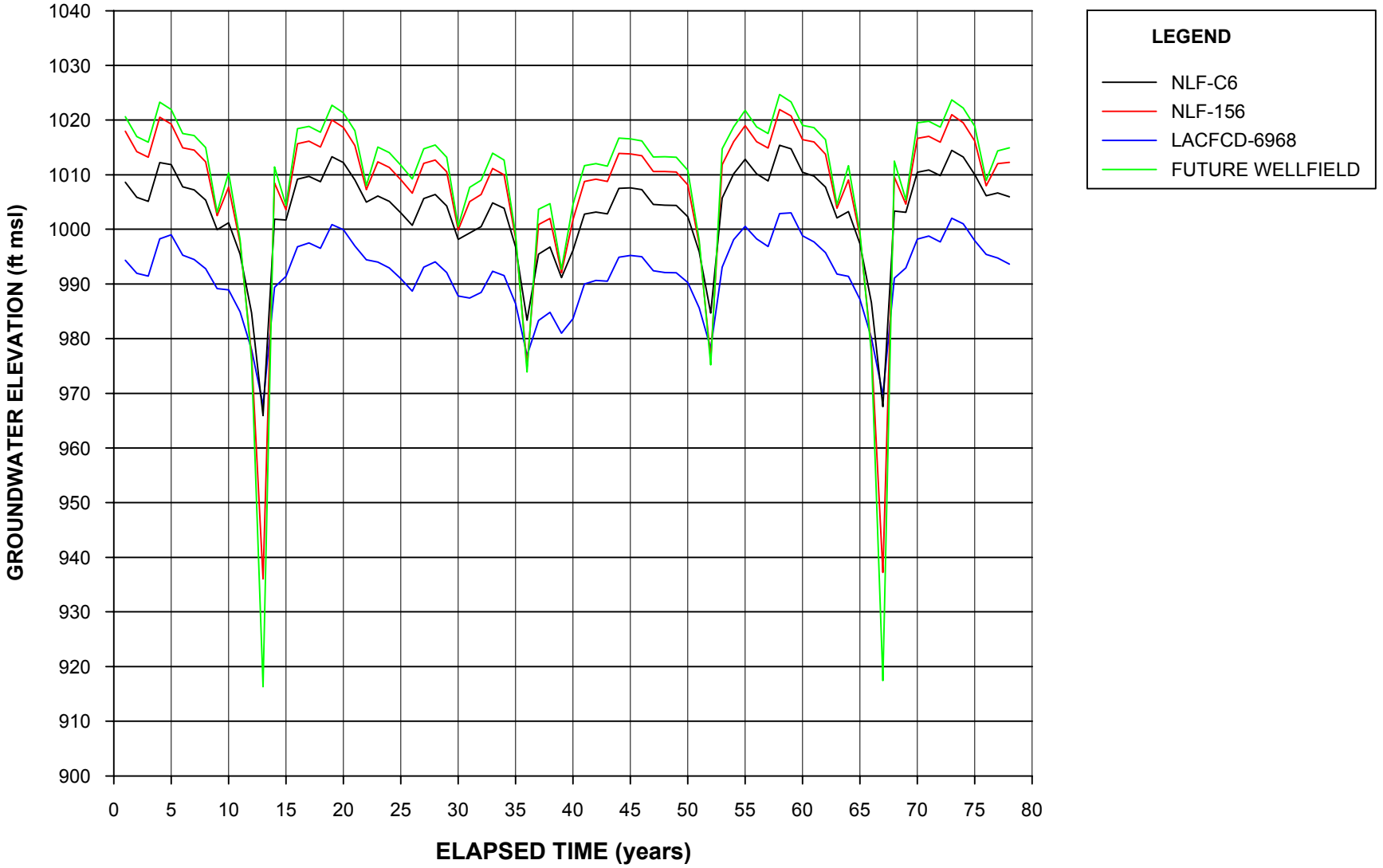
Saugus Formation – Based partially on historical operating experience, complemented by extensive recent testing and groundwater modeling work as described herein, it is planned that the Saugus Formation aquifer can supply water on a long-term sustainable basis in a normal range of 7,500 to 15,000 afy, with intermittent increases to 25,000 to 35,000 af in multiple dry years. The dry-year increases result from limited historical observation, now complemented by modeled projections, that a small amount of the large groundwater storage in the Saugus Formation can be pumped over a relatively short (dry) period, followed by recharge (replenishment) of that storage during a subsequent wet to normal period when pumping would be reduced.

Until recently, the long-term sustainability of Saugus groundwater was empirically determined from limited historical experience. The historical record shows fairly low annual pumping in most years, with one four-year period of increased pumping up to about 15,000 afy, that produced no long-term depletion of the substantial groundwater storage in the Saugus. As with the Alluvium, those empirical observations have now been complemented by the development and application of the numerical groundwater flow model. The model has been used to examine aquifer response to the operating plan for pumping from both the Alluvium and the Saugus, and to examine the effectiveness of pumping for both contaminant extraction and control of contaminant migration within the Saugus Formation.

To examine the yield of the Saugus Formation or, in other words, its sustainability on a renewable basis, the groundwater flow model was used to examine long-term projected response to pumping from both the Alluvium and the Saugus, over the 78-year period of hydrologic conditions to introduce alternating wet and dry periods as have historically occurred. The pumping simulated in the model was in accordance with the operating plan for the Basin. For the Saugus, simulated pumpage included the planned restoration of recent historic pumping from the perchlorate-impacted wells. That pumping was analyzed to assess, in addition to the overall recharge of the Saugus, the effectiveness of controlling the migration of perchlorate by extracting and treating contaminated water close to the source of contamination.

Simulated Saugus Formation response to the ranges of pumping under assumed recurrent historical hydrologic conditions was consistent with actual experience under smaller pumping rates. The response consisted of (1) short-term declines in groundwater levels and storage near pumped wells during dry-period pumping, (2) rapid recovery of groundwater levels and storage after cessation of dry-period pumping, and (3) no long-term decreases or depletion of groundwater levels or storage. Examples of projected groundwater levels and storage around the planned Saugus pumping areas are illustrated in Figures C-16 and C-17. The combination of actual experience with Saugus pumping and recharge up to about 15,000 afy, now complemented by modeled projections of aquifer response that show long-term utility of the Saugus at 7,500 to 15,000 afy in normal years and rapid recovery from higher pumping rates during intermittent dry periods, shows that the Saugus Formation can be considered a sustainable water supply source to meet the Saugus portion of the operating plan for the groundwater Basin.



NOTES:

1. SEE FIGURE 2-4 FOR LOCATIONS OF WELLS.
2. WELLS NLF-C6 AND LACFCD-6968 ARE CONSTRUCTED IN THE ALLUVIAL AQUIFER AND ARE NOT OPEN TO THE SAUGUS FORMATION. THE SIMULATED HYDROGRAPHS SHOWN AT THESE WELL LOCATIONS ARE FOR GROUNDWATER LEVELS IN THE SAUGUS FORMATION, BELOW THE OPEN INTERVALS OF THESE WELLS.
3. THE SIMULATED HYDROGRAPH FOR THE FUTURE WELLFIELD IS FOR A MODEL NODE WITH NO ASSIGNED PUMPING, LOCATED INSIDE THE WELLFIELD NEAR VWC-206.

FIGURE C-16
SIMULATED AVERAGE ANNUAL GROUNDWATER ELEVATIONS IN THE SAUGUS FORMATION WEST OF INTERSTATE 5
ANALYSIS OF GROUNDWATER BASIN YIELD
UPPER SANTA CLARA RIVER GROUNDWATER BASIN
EAST SUBBASIN, LOS ANGELES COUNTY, CALIFORNIA

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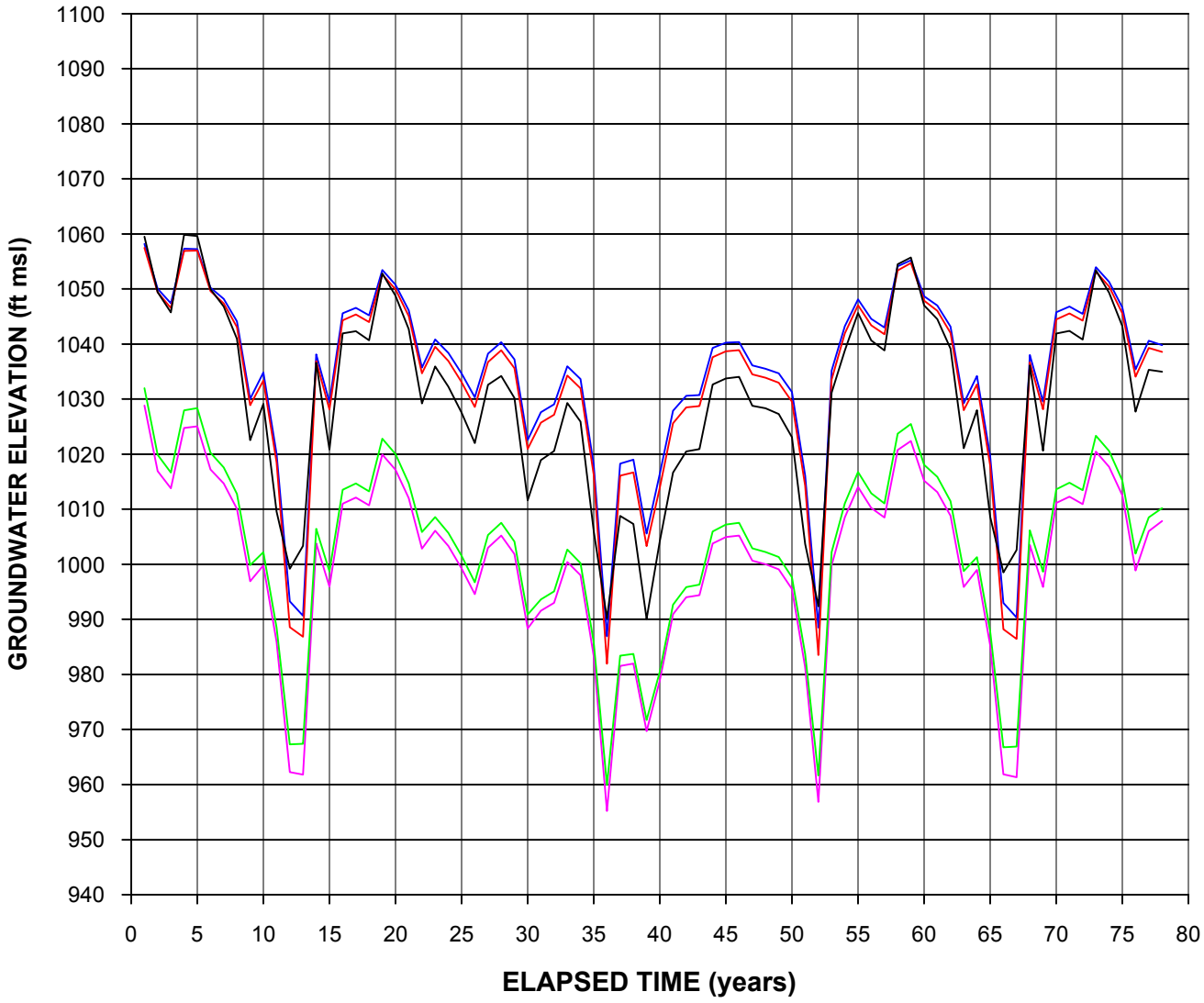

NOTE:

1. SEE FIGURE 2-4 FOR LOCATIONS OF WELLS.

FIGURE C-17
SIMULATED AVERAGE ANNUAL GROUNDWATER ELEVATIONS IN THE SAUGUS FORMATION EAST OF INTERSTATE 5
ANALYSIS OF GROUNDWATER BASIN YIELD
UPPER SANTA CLARA RIVER GROUNDWATER BASIN
EAST SUBBASIN, LOS ANGELES COUNTY, CALIFORNIA

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Appendix D

Contamination and Impact on Groundwater Supplies in the Santa Clarita Valley

Appendix D

Perchlorate Contamination and Impact on Groundwater Supplies in the Santa Clarita Valley

Introduction

The detection of perchlorate in Santa Clarita Valley groundwater supplies has raised concerns over the reliability of those supplies, in particular the Saugus Formation where four wells have been removed from active service as a result of perchlorate. As discussed below, planning for remediation of the perchlorate and restoration of the impacted well capacity is substantially underway. While that work is being completed, non-impacted production facilities can be relied upon for the quantities of water projected to be available from the Alluvial Aquifer and Saugus Formation during the time necessary to restore perchlorate-impacted wells. CLWA, the local retail water purveyors, the California Department of Toxic Substances Control (DTSC), and the U.S. Army Corps of Engineers (ACOE) continue to work closely on the perchlorate contamination issue, which reasonably ensures a prompt response to any significant changes in conditions.

The following is a discussion of pertinent events related to perchlorate contamination. This discussion is provided to illustrate that work toward the ultimate remediation of the perchlorate contamination, including the reactivation of impacted groundwater supply wells, has progressed on several integrated fronts over the last four years. The following discussion is organized into a section which summarizes the on-site investigations and clean-up activities which are under the regulatory control of DTSC, followed by several sections that focus on various aspects of the off-site impacts of perchlorate on water supply wells, and the ongoing activities to remediate that problem and restore the impacted water supply.

On-Site Investigations and Clean-up

On-site investigation is substantially underway and clean-up is in the planning stages at the former Whittaker-Bermite facility. The on-site investigation and clean-up activities at the source of the contamination are under the regulatory authority and control of DTSC.

Brief History[1]

The Whittaker-Bermite site is located in the center of the Santa Clarita Valley and was operated as an explosives and munitions manufacturing, testing, and storage facility since the late 1930's. It was first owned by the Los Angeles Powder Company and later by Golden State Fireworks, the Halifax Explosives Company, the Bermite Powder Company, and the Whittaker Corporation (Whittaker), which assumed ownership of the site in 1967. Under contracts with the U.S. Department of Defense, Whittaker Corporation used perchlorate in the manufacture of solid propellants for rockets and missiles until operations ceased in 1987. There is a long history of

[1] See, "General Site History," Whittaker Bermite Clean-Up, http://www.whittaker-bermite.com/history.html, pp. 1-3.

perchlorate use and other chemical use at the site, and recent surface and subsurface investigations at the site have revealed the presence of perchlorate and other contaminants in soil and groundwater.

The contaminants found in the soil that require clean-up are perchlorate and volatile organic compounds (VOCs). These chemicals were used in the manufacturing and testing of fireworks, dynamite, oil-field explosives, and munitions. The site consists of about 996 acres, with actual production facilities occupying approximately 50 acres. The property is characterized by chaparral covering the undisturbed portions of the site, fire breaks, dirt roads and remnants of facility foundations and buildings. The surrounding areas include commercial, light industrial, and residential land uses. The facility was closed in 1987 and most of the structures on the property were removed at or about that time.

Between 1987 and 1998, Whittaker conducted environmental investigations and clean-up activities under the supervision of DTSC and its predecessor agency. In 1994, Whittaker entered into an enforceable agreement with DTSC to conduct a comprehensive site-wide investigation of areas of concern. In early 1997, with the remedial investigations underway, DTSC informed Whittaker that the soils, groundwater, and surface runoff would have to be reassessed for the presence of perchlorate, a compound that had been unregulated during the entire period of manufacturing at the site.

In 1998, Whittaker sold the property to Santa Clarita LLC, a brownfield development company. In addition to assuming all clean-up responsibilities, Santa Clarita LLC acquired the right to develop the property contingent upon the full cleanup and certification of the property's reuse by DTSC. Between 1999 and 2001, Santa Clarita LLC continued and expanded the site investigation and clean-up programs that had been initiated by Whittaker under the 1994 agreement. In 2002, however, with Santa Clarita LLC unable to fund additional site work due to financial difficulties, DTSC opened negotiations with Whittaker to resume site investigation and clean-up work. In November 2002, DTSC issued an Order that required Whittaker to complete the site investigations and feasibility studies for all contaminants of concern under a tight time schedule.

Recent Site Activities[2]

Because the site is so large, DTSC has divided the property into separate and distinct areas called Operable Units (OUs), which are defined largely by topographic features as shown in Figure D-1. OUs 1 through 6 comprise soils and perched groundwater zones from the ground surface to 200 feet below grade. OU-7 comprises soils below 200 feet from grade and site-wide groundwater and surface water, including any off-site migration of contaminants.

[2] See, "Recent Site Activities," http://www.whittaker-bermite.com/recent.html, pp. 1-5; see also, letter from Hassan Amini, Ph.D., C.HG., Geomatrix Consultants, Inc., to Sayareh Amir, DTSC, dated August 20, 2004, pp. 1-20; and letters from Hassan Amini, Ph.D., C.HG., Geomatrix Consultants, Inc., to Sayareh Amir, DTSC, dated August 25 and 26, 2004.

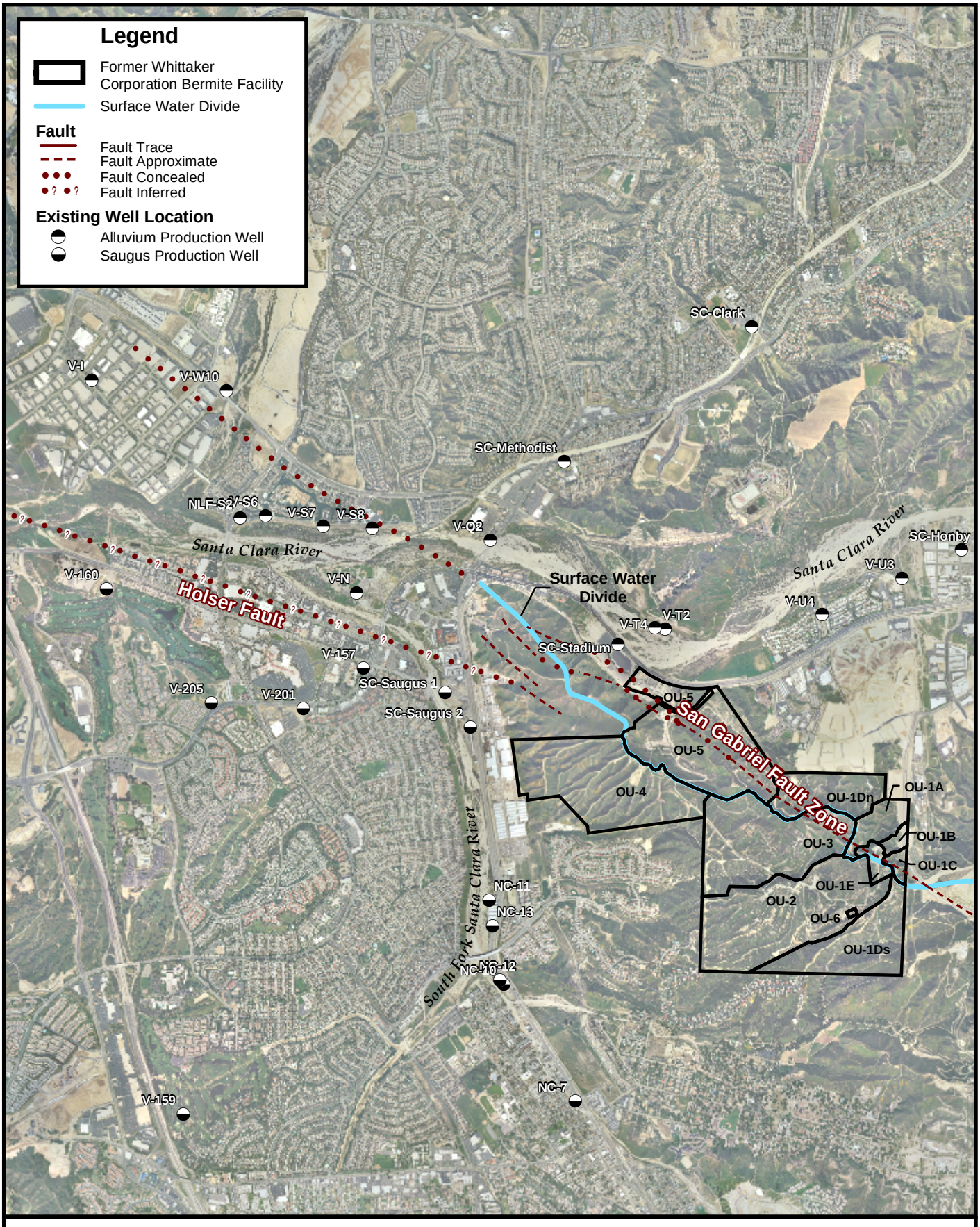


Figure D-1
Site Location
Former Whittaker-Bermite Facility

In complying with DTSC's Order, Whittaker consultants and contractors have conducted a significant amount of work since December 2002. The work has been performed pursuant to workplans submitted to and approved by DTSC. The principal activities, summarized by OU, include (1) additional remedial investigations, including soil samples, borings, exploratory trenching, and groundwater monitoring wells, (2) feasibility reports, treatability studies, and pilot tests, and (3) remedial action plans.[3] These efforts have included expediting the final remedial investigation reports, feasibility studies and remedial action plan for OU-1 soils. The final draft remedial action plan for OU-1 was submitted to DTSC in May 2004, and represents the results of efforts to initiate soil remediation work this year in some of the key source areas.[4]

In October 2004, DTSC issued a second public notice requesting comments on DTSC's proposal to clean-up perchlorate and other contaminants in the soil at OU-1.[5] Because of the different chemical and physical properties of the contaminants and the different types of soils in the impacted areas, DTSC has evaluated seven soil remediation alternatives that would protect human health and the environment. DTSC proposes to clean up perchlorate and VOCs in the soil by using a combination of the identified remediation alternatives.[6]

In addition, remedial investigation field work for the soil in OUs 2, 3, 4, 5 and 6 is almost complete, with the investigation results indicating it would be most expedient to conduct the remaining remedial response work for soils by modifying DTSC's Order to allow Whittaker to prepare and submit comprehensive site-wide documents for soil clean-up (e.g., remedial investigation, feasibility study, baseline risk assessment, and remedial action plan), rather than OU-specific documents.[7]

Whittaker also recently submitted a letter to DTSC requesting modifications to DTSC's Order, as it relates to the groundwater remedial response work for the area designated OU-7.[8] Although substantial progress has been made in OU-7, the remedial investigation and feasibility study field work for OU-7 is still ongoing.[9] Whittaker has proposed a tentative schedule for completing site-wide investigation and groundwater remediation work. The work is scheduled to be completed in 2005.[10]

In OU-7, in close coordination with the ACOE, CLWA, and local retail water purveyors, Whittaker has been conducting remedial investigation and clean-up work with respect to production wells impacted by the perchlorate contamination.[11] As part of that effort, ACOE has

[3] See, "Recent Site Activities," http://www.whittaker-bermite.com/recent.html, pp. 1-4.
[4] See, letter from Hassan Amini, Ph.D., C.HG., Geomatrix Consultants, Inc., to Sayareh Amir, DTSC, dated August 20, 2004, p. 1.
[5] See, DTSC: Site Cleanup, Whittaker-Bermite Facility (former), Fact Sheet - October 2004, http://www.dtsc.ca.gov/SiteCleanup/Whittaker_Bermite/, p. 2.
[6] See, DTSC: Site Cleanup, Whittaker-Bermite Facility (former), Fact Sheet - May 2004, http://www.dtsc.ca.gov/SiteCleanup/Whittaker_Bermite/, p. 2.
[7] See, letter from Hassan Amini, Ph.D., C.HG., Geomatrix Consultants, Inc., to Sayareh Amir, DTSC, dated August 25, 2004, pp. 1-2.
[8] See, letter from Hassan Amini, Ph.D., C.HG., Geomatrix Consultants, Inc., to Sayareh Amir, DTSC, dated August 26, 2004, pp. 1-2.
[9] *Id.*
[10] *Id.*
[11] See, "Recent Site Activities," http://www.whittaker-bermite.com/recent.html, p. 4.

been investigating the nature and extent of the perchlorate contamination impacting the production wells. In OU-7, Whittaker, CLWA, the local retail water purveyors, and ACOE have conducted the following remedial investigation and feasibility study work in 2002-2004:

- Installed and sampled approximately 30 temporary Alluvial Aquifer monitoring wells
- Installed 12 permanent Alluvial Aquifer monitoring wells
- Installed and sampled six temporary Saugus monitoring wells on and off the site
- Installed five deep multi-port Saugus monitoring wells, four within the site boundaries and one off-site
- Installed one deep single-port Saugus monitoring well within the site boundaries
- Installed cluster wells at four locations to monitor discrete Saugus Formation zones, two within and two outside the site boundaries
- Conducted several rounds of groundwater monitoring for new and existing wells
- Constructed and calibrated a computer model capable of simulating aquifer conditions for development and evaluation of plume containment and treatment strategies
- Conducted aquifer pumping and permeability tests
- Conducted sampling of some of the impacted production wells
- Conducted pilot-scale testing of above-ground treatment options for removing perchlorate from drinking water, including ion exchange and bioremediation.[12]

Remedial response actions for groundwater is continuing through 2005. The schedule contemplates additional remedial investigations, feasibility studies, interim remedial measures, and a remedial action plan for groundwater. The remedial action plan will include the design, construction, and commencement of treatment of perchlorate-contaminated groundwater from two of the retail water purveyors' impacted production wells, which would concurrently provide treated potable water and contain and capture the OU-7 perchlorate plume along its downgradient edges. [13]

For contaminated surface waters on site, Whittaker updated the site-wide surface water sampling plan subject to the approval of DTSC and the Regional Water Quality Control Board (RWQCB).[14] Whittaker collected surface water samples from the primary site drainages during winter storm events in 2003 and 2004. In addition, Whittaker updated the site's stormwater pollution plan and devised and implemented erosion control measures in various areas of the site. Whittaker also conducted a sediment sampling program for the principal drainage areas.[15]

[12] *Id.* at pp. 4-5.
[13] See, letter from Hassan Amini, Ph.D., C.HG., Geomatrix Consultants, Inc., to Sayareh Amir, DTSC, dated August 20, 2004, pp. 16-19.
[14] See, "Recent Site Activities," http://www.whittaker-bermite.com/recent.html, p. 5.
[15] *Id.*

In short, the investigation of on-site sources of the perchlorate contamination and evaluation of clean-up options are substantially underway and closely monitored by DTSC (soils and groundwater), RWQCB (surface water), and ACOE (groundwater).

Perchlorate Impacted Water Purveyor Wells

As previously noted, in 1997, perchlorate was detected in four Saugus Formation production wells operating near the former Whittaker-Bermite site. These wells, CLWA Santa Clarita Water Division's (SCWD) Wells Saugus 1 and Saugus 2, Newhall County Water District's (NCWD) Well NC-11 and Valencia Water Company's (VWC) Well V-157, were removed from service. In 2002, perchlorate was detected in the SCWD Stadium well located directly adjacent to the Whittaker-Bermite site. This Alluvial well was also removed from service. Locations of the impacted wells, and other nearby non-impacted wells, relative to the Whittaker-Bermite site are shown on Figure D-1.

Since the detection of perchlorate and resultant inactivation of impacted wells, the retail water purveyors have been conducting regular monitoring of active wells near the Whittaker-Bermite site. In late March 2005, that monitoring detected the presence of perchlorate in VWC's Well Q2, an Alluvial well located immediately northwest of the confluent of Bouquet Creek and the Santa Clara River. As a result of the detection and confirmation of perchlorate in its Well Q2, VWC removed the well from active service and pursued rapid permitting and installation of wellhead treatment. The well was returned to water supply service in October 2005.

Regulatory Standards for Perchlorate

Perchlorate is a chemical salt and is very soluble in water. It is also very mobile in water and is persistent (i.e., doesn't degrade) under typical environmental conditions. The applicable drinking water standards for perchlorate are summarized below.

On December 6, 2002, the California Office of Environmental Health Hazard Assessment (OEHHA) proposed a public health goal (PHG) for the amount of perchlorate present in drinking water. OEHHA's proposal suggested a range of 2 to 6 micrograms per liter (µg/l). A proposed PHG is a theoretical calculation that initiates a thorough, multi-year standard-setting process by DHS. An adopted PHG reflects a very stringent health standard and is not an enforceable drinking water standard. A final PHG contributes to DHS' development of a Maximum Contaminant Level (MCL), which is an enforceable drinking water standard. DHS is required to establish an MCL at a level as close as is technically and economically feasible to the PHG.

In addition to OEHHA's proposal, DHS was required to adopt an MCL for perchlorate by January 1, 2004. However, this date has been extended into 2005 to allow additional review and study by DHS. Presently, there is no drinking water standard, or MCL, for perchlorate, only a provisional limit called an "action level". The perchlorate advisory action level is currently 6 µg/l, and is not an enforceable standard.

When perchlorate was first discovered in California drinking water supplies in 1997, DHS set the advisory action level at 18 µg/l. It was revised to 4 µg/l in January 2002 and then finally to its current level of 6 µg/l in March 2004. In September 2004, Assembly Bill 2528 was signed into law by Governor Schwarzenegger. This bill eliminates the term "action level" and replaces it with two new terms, "notification level" and "response level". This new terminology became

effective January 2005. However, DHS has advised public water systems that they may use the new terminology in advance of the effective date. Using this new approach, the term "notification level" is the same as the "action level". With respect to perchlorate, the notification level would be 6 µg/l and DHS recommends that the utility provide information to its customers about the presence of the contaminant using its annual consumer confidence report. The response level for perchlorate is 10 times the notification level, or 60 µg/l. At this level, DHS recommends the source be removed from service. At perchlorate levels greater than ten times the action level (or 60 µg/l), DHS recommends (or may require) that a water system remove the source(s) of supply with that concentrations from service. However, with the primary interest of protecting public health from those contaminants regulated by an action level, water utilities normally employ conservative operations by limiting use of the contaminated source, or elect to deliver an alternate source of supply until DHS establishes an enforceable drinking water standard (i.e., MCL). Accordingly, the local retail water purveyors removed all the perchlorate-impacted wells from active water supply service. At present, while prepared to comply with evolving terms, the retail water purveyors have adopted an intended goal in restoring impacted capacity to utilize groundwater for water supply at non-detect concentrations of perchlorate. This goal is consistent with the DHS Policy 97-005 for use of impaired water sources.

Water Purveyor Litigation and Interim Settlement

On November 29, 2000, CLWA and the local retail water purveyors filed suit against the current and prior owners of the Whittaker-Bermite facility. The lawsuit includes causes of action relating to payment of all necessary costs of response, removal of the perchlorate contamination, payment of remediation action costs, and compensation for other damages associated with the perchlorate contamination. CLWA and the local retail water purveyors have incurred substantial response costs and other expenses as a result of production lost on account of the contamination. As a result, CLWA's purveyors have used SWP water to make up for lost groundwater production.

In late summer 2003, CLWA, the local retail water purveyors, Whittaker and Remediation Financial, Inc. (RFI) and Santa Clarita LLC (SCLLC) entered into an interim settlement agreement, in which the parties agreed to work cooperatively for a minimum of one year to further define long-term costs and possibly achieve a long-term settlement. The interim settlement agreement specifies that Whittaker, RFI, and SCLLC and/or their insurers will reimburse certain past costs as well as fund studies and prepare cost estimates for the clean-up plan that will restore water production and capacity of the impacted wells and protect other wells from future contamination. The interim settlement provided for a one-year stay of the lawsuit between the parties and was subsequently amended to extend the stay through January 31, 2005. This has allowed the parties to focus on the final elements of the clean-up plan, which will be submitted to the regulatory agencies in early 2005. The parties continue negotiations to reach a complete settlement.

United States Army Corps of Engineers (ACOE) Groundwater Study

In early 2002, the owner of the Whittaker-Bermite property and CLWA initiated efforts to obtain federal assistance to conduct onsite and off-site groundwater investigations. Through Congressman McKeon, an initial federal authorization of seven million dollars was provided in the form of participation by the ACOE.

Toward that end, on April 11, 2002, ACOE and CLWA entered into a Feasibility Cost-Sharing Agreement to study and locate the source of perchlorate contamination, and other contaminants of interest (COI), in the groundwater in the Santa Clarita Valley. The main objective of the ACOE/CLWA study is to sufficiently characterize the existing groundwater conditions, develop and evaluate both interim and long-term solutions to the contamination and address the contaminated groundwater in the study area, which includes the former Whittaker-Bermite facility and areas adjacent to the property. The project is being implemented pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and in October 2004, the ACOE issued its report entitled, "Draft Final Conceptual Hydrology Memorandum, Eastern Santa Clara Subbasin Study, Santa Clarita, California".[16]

ACOE is actively testing the groundwater in the region in two major phases. ACOE completed five rounds of groundwater sampling in the Saugus Formation and the Alluvial Aquifer between October 2002 and April 2004.[17] ACOE drilled over 8,500 linear feet in the study area, and installed 41 groundwater monitoring wells at 11 different locations. Groundwater sampling was performed at all 41 wells, collecting a total of 149 groundwater samples. The testing began with an initial baseline assessment of each well[18] and was followed by additional groundwater sampling events of each well.[19] As a result of the testing program, ACOE identified the concentrated source areas, began tracing and understanding the contaminant plume, and developed two-dimensional geologic cross-sectional drawings of the study area.[20]

As a result of the sampling program, ACOE determined that perchlorate appears to be one of the primary COIs in the groundwater.[21] Perchlorate was detected in a monitoring well and reconnaissance sampling points in the Alluvial Aquifer approximately one mile west of the former Whittaker-Bermite facility at Bouquet Junction.[22] Additionally, ACOE found perchlorate in a monitoring well in the Alluvial Aquifer at the mouth of Oakdale Canyon in the South Fork of the Santa Clara River, apparently caused by surface water runoff from the former Whittaker-Bermite facility.[23] Testing at this monitoring well has revealed that perchlorate may have migrated vertically into the Saugus Formation at this location, which may have caused the contamination of the NC-11 well, one of the wells that has been inactivated.[24]

[16] See, ACOE, Los Angeles District, Draft Final Conceptual Hydrogeology Technical Memorandum (Memorandum), October, 2004, p.ES-1.
[17] See, Memorandum, p.ES-2; see also, ACOE, Los Angeles District, Citizens Advisory Group Update on City of Santa Clarita Eastern Santa Clara Subbasin Groundwater Study (Update), June 9, 2004, p.6.
[18] The initial baseline sampling tested for perchlorate, volatile organic compounds (VOCs), explosive compounds, nitrosamines and other contaminants of interest (COIs) (i.e., 1,4-dioxane, semivolatile organic compounds (SVOCs), chlorate, gross alpha and gross beta, cyanide and hexavalent chromium). The wells were also tested for metals (including major cations), major anions, alkalinity, total Kjedahl nitrogen (TKN), nitrate, ammonia, total dissolved solids (TDS), biochemical oxygen demand (BOD), chemical oxygen demand (COD) and total organic compound (TOC). See, Memorandum, p.ES-3.
[19] See, Memorandum, p.ES-3; Section 6.1.
[20] See, Update, p.7.
[21] See, Memorandum, p.ES-5; Section 6.1.
[22] See, Memorandum, p.ES-5; Section 6.1; see also, Update, p.15.
[23] See, Memorandum, p. ES-5; see also, Update, p.16.
[24] See, Memorandum, p.ES-5; Section 6.1.

In the Saugus Formation, ACOE found perchlorate in a monitoring well west of Bouquet Junction, over two miles from the former Whittaker-Bermite facility.[25] However, it appears that the impact on groundwater in this area of the Saugus Formation may be limited to the upper portions of the Saugus Formation, as the contamination was not detected below hydrostratigraphic unit (HSU) SIII. The contamination of the V-157 and SC-Saugus 1 and 2 wells, which also have been deactivated, appears to be caused by the vertical downward migration of perchlorate in HSU SIII, and lateral migration away from the source areas. It also appears that the NC-11 well also may have been impacted by this contaminant plume.[26]

As a result of ACOE's work to date, the extent of perchlorate contamination in the Santa Clara region is better understood. Further work will continue to define the lateral and vertical extent of the contaminated groundwater in the Saugus Formation and Alluvial Aquifer, and evaluate potential changes in groundwater contaminants over time.[27] Therefore, ACOE plans to continue integrating its current study results with other ongoing investigations in the area, including the remedial investigation by the Whittaker Company and the response activities undertaken by CLWA and the local retail water purveyors for impacted production wells.[28] ACOE also intends to complete further focused sampling programs and prepare follow-up technical memoranda of those test results.[29]

Based on the knowledge obtained by its testing and analysis, ACOE plans to implement interim remedial measures at selected locations to reduce the perchlorate concentration before it can disperse and/or interfere with the known transportation pathways. By these efforts, ACOE, in coordination with response actions of the property with oversight from DTSC, anticipates preventing further contamination and establishing source control.[30]

DTSC/CLWA/Purveyor Environmental Oversight Agreement

In February 2003, DTSC and CLWA, NCWD, SCWD, and VWC entered into an Environmental Oversight Agreement (Agreement) whereby DTSC provides review and oversight of the response activities being undertaken by CLWA and the local retail water purveyors relating to the detection of perchlorate in the five impacted wells.

The significance of the Agreement lies in the response actions to be undertaken in its "Scope of Work" (Exhibit B to the Agreement). Under the Scope of Work, CLWA and the retail water purveyors will prepare (1) Well Characterization Reports, (2) a Health-Based Risk Assessment, (3) a Regional Groundwater Flow Model, and (4) a Treatment Technology Evaluation Report. The regional groundwater flow model and the treatment technology evaluation are key inputs to the permitting for restoring the impacted wells by returning them to water supply service as described below. Both have been completed and are being utilized in conjunction to control contamination migration and restore impacted water supply well capacity. Most importantly, under the Scope of Work, CLWA and the retail water purveyors will prepare and implement a

[25] See, Memorandum, P.ES-5; see also, Update, p.9.
[26] See, Memorandum, p. ES-5; Section 6.1.
[27] See, Memorandum, p.ES-6; Section 6.2.
[28] See, Memorandum, p.ES-1.
[29] See, Update, p.17.
[30] See, ACOE, Los Angeles District, "Citizens Advisory Group Update on City of Santa Clarita Eastern Santa Clara Subbasin Groundwater Study," June 9, 2004, p.18.

Remedial Action Plan (RAP) that will be used in connection with water treatment programs and/or well relocation. The RAP is important to the retail water purveyors, who have been working cooperatively with DTSC to implement the groundwater clean-up. CLWA is planning to submit the RAP to DTSC for its review in early 2005.

Treatment Technology

A number of full scale perchlorate treatment systems have been implemented in California and other states. In an effort to evaluate the various available treatment technologies, CLWA commissioned an investigation to identify and evaluate alternative treatment processes effective in removing perchlorate. The scope of that investigation includes resolving permitting issues pertaining to the construction and certification of a treatment facility, conducting bench-scale and pilot-scale tests to determine treatment process performance, and preparing preliminary capital and operations and maintenance cost estimates.

Three treatment technologies, an ion exchange system and two biological systems, were selected for study. The report "Treatment of Perchlorate Contaminated Groundwater from the Saugus Aquifer, TM 3 Bench and Pilot Test Results" (Carollo Engineers, February 2004), concluded that all three systems were effective in removing perchlorate. However, there was considerable uncertainty with respect to the capital and operations and maintenance costs associated with each process. Therefore, a technical group comprised of representatives from CLWA, the retail water purveyors, and consultants retained by Whittaker-Bermite agreed to solicit competitive bids for the design, construction, and operation of both ion exchange and biological treatment systems. After thorough evaluation of several bids, the technical group determined that ion exchange is the preferred technology based upon treatment performance, ease of regulatory compliance, and comparison of costs associated with construction and operations and maintenance.

The preferred single-pass ion exchange treatment technology does not generate a concentrated perchlorate waste stream that would require additional treatment before discharge to a sanitary sewer or a brine line (if one is available). This technology incorporates an active resin (a material that attracts perchlorate molecules) that safely removes the perchlorate from water. The resin is contained in pressure vessels and the water is pumped through the vessel. The resin is eventually replaced with new resin after a period of time. The old resin is removed and transported by truck to an approved waste disposal site where it is safely destroyed. This technology is robust and reliable for use in drinking water systems. DHS has approved operation of the perchlorate treatment plants currently in operation at the following locations:

- La Puente Valley Water District (2,500 gpm)
- San Gabriel Valley Water Company, El Monte (7,800 gpm)
- California Domestic Water Company, Whittier (5,000 gpm)
- City of Riverside (2,000 gpm)
- West San Bernardino Water District, Rialto (2,000 gpm)
- City of Rialto (2,000 gpm)
- City of Colton (3,500 gpm)
- Fontana Union WC (5,000 gpm)
- City of Pomona (10,000 gpm)

Based on (1) the results of CLWA's investigation of perchlorate removal technologies, (2) the technical group's evaluation, and (3) DHS' approval of single-pass ion exchange for treatment in other settings, CLWA and the local retail water purveyors are planning single-pass ion exchange for the treatment technology for restoration of impacted capacity (wells) in accordance with the permitting, testing, and installation process as currently scheduled and described in the next section. The wellhead treatment installed at VWC Well Q2 is the same single-pass ion exchange as is planned for restoration of impacted Saugus well capacity.

Restoration of Perchlorate Impacted Water Supply

Since the detection of perchlorate in the four Saugus wells in 1997, CLWA and the retail water purveyors have recognized that one element of an overall remediation program would most likely include pumping from impacted wells, or from other wells in the immediate area, to establish hydraulic conditions that would control the migration of contamination from further impacting the aquifer in a downgradient (westerly) direction. Thus, CLWA and the retail water purveyors expect that the overall perchlorate remediation program could include dedicated pumping from some or all of the impacted wells, with appropriate treatment, such that two desirable objectives could both be achieved. The first objective is control of subsurface flow and protection of downgradient wells and the second is restoration of some or all of the contaminated water supply. Not all impacted capacity is required for control of groundwater flow. The remaining capacity would be replaced by construction of replacement wells at other non-impacted locations.

In cooperation with state regulatory agencies and investigators working for Whittaker-Bermite, CLWA and the local retail water purveyors developed an off-site plan that focuses on the above concepts of groundwater flow control and restored pumping capacity and is compatible with on-site and possibly other off-site remediation activities. Specifically relating to water supply, the plan includes the following:

- Constructing and operating a water treatment process that removes perchlorate from two impacted wells such that the produced water can be used for municipal supply
- Hydraulically containing the perchlorate contamination moving from the Whittaker-Bermite site toward the impacted wells by pumping the wells at rates that will capture water from all directions around them
- Protecting the downgradient non-impacted wells through the same hydraulic containment that results from pumping two of the impacted wells
- Restoring the annual volumes of water that were pumped from the impacted wells before they were inactivated, and also restoring the wells' total capacity to produce water in a manner consistent with the retail water purveyor's operational plan for groundwater supply

The current schedule for implementation of the plan to restore contaminated water supply (wells) is illustrated in Figure D-2. Included in the schedule is a planned extended test of the wells that will be returned to service as part of restoring contaminated water supply and that will also be operated to extract contaminated water and control the migration of contamination in the aquifer. Concurrent with the testing of the wells, several specific ion exchange resins will also be tested to evaluate their performance and longevity. The two key activities that comprise the majority of

effort required for implementation of the plan are general facilities-related work (design and construction of well facilities, treatment equipment, pipelines, etc.) and permitting work. Both activities are planned and scheduled concurrently resulting in planned completion (i.e., restoration of all impacted capacity) in 2006. Notable recent accomplishments toward implementation include completion of the Final Draft Interim Remedial Action Plan (RAP) in August 2005 and completion of environmental review with the adoption of a Mitigated Negative Declaration in September 2005.

In light of the preceding, with regard to the adequacy of groundwater as the local component of water supply in this UWMP, the impacted capacity will remain unavailable into 2006, during which time the non-impacted groundwater supply will be sufficient to meet near-term water requirements. Afterwards, the total groundwater capacity will be sufficient to meet the full range of normal and dry-year conditions as provided in the operating plan for groundwater supply, as described in Chapter 3 of this UWMP.

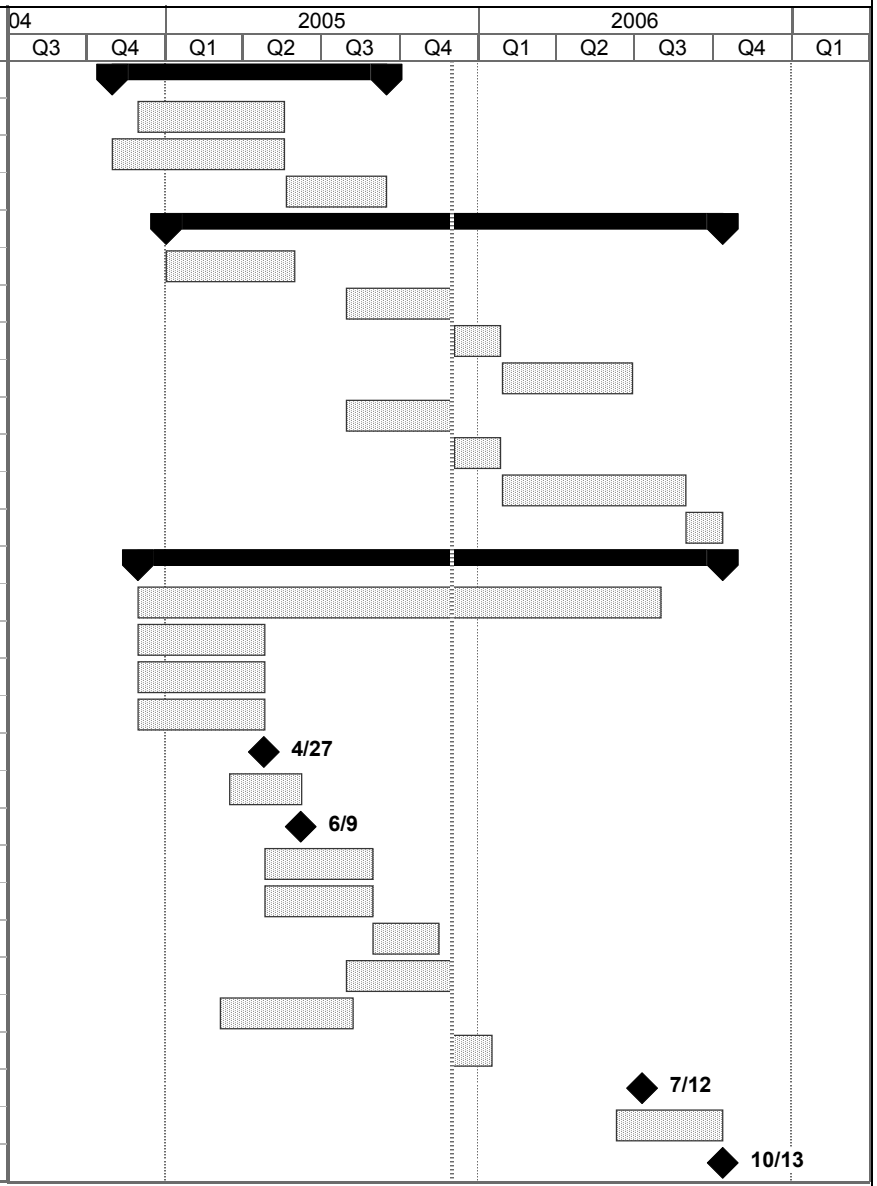
Returning contaminated wells to municipal water supply service by installing treatment requires issuance of permit from DHS before the water can be considered potable and safe for delivery to customers. The permit requirements are contained in DHS Policy Memo 97-005 for direct domestic use of impaired water sources. Before issuing a permit to a water utility for use of an impaired source as part of the utility's overall water supply permit, DHS requires that studies and engineering work be performed to demonstrate that pumping the wells and treating the water will be protective of public health for users of the water. The Policy Memo requires that DHS review the local retail water purveyor's plan, establish appropriate permit conditions for the wells and treatment system, and provide overall approval of returning the impacted wells to service for potable use. Ultimately, CLWA and the local retail water purveyor's plan and the DHS requirements are intended to ensure that the water introduced to the potable water distribution system has no detectable concentration of perchlorate.

The DHS 97-005 Policy Memo requires, among other things, the completion of a source water assessment for the impacted wells intended to be returned to service. The purpose of the assessment is to determine the extent to which the aquifer is vulnerable to continued migration of perchlorate and other contaminants of interest from the Whittaker-Bermite site. The assessment will include the following:

- Delineation of the groundwater capture zone caused by operating the impacted wells
- Identification of contaminants found in the groundwater at or near the impacted wells
- Identification of chemicals or contaminants used or generated at the Whittaker-Bermite facility
- Determination of the vulnerability of pumping the impacted wells to these contaminant sources

Figure D-2
Preliminary 97-005 Implementation Schedule
Castaic Lake Water Agency

ID	Task Name	Duration	Start	Finish
1	**DTSC Approval Activities**	**230 days**	**Mon 11/1/04**	**Fri 9/16/05**
2	Feasibility Study	6.15 mons	Wed 12/1/04	Fri 5/20/05
3	Draft RAP	29 wks	Mon 11/1/04	Fri 5/20/05
4	Final RAP	4.25 mons	Mon 5/23/05	Fri 9/16/05
5	**Implementation Activities**	**465 days**	**Mon 1/3/05**	**Fri 10/13/06**
6	Easements and ROW	5.4 mons	Mon 1/3/05	Wed 6/1/05
7	Treatment Design	4.4 mons	Mon 8/1/05	Wed 11/30/05
8	Treatment Bidding & Contracting	2 mons	Mon 12/5/05	Fri 1/27/06
9	Treatment Construction	5.5 mons	Mon 1/30/06	Fri 6/30/06
10	Pipeline Design	4.4 mons	Mon 8/1/05	Wed 11/30/05
11	Pipeline Bidding & Contracting	2 mons	Mon 12/5/05	Fri 1/27/06
12	Pipeline Construction	7.7 mons	Mon 1/30/06	Thu 8/31/06
13	System Startup	1.55 mons	Fri 9/1/06	Fri 10/13/06
14	**DHS Approval Activities (97-005)**	**488 days**	**Wed 12/1/04**	**Fri 10/13/06**
15	DHS Coordination	21.8 mons	Wed 12/1/04	Wed 8/2/06
16	TM1: Source Water Assessment	5.3 mons	Wed 12/1/04	Wed 4/27/05
17	TM2: Raw Water Quality Characterization	5.3 mons	Wed 12/1/04	Wed 4/27/05
18	TM3: Source Water Protection	5.3 mons	Wed 12/1/04	Wed 4/27/05
19	DHS Workshop No. 1	0 days	Wed 4/27/05	Wed 4/27/05
20	TM4: Effective Monitoring & Treatment	3 mons	Fri 3/18/05	Thu 6/9/05
21	DHS Workshop No. 2	0 days	Thu 6/9/05	Thu 6/9/05
22	TM5: Human Health Risk Assessment	4.5 mons	Thu 4/28/05	Wed 8/31/05
23	TM6: Alternative Source Assessment	4.5 mons	Thu 4/28/05	Wed 8/31/05
24	DHS Review of TMs 5 & 6	2.75 mons	Thu 9/1/05	Wed 11/16/05
25	Prepare 97-005 Engineer's Report	4.4 mons	Mon 8/1/05	Wed 11/30/05
26	CEQA Initial Study and Draft MND	5.55 mons	Mon 3/7/05	Mon 8/8/05
27	Permit Application	1.7 mons	Thu 12/1/05	Tue 1/17/06
28	Public Hearing	0 days	Wed 7/12/06	Wed 7/12/06
29	DHS Evaluation	4.5 mons	Mon 6/12/06	Fri 10/13/06
30	Obtain DHS Permit	0 days	Fri 10/13/06	Fri 10/13/06



Project: CLWA 97-005_r2
Date: Thu 12/1/05

Task
Split
Progress
Milestone
Summary
Project Summary
External Tasks
External Milestone
Deadline

CLWA is currently working directly with the retail water purveyors and its consultants on development of the DHS 97-005 Policy Memo permit application. Two coordination workshops have already been held with DHS. Drafts of all six elements of the 97-005 Policy Memo have been submitted to DHS and the retail purveyors for review, including: the Source Water Assessment, Raw Water Quality Characterization, Source Protection Plan, Effective Monitoring and Treatment Evaluation, Human Health Risk Assessment, and the Alternatives Sources Evaluation. The Engineer's Report, which summarizes these six elements for the 97-005 process, is anticipated to be complete by the end of November 2005.

As noted above, CLWA and the local retail water purveyors have recognized the probable need for some form of pumping in or near the impacted wells to extract contamination and protect downgradient non-impacted wells. As part of the permitting for use of impacted wells with treatment, DHS 97-005 Policy Memo requires an analysis to demonstrate contaminant capture and protection of other nearby water supply wells. The development and calibration of a numerical groundwater flow model of the entire basin was initiated as a result of a 2001 Memorandum of Understanding among the Upper Basin Water Purveyors (CLWA, CLWA SCWD, LACWWD #36, NCWD, and VWC) and the United Water Conservation District in Ventura County.

The groundwater model was initially intended for use in analyzing the yield and sustainability of groundwater in the Basin. Use of the model for that analysis is described in Chapter 3. The model was adaptable to analyze both the sustainability of groundwater under an operational scenario that includes full restoration of perchlorate-contaminated supply and the containment of perchlorate near the Whittaker-Bermite property (i.e., by pumping some of the contaminated wells), including preventing movement of perchlorate contamination to other portions of the aquifer system. DTSC reviewed and approved the construction and calibration of the regional model as described in the final model report "Regional Groundwater Flow Model for the Santa Clarita Valley, Model Development and Calibration" (CH2M Hill, April 2004).

After DTSC's approval of the model, it was used to simulate the capture and control of perchlorate by restoring impacted wells, with treatment, as described above. The results of that work were summarized in a second report "Analysis of Perchlorate Containment in Groundwater Near the Whittaker-Bermite Property, Santa Clarita, California" (CH2M Hill, December 2004). The modeling analysis indicate that the pumping of impacted wells SCWD-Saugus 1 and SCWD-Saugus 2 at rates of 1,200 gpm each on a nearly continual basis will effectively contain perchlorate migrating westward in the Saugus Formation from the Whittaker-Bermite property. The analysis also indicates that (1) no new production wells are needed in the Saugus Formation to meet the perchlorate containment objective, (2) impacted well NCWD-11 is not a required component of the containment program, and (3) pumping at SCWC-Saugus 1 and SCWC-Saugus 2 is necessary to prevent migration of perchlorate to other portions of the Saugus Formation.

This report also includes the general design of a sentinel groundwater monitoring network and program required by DHS as part of its 97-005 Policy Memo permitting. The perchlorate containment report was approved by DTSC in November 2004. With that approval, the model is now being used to support the source water assessment and the remainder of the permitting process required by DHS under its 97-005 Policy Memo.

Somewhat independent of the focus on impacted Saugus wells and restoration of that impacted water supply has been the Alluvial Stadium well. On-site investigations by Whittaker-Bermite since late 2003 have resulted in the completion, in June 2005, of a Workplan for a Pilot Remediation Pumping Program in the Northern Alluvium and certain on-site sub-areas that are east/southeast, or generally upgradient, of the impacted Stadium well. That program basically involves the establishment of containment, generally along the northern boundary of the Whittaker-Bermite site, upgradient of the Stadium well, by continuous pumping of a former Whittaker-Bermite facility well, at a continuous low capacity, complemented by pumping at several groundwater "hot spots" that are also generally upgradient of the Stadium well. Due to the low conductivity nature of the aquifer materials at the various "hot spots", pumping for containment at those locations would be from several wells at low pumping capacities. Extracted water would be treated at Whittaker-Bermite's existing on-site treatment system. Generally consistent with the Saugus restoration concept, the Northern Alluvium pumping program would have the concurrent objectives of preventing site-related contaminants from leaving the site and removing some contamination from groundwater such that it can be removed in the on-site treatment process prior to discharge of the water back to the groundwater Basin.

Appendix E

Project Description Excerpt from August 2005 "CLWA Groundwater Containment, Treatment, and Restoration Project" Mitigated Negative Declaration

Appendix E

Project Description Excerpt from August 2005 "CLWA Groundwater Containment, Treatment, and Restoration Project" Mitigated Negative Declaration

Containment/Treatment Facilities

The Proposed Project for containment/treatment is based on analysis of temporal and spatial variations in groundwater flow patterns using the Regional Groundwater Flow Model for Santa Clarita Valley ("*Draft Interim Feasibility Study*," Kennedy/Jenks 2005). Model development and calibration are described in the "*Regional Groundwater Flow Model for the Santa Clarita Valley: Model Development and Calibration*," CH2M HILL 2004. Based on the model, the movement of contaminated water from the Whittaker-Bermite Property in the Saugus Formation was in a westerly direction. The San Gabriel Fault Zone, which runs east-west through the northern portion of the Whittaker-Bermite Property, was determined to provide a partial barrier to northward migration of the perchlorate-contaminated groundwater, and perchlorate-contaminated water could therefore be intercepted at the existing Saugus 1 and Saugus 2 wells, which are located near the intersection of Magic Mountain Parkway and San Fernando Road. Pumping of groundwater along the leading edge of the plume at these wells would effectively create a cone of depression adjacent to the wells. Perchlorate-contaminated water would then flow into this cone of depression where it would be extracted. The volume of extraction was evaluated to match it to the inflow of perchlorate-contaminated water, thereby maintaining a cone of depression that does not induce migration of better quality groundwater from the Alluvial Aquifer into the cone of depression. An extraction rate of from 1,100 gpm to 1,250 gpm is proposed.

Once extracted, the contaminated water would then be treated to remove the perchlorate and utilized. Over time, this interception of the contaminated plume would (a) reduce downstream migration of the plume and (b) collect the perchlorate and permanently remove it from the groundwater basin. Given that no new contamination would occur up-gradient from the interceptor wells, this strategy should eventually remediate the perchlorate problem.

The primary elements of the Containment Facilities to be constructed and operated (Figure 4 [not included]; Table E-1) are new pumps for existing production wells, new monitoring wells, new pipelines, and a new treatment plant for perchlorate removal. In addition, several existing wells would be removed. These facilities would provide for extraction of contaminated groundwater, conveyance of this water to a treatment facility, and treatment to remove perchlorates. The treatment plant would be tied into existing CLWA distribution pipelines to deliver treated water. Containment facility elements and specifications are shown on Table E-1.

Table E-1
Proposed Project Perchlorate Containment Facilities

FACILITY	SITE	DESCRIPTION (SEE FIGURE 4 [Not Included])
New pumps	Saugus-1 and Saugus-2 wells	**New** variable speed up to 1200 gpm each, installed at existing well site.
Network of monitoring wells	North of Saugus-2 and adjacent to alluvial basin	**New** Small-diameter wells not used for production, located to characterize the contaminant plume and to monitor program effectiveness; included up gradient wells managed in cooperation with other entities.
Conveyance to Treatment Plant	Road rights of way and bike trail	**Segment 1: New** 10" pipeline from Saugus-2, along San Fernando Road to connect with an existing 14-21 inch pipeline on the east side of the South Fork of the Santa Clara River.
		Segment 2: **Connection** of segment 1 to an existing 14-21" pipeline under the Santa Clara River, along Magic Mountain Parkway, and north along Valencia Blvd. to the bridge at the South Fork of the Santa Clara River.
		Segment 3. **New** 16" pipeline under the Valencia Blvd. bridge at the South Fork of the Santa Clara River, along the north/west right-of-way of Valencia Boulevard, along a bike path around the gas station at Bouquet Canyon Bridge, suspended on the west side of Bouquet Canyon Bridge, then west along a bike path to the Rio Vista Intake Pump Station.
Treatment Plant	At Rio Vista Intake Pump Station	**New** one-train, two vessel ion exchange system using Amberlite PWA2 strong-base anion exchange resin followed by chloramination disinfection with a rated capacity of 2400 gpm.
Conveyance from Treatment Plant	West of Treatment Plant	**Connect new Treatment Plant to existing Rio Vista Intake Pump Plant** and CLWA's existing treated water pipeline.

Containment Facility Operation

Containment wells would initially be operated at 1,100 gpm, and then adjusted based on monitoring well data to achieve effective containment of perchlorates. Adjustments would be made in consultation with the Department of Toxic Substance Control (DTSC). Contaminants would be treated in accordance with DHS requirements.

The containment treatment facility utilizes disposable filters to remove perchlorates (US Filter). The dual vessel design of the facility would provide for continuous operation. Primary filtration would occur in Vessel 1, with Vessel 2 providing a final "polishing." When the filter in Vessel 1 requires replacement, primary filtration would switch to Vessel 2 while the filter in Vessel 1 is removed and replaced. Filters would then be collected from the facility and transported off site to an approved commercial disposal facility. The perchlorate treatment plant would be monitored on a continuous 24-hour basis at the adjacent Rio Vista Intake Pump Station using a Supervisory Control and Data Acquisition (SCADA) program.

Facilities for Restoration of Service

The containment element of the Proposed Project would restore up to 43% of production from the Saugus-1 and Saugus-2 wells. The permanent closure of VWC's V-157 well (V-157), NCWD's well number 11 (NC 11), and the Stadium well operated by CLWA's Santa Clara Water Division has created a deficit in local groundwater production of 6,300 gpm capacity, or about 3,838 afy. The containment project would also convert several existing pipelines from treated water use for conveyance of perchlorate-contaminated water to the treatment plant.

To restore local well production to pre-contamination levels and to restore service affected by conversion of existing facilities to carry untreated water, CLWA proposes to relocate production wells to areas outside of the zone of perchlorate contamination and to construct new conveyance facilities to replace the existing treated water pipelines that will be converted to convey water from Saugus 1 and Saugus 2 to the new treatment plant. This involves two elements (Figures 5 and 6 [not included]).

First, to replace lost production east of the confluence of the Santa Clara River and the South Fork of the Santa Clara River from closure of the Stadium Well, CLWA would relocate the Stadium Well from its location adjacent to the Stadium along the south bank of the Santa Clara River to a location about 0.6 miles upstream from the Stadium site to an existing CLWA facility at Furnivall Avenue and Santa Clara Street and would construct a short (50-100 foot) pipeline from the well to an existing 8-inch distribution line.

Second, in addition to VWC's new 2,500 gpm well northwest of Magic Mountain Amusement Park (hereafter MMA Park), CLWA would:

- Construct a new multiple-well 4,000 gpm facility (with chloramination facilities) along a dirt road to the west of the MMA Park), with wells connected via a 12-inch pipeline;
- Construct a new 18-inch treated water pipeline from CLWA's 48-inch pipeline at the McBean Parkway Bridge to a site opposite from NC 11; and
- Construct a new 18-inch groundwater pipeline along new road alignments that would connect these new wells directly to CLWA's existing 42-inch pipeline.

Long-term planning for CLWA's water storage and conveyance facilities includes potential development of a regulating reservoir southwest of the two proposed new wells. The regulating reservoir and the pipelines, which may be developed to connect it to the Proposed Project, are shown on Figure 6 [not included] for informational purposes and because they are addressed in the cumulative impacts discussion in this Initial Study. However, this reservoir facility and the pipelines needed to connect it to the Proposed Project are not a part of the Proposed Project and the Proposed Project does not depend upon them.

The wells, 12-inch connecting pipeline, chloramination facility, and 12-inch to 18-inch pipeline would be constructed within the road alignments of future planned roads. CLWA facilities would be constructed following the initial grading for these roads and the adjacent development. In combination with yield from the Saugus-1 and Saugus-2 wells and associated treatment plant, these actions would restore production lost due to perchlorate contamination and would restore service to areas previously served by the NC-11, V-157, and Stadium wells. Siting and details of the proposed restoration-of-service facilities are summarized on Table E-2. Note that the planned reservoir is not a part of the Proposed Project.

Chloramination Facilities

Chloramination facilities would be constructed at two sites: (a) at the new perchlorate treatment facility and (b) at the new well field west of MMA Park. Chloramines are formed by mixing sodium hypochlorate and ammonia, which are produced or stored in separate areas prior to mixing into the water stream. Several types of facilities would be considered during final design. Regardless of facility type, these facilities would be fully contained, and storage of water treatment chemicals would be within double-walled containers with separate containment back-up systems capable of holding 1.5 times the capacity of each chemical tank.

Table E-2
Proposed Project facilities for Restoration of Service

FACILITY	SITE	DESCRIPTION (SEE FIGURES 5 AND 6 [Not Included])
To replace Stadium Well		
New alluvial well	Furnivall Ave. & Santa Clara St.	**New** 800 gpm well and up to 100 foot long pipeline to connect to existing 8" pipeline.
To replace pumping capacity from contaminated wells to restore local dry year water supplies		
Well field and chloramination facility	West of MMA Park	**New** wells with a combined capacity of 4,000 gpm to be constructed along the unpaved perimeter road on the west boundary of the MMA Park, with a chloramination facility located at the last well along the 12" to 18" pipeline connecting these wells.
Pipeline from new wells to Existing 42" CLWA	West Magic Mountain Parkway to I-5	**Segment 4: New** 18" pipeline from the chloramination facility to Magic Mountain Parkway and then east along Magic Mountain Parkway to the terminus of CLWA's 42" pipeline at I-5.
Pipeline to serve area west of McBean Parkway	McBean Parkway to NC-11	**Segment 5. New** 33" pipeline along bikeway on south levee of the South Fork of the Santa Clara River to Valencia Boulevard; **Segment 6. New** 39" pipeline along Valencia Blvd. and Magic Mountain Parkway with a turnout west of San Fernando Road. **Segment 7. New** 18" pipeline from the Segment 5 turnout to San Fernando Road; and **Segment 8. New** turnout, connection to the CLWA existing 21" pipeline along the west side of the South Fork of the Santa Clara River, and 18" pipeline from the turnout parallel to CLWA's existing 21" pipeline along an access road to a site opposite NC-11, connecting to existing turnouts.

Appendix F
Best Management Practices

Reported as of 5/7/05

BMP 03: System Water Audits, Leak Detection and Repair

Reporting Unit:	BMP Form Status:	Year:
Castaic Lake Water Agency	**100% Complete**	**2003**

A. Implementation

1. Has your agency completed a pre-screening system audit for this reporting year?	yes
2. If YES, enter the values (AF/Year) used to calculate verifiable use as a percent of total production:	
a. Determine metered sales (AF)	44418
b. Determine other system verifiable uses (AF)	0
c. Determine total supply into the system (AF)	44838
d. Using the numbers above, if (Metered Sales + Other Verifiable Uses) / Total Supply is < 0.9 then a full-scale system audit is required.	0.99
3. Does your agency keep necessary data on file to verify the values used to calculate verifiable uses as a percent of total production?	yes
4. Did your agency complete a full-scale audit during this report year?	no
5. Does your agency maintain in-house records of audit results or the completed AWWA audit worksheets for the completed audit?	no
6. Does your agency operate a system leak detection program?	yes
a. If yes, describe the leak detection program:	
monthly review of metered sales vs. supply	

B. Survey Data

1. Total number of miles of distribution system line.	26
2. Number of miles of distribution system line surveyed.	26

C. System Audit / Leak Detection Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	5000	6000
2. Actual Expenditures	5000	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	No
a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."	

E. Comments

Reported as of 5/7/05

BMP 07: Public Information Programs

Reporting Unit:	BMP Form Status:	Year:
Castaic Lake Water Agency	**100% Complete**	**2003**

A. Implementation

1. Does your agency maintain an active public information program to promote and educate customers about water conservation? yes

a. If YES, describe the program and how it's organized.

Agency provides a quarterly community newsletter to approx. 2,000 people/organizatioms/elected officials. Utilize paid advertising, public and media events and Agency conservation garden to promote water conservation in service area.

2. Indicate which and how many of the following activities are included in your public information program.

Public Information Program Activity	Yes/No	Number of Events
a. Paid Advertising	yes	10
b. Public Service Announcement	yes	0
c. Bill Inserts / Newsletters / Brochures	yes	4
d. Bill showing water usage in comparison to previous year's usage	yes	
e. Demonstration Gardens	yes	15
f. Special Events, Media Events	yes	10
g. Speaker's Bureau	yes	3
h. Program to coordinate with other government agencies, industry and public interest groups and media	yes	

B. Conservation Information Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	147102	100000
2. Actual Expenditures	144283	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

A2d. Retailers are billed based on usage and are shown last year's usage of Agency wholesale production. B1 and B2. After 2003, began new accounting system, also re-organized personnel.

Reported as of 5/7/05

BMP 08: School Education Programs

Reporting Unit:	BMP Form Status:	Year:
Castaic Lake Water Agency	**100% Complete**	**2003**

A. Implementation

1.Has your agency implemented a school information program to promote water conservation? yes

2. Please provide information on your school programs (by grade level):

Grade	Are grade-appropriate materials distributed?	No. of class presentations	No. of students reached	No. of teachers' workshops
Grades K-3rd	yes	147	3033	0
Grades 4th-6th	yes	67	2421	0
Grades 7th-8th	yes	0	0	0
High School	yes	0	0	0

3. Did your Agency's materials meet state education framework requirements? yes

4. When did your Agency begin implementing this program? 09/01/1995

B. School Education Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	114670	115000
2. Actual Expenditures	110979	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Have expanded program to include more workshops, career days and job fairs. PROBLEM: increased school district emphasis on testing has made entry into Grades 7-12 very difficult.

Reported as of 5/7/05

BMP 10: Wholesale Agency Assistance Programs

Reporting Unit: **Castaic Lake Water Agency**

BMP Form Status: **100% Complete**

Year: **2003**

A. Implementation

1. Financial Support by BMP

BMP	Financial Incentives Offered?	Budgeted Amount	Amount Awarded	BMP	Financial Incentives Offered?	Budgeted Amount	Amount Awarded
1	No	0	0	8	yes	165852	162161
2	yes	10000	10000	9	No		
3	No			10	yes	93659	72659
4	No			11	No		
5	No			12	yes	58000	58000
6	No			13	No		
7	yes	147102	144283	14	yes	20000	20000

2. Technical Support

a. Has your agency conducted or funded workshops addressing CUWCC procedures for calculating program savings, costs and cost-effectiveness?	yes
b. Has your agency conducted or funded workshops addressing retail agencies' BMP implementation reporting requirements?	yes
c. Has your agency conducted or funded workshops addressing:	
1) ULFT replacement	yes
2) Residential retrofits	yes
3) Commercial, industrial, and institutional surveys	No
4) Residential and large turf irrigation	No
5) Conservation-related rates and pricing	No

3. Staff Resources by BMP

BMP	Qualified Staff Available for BMP?	No. FTE Staff Assigned to BMP	BMP	Qualified Staff Available for BMP?	No. FTE Staff Assigned to BMP
1	yes	.5	8	yes	10
2	yes	.5	9	yes	.5
3	yes	1	10	yes	2
4	yes	.5	11	yes	.5
5	yes	2.5	12	yes	2
6	yes	.5	13	yes	.5
7	yes	3	14	yes	.5

4. Regional Programs by BMP

BMP	Implementation/ Management Program?	BMP	Implementation/ Management Program?
1	No	8	yes
2	yes	9	yes
3	No	10	yes
4	No	11	No
5	yes	12	yes
6	No	13	No
7	yes	14	yes

B. Wholesale Agency Assistance Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	494613	500000
2. Actual Expenditures	467103	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Reported as of 5/7/05

BMP 11: Conservation Pricing

Reporting Unit:	BMP Form Status:	Year:
Castaic Lake Water Agency	**100% Complete**	**2003**

A. Implementation

Rate Structure Data Volumetric Rates for Water Service by Customer Class

1. Residential	
a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$6049713
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$3264000
2. Commercial	
a. Water Rate Structure	
b. Sewer Rate Structure	
c. Total Revenue from Volumetric Rates	$
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$
3. Industrial	
a. Water Rate Structure	
b. Sewer Rate Structure	
c. Total Revenue from Volumetric Rates	$
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$
4. Institutional / Government	
a. Water Rate Structure	
b. Sewer Rate Structure	
c. Total Revenue from Volumetric Rates	$
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$
5. Irrigation	
a. Water Rate Structure	
b. Sewer Rate Structure	
c. Total Revenue from Volumetric Rates	$
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$
6. Other	
a. Water Rate Structure	

b. Sewer Rate Structure

c. Total Revenue from Volumetric Rates $

d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources $

B. Conservation Pricing Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Reported as of 5/7/05

BMP 12: Conservation Coordinator

Reporting Unit:	BMP Form Status:	Year:
Castaic Lake Water Agency	**100% Complete**	**2003**

A. Implementation

1. Does your Agency have a conservation coordinator? yes
2. Is this a full-time position? no
3. If no, is the coordinator supplied by another agency with which you cooperate in a regional conservation program ? no
4. Partner agency's name:
5. If your agency supplies the conservation coordinator:
   - a. What percent is this conservation coordinator's position? 50%
   - b. Coordinator's Name Mary Lou Cotton
   - c. Coordinator's Title Water Resources Manager
   - d. Coordinator's Experience and Number of Years 11
   - e. Date Coordinator's position was created (mm/dd/yyyy) 02/15/2001
6. Number of conservation staff, including Conservation Coordinator. 3

B. Conservation Staff Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	68497	59000
2. Actual Expenditures	68497	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no
   - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

One position filled for only part of calendar year.

Reported as of 5/7/05

BMP 03: System Water Audits, Leak Detection and Repair

Reporting Unit:	BMP Form Status:	Year:
Castaic Lake Water Agency	**100% Complete**	**2004**

A. Implementation

1. Has your agency completed a pre-screening system audit for this reporting year?	yes
2. If YES, enter the values (AF/Year) used to calculate verifiable use as a percent of total production:	
a. Determine metered sales (AF)	46669
b. Determine other system verifiable uses (AF)	0
c. Determine total supply into the system (AF)	47088
d. Using the numbers above, if (Metered Sales + Other Verifiable Uses) / Total Supply is < 0.9 then a full-scale system audit is required.	0.99
3. Does your agency keep necessary data on file to verify the values used to calculate verifiable uses as a percent of total production?	yes
4. Did your agency complete a full-scale audit during this report year?	no
5. Does your agency maintain in-house records of audit results or the completed AWWA audit worksheets for the completed audit?	no
6. Does your agency operate a system leak detection program?	yes
a. If yes, describe the leak detection program:	
monthly review of metered sales vs. supply	

B. Survey Data

1. Total number of miles of distribution system line.	26
2. Number of miles of distribution system line surveyed.	26

C. System Audit / Leak Detection Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	6000	6000
2. Actual Expenditures	6000	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	No
a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."	

E. Comments

Reported as of 5/7/05

BMP 07: Public Information Programs

Reporting Unit:	BMP Form Status:	Year:
Castaic Lake Water Agency	**100% Complete**	**2004**

A. Implementation

1. Does your agency maintain an active public information program to promote and educate customers about water conservation? yes

a. If YES, describe the program and how it's organized.

Agency provides a quarterly community newsletter to approx. 50,000 people/organizatioms/elected officials. Utilize paid advertising, public and media events and Agency conservation garden to promote water conservation in service area.

2. Indicate which and how many of the following activities are included in your public information program.

Public Information Program Activity	Yes/No	Number of Events
a. Paid Advertising	yes	15
b. Public Service Announcement	yes	0
c. Bill Inserts / Newsletters / Brochures	yes	5
d. Bill showing water usage in comparison to previous year's usage	yes	
e. Demonstration Gardens	yes	15
f. Special Events, Media Events	yes	3
g. Speaker's Bureau	yes	8
h. Program to coordinate with other government agencies, industry and public interest groups and media	yes	

B. Conservation Information Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	235163	200000
2. Actual Expenditures	241461	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

A2d. Retailers are billed based on usage and are shown last year's usage of Agency wholesale production. B1 and B2. Relects new accounting process and reorganization.

Reported as of 5/7/05

BMP 08: School Education Programs

Reporting Unit:	BMP Form Status:	Year:
Castaic Lake Water Agency	**100% Complete**	**2004**

A. Implementation

1.Has your agency implemented a school information program to promote water conservation? yes

2. Please provide information on your school programs (by grade level):

Grade	Are grade-appropriate materials distributed?	No. of class presentations	No. of students reached	No. of teachers' workshops
Grades K-3rd	yes	54	1080	0
Grades 4th-6th	yes	21	732	0
Grades 7th-8th	yes	0	0	0
High School	yes	0	0	0

3. Did your Agency's materials meet state education framework requirements? yes

4. When did your Agency begin implementing this program? 09/01/1995

B. School Education Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	207270	200000
2. Actual Expenditures	219362	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Continuing difficulty gaining entry into Grades 7-12. B1 and B2. Reflects additonal staff hired in 2004.

Reported as of 5/7/05

BMP 10: Wholesale Agency Assistance Programs

Reporting Unit: **Castaic Lake Water Agency**

BMP Form Status: **100% Complete**

Year: **2004**

A. Implementation

1. Financial Support by BMP

BMP	Financial Incentives Offered?	Budgeted Amount	Amount Awarded	BMP	Financial Incentives Offered?	Budgeted Amount	Amount Awarded
1	No			8	yes	235163	241461
2	yes	20000	21000	9	No		
3	No			10	yes	88659	86621
4	No			11	No		
5	No			12	yes	58000	58000
6	No			13	No		
7	yes	207270	219362	14	yes	25000	25000

2. Technical Support

a. Has your agency conducted or funded workshops addressing CUWCC procedures for calculating program savings, costs and cost-effectiveness?	yes
b. Has your agency conducted or funded workshops addressing retail agencies' BMP implementation reporting requirements?	yes
c. Has your agency conducted or funded workshops addressing:	
1) ULFT replacement	yes
2) Residential retrofits	yes
3) Commercial, industrial, and institutional surveys	No
4) Residential and large turf irrigation	No
5) Conservation-related rates and pricing	No

3. Staff Resources by BMP

BMP	Qualified Staff Available for BMP?	No. FTE Staff Assigned to BMP	BMP	Qualified Staff Available for BMP?	No. FTE Staff Assigned to BMP
1	yes	.5	**8**	yes	10
2	yes	.5	**9**	yes	.5
3	yes	1	**10**	yes	2
4	yes	.5	**11**	yes	.5
5	yes	2.5	**12**	yes	2
6	yes	.5	**13**	yes	.5
7	yes	3	**14**	yes	.5

4. Regional Programs by BMP

BMP	Implementation/ Management Program?	BMP	Implementation/ Management Program?
1	No	**8**	yes
2	yes	**9**	yes
3	No	**10**	yes
4	No	**11**	No
5	yes	**12**	yes
6	No	**13**	No
7	yes	**14**	yes

B. Wholesale Agency Assistance Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	634092	650000
2. Actual Expenditures	651444	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

all budget numbers reflect new accounting process started in 2004.

Reported as of 5/7/05

BMP 11: Conservation Pricing

Reporting Unit:	BMP Form Status:	Year:
Castaic Lake Water Agency	**100% Complete**	**2004**

A. Implementation

Rate Structure Data Volumetric Rates for Water Service by Customer Class

1. Residential	
a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$8561300
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$0
2. Commercial	
a. Water Rate Structure	
b. Sewer Rate Structure	
c. Total Revenue from Volumetric Rates	$
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$
3. Industrial	
a. Water Rate Structure	
b. Sewer Rate Structure	
c. Total Revenue from Volumetric Rates	$
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$
4. Institutional / Government	
a. Water Rate Structure	
b. Sewer Rate Structure	
c. Total Revenue from Volumetric Rates	$
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$
5. Irrigation	
a. Water Rate Structure	
b. Sewer Rate Structure	
c. Total Revenue from Volumetric Rates	$
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$
6. Other	
a. Water Rate Structure	

b. Sewer Rate Structure

c. Total Revenue from Volumetric Rates $

d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources $

B. Conservation Pricing Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Reported as of 5/7/05

BMP 12: Conservation Coordinator

Reporting Unit:	BMP Form Status:	Year:
Castaic Lake Water Agency	**100% Complete**	**2004**

A. Implementation

1. Does your Agency have a conservation coordinator? yes
2. Is this a full-time position? no
3. If no, is the coordinator supplied by another agency with which you cooperate in a regional conservation program ? no
4. Partner agency's name:
5. If your agency supplies the conservation coordinator:
   - a. What percent is this conservation coordinator's position? 50%
   - b. Coordinator's Name Mary Lou Cotton
   - c. Coordinator's Title Water Resources Manager
   - d. Coordinator's Experience and Number of Years 11
   - e. Date Coordinator's position was created (mm/dd/yyyy) 02/18/2001
6. Number of conservation staff, including Conservation Coordinator. 3

B. Conservation Staff Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	80503	80000
2. Actual Expenditures	80503	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no
   - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

CUWCC

Best Management Practices Report Filing

Base Year Data

Reporting Unit: **Santa Clarita Water Division**	**Submitted to CUWCC** 04/19/2003

INSTRUCTIONS: This form MUST BE completed and submitted to the CUWCC prior to filing any BMP reports. The data provided on this form is used in determining coverage requirements for specific BMPs as indicated. If some of the data requested is not available, make reasonable estimates. You can update and edit values, if more precise information becomes available in the future.

For Customer Classification Definitions (i.e. Single Family, Multi-Family) click HERE.

	1. Your **BASE YEAR is 2001**. NOTE: Many calculations in determining credit history and coverage requirements are contingent on your BASE YEAR, which is calculated based on the following criteria. If a Signatory signed the MOU in 1997 or earlier, then the Base Year is 1997. If a Signatory signed the MOU after 1997, then the Base Year is the year the MOU was signed. The same holds true for USBR Contractors, except the date their Base Year is calculated from is the date that their Plan was noticed in the Federal Register.	
	BMP 1	
	2. Number of single-family customers in 2001	20802
	3. Number of multi-family units in 2001	1892
	BMPs 2 and 14	
	4. Number of single-family housing units constructed prior to 1992	14457
	5. Number of multi-family units prior to 1992	3401
	BMP 4	
	6. Number of unmetered accounts in 2001	0
	BMPs 5 and 9	
	7. Number of commercial accounts in 2001	582
	8. Number of industrial accounts in 2001	19
	9. Number of institutional accounts in 2001	89
	10. Total water use (AF) by commercial, industrial and institutional accounts in 2001	2850
	BMP 14	
	11. Average number of toilets per single-family household	2
	12. Average number of toilets per multi-family household	2
	13. Five-year average resale rate of single-family households	10.6

	14. Five-year average resale rate of multi-family households	19.1
	15. Average persons per single-family household	3.3
	16. Average persons per multi-family household	3.3

Reported as of 5/7/05

Accounts & Water Use

Reporting Unit Name:	Submitted to	Year:
Santa Clarita Water Division	CUWCC **02/15/2005**	**2003**

A. Service Area Population Information:

1. Total service area population 82200

B. Number of Accounts and Water Deliveries (AF)

Type	Metered		Unmetered	
	No. of Accounts	Water Deliveries (AF)	No. of Accounts	Water Deliveries (AF)
1. Single-Family	21754	16006	0	0
2. Multi-Family	4216	2594	0	0
3. Commercial	617	888	0	0
4. Industrial	19	135	0	0
5. Institutional	95	764	0	0
6. Dedicated Irrigation	731	4231	0	0
7. Recycled Water	0	0	0	0
8. Other	0	0	0	0
9. Unaccounted	NA	0	NA	0
Total	27432	24618	0	0
	Metered		**Unmetered**	

Reported as of 5/7/05

BMP 01: Water Survey Programs for Single-Family and Multi-Family Residential Customers

Reporting Unit:	BMP Form Status:	Year:
Santa Clarita Water Division	**100% Complete**	**2003**

A. Implementation

1. Based on your signed MOU date, 02/07/2001, your Agency STRATEGY DUE DATE is:	02/07/2003
2. Has your agency developed and implemented a targeting/ marketing strategy for SINGLE-FAMILY residential water use surveys?	no
a. If YES, when was it implemented?	
3. Has your agency developed and implemented a targeting/ marketing strategy for MULTI-FAMILY residential water use surveys?	no
a. If YES, when was it implemented?	

B. Water Survey Data

Survey Counts:	Single Family Accounts	Multi-Family Units
1. Number of surveys offered:	0	0
2. Number of surveys completed:	0	0
Indoor Survey:		
3. Check for leaks, including toilets, faucets and meter checks	no	no
4. Check showerhead flow rates, aerator flow rates, and offer to replace or recommend replacement, if necessary	no	no
5. Check toilet flow rates and offer to install or recommend installation of displacement device or direct customer to ULFT replacement program, as neccesary; replace leaking toilet flapper, as necessary	no	no
Outdoor Survey:		
6. Check irrigation system and timers	no	no
7. Review or develop customer irrigation schedule	no	no
8. Measure landscaped area (Recommended but not required for surveys)	no	no
9. Measure total irrigable area (Recommended but not required for surveys)	no	no
10. Which measurement method is typically used (Recommended but not required for surveys)		None
11. Were customers provided with information packets that included evaluation results and water savings recommendations?	no	no
12. Have the number of surveys offered and completed, survey results, and survey costs been tracked?	no	no
a. If yes, in what form are surveys tracked?		None

b. Describe how your agency tracks this information.

C. Water Survey Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

Waiting on BMP revision before beginning implementation.

Reported as of 5/7/05

BMP 02: Residential Plumbing Retrofit

Reporting Unit:	BMP Form Status:	Year:
Santa Clarita Water Division	**100% Complete**	**2003**

A. Implementation

1. Is there an enforceable ordinance in effect in your service area requiring replacement of high-flow showerheads and other water use fixtures with their low-flow counterparts? — no

   a. If YES, list local jurisdictions in your service area and code or ordinance in each:

2. Has your agency satisfied the 75% saturation requirement for single-family housing units? — no

3. Estimated percent of single-family households with low-flow showerheads: — %

4. Has your agency satisfied the 75% saturation requirement for multi-family housing units? — no

5. Estimated percent of multi-family households with low-flow showerheads: — %

6. If YES to 2 OR 4 above, please describe how saturation was determined, including the dates and results of any survey research.

B. Low-Flow Device Distribution Information

1. Has your agency developed a targeting/ marketing strategy for distributing low-flow devices? — yes

   a. If YES, when did your agency begin implementing this strategy? — 5/12/2002

   b. Describe your targeting/ marketing strategy.

   Newspaper ads, flyers and newsletter notifications of distrbution events.

Low-Flow Devices Distributed/ Installed	SF Accounts	MF Units
2. Number of low-flow showerheads distributed:	83	4
3. Number of toilet-displacement devices distributed:	0	0
4. Number of toilet flappers distributed:	0	0
5. Number of faucet aerators distributed:	25	15

6. Does your agency track the distribution and cost of low-flow devices? — yes

   a. If YES, in what format are low-flow devices tracked? — Manual Activity

   b. If yes, describe your tracking and distribution system :

   Keep records of which account addresses received low-flow devices.

C. Low-Flow Device Distribution Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0

2. Actual Expenditures 0

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

All funding provided by CLWA on behalf of retailers.

Reported as of 5/7/05

BMP 03: System Water Audits, Leak Detection and Repair

Reporting Unit:	BMP Form Status:	Year:
Santa Clarita Water Division	**100% Complete**	**2003**

A. Implementation

1. Has your agency completed a pre-screening system audit for this reporting year?	no
2. If YES, enter the values (AF/Year) used to calculate verifiable use as a percent of total production:	
a. Determine metered sales (AF)	
b. Determine other system verifiable uses (AF)	
c. Determine total supply into the system (AF)	
d. Using the numbers above, if (Metered Sales + Other Verifiable Uses) / Total Supply is < 0.9 then a full-scale system audit is required.	0.00
3. Does your agency keep necessary data on file to verify the values used to calculate verifiable uses as a percent of total production?	no
4. Did your agency complete a full-scale audit during this report year?	no
5. Does your agency maintain in-house records of audit results or the completed AWWA audit worksheets for the completed audit?	no
6. Does your agency operate a system leak detection program?	yes
a. If yes, describe the leak detection program:	
Visual inpsections/response to customers.	

B. Survey Data

1. Total number of miles of distribution system line.	286
2. Number of miles of distribution system line surveyed.	0

C. System Audit / Leak Detection Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	No
a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."	

E. Comments

Reported as of 5/7/05

BMP 04: Metering with Commodity Rates for all New Connections and Retrofit of Existing

Reporting Unit:	BMP Form Status:	Year:
Santa Clarita Water Division	**100% Complete**	**2003**

A. Implementation

1. Does your agency require meters for all new connections and bill by volume-of-use?	yes
2. Does your agency have a program for retrofitting existing unmetered connections and bill by volume-of-use?	no
a. If YES, when was the plan to retrofit and bill by volume-of-use existing unmetered connections completed?	
b. Describe the program:	
3. Number of previously unmetered accounts fitted with meters during report year.	0

B. Feasibility Study

1. Has your agency conducted a feasibility study to assess the merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters?	no
a. If YES, when was the feasibility study conducted? (mm/dd/yy)	
b. Describe the feasibility study:	
2. Number of CII accounts with mixed-use meters.	700
3. Number of CII accounts with mixed-use meters retrofitted with dedicated irrigation meters during reporting period.	0

C. Meter Retrofit Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	No
a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."	

E. Comments

All connections are metered.

Reported as of 5/7/05

BMP 05: Large Landscape Conservation Programs and Incentives

Reporting Unit:	BMP Form Status:	Year:
Santa Clarita Water Division	**100% Complete**	**2003**

A. Water Use Budgets

1. Number of Dedicated Irrigation Meter Accounts:	731
2. Number of Dedicated Irrigation Meter Accounts with Water Budgets:	0
3. Budgeted Use for Irrigation Meter Accounts with Water Budgets (AF):	0
4. Actual Use for Irrigation Meter Accounts with Water Budgets (AF):	0
5. Does your agency provide water use notices to accounts with budgets each billing cycle?	no

B. Landscape Surveys

1. Has your agency developed a marketing / targeting strategy for landscape surveys?	no
a. If YES, when did your agency begin implementing this strategy?	
b. Description of marketing / targeting strategy:	
2. Number of Surveys Offered.	0
3. Number of Surveys Completed.	0
4. Indicate which of the following Landscape Elements are part of your survey:	
a. Irrigation System Check	no
b. Distribution Uniformity Analysis	no
c. Review / Develop Irrigation Schedules	no
d. Measure Landscape Area	no
e. Measure Total Irrigable Area	no
f. Provide Customer Report / Information	no
5. Do you track survey offers and results?	no
6. Does your agency provide follow-up surveys for previously completed surveys?	no
a. If YES, describe below:	

C. Other BMP 5 Actions

1. An agency can provide mixed-use accounts with ETo-based landscape budgets in lieu of a large landscape survey program. Does your agency provide mixed-use accounts with landscape budgets?	no
2. Number of CII mixed-use accounts with landscape budgets.	0
3. Do you offer landscape irrigation training?	yes
4. Does your agency offer financial incentives to improve	no

landscape water use efficiency?

Type of Financial Incentive:	Budget (Dollars/ Year)	Number Awarded to Customers	Total Amount Awarded
a. Rebates			
b. Loans			
c. Grants			

5. Do you provide landscape water use efficiency information to new customers and customers changing services? yes

a. If YES, describe below:

Information and training provided by Castaic Lake WA

6. Do you have irrigated landscaping at your facilities? yes

a. If yes, is it water-efficient? yes

b. If yes, does it have dedicated irrigation metering? yes

7. Do you provide customer notices at the start of the irrigation season? no

8. Do you provide customer notices at the end of the irrigation season? no

D. Landscape Conservation Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

E. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

F. Comments

Reported as of 5/7/05

BMP 06: High-Efficiency Washing Machine Rebate Programs

Reporting Unit:	BMP Form Status:	Year:
Santa Clarita Water Division	**100% Complete**	**2003**

A. Implementation

1. Do any energy service providers or waste water utilities in your service area offer rebates for high-efficiency washers? — no

   a. If YES, describe the offerings and incentives as well as who the energy/waste water utility provider is.

2. Does your agency offer rebates for high-efficiency washers? — no
3. What is the level of the rebate? — 0
4. Number of rebates awarded. — 0

B. Rebate Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? — no

   a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Reported as of 5/7/05

BMP 07: Public Information Programs

Reporting Unit:	BMP Form Status:	Year:
Santa Clarita Water Division	**100% Complete**	**2003**

A. Implementation

1. Does your agency maintain an active public information program to promote and educate customers about water conservation? no

a. If YES, describe the program and how it's organized.

CLWA as wholesaler runs program for retailers. See CLWA form.

2. Indicate which and how many of the following activities are included in your public information program.

Public Information Program Activity	Yes/No	Number of Events
a. Paid Advertising	no	
b. Public Service Announcement	no	
c. Bill Inserts / Newsletters / Brochures	no	
d. Bill showing water usage in comparison to previous year's usage	yes	
e. Demonstration Gardens	no	
f. Special Events, Media Events	no	
g. Speaker's Bureau	no	
h. Program to coordinate with other government agencies, industry and public interest groups and media	yes	

B. Conservation Information Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Program provided by Castaic Lake WA.

Reported as of 5/7/05

BMP 08: School Education Programs

Reporting Unit:	BMP Form Status:	Year:
Santa Clarita Water Division	**100% Complete**	**2003**

A. Implementation

1.Has your agency implemented a school information program to promote water conservation? no

2. Please provide information on your school programs (by grade level):

Grade	Are grade-appropriate materials distributed?	No. of class presentations	No. of students reached	No. of teachers' workshops
Grades K-3rd				
Grades 4th-6th				
Grades 7th-8th				
High School				

3. Did your Agency's materials meet state education framework requirements? yes

4. When did your Agency begin implementing this program?

B. School Education Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Program provided by CLWA on behalf of retailers.

Reported as of 5/7/05

BMP 09: Conservation Programs for CII Accounts

Reporting Unit:	BMP Form Status:	Year:
Santa Clarita Water Division	**100% Complete**	**2003**

A. Implementation

1. Has your agency identified and ranked COMMERCIAL customers according to use?	yes
2. Has your agency identified and ranked INDUSTRIAL customers according to use?	yes
3. Has your agency identified and ranked INSTITUTIONAL customers according to use?	yes

Option A: CII Water Use Survey and Customer Incentives Program

4. Is your agency operating a CII water use survey and customer incentives program for the purpose of complying with BMP 9 under this option? no

CII Surveys	Commercial Accounts	Industrial Accounts	Institutional Accounts
a. Number of New Surveys Offered			
b. Number of New Surveys Completed			
c. Number of Site Follow-ups of Previous Surveys (within 1 yr)			
d. Number of Phone Follow-ups of Previous Surveys (within 1 yr)			

CII Survey Components	Commercial Accounts	Industrial Accounts	Institutional Accounts
e. Site Visit	no	no	no
f. Evaluation of all water-using apparatus and processes	no	no	no
g. Customer report identifying recommended efficiency measures, paybacks and agency incentives	no	no	no

Agency CII Customer Incentives	Budget ($/Year)	No. Awarded to Customers	Total $ Amount Awarded
h. Rebates	0	0	0
i. Loans	0	0	0
j. Grants	0	0	0
k. Others	0	0	0

Option B: CII Conservation Program Targets

5. Does your agency track CII program interventions and water savings for the purpose of complying with BMP 9 under this option?	no
6. Does your agency document and maintain records on how savings were realized and the method of calculation for estimated savings?	no
7. Estimated annual savings (AF/yr) from site-verified actions taken by agency since 1991.	
8. Estimated annual savings (AF/yr) from non-site-verified actions taken by agency since 1991.	

B. Conservation Program Expenditures for CII Accounts

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

   a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Not implementing BMP.

Reported as of 5/7/05

BMP 09a: CII ULFT Water Savings

Reporting Unit:	BMP Form Status:	Year:
Santa Clarita Water Division	**100% Complete**	**2003**

1. Did your agency implement a CII ULFT replacement program in the reporting year? If No, please explain why on Line B. 10. — No

A. Targeting and Marketing

1. What basis does your agency use to target customers for participation in this program? Check all that apply.

   a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

2. How does your agency advertise this program? Check all that apply.

   a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

B. Implementation

1. Does your agency keep and maintain customer participant information? (Read the Help information for a complete list of all the information for this BMP.)

2. Would your agency be willing to share this information if the CUWCC did a study to evaluate the program on behalf of your agency?

3. What is the total number of customer accounts participating in the program during the last year ?

CII Subsector	Number of Toilets Replaced			
4.	**Standard Gravity Tank**	**Air Assisted**	**Valve Floor Mount**	**Valve Wall Mount**
a. Offices				
b. Retail / Wholesale				
c. Hotels				
d. Health				
e. Industrial				
f. Schools: K to 12				
g. Eating				
h. Govern-ment				
i. Churches				
j. Other				

5. Program design.

6. Does your agency use outside services to implement this program?

a. If yes, check all that apply.

7. Participant tracking and follow-up.

8. Based on your program experience, please rank on a scale of 1 to 5, with 1 being the least frequent cause and 5 being the most frequent cause, the following reasons why customers refused to participate in the program.

a. Disruption to business

b. Inadequate payback

c. Inadequate ULFT performance

d. Lack of funding

e. American's with Disabilities Act

f. Permitting

g. Other. Please describe in B. 9.

9. Please describe general program acceptance/resistance by customers, obstacles to implementation, and other isues affecting program implementation or effectiveness.

10. Please provide a general assessment of the program for this reporting year. Did your program achieve its objectives? Were your targeting and marketing approaches effective? Were program costs in line with expectations and budgeting?

Not implementing BMP.

C. Conservation Program Expenditures for CII ULFT

1. CII ULFT Program: Annual Budget & Expenditure Data

	Budgeted	Actual Expenditure
a. Labor	0	0
b. Materials	0	0
c. Marketing & Advertising	0	0
d. Administration & Overhead	0	0
e. Outside Services	0	0
f. Total	0	0

2. CII ULFT Program: Annual Cost Sharing

a. Wholesale agency contribution	
b. State agency contribution	
c. Federal agency contribution	
d. Other contribution	
e. Total	0

Reported as of 5/7/05

BMP 11: Conservation Pricing

Reporting Unit:	BMP Form Status:	Year:
Santa Clarita Water Division	**100% Complete**	**2003**

A. Implementation

Rate Structure Data Volumetric Rates for Water Service by Customer Class

1. Residential	
a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$6968914
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$2740750
2. Commercial	
a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$337293
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$122163
3. Industrial	
a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$51278
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$9310
4. Institutional / Government	
a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$290286
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$42691
5. Irrigation	
a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$1606562
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$215115
6. Other	
a. Water Rate Structure	Service Not Provided

b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$0
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$0

B. Conservation Pricing Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

2003 revenues reflect new accounting process.

Reported as of 5/7/05

BMP 12: Conservation Coordinator

Reporting Unit:	BMP Form Status:	Year:
Santa Clarita Water Division	**100% Complete**	**2003**

A. Implementation

1. Does your Agency have a conservation coordinator?	no
2. Is this a full-time position?	no
3. If no, is the coordinator supplied by another agency with which you cooperate in a regional conservation program ?	yes
4. Partner agency's name:	Castaic Lake WA
5. If your agency supplies the conservation coordinator:	
a. What percent is this conservation coordinator's position?	%
b. Coordinator's Name	
c. Coordinator's Title	
d. Coordinator's Experience and Number of Years	
e. Date Coordinator's position was created (mm/dd/yyyy)	
6. Number of conservation staff, including Conservation Coordinator.	0

B. Conservation Staff Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	no
a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."	

D. Comments

Reported as of 5/7/05

BMP 13: Water Waste Prohibition

Reporting Unit:	BMP Form Status:	Year:
Santa Clarita Water Division	**100% Complete**	**2003**

A. Requirements for Documenting BMP Implementation

1. Is a water waste prohibition ordinance in effect in your service area? — no

   a. If YES, describe the ordinance:

2. Is a copy of the most current ordinance(s) on file with CUWCC? — no

   a. List local jurisdictions in your service area in the first text box and water waste ordinance citations in each jurisdiction in the second text box:

B. Implementation

1. Indicate which of the water uses listed below are prohibited by your agency or service area.

   a. Gutter flooding — no

   b. Single-pass cooling systems for new connections — no

   c. Non-recirculating systems in all new conveyor or car wash systems — yes

   d. Non-recirculating systems in all new commercial laundry systems — no

   e. Non-recirculating systems in all new decorative fountains — yes

   f. Other, please name — no

2. Describe measures that prohibit water uses listed above:

   Recirculating systems required in all car washes and fountains (city/san district ordinance).

Water Softeners:

3. Indicate which of the following measures your agency has supported in developing state law:

   a. Allow the sale of more efficient, demand-initiated regenerating DIR models. — no

   b. Develop minimum appliance efficiency standards that:

      i.) Increase the regeneration efficiency standard to at least 3,350 grains of hardness removed per pound of common salt used. — no

      ii.) Implement an identified maximum number of gallons discharged per gallon of soft water produced. — no

   c. Allow local agencies, including municipalities and special districts, to set more stringent standards and/or to ban on-site regeneration of water softeners if it is demonstrated and found by the agency governing board that there is an adverse effect on the reclaimed water or groundwater supply. — no

4. Does your agency include water softener checks in home water audit programs? — no

5. Does your agency include information about DIR and exchange-type water softeners in educational efforts to encourage replacement of less efficient timer models? no

C. Water Waste Prohibition Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

Agency supported San District water softener ban ordinance adopted in 2003.

Reported as of 5/7/05

BMP 14: Residential ULFT Replacement Programs

Reporting Unit:	BMP Form Status:	Year:
Santa Clarita Water Division	**100% Complete**	**2003**

A. Implementation

	Single-Family Accounts	Multi-Family Units
1. Does your Agency have program(s) for replacing high-water-using toilets with ultra-low flush toilets?	yes	yes

Number of Toilets Replaced by Agency Program During Report Year

Replacement Method	SF Accounts	MF Units
2. Rebate	60	9
3. Direct Install	0	0
4. CBO Distribution	0	0
5. Other	0	0
Total	**60**	**9**

6. Describe your agency's ULFT program for single-family residences.

publicly advertised rebate program

7. Describe your agency's ULFT program for multi-family residences.

publicly advertised rebate program

8. Is a toilet retrofit on resale ordinance in effect for your service area? no

9. List local jurisdictions in your service area in the left box and ordinance citations in each jurisdiction in the right box:

B. Residential ULFT Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	10000	20000
2. Actual Expenditures	10000	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Program run by CLWA on behalf of retailers

Reported as of 5/7/05

Accounts & Water Use

Reporting Unit Name:
Santa Clarita Water Division

Submitted to CUWCC
02/15/2005

Year:
2004

A. Service Area Population Information:

1. Total service area population 85300

B. Number of Accounts and Water Deliveries (AF)

Type	Metered		Unmetered	
	No. of Accounts	Water Deliveries (AF)	No. of Accounts	Water Deliveries (AF)
1. Single-Family	22404	16922	0	0
2. Multi-Family	4351	2538	0	0
3. Commercial	627	917	0	0
4. Industrial	19	127	0	0
5. Institutional	97	790	0	0
6. Dedicated Irrigation	773	4828	0	0
7. Recycled Water	0	0	0	0
8. Other	0	0	0	0
9. Unaccounted	NA	0	NA	0
Total	28271	26122	0	0
	Metered		**Unmetered**	

Reported as of 5/7/05

BMP 01: Water Survey Programs for Single-Family and Multi-Family Residential Customers

Reporting Unit:	BMP Form Status:	Year:
Santa Clarita Water Division	**100% Complete**	**2004**

A. Implementation

1. Based on your signed MOU date, 02/07/2001, your Agency STRATEGY DUE DATE is:	02/07/2003
2. Has your agency developed and implemented a targeting/ marketing strategy for SINGLE-FAMILY residential water use surveys?	no
a. If YES, when was it implemented?	
3. Has your agency developed and implemented a targeting/ marketing strategy for MULTI-FAMILY residential water use surveys?	no
a. If YES, when was it implemented?	

B. Water Survey Data

Survey Counts:	Single Family Accounts	Multi-Family Units
1. Number of surveys offered:	0	0
2. Number of surveys completed:	0	0
Indoor Survey:		
3. Check for leaks, including toilets, faucets and meter checks	no	no
4. Check showerhead flow rates, aerator flow rates, and offer to replace or recommend replacement, if necessary	no	no
5. Check toilet flow rates and offer to install or recommend installation of displacement device or direct customer to ULFT replacement program, as neccesary; replace leaking toilet flapper, as necessary	no	no
Outdoor Survey:		
6. Check irrigation system and timers	no	no
7. Review or develop customer irrigation schedule	no	no
8. Measure landscaped area (Recommended but not required for surveys)	no	no
9. Measure total irrigable area (Recommended but not required for surveys)	no	no
10. Which measurement method is typically used (Recommended but not required for surveys)		None
11. Were customers provided with information packets that included evaluation results and water savings recommendations?	no	no
12. Have the number of surveys offered and completed, survey results, and survey costs been tracked?	no	no
a. If yes, in what form are surveys tracked?		None

b. Describe how your agency tracks this information.

C. Water Survey Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

Waiting on BMP revision before beginning implementation.

Reported as of 5/7/05

BMP 02: Residential Plumbing Retrofit

Reporting Unit:	BMP Form Status:	Year:
Santa Clarita Water Division	**100% Complete**	**2004**

A. Implementation

1. Is there an enforceable ordinance in effect in your service area requiring replacement of high-flow showerheads and other water use fixtures with their low-flow counterparts? no

   a. If YES, list local jurisdictions in your service area and code or ordinance in each:

2. Has your agency satisfied the 75% saturation requirement for single-family housing units? no

3. Estimated percent of single-family households with low-flow showerheads: %

4. Has your agency satisfied the 75% saturation requirement for multi-family housing units? no

5. Estimated percent of multi-family households with low-flow showerheads: %

6. If YES to 2 OR 4 above, please describe how saturation was determined, including the dates and results of any survey research.

B. Low-Flow Device Distribution Information

1. Has your agency developed a targeting/ marketing strategy for distributing low-flow devices? yes

   a. If YES, when did your agency begin implementing this strategy? 5/12/2002

   b. Describe your targeting/ marketing strategy.

   Newspaper ads, flyers and newsletter notifications of distrbution events.

Low-Flow Devices Distributed/ Installed	SF Accounts	MF Units
2. Number of low-flow showerheads distributed:	41	3
3. Number of toilet-displacement devices distributed:	0	0
4. Number of toilet flappers distributed:	0	0
5. Number of faucet aerators distributed:	25	10

6. Does your agency track the distribution and cost of low-flow devices? yes

   a. If YES, in what format are low-flow devices tracked? Manual Activity

   b. If yes, describe your tracking and distribution system :

   Keep records of which account addresses received low-flow devices.

C. Low-Flow Device Distribution Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0

2. Actual Expenditures 0

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

All funding provided by CLWA on behalf of retailers.

Reported as of 5/7/05

BMP 03: System Water Audits, Leak Detection and Repair

Reporting Unit:	BMP Form Status:	Year:
Santa Clarita Water Division	**100% Complete**	**2004**

A. Implementation

1. Has your agency completed a pre-screening system audit for this reporting year?	no
2. If YES, enter the values (AF/Year) used to calculate verifiable use as a percent of total production:	
a. Determine metered sales (AF)	
b. Determine other system verifiable uses (AF)	
c. Determine total supply into the system (AF)	
d. Using the numbers above, if (Metered Sales + Other Verifiable Uses) / Total Supply is < 0.9 then a full-scale system audit is required.	0.00
3. Does your agency keep necessary data on file to verify the values used to calculate verifiable uses as a percent of total production?	no
4. Did your agency complete a full-scale audit during this report year?	no
5. Does your agency maintain in-house records of audit results or the completed AWWA audit worksheets for the completed audit?	no
6. Does your agency operate a system leak detection program?	yes
a. If yes, describe the leak detection program:	
Visual inpsections/response to customers.	

B. Survey Data

1. Total number of miles of distribution system line.	299
2. Number of miles of distribution system line surveyed.	0

C. System Audit / Leak Detection Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	No
a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."	

E. Comments

Reported as of 5/7/05

BMP 04: Metering with Commodity Rates for all New Connections and Retrofit of Existing

Reporting Unit:	BMP Form Status:	Year:
Santa Clarita Water Division	**100% Complete**	**2004**

A. Implementation

1. Does your agency require meters for all new connections and bill by volume-of-use?	yes
2. Does your agency have a program for retrofitting existing unmetered connections and bill by volume-of-use?	no
a. If YES, when was the plan to retrofit and bill by volume-of-use existing unmetered connections completed?	
b. Describe the program:	
3. Number of previously unmetered accounts fitted with meters during report year.	0

B. Feasibility Study

1. Has your agency conducted a feasibility study to assess the merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters?	no
a. If YES, when was the feasibility study conducted? (mm/dd/yy)	
b. Describe the feasibility study:	
2. Number of CII accounts with mixed-use meters.	715
3. Number of CII accounts with mixed-use meters retrofitted with dedicated irrigation meters during reporting period.	0

C. Meter Retrofit Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	No
a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."	

E. Comments

All connections are metered.

Reported as of 5/7/05

BMP 05: Large Landscape Conservation Programs and Incentives

Reporting Unit:	BMP Form Status:	Year:
Santa Clarita Water Division	**100% Complete**	**2004**

A. Water Use Budgets

1. Number of Dedicated Irrigation Meter Accounts:	773
2. Number of Dedicated Irrigation Meter Accounts with Water Budgets:	0
3. Budgeted Use for Irrigation Meter Accounts with Water Budgets (AF):	0
4. Actual Use for Irrigation Meter Accounts with Water Budgets (AF):	0
5. Does your agency provide water use notices to accounts with budgets each billing cycle?	no

B. Landscape Surveys

1. Has your agency developed a marketing / targeting strategy for landscape surveys?	no
a. If YES, when did your agency begin implementing this strategy?	
b. Description of marketing / targeting strategy:	
2. Number of Surveys Offered.	0
3. Number of Surveys Completed.	0
4. Indicate which of the following Landscape Elements are part of your survey:	
a. Irrigation System Check	no
b. Distribution Uniformity Analysis	no
c. Review / Develop Irrigation Schedules	no
d. Measure Landscape Area	no
e. Measure Total Irrigable Area	no
f. Provide Customer Report / Information	no
5. Do you track survey offers and results?	no
6. Does your agency provide follow-up surveys for previously completed surveys?	no
a. If YES, describe below:	

C. Other BMP 5 Actions

1. An agency can provide mixed-use accounts with ETo-based landscape budgets in lieu of a large landscape survey program. Does your agency provide mixed-use accounts with landscape budgets?	no
2. Number of CII mixed-use accounts with landscape budgets.	0
3. Do you offer landscape irrigation training?	yes
4. Does your agency offer financial incentives to improve	no

landscape water use efficiency?

Type of Financial Incentive:	Budget (Dollars/ Year)	Number Awarded to Customers	Total Amount Awarded
a. Rebates			
b. Loans			
c. Grants			

5. Do you provide landscape water use efficiency information to new customers and customers changing services? yes

a. If YES, describe below:

Information and training provided by Castaic Lake WA

6. Do you have irrigated landscaping at your facilities? yes

a. If yes, is it water-efficient? yes

b. If yes, does it have dedicated irrigation metering? yes

7. Do you provide customer notices at the start of the irrigation season? no

8. Do you provide customer notices at the end of the irrigation season? no

D. Landscape Conservation Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

E. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

F. Comments

Reported as of 5/7/05

BMP 06: High-Efficiency Washing Machine Rebate Programs

Reporting Unit:	BMP Form Status:	Year:
Santa Clarita Water Division	**100% Complete**	**2004**

A. Implementation

1. Do any energy service providers or waste water utilities in your service area offer rebates for high-efficiency washers? — no

   a. If YES, describe the offerings and incentives as well as who the energy/waste water utility provider is.

2. Does your agency offer rebates for high-efficiency washers? — no
3. What is the level of the rebate? — 0
4. Number of rebates awarded. — 0

B. Rebate Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? — no

   a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Reported as of 5/7/05

BMP 07: Public Information Programs

Reporting Unit:	BMP Form Status:	Year:
Santa Clarita Water Division	**100% Complete**	**2004**

A. Implementation

1. Does your agency maintain an active public information program to promote and educate customers about water conservation? no

a. If YES, describe the program and how it's organized.

CLWA as wholesaler runs program for retailers. See CLWA form.

2. Indicate which and how many of the following activities are included in your public information program.

Public Information Program Activity	Yes/No	Number of Events
a. Paid Advertising	no	
b. Public Service Announcement	no	
c. Bill Inserts / Newsletters / Brochures	no	
d. Bill showing water usage in comparison to previous year's usage	yes	
e. Demonstration Gardens	no	
f. Special Events, Media Events	no	
g. Speaker's Bureau	no	
h. Program to coordinate with other government agencies, industry and public interest groups and media	yes	

B. Conservation Information Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Program provided by Castaic Lake WA.

Reported as of 5/7/05

BMP 08: School Education Programs

Reporting Unit:	BMP Form Status:	Year:
Santa Clarita Water Division	**100% Complete**	**2004**

A. Implementation

1.Has your agency implemented a school information program to promote water conservation? no

2. Please provide information on your school programs (by grade level):

Grade	Are grade-appropriate materials distributed?	No. of class presentations	No. of students reached	No. of teachers' workshops
Grades K-3rd				
Grades 4th-6th				
Grades 7th-8th				
High School				

3. Did your Agency's materials meet state education framework requirements? yes

4. When did your Agency begin implementing this program?

B. School Education Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Program provided by CLWA on behalf of retailers.

Reported as of 5/7/05

BMP 09: Conservation Programs for CII Accounts

Reporting Unit:	BMP Form Status:	Year:
Santa Clarita Water Division	**100% Complete**	**2004**

A. Implementation

1. Has your agency identified and ranked COMMERCIAL customers according to use?	yes
2. Has your agency identified and ranked INDUSTRIAL customers according to use?	yes
3. Has your agency identified and ranked INSTITUTIONAL customers according to use?	yes

Option A: CII Water Use Survey and Customer Incentives Program

4. Is your agency operating a CII water use survey and customer incentives program for the purpose of complying with BMP 9 under this option?	no

CII Surveys	Commercial Accounts	Industrial Accounts	Institutional Accounts
a. Number of New Surveys Offered			
b. Number of New Surveys Completed			
c. Number of Site Follow-ups of Previous Surveys (within 1 yr)			
d. Number of Phone Follow-ups of Previous Surveys (within 1 yr)			

CII Survey Components	Commercial Accounts	Industrial Accounts	Institutional Accounts
e. Site Visit	no		no
f. Evaluation of all water-using apparatus and processes	no	no	no
g. Customer report identifying recommended efficiency measures, paybacks and agency incentives	no	no	no

Agency CII Customer Incentives	Budget ($/Year)	No. Awarded to Customers	Total $ Amount Awarded
h. Rebates	0	0	0
i. Loans	0	0	0
j. Grants	0	0	0
k. Others	0	0	0

Option B: CII Conservation Program Targets

5. Does your agency track CII program interventions and water savings for the purpose of complying with BMP 9 under this option?	no
6. Does your agency document and maintain records on how savings were realized and the method of calculation for estimated savings?	no
7. Estimated annual savings (AF/yr) from site-verified actions taken by agency since 1991.	
8. Estimated annual savings (AF/yr) from non-site-verified actions taken by agency since 1991.	

B. Conservation Program Expenditures for CII Accounts

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Not implementing BMP.

Reported as of 5/7/05

BMP 09a: CII ULFT Water Savings

Reporting Unit:	BMP Form Status:	Year:
Santa Clarita Water Division	**100% Complete**	**2004**

1. Did your agency implement a CII ULFT replacement program in the reporting year? If No, please explain why on Line B. 10. — No

A. Targeting and Marketing

1. What basis does your agency use to target customers for participation in this program? Check all that apply.

   a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

2. How does your agency advertise this program? Check all that apply.

   a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

B. Implementation

1. Does your agency keep and maintain customer participant information? (Read the Help information for a complete list of all the information for this BMP.)

2. Would your agency be willing to share this information if the CUWCC did a study to evaluate the program on behalf of your agency?

3. What is the total number of customer accounts participating in the program during the last year ?

CII Subsector	Number of Toilets Replaced			
4.	**Standard Gravity Tank**	**Air Assisted**	**Valve Floor Mount**	**Valve Wall Mount**
a. Offices				
b. Retail / Wholesale				
c. Hotels				
d. Health				
e. Industrial				
f. Schools: K to 12				
g. Eating				
h. Govern-ment				
i. Churches				
j. Other				

5. Program design.

6. Does your agency use outside services to implement this program?

a. If yes, check all that apply.

7. Participant tracking and follow-up.

8. Based on your program experience, please rank on a scale of 1 to 5, with 1 being the least frequent cause and 5 being the most frequent cause, the following reasons why customers refused to participate in the program.

a. Disruption to business

b. Inadequate payback

c. Inadequate ULFT performance

d. Lack of funding

e. American's with Disabilities Act

f. Permitting

g. Other. Please describe in B. 9.

9. Please describe general program acceptance/resistance by customers, obstacles to implementation, and other isues affecting program implementation or effectiveness.

10. Please provide a general assessment of the program for this reporting year. Did your program achieve its objectives? Were your targeting and marketing approaches effective? Were program costs in line with expectations and budgeting?

Not implementing BMP.

C. Conservation Program Expenditures for CII ULFT

1. CII ULFT Program: Annual Budget & Expenditure Data

	Budgeted	Actual Expenditure
a. Labor		
b. Materials		
c. Marketing & Advertising		
d. Administration & Overhead		
e. Outside Services		
f. Total	0	0

2. CII ULFT Program: Annual Cost Sharing

a. Wholesale agency contribution	
b. State agency contribution	
c. Federal agency contribution	
d. Other contribution	
e. Total	0

Reported as of 5/7/05

BMP 11: Conservation Pricing

Reporting Unit:	BMP Form Status:	Year:
Santa Clarita Water Division	**100% Complete**	**2004**

A. Implementation

Rate Structure Data Volumetric Rates for Water Service by Customer Class

1. Residential	
a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$8082631
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$3716432
2. Commercial	
a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$374628
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$166423
3. Industrial	
a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$52330
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$12265
4. Institutional / Government	
a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$339935
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$57314
5. Irrigation	
a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$2072553
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$299384
6. Other	
a. Water Rate Structure	Service Not Provided

b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$0
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$0

B. Conservation Pricing Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

CII revenues are combined and shown in Commercial

Reported as of 5/7/05

BMP 12: Conservation Coordinator

Reporting Unit:	BMP Form Status:	Year:
Santa Clarita Water Division	**100% Complete**	**2004**

A. Implementation

1. Does your Agency have a conservation coordinator? no
2. Is this a full-time position? no
3. If no, is the coordinator supplied by another agency with which you cooperate in a regional conservation program ? yes
4. Partner agency's name: Castaic Lake WA
5. If your agency supplies the conservation coordinator:
   - a. What percent is this conservation coordinator's position? %
   - b. Coordinator's Name
   - c. Coordinator's Title
   - d. Coordinator's Experience and Number of Years
   - e. Date Coordinator's position was created (mm/dd/yyyy)
6. Number of conservation staff, including Conservation Coordinator. 0

B. Conservation Staff Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no
   - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Reported as of 5/7/05

BMP 13: Water Waste Prohibition

Reporting Unit:	BMP Form Status:	Year:
Santa Clarita Water Division	**100% Complete**	**2004**

A. Requirements for Documenting BMP Implementation

1. Is a water waste prohibition ordinance in effect in your service area? — no

   a. If YES, describe the ordinance:

2. Is a copy of the most current ordinance(s) on file with CUWCC? — no

   a. List local jurisdictions in your service area in the first text box and water waste ordinance citations in each jurisdiction in the second text box:

B. Implementation

1. Indicate which of the water uses listed below are prohibited by your agency or service area.

   a. Gutter flooding — no

   b. Single-pass cooling systems for new connections — no

   c. Non-recirculating systems in all new conveyor or car wash systems — no

   d. Non-recirculating systems in all new commercial laundry systems — no

   e. Non-recirculating systems in all new decorative fountains — no

   f. Other, please name — no

2. Describe measures that prohibit water uses listed above:

   Recirculating systems required in all car washes and fountains (city/san district ordinance).

Water Softeners:

3. Indicate which of the following measures your agency has supported in developing state law:

   a. Allow the sale of more efficient, demand-initiated regenerating DIR models. — no

   b. Develop minimum appliance efficiency standards that:

      i.) Increase the regeneration efficiency standard to at least 3,350 grains of hardness removed per pound of common salt used. — no

      ii.) Implement an identified maximum number of gallons discharged per gallon of soft water produced. — no

   c. Allow local agencies, including municipalities and special districts, to set more stringent standards and/or to ban on-site regeneration of water softeners if it is demonstrated and found by the agency governing board that there is an adverse effect on the reclaimed water or groundwater supply. — no

4. Does your agency include water softener checks in home water audit programs? — no

5. Does your agency include information about DIR and exchange-type water softeners in educational efforts to encourage replacement of less efficient timer models? no

C. Water Waste Prohibition Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

Agency supported San District water softener ban ordinance adopted in 2003.

Reported as of 5/7/05

BMP 14: Residential ULFT Replacement Programs

Reporting Unit:	BMP Form Status:	Year:
Santa Clarita Water Division	**100% Complete**	**2004**

A. Implementation

	Single-Family Accounts	Multi-Family Units
1. Does your Agency have program(s) for replacing high-water-using toilets with ultra-low flush toilets?	yes	yes

Number of Toilets Replaced by Agency Program During Report Year

Replacement Method	SF Accounts	MF Units
2. Rebate	125	10
3. Direct Install	0	0
4. CBO Distribution	0	0
5. Other	0	0
Total	**125**	**10**

6. Describe your agency's ULFT program for single-family residences.

publicly advertised rebate program

7. Describe your agency's ULFT program for multi-family residences.

publicly advertised rebate program

8. Is a toilet retrofit on resale ordinance in effect for your service area? no

9. List local jurisdictions in your service area in the left box and ordinance citations in each jurisdiction in the right box:

B. Residential ULFT Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	20000	20000
2. Actual Expenditures	20000	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Program run by CLWA on behalf of retailers

CUWCC

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Memorandum of Understanding

Base Year Data

Reporting Unit: **Valencia Water Company**	**Submitted to CUWCC** 04/19/2003

INSTRUCTIONS: This form MUST BE completed and submitted to the CUWCC prior to filing any BMP reports. The data provided on this form is used in determining coverage requirements for specific BMPs as indicated. If some of the data requested is not available, make reasonable estimates. You can update and edit values, if more precise information becomes available in the future.

For Customer Classification Definitions (i.e. Single Family, Multi-Family) click HERE.

	1. Your **BASE YEAR is 2001.** NOTE: Many calculations in determining credit history and coverage requirements are contingent on your BASE YEAR, which is calculated based on the following criteria. If a Signatory signed the MOU in 1997 or earlier, then the Base Year is 1997. If a Signatory signed the MOU after 1997, then the Base Year is the year the MOU was signed. The same holds true for USBR Contractors, except the date their Base Year is calculated from is the date that their Plan was noticed in the Federal Register.	
	BMP 1	
	2. Number of single-family customers in 2001	19565
	3. Number of multi-family units in 2001	219
	BMPs 2 and 14	
	4. Number of single-family housing units constructed prior to 1992	12871
	5. Number of multi-family units prior to 1992	152
	BMP 4	
	6. Number of unmetered accounts in 2001	0
	BMPs 5 and 9	
	7. Number of commercial accounts in 2001	567
	8. Number of industrial accounts in 2001	901
	9. Number of institutional accounts in 2001	52
	10. Total water use (AF) by commercial, industrial and institutional accounts in 2001	6650
	BMP 14	
	11. Average number of toilets per single-family household	2
	12. Average number of toilets per multi-family household	2
	13. Five-year average resale rate of single-family households	8.6

	14. Five-year average resale rate of multi-family households	8.9
	15. Average persons per single-family household	3.3
	16. Average persons per multi-family household	3.3

Reported as of 5/7/05

Accounts & Water Use

Reporting Unit Name:
Valencia Water Company

Submitted to CUWCC
02/15/2005

Year:
2003

A. Service Area Population Information:

1. Total service area population 89000

B. Number of Accounts and Water Deliveries (AF)

Type	Metered		Unmetered	
	No. of Accounts	Water Deliveries (AF)	No. of Accounts	Water Deliveries (AF)
1. Single-Family	23365	14191	0	0
2. Multi-Family	277	1186	0	0
3. Commercial	854	5110	0	0
4. Industrial	441	1825	0	0
5. Institutional	59	1101	0	0
6. Dedicated Irrigation	400	2952	0	0
7. Recycled Water	1	96	0	0
8. Other	0	0	0	0
9. Unaccounted	NA	0	NA	0
Total	25397	26461	0	0
	Metered		**Unmetered**	

Reported as of 5/7/05

BMP 01: Water Survey Programs for Single-Family and Multi-Family Residential Customers

Reporting Unit:	BMP Form Status:	Year:
Valencia Water Company	**100% Complete**	**2003**

A. Implementation

1. Based on your signed MOU date, 02/07/2001, your Agency STRATEGY DUE DATE is:	02/07/2003
2. Has your agency developed and implemented a targeting/ marketing strategy for SINGLE-FAMILY residential water use surveys?	no
a. If YES, when was it implemented?	
3. Has your agency developed and implemented a targeting/ marketing strategy for MULTI-FAMILY residential water use surveys?	no
a. If YES, when was it implemented?	

B. Water Survey Data

Survey Counts:	Single Family Accounts	Multi-Family Units
1. Number of surveys offered:	0	0
2. Number of surveys completed:	0	0
Indoor Survey:		
3. Check for leaks, including toilets, faucets and meter checks	no	no
4. Check showerhead flow rates, aerator flow rates, and offer to replace or recommend replacement, if necessary	no	no
5. Check toilet flow rates and offer to install or recommend installation of displacement device or direct customer to ULFT replacement program, as neccesary; replace leaking toilet flapper, as necessary	no	no
Outdoor Survey:		
6. Check irrigation system and timers	no	no
7. Review or develop customer irrigation schedule	no	no
8. Measure landscaped area (Recommended but not required for surveys)	no	no
9. Measure total irrigable area (Recommended but not required for surveys)	no	no
10. Which measurement method is typically used (Recommended but not required for surveys)		None
11. Were customers provided with information packets that included evaluation results and water savings recommendations?	no	no
12. Have the number of surveys offered and completed, survey results, and survey costs been tracked?	no	no
a. If yes, in what form are surveys tracked?		None

b. Describe how your agency tracks this information.

C. Water Survey Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

waiting on BMP revision

Reported as of 5/7/05

BMP 02: Residential Plumbing Retrofit

Reporting Unit:	BMP Form Status:	Year:
Valencia Water Company	**100% Complete**	**2003**

A. Implementation

1. Is there an enforceable ordinance in effect in your service area requiring replacement of high-flow showerheads and other water use fixtures with their low-flow counterparts? — no

   a. If YES, list local jurisdictions in your service area and code or ordinance in each:

2. Has your agency satisfied the 75% saturation requirement for single-family housing units? — no

3. Estimated percent of single-family households with low-flow showerheads: — %

4. Has your agency satisfied the 75% saturation requirement for multi-family housing units? — no

5. Estimated percent of multi-family households with low-flow showerheads: — %

6. If YES to 2 OR 4 above, please describe how saturation was determined, including the dates and results of any survey research.

B. Low-Flow Device Distribution Information

1. Has your agency developed a targeting/ marketing strategy for distributing low-flow devices? — yes

   a. If YES, when did your agency begin implementing this strategy? — 5/12/2002

   b. Describe your targeting/ marketing strategy.

   Distribution at public events, paid advertising.

Low-Flow Devices Distributed/ Installed	SF Accounts	MF Units
2. Number of low-flow showerheads distributed:	25	6
3. Number of toilet-displacement devices distributed:	0	0
4. Number of toilet flappers distributed:	0	0
5. Number of faucet aerators distributed:	30	5

6. Does your agency track the distribution and cost of low-flow devices? — yes

   a. If YES, in what format are low-flow devices tracked? — Database

   b. If yes, describe your tracking and distribution system :

   Names and address of recipient.

C. Low-Flow Device Distribution Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0

2. Actual Expenditures 0

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

CLWA provides program and funding on behalf of retailers.

Reported as of 5/7/05

BMP 03: System Water Audits, Leak Detection and Repair

Reporting Unit:	BMP Form Status:	Year:
Valencia Water Company	**100% Complete**	**2003**

A. Implementation

1. Has your agency completed a pre-screening system audit for this reporting year?	no
2. If YES, enter the values (AF/Year) used to calculate verifiable use as a percent of total production:	
a. Determine metered sales (AF)	
b. Determine other system verifiable uses (AF)	
c. Determine total supply into the system (AF)	
d. Using the numbers above, if (Metered Sales + Other Verifiable Uses) / Total Supply is < 0.9 then a full-scale system audit is required.	0.00
3. Does your agency keep necessary data on file to verify the values used to calculate verifiable uses as a percent of total production?	yes
4. Did your agency complete a full-scale audit during this report year?	yes
5. Does your agency maintain in-house records of audit results or the completed AWWA audit worksheets for the completed audit?	yes
6. Does your agency operate a system leak detection program?	no
a. If yes, describe the leak detection program:	

B. Survey Data

1. Total number of miles of distribution system line.	310
2. Number of miles of distribution system line surveyed.	310

C. System Audit / Leak Detection Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	yes
a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."	
see 2002 explanation	

E. Comments

Reported as of 5/7/05

BMP 04: Metering with Commodity Rates for all New Connections and Retrofit of Existing

Reporting Unit:	BMP Form Status:	Year:
Valencia Water Company	**100% Complete**	**2003**

A. Implementation

1. Does your agency require meters for all new connections and bill by volume-of-use?	yes
2. Does your agency have a program for retrofitting existing unmetered connections and bill by volume-of-use?	no
a. If YES, when was the plan to retrofit and bill by volume-of-use existing unmetered connections completed?	
b. Describe the program:	
3. Number of previously unmetered accounts fitted with meters during report year.	0

B. Feasibility Study

1. Has your agency conducted a feasibility study to assess the merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters?	no
a. If YES, when was the feasibility study conducted? (mm/dd/yy)	
b. Describe the feasibility study:	
2. Number of CII accounts with mixed-use meters.	0
3. Number of CII accounts with mixed-use meters retrofitted with dedicated irrigation meters during reporting period.	0

C. Meter Retrofit Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	No
a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."	

E. Comments

All connections are metered.

Reported as of 5/7/05

BMP 05: Large Landscape Conservation Programs and Incentives

Reporting Unit: **Valencia Water Company**

BMP Form Status: **100% Complete**

Year: **2003**

A. Water Use Budgets

1. Number of Dedicated Irrigation Meter Accounts:	400
2. Number of Dedicated Irrigation Meter Accounts with Water Budgets:	0
3. Budgeted Use for Irrigation Meter Accounts with Water Budgets (AF):	0
4. Actual Use for Irrigation Meter Accounts with Water Budgets (AF):	0
5. Does your agency provide water use notices to accounts with budgets each billing cycle?	no

B. Landscape Surveys

1. Has your agency developed a marketing / targeting strategy for landscape surveys?	no
a. If YES, when did your agency begin implementing this strategy?	
b. Description of marketing / targeting strategy:	
2. Number of Surveys Offered.	0
3. Number of Surveys Completed.	0
4. Indicate which of the following Landscape Elements are part of your survey:	
a. Irrigation System Check	no
b. Distribution Uniformity Analysis	no
c. Review / Develop Irrigation Schedules	no
d. Measure Landscape Area	no
e. Measure Total Irrigable Area	no
f. Provide Customer Report / Information	no
5. Do you track survey offers and results?	no
6. Does your agency provide follow-up surveys for previously completed surveys?	no
a. If YES, describe below:	

C. Other BMP 5 Actions

1. An agency can provide mixed-use accounts with ETo-based landscape budgets in lieu of a large landscape survey program. Does your agency provide mixed-use accounts with landscape budgets?	no
2. Number of CII mixed-use accounts with landscape budgets.	0
3. Do you offer landscape irrigation training?	yes
4. Does your agency offer financial incentives to improve	no

landscape water use efficiency?

Type of Financial Incentive:	Budget (Dollars/ Year)	Number Awarded to Customers	Total Amount Awarded
a. Rebates	0	0	0
b. Loans	0	0	0
c. Grants	0	0	0

5. Do you provide landscape water use efficiency information to new customers and customers changing services? No

a. If YES, describe below:

CLWA provides training and information on behalf of retailers

6. Do you have irrigated landscaping at your facilities? yes

a. If yes, is it water-efficient? yes

b. If yes, does it have dedicated irrigation metering? yes

7. Do you provide customer notices at the start of the irrigation season? no

8. Do you provide customer notices at the end of the irrigation season? no

D. Landscape Conservation Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

E. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

F. Comments

Reported as of 5/7/05

BMP 06: High-Efficiency Washing Machine Rebate Programs

Reporting Unit:	BMP Form Status:	Year:
Valencia Water Company	**100% Complete**	**2003**

A. Implementation

1. Do any energy service providers or waste water utilities in your service area offer rebates for high-efficiency washers? — no

    a. If YES, describe the offerings and incentives as well as who the energy/waste water utility provider is.

2. Does your agency offer rebates for high-efficiency washers? — no

3. What is the level of the rebate?

4. Number of rebates awarded.

B. Rebate Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? — no

    a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Reported as of 5/7/05

BMP 07: Public Information Programs

Reporting Unit:	BMP Form Status:	Year:
Valencia Water Company	**100% Complete**	**2003**

A. Implementation

1. Does your agency maintain an active public information program to promote and educate customers about water conservation? yes

a. If YES, describe the program and how it's organized.

Newlsetters, bill inserts, website, coordination with wholesaler.

2. Indicate which and how many of the following activities are included in your public information program.

Public Information Program Activity	Yes/No	Number of Events
a. Paid Advertising	yes	3
b. Public Service Announcement	no	
c. Bill Inserts / Newsletters / Brochures	yes	4
d. Bill showing water usage in comparison to previous year's usage	yes	
e. Demonstration Gardens	yes	2
f. Special Events, Media Events	yes	3
g. Speaker's Bureau	no	
h. Program to coordinate with other government agencies, industry and public interest groups and media	yes	

B. Conservation Information Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Coordinate public outreach with CLWA programs/part of CLWA budget

Reported as of 5/7/05

BMP 08: School Education Programs

Reporting Unit:	BMP Form Status:	Year:
Valencia Water Company	**100% Complete**	**2003**

A. Implementation

1.Has your agency implemented a school information program to promote water conservation? no

2. Please provide information on your school programs (by grade level):

Grade	Are grade-appropriate materials distributed?	No. of class presentations	No. of students reached	No. of teachers' workshops
Grades K-3rd				
Grades 4th-6th				
Grades 7th-8th				
High School				

3. Did your Agency's materials meet state education framework requirements? no

4. When did your Agency begin implementing this program?

B. School Education Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Program is run by CLWA on behalf of retailers

Reported as of 5/7/05

BMP 09: Conservation Programs for CII Accounts

Reporting Unit:	BMP Form Status:	Year:
Valencia Water Company	**100% Complete**	**2003**

A. Implementation

1. Has your agency identified and ranked COMMERCIAL customers according to use?	yes
2. Has your agency identified and ranked INDUSTRIAL customers according to use?	yes
3. Has your agency identified and ranked INSTITUTIONAL customers according to use?	yes

Option A: CII Water Use Survey and Customer Incentives Program

4. Is your agency operating a CII water use survey and customer incentives program for the purpose of complying with BMP 9 under this option? yes

CII Surveys	Commercial Accounts	Industrial Accounts	Institutional Accounts
a. Number of New Surveys Offered	16	4	4
b. Number of New Surveys Completed	12	2	4
c. Number of Site Follow-ups of Previous Surveys (within 1 yr)	0	0	0
d. Number of Phone Follow-ups of Previous Surveys (within 1 yr)	0	0	0

CII Survey Components	Commercial Accounts	Industrial Accounts	Institutional Accounts
e. Site Visit	yes	yes	yes
f. Evaluation of all water-using apparatus and processes	yes	yes	yes
g. Customer report identifying recommended efficiency measures, paybacks and agency incentives	yes	yes	yes

Agency CII Customer Incentives	Budget ($/Year)	No. Awarded to Customers	Total $ Amount Awarded
h. Rebates	0	0	0
i. Loans	0	0	0
j. Grants	0	0	0
k. Others	0	0	0

Option B: CII Conservation Program Targets

5. Does your agency track CII program interventions and water savings for the purpose of complying with BMP 9 under this option?	no
6. Does your agency document and maintain records on how savings were realized and the method of calculation for estimated savings?	no
7. Estimated annual savings (AF/yr) from site-verified actions taken by agency since 1991.	0
8. Estimated annual savings (AF/yr) from non-site-verified actions taken by agency since 1991.	0

B. Conservation Program Expenditures for CII Accounts

	This Year	Next Year
1. Budgeted Expenditures	40000	45000
2. Actual Expenditures	40000	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Operating a pilot survey program while waiting on BMP revision.

Reported as of 5/7/05

BMP 09a: CII ULFT Water Savings

Reporting Unit:	BMP Form Status:	Year:
Valencia Water Company	**100% Complete**	**2003**

1. Did your agency implement a CII ULFT replacement program in the reporting year? No

If No, please explain why on Line B. 10.

A. Targeting and Marketing

1. What basis does your agency use to target customers for participation in this program? Check all that apply.

   a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

2. How does your agency advertise this program? Check all that apply.

   a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

B. Implementation

1. Does your agency keep and maintain customer participant information? (Read the Help information for a complete list of all the information for this BMP.)

2. Would your agency be willing to share this information if the CUWCC did a study to evaluate the program on behalf of your agency?

3. What is the total number of customer accounts participating in the program during the last year ?

CII Subsector	Number of Toilets Replaced			
4.	**Standard Gravity Tank**	**Air Assisted**	**Valve Floor Mount**	**Valve Wall Mount**
a. Offices				
b. Retail / Wholesale				
c. Hotels				
d. Health				
e. Industrial				
f. Schools: K to 12				
g. Eating				
h. Govern-ment				
i. Churches				
j. Other				

5. Program design.

6. Does your agency use outside services to implement this program?

a. If yes, check all that apply.

7. Participant tracking and follow-up.

8. Based on your program experience, please rank on a scale of 1 to 5, with 1 being the least frequent cause and 5 being the most frequent cause, the following reasons why customers refused to participate in the program.

a. Disruption to business

b. Inadequate payback

c. Inadequate ULFT performance

d. Lack of funding

e. American's with Disabilities Act

f. Permitting

g. Other. Please describe in B. 9.

9. Please describe general program acceptance/resistance by customers, obstacles to implementation, and other isues affecting program implementation or effectiveness.

10. Please provide a general assessment of the program for this reporting year. Did your program achieve its objectives? Were your targeting and marketing approaches effective? Were program costs in line with expectations and budgeting?

ULFTs are part of a pilot CII survey program. Seemed well-accepted by those entities that accepted surveys

C. Conservation Program Expenditures for CII ULFT

1. CII ULFT Program: Annual Budget & Expenditure Data

	Budgeted	Actual Expenditure
a. Labor		
b. Materials		
c. Marketing & Advertising		
d. Administration & Overhead		
e. Outside Services		
f. Total	0	0

2. CII ULFT Program: Annual Cost Sharing

a. Wholesale agency contribution

b. State agency contribution

c. Federal agency contribution

d. Other contribution

e. Total	0

D. Comments

Reported as of 5/7/05

BMP 11: Conservation Pricing

Reporting Unit:	BMP Form Status:	Year:
Valencia Water Company	**100% Complete**	**2003**

A. Implementation

Rate Structure Data Volumetric Rates for Water Service by Customer Class

1. Residential	
a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$5886000
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$3181000
2. Commercial	
a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$1984000
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$468000
3. Industrial	
a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$708000
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$262000
4. Institutional / Government	
a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$426000
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$426000
5. Irrigation	
a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$1152000
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$238000
6. Other	
a. Water Rate Structure	Uniform

b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$33000
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$1000

B. Conservation Pricing Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

"Other" is recycled water service initiated in 2003.

Reported as of 5/7/05

BMP 12: Conservation Coordinator

Reporting Unit:	BMP Form Status:	Year:
Valencia Water Company	**100% Complete**	**2003**

A. Implementation

1. Does your Agency have a conservation coordinator? no
2. Is this a full-time position? no
3. If no, is the coordinator supplied by another agency with which you cooperate in a regional conservation program ? yes
4. Partner agency's name: Castaic Lake WA
5. If your agency supplies the conservation coordinator:
   - a. What percent is this conservation coordinator's position? %
   - b. Coordinator's Name
   - c. Coordinator's Title
   - d. Coordinator's Experience and Number of Years
   - e. Date Coordinator's position was created (mm/dd/yyyy)
6. Number of conservation staff, including Conservation Coordinator. 2

B. Conservation Staff Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no
   - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Reported as of 5/7/05

BMP 13: Water Waste Prohibition

Reporting Unit:	BMP Form Status:	Year:
Valencia Water Company	**100% Complete**	**2003**

A. Requirements for Documenting BMP Implementation

1. Is a water waste prohibition ordinance in effect in your service area? — no

   a. If YES, describe the ordinance:

2. Is a copy of the most current ordinance(s) on file with CUWCC? — no

   a. List local jurisdictions in your service area in the first text box and water waste ordinance citations in each jurisdiction in the second text box:

B. Implementation

1. Indicate which of the water uses listed below are prohibited by your agency or service area.

   a. Gutter flooding — no

   b. Single-pass cooling systems for new connections — no

   c. Non-recirculating systems in all new conveyor or car wash systems — yes

   d. Non-recirculating systems in all new commercial laundry systems — no

   e. Non-recirculating systems in all new decorative fountains — yes

   f. Other, please name — no

2. Describe measures that prohibit water uses listed above:

   Local planning rules.

Water Softeners:

3. Indicate which of the following measures your agency has supported in developing state law:

   a. Allow the sale of more efficient, demand-initiated regenerating DIR models. — yes

   b. Develop minimum appliance efficiency standards that:

      i.) Increase the regeneration efficiency standard to at least 3,350 grains of hardness removed per pound of common salt used. — yes

      ii.) Implement an identified maximum number of gallons discharged per gallon of soft water produced. — yes

   c. Allow local agencies, including municipalities and special districts, to set more stringent standards and/or to ban on-site regeneration of water softeners if it is demonstrated and found by the agency governing board that there is an adverse effect on the reclaimed water or groundwater supply. — yes

4. Does your agency include water softener checks in home water audit programs? — no

5. Does your agency include information about DIR and exchange-

type water softeners in educational efforts to encourage replacement of less efficient timer models? no

C. Water Waste Prohibition Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

Reported as of 5/7/05

BMP 14: Residential ULFT Replacement Programs

Reporting Unit:	BMP Form Status:	Year:
Valencia Water Company	**100% Complete**	**2003**

A. Implementation

	Single-Family Accounts	Multi-Family Units
1. Does your Agency have program(s) for replacing high-water-using toilets with ultra-low flush toilets?	yes	yes

Number of Toilets Replaced by Agency Program During Report Year

Replacement Method	SF Accounts	MF Units
2. Rebate	40	7
3. Direct Install	0	0
4. CBO Distribution	0	0
5. Other	0	0
Total	**40**	**7**

6. Describe your agency's ULFT program for single-family residences.

publicly-advertised rebate program

7. Describe your agency's ULFT program for multi-family residences.

publicly-advertised rebate program

8. Is a toilet retrofit on resale ordinance in effect for your service area? no

9. List local jurisdictions in your service area in the left box and ordinance citations in each jurisdiction in the right box:

B. Residential ULFT Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	10000	20000
2. Actual Expenditures	10000	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Program run by CLWA on behalf of retailers

Reported as of 5/7/05

Water Supply & Reuse

Reporting Unit:

Year:
2004

Water Supply Source Information

Supply Source Name	Quantity (AF) Supplied	Supply Type

Total AF:

Reported as of 5/7/05

Accounts & Water Use

Reporting Unit Name:
Valencia Water Company

Submitted to CUWCC
02/15/2005

Year:
2004

A. Service Area Population Information:

1. Total service area population 93000

B. Number of Accounts and Water Deliveries (AF)

Type	Metered		Unmetered	
	No. of Accounts	Water Deliveries (AF)	No. of Accounts	Water Deliveries (AF)
1. Single-Family	24297	15522	0	0
2. Multi-Family	293	1288	0	0
3. Commercial	928	5827	0	0
4. Industrial	442	1957	0	0
5. Institutional	63	928	0	0
6. Dedicated Irrigation	405	3193	0	0
7. Recycled Water	8	420	0	0
8. Other	0	0	0	0
9. Unaccounted	NA	0	NA	0
Total	26436	29135	0	0
	Metered		**Unmetered**	

Reported as of 5/7/05

BMP 01: Water Survey Programs for Single-Family and Multi-Family Residential Customers

Reporting Unit:	BMP Form Status:	Year:
Valencia Water Company	**100% Complete**	**2004**

A. Implementation

1. Based on your signed MOU date, 02/07/2001, your Agency STRATEGY DUE DATE is:	02/07/2003
2. Has your agency developed and implemented a targeting/ marketing strategy for SINGLE-FAMILY residential water use surveys?	no
a. If YES, when was it implemented?	
3. Has your agency developed and implemented a targeting/ marketing strategy for MULTI-FAMILY residential water use surveys?	no
a. If YES, when was it implemented?	

B. Water Survey Data

Survey Counts:	**Single Family Accounts**	**Multi-Family Units**
1. Number of surveys offered:	0	0
2. Number of surveys completed:	0	0
Indoor Survey:		
3. Check for leaks, including toilets, faucets and meter checks	no	no
4. Check showerhead flow rates, aerator flow rates, and offer to replace or recommend replacement, if necessary	no	no
5. Check toilet flow rates and offer to install or recommend installation of displacement device or direct customer to ULFT replacement program, as neccesary; replace leaking toilet flapper, as necessary	no	no
Outdoor Survey:		
6. Check irrigation system and timers	no	no
7. Review or develop customer irrigation schedule	no	no
8. Measure landscaped area (Recommended but not required for surveys)	no	no
9. Measure total irrigable area (Recommended but not required for surveys)	no	no
10. Which measurement method is typically used (Recommended but not required for surveys)		None
11. Were customers provided with information packets that included evaluation results and water savings recommendations?	no	no
12. Have the number of surveys offered and completed, survey results, and survey costs been tracked?	no	no
a. If yes, in what form are surveys tracked?		None

b. Describe how your agency tracks this information.

C. Water Survey Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

waiting on BMP revision

Reported as of 5/7/05

BMP 02: Residential Plumbing Retrofit

Reporting Unit:	BMP Form Status:	Year:
Valencia Water Company	**100% Complete**	**2004**

A. Implementation

1. Is there an enforceable ordinance in effect in your service area requiring replacement of high-flow showerheads and other water use fixtures with their low-flow counterparts? — no

   a. If YES, list local jurisdictions in your service area and code or ordinance in each:

2. Has your agency satisfied the 75% saturation requirement for single-family housing units? — no

3. Estimated percent of single-family households with low-flow showerheads: — %

4. Has your agency satisfied the 75% saturation requirement for multi-family housing units? — no

5. Estimated percent of multi-family households with low-flow showerheads: — %

6. If YES to 2 OR 4 above, please describe how saturation was determined, including the dates and results of any survey research.

B. Low-Flow Device Distribution Information

1. Has your agency developed a targeting/ marketing strategy for distributing low-flow devices? — yes

   a. If YES, when did your agency begin implementing this strategy? — 5/12/2002

   b. Describe your targeting/ marketing strategy.

   Distribution at public events, paid advertising.

Low-Flow Devices Distributed/ Installed	SF Accounts	MF Units
2. Number of low-flow showerheads distributed:	20	5
3. Number of toilet-displacement devices distributed:	0	0
4. Number of toilet flappers distributed:	0	0
5. Number of faucet aerators distributed:	25	5

6. Does your agency track the distribution and cost of low-flow devices? — yes

   a. If YES, in what format are low-flow devices tracked? — Database

   b. If yes, describe your tracking and distribution system :

   Names and address of recipient.

C. Low-Flow Device Distribution Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0

2. Actual Expenditures 0

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

CLWA provides program and funding on behalf of retailers.

Reported as of 5/7/05

BMP 03: System Water Audits, Leak Detection and Repair

Reporting Unit:	BMP Form Status:	Year:
Valencia Water Company	**100% Complete**	**2004**

A. Implementation

1. Has your agency completed a pre-screening system audit for this reporting year?	no
2. If YES, enter the values (AF/Year) used to calculate verifiable use as a percent of total production:	
a. Determine metered sales (AF)	
b. Determine other system verifiable uses (AF)	
c. Determine total supply into the system (AF)	
d. Using the numbers above, if (Metered Sales + Other Verifiable Uses) / Total Supply is < 0.9 then a full-scale system audit is required.	0.00
3. Does your agency keep necessary data on file to verify the values used to calculate verifiable uses as a percent of total production?	yes
4. Did your agency complete a full-scale audit during this report year?	yes
5. Does your agency maintain in-house records of audit results or the completed AWWA audit worksheets for the completed audit?	yes
6. Does your agency operate a system leak detection program?	no
a. If yes, describe the leak detection program:	

B. Survey Data

1. Total number of miles of distribution system line.	323
2. Number of miles of distribution system line surveyed.	323

C. System Audit / Leak Detection Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	yes
a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."	
see 2002 explanation	

E. Comments

Reported as of 5/7/05

BMP 04: Metering with Commodity Rates for all New Connections and Retrofit of Existing

Reporting Unit:	BMP Form Status:	Year:
Valencia Water Company	**100% Complete**	**2004**

A. Implementation

1. Does your agency require meters for all new connections and bill by volume-of-use?	yes
2. Does your agency have a program for retrofitting existing unmetered connections and bill by volume-of-use?	no
a. If YES, when was the plan to retrofit and bill by volume-of-use existing unmetered connections completed?	
b. Describe the program:	
3. Number of previously unmetered accounts fitted with meters during report year.	0

B. Feasibility Study

1. Has your agency conducted a feasibility study to assess the merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters?	no
a. If YES, when was the feasibility study conducted? (mm/dd/yy)	
b. Describe the feasibility study:	
2. Number of CII accounts with mixed-use meters.	0
3. Number of CII accounts with mixed-use meters retrofitted with dedicated irrigation meters during reporting period.	0

C. Meter Retrofit Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	No
a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."	

E. Comments

Reported as of 5/7/05

BMP 05: Large Landscape Conservation Programs and Incentives

Reporting Unit:	BMP Form Status:	Year:
Valencia Water Company	**100% Complete**	**2004**

A. Water Use Budgets

1. Number of Dedicated Irrigation Meter Accounts:	1119
2. Number of Dedicated Irrigation Meter Accounts with Water Budgets:	0
3. Budgeted Use for Irrigation Meter Accounts with Water Budgets (AF):	0
4. Actual Use for Irrigation Meter Accounts with Water Budgets (AF):	0
5. Does your agency provide water use notices to accounts with budgets each billing cycle?	no

B. Landscape Surveys

1. Has your agency developed a marketing / targeting strategy for landscape surveys?	no
a. If YES, when did your agency begin implementing this strategy?	
b. Description of marketing / targeting strategy:	
2. Number of Surveys Offered.	0
3. Number of Surveys Completed.	0
4. Indicate which of the following Landscape Elements are part of your survey:	
a. Irrigation System Check	no
b. Distribution Uniformity Analysis	no
c. Review / Develop Irrigation Schedules	no
d. Measure Landscape Area	no
e. Measure Total Irrigable Area	no
f. Provide Customer Report / Information	no
5. Do you track survey offers and results?	no
6. Does your agency provide follow-up surveys for previously completed surveys?	no
a. If YES, describe below:	

C. Other BMP 5 Actions

1. An agency can provide mixed-use accounts with ETo-based landscape budgets in lieu of a large landscape survey program. Does your agency provide mixed-use accounts with landscape budgets?	no
2. Number of CII mixed-use accounts with landscape budgets.	0
3. Do you offer landscape irrigation training?	yes
4. Does your agency offer financial incentives to improve	no

landscape water use efficiency?

Type of Financial Incentive:	Budget (Dollars/ Year)	Number Awarded to Customers	Total Amount Awarded
a. Rebates	0	0	0
b. Loans	0	0	0
c. Grants	0	0	0

5. Do you provide landscape water use efficiency information to new customers and customers changing services? No

a. If YES, describe below:

CLWA provides training on behalf of retailers

6. Do you have irrigated landscaping at your facilities? yes

a. If yes, is it water-efficient? yes

b. If yes, does it have dedicated irrigation metering? yes

7. Do you provide customer notices at the start of the irrigation season? no

8. Do you provide customer notices at the end of the irrigation season? no

D. Landscape Conservation Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

E. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

F. Comments

Reported as of 5/7/05

BMP 06: High-Efficiency Washing Machine Rebate Programs

Reporting Unit:	BMP Form Status:	Year:
Valencia Water Company	**100% Complete**	**2004**

A. Implementation

1. Do any energy service providers or waste water utilities in your service area offer rebates for high-efficiency washers? — no

    a. If YES, describe the offerings and incentives as well as who the energy/waste water utility provider is.

2. Does your agency offer rebates for high-efficiency washers? — no

3. What is the level of the rebate?

4. Number of rebates awarded.

B. Rebate Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? — no

    a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Reported as of 5/7/05

BMP 07: Public Information Programs

Reporting Unit:	BMP Form Status:	Year:
Valencia Water Company	**100% Complete**	**2004**

A. Implementation

1. Does your agency maintain an active public information program to promote and educate customers about water conservation? yes

a. If YES, describe the program and how it's organized.

Newlsetters, bill inserts, website, coordination with wholesaler.

2. Indicate which and how many of the following activities are included in your public information program.

Public Information Program Activity	Yes/No	Number of Events
a. Paid Advertising	yes	3
b. Public Service Announcement	no	
c. Bill Inserts / Newsletters / Brochures	yes	4
d. Bill showing water usage in comparison to previous year's usage	yes	
e. Demonstration Gardens	yes	2
f. Special Events, Media Events	yes	3
g. Speaker's Bureau	no	
h. Program to coordinate with other government agencies, industry and public interest groups and media	yes	

B. Conservation Information Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Coordinate public outreach with CLWA programs/part of CLWA budget

Reported as of 5/7/05

BMP 08: School Education Programs

Reporting Unit:	BMP Form Status:	Year:
Valencia Water Company	**100% Complete**	**2004**

A. Implementation

1.Has your agency implemented a school information program to promote water conservation? no

2. Please provide information on your school programs (by grade level):

Grade	Are grade-appropriate materials distributed?	No. of class presentations	No. of students reached	No. of teachers' workshops
Grades K-3rd				
Grades 4th-6th				
Grades 7th-8th				
High School				

3. Did your Agency's materials meet state education framework requirements? no

4. When did your Agency begin implementing this program?

B. School Education Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Program is run by CLWA on behalf of retailers

Reported as of 5/7/05

BMP 09: Conservation Programs for CII Accounts

Reporting Unit:	BMP Form Status:	Year:
Valencia Water Company	**100% Complete**	**2004**

A. Implementation

1. Has your agency identified and ranked COMMERCIAL customers according to use?	yes
2. Has your agency identified and ranked INDUSTRIAL customers according to use?	yes
3. Has your agency identified and ranked INSTITUTIONAL customers according to use?	yes

Option A: CII Water Use Survey and Customer Incentives Program

4. Is your agency operating a CII water use survey and customer incentives program for the purpose of complying with BMP 9 under this option?	yes

CII Surveys	Commercial Accounts	Industrial Accounts	Institutional Accounts
a. Number of New Surveys Offered	7	3	0
b. Number of New Surveys Completed	7	3	0
c. Number of Site Follow-ups of Previous Surveys (within 1 yr)	0	0	0
d. Number of Phone Follow-ups of Previous Surveys (within 1 yr)	0	0	0

CII Survey Components	Commercial Accounts	Industrial Accounts	Institutional Accounts
e. Site Visit	yes	yes	yes
f. Evaluation of all water-using apparatus and processes	yes	yes	yes
g. Customer report identifying recommended efficiency measures, paybacks and agency incentives	yes	yes	yes

Agency CII Customer Incentives	Budget ($/Year)	No. Awarded to Customers	Total $ Amount Awarded
h. Rebates	0	0	0
i. Loans	0	0	0
j. Grants	0	0	0
k. Others	0	0	0

Option B: CII Conservation Program Targets

5. Does your agency track CII program interventions and water savings for the purpose of complying with BMP 9 under this option?	no
6. Does your agency document and maintain records on how savings were realized and the method of calculation for estimated savings?	no
7. Estimated annual savings (AF/yr) from site-verified actions taken by agency since 1991.	0
8. Estimated annual savings (AF/yr) from non-site-verified actions taken by agency since 1991.	0

B. Conservation Program Expenditures for CII Accounts

	This Year	Next Year
1. Budgeted Expenditures	40000	40000
2. Actual Expenditures	45000	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Operating a pilot survey prorgam while waiting on BMP revision.

Reported as of 5/7/05

BMP 09a: CII ULFT Water Savings

Reporting Unit:	BMP Form Status:	Year:
Valencia Water Company	**100% Complete**	**2004**

1. Did your agency implement a CII ULFT replacement program in the reporting year? If No, please explain why on Line B. 10. — No

A. Targeting and Marketing

1. What basis does your agency use to target customers for participation in this program? Check all that apply.

   a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

2. How does your agency advertise this program? Check all that apply.

   a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

B. Implementation

1. Does your agency keep and maintain customer participant information? (Read the Help information for a complete list of all the information for this BMP.)

2. Would your agency be willing to share this information if the CUWCC did a study to evaluate the program on behalf of your agency?

3. What is the total number of customer accounts participating in the program during the last year ?

CII Subsector	Number of Toilets Replaced			
4.	Standard Gravity Tank	Air Assisted	Valve Floor Mount	Valve Wall Mount
a. Offices				
b. Retail / Wholesale				
c. Hotels				
d. Health				
e. Industrial				
f. Schools: K to 12				
g. Eating				
h. Govern-ment				
i. Churches				
j. Other				

5. Program design.

6. Does your agency use outside services to implement this program?

a. If yes, check all that apply.

7. Participant tracking and follow-up.

8. Based on your program experience, please rank on a scale of 1 to 5, with 1 being the least frequent cause and 5 being the most frequent cause, the following reasons why customers refused to participate in the program.

a. Disruption to business

b. Inadequate payback

c. Inadequate ULFT performance

d. Lack of funding

e. American's with Disabilities Act

f. Permitting

g. Other. Please describe in B. 9.

9. Please describe general program acceptance/resistance by customers, obstacles to implementation, and other isues affecting program implementation or effectiveness.

10. Please provide a general assessment of the program for this reporting year. Did your program achieve its objectives? Were your targeting and marketing approaches effective? Were program costs in line with expectations and budgeting?

ULFTs are part of a pilot CII survey program. Seemed well-accepted by those entities that accepted surveys

C. Conservation Program Expenditures for CII ULFT

1. CII ULFT Program: Annual Budget & Expenditure Data

	Budgeted	Actual Expenditure
a. Labor		
b. Materials		
c. Marketing & Advertising		
d. Administration & Overhead		
e. Outside Services		
f. Total	0	0

2. CII ULFT Program: Annual Cost Sharing

a. Wholesale agency contribution

b. State agency contribution

c. Federal agency contribution

d. Other contribution

e. Total	0

D. Comments

Reported as of 5/7/05

BMP 11: Conservation Pricing

Reporting Unit:	BMP Form Status:	Year:
Valencia Water Company	**100% Complete**	**2004**

A. Implementation

Rate Structure Data Volumetric Rates for Water Service by Customer Class

1. Residential	
a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$6504000
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$3190000
2. Commercial	
a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$2420000
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$489000
3. Industrial	
a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$813000
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$245000
4. Institutional / Government	
a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$385000
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$58000
5. Irrigation	
a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$1331000
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$231000
6. Other	
a. Water Rate Structure	Service Not Provided

b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$143000
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$7000

B. Conservation Pricing Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

"Other" is recycled water

Reported as of 5/7/05

BMP 12: Conservation Coordinator

Reporting Unit:	BMP Form Status:	Year:
Valencia Water Company	**100% Complete**	**2004**

A. Implementation

1. Does your Agency have a conservation coordinator?	no
2. Is this a full-time position?	no
3. If no, is the coordinator supplied by another agency with which you cooperate in a regional conservation program ?	yes
4. Partner agency's name:	Castaic Lake WA
5. If your agency supplies the conservation coordinator:	
a. What percent is this conservation coordinator's position?	%
b. Coordinator's Name	
c. Coordinator's Title	
d. Coordinator's Experience and Number of Years	
e. Date Coordinator's position was created (mm/dd/yyyy)	
6. Number of conservation staff, including Conservation Coordinator.	2

B. Conservation Staff Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	no
a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."	

D. Comments

Reported as of 5/7/05

BMP 13: Water Waste Prohibition

Reporting Unit:	BMP Form Status:	Year:
Valencia Water Company	**100% Complete**	**2004**

A. Requirements for Documenting BMP Implementation

1. Is a water waste prohibition ordinance in effect in your service area? — no

   a. If YES, describe the ordinance:

2. Is a copy of the most current ordinance(s) on file with CUWCC? — no

   a. List local jurisdictions in your service area in the first text box and water waste ordinance citations in each jurisdiction in the second text box:

B. Implementation

1. Indicate which of the water uses listed below are prohibited by your agency or service area.

   a. Gutter flooding — no

   b. Single-pass cooling systems for new connections — no

   c. Non-recirculating systems in all new conveyor or car wash systems — yes

   d. Non-recirculating systems in all new commercial laundry systems — no

   e. Non-recirculating systems in all new decorative fountains — yes

   f. Other, please name — no

2. Describe measures that prohibit water uses listed above:

   Local planning rules.

Water Softeners:

3. Indicate which of the following measures your agency has supported in developing state law:

   a. Allow the sale of more efficient, demand-initiated regenerating DIR models. — yes

   b. Develop minimum appliance efficiency standards that:

      i.) Increase the regeneration efficiency standard to at least 3,350 grains of hardness removed per pound of common salt used. — yes

      ii.) Implement an identified maximum number of gallons discharged per gallon of soft water produced. — yes

   c. Allow local agencies, including municipalities and special districts, to set more stringent standards and/or to ban on-site regeneration of water softeners if it is demonstrated and found by the agency governing board that there is an adverse effect on the reclaimed water or groundwater supply. — yes

4. Does your agency include water softener checks in home water audit programs? — no

5. Does your agency include information about DIR and exchange-

type water softeners in educational efforts to encourage replacement of less efficient timer models? no

C. Water Waste Prohibition Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

Reported as of 5/7/05

BMP 14: Residential ULFT Replacement Programs

Reporting Unit:	BMP Form Status:	Year:
Valencia Water Company	**100% Complete**	**2004**

A. Implementation

	Single-Family Accounts	Multi-Family Units
1. Does your Agency have program(s) for replacing high-water-using toilets with ultra-low flush toilets?	yes	yes

Number of Toilets Replaced by Agency Program During Report Year

Replacement Method	SF Accounts	MF Units
2. Rebate	90	4
3. Direct Install	0	0
4. CBO Distribution	0	0
5. Other	0	0
Total	**90**	**4**

6. Describe your agency's ULFT program for single-family residences.

publicly-advertised rebate program

7. Describe your agency's ULFT program for multi-family residences.

publicly-advertised rebate program

8. Is a toilet retrofit on resale ordinance in effect for your service area? no

9. List local jurisdictions in your service area in the left box and ordinance citations in each jurisdiction in the right box:

B. Residential ULFT Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	20000	20000
2. Actual Expenditures	20000	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Program run by CLWA on behalf of retailers

CUWCC

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Memorandum of Understanding

Base Year Data

Reporting Unit: **Newhall County Water District**	**Submitted to CUWCC** 08/21/2003

INSTRUCTIONS: This form MUST BE completed and submitted to the CUWCC prior to filing any BMP reports. The data provided on this form is used in determining coverage requirements for specific BMPs as indicated. If some of the data requested is not available, make reasonable estimates. You can update and edit values, if more precise information becomes available in the future.

For Customer Classification Definitions (i.e. Single Family, Multi-Family) click HERE.

	1. Your **BASE YEAR is 2002.** NOTE: Many calculations in determining credit history and coverage requirements are contingent on your BASE YEAR, which is calculated based on the following criteria. If a Signatory signed the MOU in 1997 or earlier, then the Base Year is 1997. If a Signatory signed the MOU after 1997, then the Base Year is the year the MOU was signed. The same holds true for USBR Contractors, except the date their Base Year is calculated from is the date that their Plan was noticed in the Federal Register.	
	BMP 1	
	2. Number of single-family customers in 2002	6662
	3. Number of multi-family units in 2002	4812
	BMPs 2 and 14	
	4. Number of single-family housing units constructed prior to 1992	5522
	5. Number of multi-family units prior to 1992	4756
	BMP 4	
	6. Number of unmetered accounts in 2002	0
	BMPs 5 and 9	
	7. Number of commercial accounts in 2002	323
	8. Number of industrial accounts in 2002	8
	9. Number of institutional accounts in 2002	71
	10. Total water use (AF) by commercial, industrial and institutional accounts in 2002	2289.66
	BMP 14	
	11. Average number of toilets per single-family household	2.5
	12. Average number of toilets per multi-family household	1.2
	13. Five-year average resale rate of single-family households	4.46

	14. Five-year average resale rate of multi-family households	9.02
	15. Average persons per single-family household	3.35
	16. Average persons per multi-family household	2.51

Accounts & Water Use

Reporting Unit Name:	Submitted to	Year:
Newhall County Water District	CUWCC **11/30/2004**	**2003**

A. Service Area Population Information:

1. Total service area population 32000

B. Number of Accounts and Water Deliveries (AF)

Type	Metered		Unmetered	
	No. of Accounts	Water Deliveries (AF)	No. of Accounts	Water Deliveries (AF)
1. Single-Family	6807	5687	0	0
2. Multi-Family	384	1803	0	0
3. Commercial	267	562	0	0
4. Industrial	7	76	0	0
5. Institutional	64	632	0	0
6. Dedicated Irrigation	70	945	0	0
7. Recycled Water	0	0	0	0
8. Other	72	130.4	0	0
9. Unaccounted	NA	21.55	NA	12.48
Total	7671	9856.95	0	12.48
	Metered		**Unmetered**	

Accounts & Water Use

Reporting Unit Name:	Submitted to	Year:
Newhall County Water District	CUWCC **11/30/2004**	**2004**

A. Service Area Population Information:

1. Total service area population 35000

B. Number of Accounts and Water Deliveries (AF)

Type	Metered		Unmetered	
	No. of Accounts	Water Deliveries (AF)	No. of Accounts	Water Deliveries (AF)
1. Single-Family	7544	6054	0	0
2. Multi-Family	367	1682	0	0
3. Commercial	283	524	0	0
4. Industrial	7	116	0	0
5. Institutional	63	613	0	0
6. Dedicated Irrigation	77	1457	0	0
7. Recycled Water	0	0	0	0
8. Other	81	54	0	0
9. Unaccounted	NA	6.62	NA	826.23
Total	8422	10506.62	0	826.23
	Metered		**Unmetered**	

BMP 01: Water Survey Programs for Single-Family and Multi-Family Residential Customers

Reporting Unit:	BMP Form Status:	Year:
Newhall County Water District	**100% Complete**	**2003**

A. Implementation

1. Based on your signed MOU date, 03/05/2002, your Agency STRATEGY DUE DATE is:	03/04/2004
2. Has your agency developed and implemented a targeting/ marketing strategy for SINGLE-FAMILY residential water use surveys?	no
a. If YES, when was it implemented?	N/A
3. Has your agency developed and implemented a targeting/ marketing strategy for MULTI-FAMILY residential water use surveys?	no
a. If YES, when was it implemented?	N/A

B. Water Survey Data

Survey Counts:	Single Family Accounts	Multi-Family Units
1. Number of surveys offered:	0	0
2. Number of surveys completed:	0	0
Indoor Survey:		
3. Check for leaks, including toilets, faucets and meter checks	no	no
4. Check showerhead flow rates, aerator flow rates, and offer to replace or recommend replacement, if necessary	no	no
5. Check toilet flow rates and offer to install or recommend installation of displacement device or direct customer to ULFT replacement program, as neccesary; replace leaking toilet flapper, as necessary	no	no
Outdoor Survey:		
6. Check irrigation system and timers	no	no
7. Review or develop customer irrigation schedule	no	no
8. Measure landscaped area (Recommended but not required for surveys)	no	no
9. Measure total irrigable area (Recommended but not required for surveys)	no	no
10. Which measurement method is typically used (Recommended but not required for surveys)		None
11. Were customers provided with information packets that included evaluation results and water savings recommendations?	no	no
12. Have the number of surveys offered and completed, survey results, and survey costs been tracked?	no	no
a. If yes, in what form are surveys tracked?		None

b. Describe how your agency tracks this information.

NCWD did not have a residential survey program from 7/2002 - 6/2003. However, in Fiscal Year 2002/2003 NCWD updated their database system

to Inhance which allowed for customer service to more easily identify and log customers based on their class code. Single-family and multi-family customers were classified in separate classes and homeowner association accounts, neighborhood recreation facilities, and other common irrigated areas were coded as landscape for future BMP 5 programs. The Inhance system also allowed NCWD to electronically sort residential customers by parcel groupings or books. From the listed books/groups, Customer Service was able to calculate the estimated number of single and multi-family dwelling units built before 1992. This data information can then be used for the development and marketing BMP 2 (Residential Plumbing Retrofit) and 14 (ULFT Rebate Program).

C. Water Survey Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

N/A

E. Comments

NCWD signed the MOU in 3/2002 and therefore was not required to implement a Residential Water Use Survey Program until 7/2003 which is the start of the 2004 reporting period. Although a residential water use survey program was not implemented in FY 2002/03, NCWD offered residential customers informative material and guidebooks to help them identify water waste or inefficiency and how they could conserve. All new residential customers were given Conservation Packets with information on water conservation for indoor and outdoor residential water usage. These packets included irrigation and gardening guidebooks (Sunset Magazine), 55 Quick Tips, recommendations to identify and prevent leaks, how to complete a self audit of your home, and other useful pamphlets and material.

Reported as of 5/18/05

BMP 01: Water Survey Programs for Single-Family and Multi-Family Residential Customers

Reporting Unit:	BMP Form Status:	Year:
Newhall County Water District	**100% Complete**	**2004**

A. Implementation

1. Based on your signed MOU date, 03/05/2002, your Agency STRATEGY DUE DATE is:	03/04/2004
2. Has your agency developed and implemented a targeting/ marketing strategy for SINGLE-FAMILY residential water use surveys?	no
a. If YES, when was it implemented?	N/A
3. Has your agency developed and implemented a targeting/ marketing strategy for MULTI-FAMILY residential water use surveys?	no
a. If YES, when was it implemented?	N/A

B. Water Survey Data

Survey Counts:	Single Family Accounts	Multi-Family Units
1. Number of surveys offered:	0	0
2. Number of surveys completed:	0	0
Indoor Survey:		
3. Check for leaks, including toilets, faucets and meter checks	no	no
4. Check showerhead flow rates, aerator flow rates, and offer to replace or recommend replacement, if necessary	no	no
5. Check toilet flow rates and offer to install or recommend installation of displacement device or direct customer to ULFT replacement program, as neccesary; replace leaking toilet flapper, as necessary	no	no
Outdoor Survey:		
6. Check irrigation system and timers	no	no
7. Review or develop customer irrigation schedule	no	no
8. Measure landscaped area (Recommended but not required for surveys)	no	no
9. Measure total irrigable area (Recommended but not required for surveys)	no	no
10. Which measurement method is typically used (Recommended but not required for surveys)		None
11. Were customers provided with information packets that included evaluation results and water savings recommendations?	no	no
12. Have the number of surveys offered and completed, survey results, and survey costs been tracked?	yes	yes
a. If yes, in what form are surveys tracked?		database

b. Describe how your agency tracks this information.

A tracking system for monitoring participation in BMP 1 and other programs was created in NCWD's Inhance database in 2002/03 which is

connected to the customer service and billing database. In 2003/04, NCWDÌs Customer Service staff began connecting the BMP data to the district's GIS mapping software. With the GIS, NCWD is able to map out pre and post 1992 residential accounts so that the district could have additional information such as lot size, topographic conditions and other issues essential to identify ideal customers for a residential survey program. Furthermore, a new detailed BMP data section was added to the Inhance system to log customer participation in each of the BMP programs including residential surveys. Combining the new BMP data section and the GIS capabilities, NCWD was able to determine trends in customer behavior/participation so that BMP 1 and other programs can be better marketed and implemented. Specific data and information related to BMP 1 is also tracked in an excel database.

C. Water Survey Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

N/A

E. Comments

NCWD filed a late exemption in November 2004 for the District's first year (2003/04 reporting period) for implementing BMP 1. NCWD did not have the staff or budgeted funds to implement a residential survey program. NCWD has begun development of a pilot survey program in late FY 2003/04 to evaluate the effectiveness (resulting water savings and cost savings achieved) of a district managed residential survey program. The pilot survey program is expected to begin in 2005. After the completion of 30-50 surveys and post-survey monitoring and assessments, NCWD will determine the most cost-effective method for reducing residential water usage out of the listed options below: 1. In-house (staff operated and maintained) survey program. 2. Outsourced (to outside consulting firm) large scale residential survey program. 3. Valley-wide survey program (with other local retailers and CLWA assistance). 4. Discontinuation of any and all residential survey programs. Although a residential water use survey program was not implemented in FY 2003/04, NCWD continued to offer residential customers informative material and guidebooks to help them identify water waste or inefficiency and how they could conserve. All new residential customers were given Conservation Packets with information on water conservation for indoor and outdoor residential water usage. These packets included irrigation and gardening guidebooks (Sunset Magazine), 55 Quick Tips, recommendations to identify and prevent leaks, how to complete a self audit of your home, and other useful pamphlets and material.

Reported as of 5/18/05

BMP 02: Residential Plumbing Retrofit

Reporting Unit:	BMP Form Status:	Year:
Newhall County Water District	**100% Complete**	**2004**

A. Implementation

1. Is there an enforceable ordinance in effect in your service area requiring replacement of high-flow showerheads and other water use fixtures with their low-flow counterparts? no

   a. If YES, list local jurisdictions in your service area and code or ordinance in each:

   The City of Santa Clarita requires the replacement of high flow plumbing fixtures and devices in high stage drought conditions only. No other local ordinance or code requiring installation or retrofit of low flow plumbing devices (for residential customers) is in place for NCWDís service area in the Santa Clarita Valley. NCWD is creating a Water Use Efficiency Ordinance (effective 12/2004) with listed recommendations to be water efficient including the installation of low flow plumbing devices. NCWD is considering requiring that customers/residents follow these recommendations during a DWR declared drought.

2. Has your agency satisfied the 75% saturation requirement for single-family housing units? no

3. Estimated percent of single-family households with low-flow showerheads: 1.3%

4. Has your agency satisfied the 75% saturation requirement for multi-family housing units? no

5. Estimated percent of multi-family households with low-flow showerheads: .15%

6. If YES to 2 OR 4 above, please describe how saturation was determined, including the dates and results of any survey research.

   N/A

B. Low-Flow Device Distribution Information

1. Has your agency developed a targeting/ marketing strategy for distributing low-flow devices? yes

   a. If YES, when did your agency begin implementing this strategy? 01/01/2003

   b. Describe your targeting/ marketing strategy.

   Showerheads and aerators were provided by the wholesaler (CLWA) to give out to customers at local events (i.e. Open House, River Rally, Emergency Expo). The program was mainly marketed by CLWA; however NCWD advertised the program in the quarterly newsletter and at the front office desk. In 2003/04 NCWD expanded the BMP 2 program to also include all pre-1992 multi-family homes in addition to the (pre-1992) single-family homes. This includes several mobile home parks and small apartment buildings built prior to 1992. Customers were allocated up to 4 devices per household unless they could prove additional low flow devices were necessary.

Low-Flow Devices Distributed/ Installed	SF Accounts	MF Units
2. Number of low-flow showerheads distributed:	21	4
3. Number of toilet-displacement devices distributed:	0	0
4. Number of toilet flappers distributed:	0	0
5. Number of faucet aerators distributed:	29	27

6. Does your agency track the distribution and cost of low-flow devices? yes

a. If YES, in what format are low-flow devices tracked? Database

b. If yes, describe your tracking and distribution system :

In 2003/04 NCWD staff added data box in the customer service and billing database (Inhance) in order to accurately track customer participation. BMP participation was categorized by program and tracked based on the status or level of a customer's participation as follows: 1. Call or email of interest 2. Received Application Form (for rebate programs) 3. Participated in designated BMP program (example: received showerhead) 4. Customer on waiting list 5. Post program follow up completed For BMP 2, each low flow device (i.e. showerheads, faucet aerators and garden hose spray nozzles) was tracked as well. Using the database, NCWD was able to map the distribution of participation throughout the four service areas and easily identify patterns and trends. For example, participation in BMP 2 was clumped in neighborhoods most likely due to communication between neighbors regarding the programs.

C. Low-Flow Device Distribution Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	2228.4	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

N/A

E. Comments

In June of 2/004, NCWD offered the free devices to both single and multi-family customers to increase distribution and meet the requirements of BMP 2. NCWD also started providing the low flow devices to customers at the district's front office rather than strictly at public events. The estimated expenditures are for approximately 60 hours of staff time invested at $37.14/hour. Staff hours includes the time necessary to created the tracking database and maps, coordinating with CLWA, assisting customers, stocking front office inventory, and logging customer participation.

Reported as of 5/18/05

BMP 03: System Water Audits, Leak Detection and Repair

Reporting Unit:	BMP Form Status:	Year:
Newhall County Water District	**100% Complete**	**2003**

A. Implementation

1. Has your agency completed a pre-screening system audit for this reporting year? yes

2. If YES, enter the values (AF/Year) used to calculate verifiable use as a percent of total production:

   a. Determine metered sales (AF) 9840.96

   b. Determine other system verifiable uses (AF) 0

   c. Determine total supply into the system (AF) 9869.43

   d. Using the numbers above, if (Metered Sales + Other Verifiable Uses) / Total Supply is < 0.9 then a full-scale system audit is required. 1.00

3. Does your agency keep necessary data on file to verify the values used to calculate verifiable uses as a percent of total production? yes

4. Did your agency complete a full-scale audit during this report year? no

5. Does your agency maintain in-house records of audit results or the completed AWWA audit worksheets for the completed audit? no

6. Does your agency operate a system leak detection program? no

   a. If yes, describe the leak detection program:

   Although NCWD does not have a proactive leak detection program, the district monitors key data to quickly identify leaks and other necessary repairs in the distribution system. Monthly records of total water purchased from CLWA and water supply obtained through district wells (groundwater), as well as the total water sales and other verifiable usage for all 4 service areas is logged. The percent water loss is tracked to determine potential leaks or system misreads throughout the 4 service areas. The total (annual) water loss for the entire district averages around 7.5 to 9.0 percent.

B. Survey Data

1. Total number of miles of distribution system line. 134.93

2. Number of miles of distribution system line surveyed. 0

C. System Audit / Leak Detection Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	500000	382.343
2. Actual Expenditures	567444.49	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

   a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

   N/A

E. Comments

The listed budget and expenditures [Section C (1,2)] include all maintenance, leak and general repairs, upgrades and replacement of the distribution system in the four service areas. NCWD investigates

potential leaks and system damages as needed and monitors the collected data to detect major leaks and other irregularities in the system. The investigation of system leaks is classified under system maintenance in the 2002-03 Budget. A detailed breakdown of the budget and expenditures for Leak Detection, Repair and Distribution System Maintenance is attached (submitted separately to CUWCC).

Reported as of 5/18/05

BMP 03: System Water Audits, Leak Detection and Repair

Reporting Unit:	BMP Form Status:	Year:
Newhall County Water District	**100% Complete**	**2004**

A. Implementation

1. Has your agency completed a pre-screening system audit for this reporting year? — no

2. If YES, enter the values (AF/Year) used to calculate verifiable use as a percent of total production:

a. Determine metered sales (AF)	10507.16
b. Determine other system verifiable uses (AF)	-4.04
c. Determine total supply into the system (AF)	11332.85
d. Using the numbers above, if (Metered Sales + Other Verifiable Uses) / Total Supply is < 0.9 then a full-scale system audit is required.	0.93

3. Does your agency keep necessary data on file to verify the values used to calculate verifiable uses as a percent of total production? — yes

4. Did your agency complete a full-scale audit during this report year? — yes

5. Does your agency maintain in-house records of audit results or the completed AWWA audit worksheets for the completed audit? — no

6. Does your agency operate a system leak detection program? — no

a. If yes, describe the leak detection program:

Refer to 2002-03 Submission

B. Survey Data

1. Total number of miles of distribution system line.	147.41
2. Number of miles of distribution system line surveyed.	0

C. System Audit / Leak Detection Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	382343	500000
2. Actual Expenditures	358475.08	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? — No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

N/A

E. Comments

The listed budget and expenditures [Section C (1,2)] include all maintenance, leak and general repairs, upgrades and replacement of the distribution system in the four service areas. NCWD investigates potential leaks and system damages as needed and monitors the collected data to detect major leaks and other irregularities in the system. The investigation of system leaks is classified under system maintenance in the 2002-03 Budget. A detailed breakdown of the budget and expenditures for Leak Detection, Repair and Distribution System Maintenance is attached (submitted separately to CUWCC).

Reported as of 5/18/05

BMP 04: Metering with Commodity Rates for all New Connections and Retrofit of Existing

Reporting Unit:	BMP Form Status:	Year:
Newhall County Water District	**100% Complete**	**2003**

A. Implementation

1. Does your agency require meters for all new connections and bill by volume-of-use? yes

2. Does your agency have a program for retrofitting existing unmetered connections and bill by volume-of-use? no

a. If YES, when was the plan to retrofit and bill by volume-of-use existing unmetered connections completed? Always Metered

b. Describe the program:

All existing accounts are metered and have been for several years. All new connections are required to install the appropriate size meter and type (i.e. CII mixed or dedication irrigation meter) as determined necessary by the district's engineering department and approved by management.

3. Number of previously unmetered accounts fitted with meters during report year. 0

B. Feasibility Study

1. Has your agency conducted a feasibility study to assess the merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters? no

a. If YES, when was the feasibility study conducted? (mm/dd/yy) N/A

b. Describe the feasibility study:

N/A - NCWD has an "at least as effective" district policy to assess the benefits of installing a dedicated irrigation meter on a case by case basis [see Section D(b)].

2. Number of CII accounts with mixed-use meters. 341

3. Number of CII accounts with mixed-use meters retrofitted with dedicated irrigation meters during reporting period. 0

C. Meter Retrofit Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? yes

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

NCWD meets the requirements under BMP 4 Sections A(a), C, and D as described in the BMP. A dedicated irrigation meter retrofit program [Section A(b)] and a feasibility study [Section a(c)] on the merits of an incentive program to switch mixed meters to dedicated landscape (irrigation) meters has not been completed. These two requirements have been meet through NCWD*s new water service connection policies and procedures. Currently, dedicated irrigation meters have been installed in all appropriate CII properties within the district and therefore there are no retrofit opportunities available. Like all CII and other meters, the dedicated irrigation meters are

billed based on monthly usage. The irrigation meters are also separately billed from a property*s main meter with a separate monthly service fee (based on the size of the meter), energy and water availability fees, and other standard monthly charges. Instead of a feasibility study to determine the potential merits of an incentive program, NCWD requires developers to install dedicated irrigation meters when appropriate (as determined by the district). NCWD evaluates the cost/benefits of installing a dedicated irrigation meter during a new projects* (or customer*s) water service application and installation process. The engineering staff work with the developer/customer to determine if a dedicated irrigation meter is necessary and will benefit the customer and the district to help conserve water. If the NCWD*s engineering department determines a dedicated irrigation meter is necessary, the developer/customer is required to install the separate meter and incur any related installation costs. As a result of these policies, NCWD has a significant number of dedicated irrigation meters in the CII sectors that will allow the district to better audit these accounts and establish water budgets (for BMP 5 requirements) to reduce district water usage.

E. Comments

NCWD has met the requirements stated under BMP 4 requiring meters for all existing and new customers. Furthermore, dedicated irrigation meters are installed at the time of initial service connection (when appropriate) to reduce water usage and minimize costs to the district and the customer. NCWD will assist any property owners in retrofitting their property with a dedicated irrigation meter if there is an increase in the landscape area(s) or other circumstance to constitute the need for a separate landscape/irrigation meter. However, NCWD does not offer any incentive for customers to retrofit and the associated installation costs are the responsibility of the customers.

Reported as of 5/18/05

BMP 04: Metering with Commodity Rates for all New Connections and Retrofit of Existing

Reporting Unit:	BMP Form Status:	Year:
Newhall County Water District	**100% Complete**	**2004**

A. Implementation

1. Does your agency require meters for all new connections and bill by volume-of-use?	yes
2. Does your agency have a program for retrofitting existing unmetered connections and bill by volume-of-use?	no
a. If YES, when was the plan to retrofit and bill by volume-of-use existing unmetered connections completed?	N/A

b. Describe the program:

All existing accounts are metered and have been for several years. All new connections are required to install the appropriate size meter and type (i.e. CII mixed, residential, dedication irrigation meter, etc.) as determined necessary by the district's engineering department.

3. Number of previously unmetered accounts fitted with meters during report year.	0

B. Feasibility Study

1. Has your agency conducted a feasibility study to assess the merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters?	no
a. If YES, when was the feasibility study conducted? (mm/dd/yy)	N/ A

b. Describe the feasibility study:

N/A

2. Number of CII accounts with mixed-use meters.	358
3. Number of CII accounts with mixed-use meters retrofitted with dedicated irrigation meters during reporting period.	0

C. Meter Retrofit Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	yes

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

N/A ñ NCWD has an "at least as effective" district policy to assess the benefits of installing a dedicated irrigation meter on a case by case basis [see Section D(a) 2002-03 submission].

E. Comments

NCWD continues to meet the requirements under BMP 4 Sections A(a), C, D as described in the BMP, as well as Section A(b) (retrofit program) and Section A(c) (feasibility study) under the district*s úat least as effectiveî program in place. These two requirements are met through NCWD*s new water service connection policies and procedures. The incentives of installing a dedicated irrigation meter are evaluated during the initial service application process for each individual service application.

Dedicated irrigation meters are installed in all appropriate CII properties during the initial service connection to minimize retrofit costs to the district and the customer (refer to BMP 4 2002-03 Comment submission).

Reported as of 5/18/05

BMP 05: Large Landscape Conservation Programs and Incentives

Reporting Unit:	BMP Form Status:	Year:
Newhall County Water District	**100% Complete**	**2003**

A. Water Use Budgets

1. Number of Dedicated Irrigation Meter Accounts:	118
2. Number of Dedicated Irrigation Meter Accounts with Water Budgets:	0
3. Budgeted Use for Irrigation Meter Accounts with Water Budgets (AF):	0
4. Actual Use for Irrigation Meter Accounts with Water Budgets (AF):	0
5. Does your agency provide water use notices to accounts with budgets each billing cycle?	no

B. Landscape Surveys

1. Has your agency developed a marketing / targeting strategy for landscape surveys?	no
a. If YES, when did your agency begin implementing this strategy?	N/A
b. Description of marketing / targeting strategy:	
N/A	
2. Number of Surveys Offered.	0
3. Number of Surveys Completed.	0
4. Indicate which of the following Landscape Elements are part of your survey:	
a. Irrigation System Check	no
b. Distribution Uniformity Analysis	no
c. Review / Develop Irrigation Schedules	no
d. Measure Landscape Area	no
e. Measure Total Irrigable Area	no
f. Provide Customer Report / Information	no
5. Do you track survey offers and results?	no
6. Does your agency provide follow-up surveys for previously completed surveys?	no
a. If YES, describe below:	
N/A	

C. Other BMP 5 Actions

1. An agency can provide mixed-use accounts with ETo-based landscape budgets in lieu of a large landscape survey program. Does your agency provide mixed-use accounts with landscape budgets?	no
2. Number of CII mixed-use accounts with landscape budgets.	0
3. Do you offer landscape irrigation training?	no
4. Does your agency offer financial incentives to improve landscape water use efficiency?	no

Type of Financial Incentive:	Budget (Dollars/ Year)	Number Awarded to Customers	Total Amount Awarded

a. Rebates	0	0	0
b. Loans	0	0	0
c. Grants	0	0	0

5. Do you provide landscape water use efficiency information to new customers and customers changing services? yes

a. If YES, describe below:

NCWD offers basic landscape design manuals (published by AWWA) to help customers incorporate native and drought tolerant plants with consideration to the unique conditions found in the Santa Clarita Valley. Information on efficient gardening is also provided to children in the Culver and AWWA published coloring and activity books provided to customers at events and the NCWD office. The local water wholesaler (CLWA) also provides NCWD and the other local retailers with several sources and opportunities for all customers to learn more about water efficient landscape irrigation. Residents and businesses in the valley have access to an extensive list of plants and key information on planting and maintaining the recommended species on CLWAls website. CLWA also offers training courses to all Santa Clarita Valley residents (including NCWD customers), gardeners and business owners on creating and maintaining a water efficient landscape. Classes include organic gardening, drip irrigation, native and drought tolerant plants, among other classes available. NCWD further promotes water efficient landscape design and irrigation through newsletter articles, local newspaper articles and through the districtls Ordinance 101 (Water Conservation) that lists recommended watering hours and outdoor (and indoor) water wasting activities.

6. Do you have irrigated landscaping at your facilities? yes

a. If yes, is it water-efficient? yes

b. If yes, does it have dedicated irrigation metering? yes

7. Do you provide customer notices at the start of the irrigation season? yes

8. Do you provide customer notices at the end of the irrigation season? yes

D. Landscape Conservation Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

E. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

N/A

F. Comments

There are no listed expenditures for BMP 5 for 2002/03 since any costs for landscape /irrigation educational material and guidebooks were included in expenditures for BMP 7 (Public Information Programs). Estimated expenditures specifically for educational material on water efficient landscape/irrigation are approximately $400 ordered from AWWA. Staff hours and miscellaneous costs are also calculated under BMP 7. NCWD signed the MOU in 3/2002 and therefore was not

required to implement a Landscape Survey Program until 7/2004 which is the start of the 2005 reporting period.

Reported as of 5/18/05

BMP 05: Large Landscape Conservation Programs and Incentives

Reporting Unit:	BMP Form Status:	Year:
Newhall County Water District	**100% Complete**	**2004**

A. Water Use Budgets

1. Number of Dedicated Irrigation Meter Accounts:	133
2. Number of Dedicated Irrigation Meter Accounts with Water Budgets:	0
3. Budgeted Use for Irrigation Meter Accounts with Water Budgets (AF):	0
4. Actual Use for Irrigation Meter Accounts with Water Budgets (AF):	0
5. Does your agency provide water use notices to accounts with budgets each billing cycle?	no

B. Landscape Surveys

1. Has your agency developed a marketing / targeting strategy for landscape surveys?	no
a. If YES, when did your agency begin implementing this strategy?	N/A
b. Description of marketing / targeting strategy:	
N/A	
2. Number of Surveys Offered.	0
3. Number of Surveys Completed.	0
4. Indicate which of the following Landscape Elements are part of your survey:	
a. Irrigation System Check	no
b. Distribution Uniformity Analysis	no
c. Review / Develop Irrigation Schedules	no
d. Measure Landscape Area	no
e. Measure Total Irrigable Area	no
f. Provide Customer Report / Information	no
5. Do you track survey offers and results?	no
6. Does your agency provide follow-up surveys for previously completed surveys?	no
a. If YES, describe below:	
N/A	

C. Other BMP 5 Actions

1. An agency can provide mixed-use accounts with ETo-based landscape budgets in lieu of a large landscape survey program. Does your agency provide mixed-use accounts with landscape budgets?	no
2. Number of CII mixed-use accounts with landscape budgets.	0
3. Do you offer landscape irrigation training?	yes
4. Does your agency offer financial incentives to improve landscape water use efficiency?	no

Type of Financial Incentive:	Budget (Dollars/ Year)	Number Awarded to Customers	Total Amount Awarded

a. Rebates	0	0	0
b. Loans	0	0	0
c. Grants	0	0	0

5. Do you provide landscape water use efficiency information to new customers and customers changing services? yes

a. If YES, describe below:

In 2003/04 NCWD expanded its library of water conservation information and resources to include more landscape and irrigation guidebooks, references and other helpful material for customers. The District provided the Sunset Magazine series to all new homeowners and made them available to customers attending public events and to customers at the NCWD office. The Sunset magazine series included; ìSmart Water & Energy Use in the West,î ìHow to Water Your Garden,î and ìWater-Wise Gardening for California.î NCWD also offers basic landscape design manuals (published by AWWA) to help customers incorporate native and drought tolerant plants with consideration to the unique conditions found in the Santa Clarita Valley. Information on efficient gardening is also provided to children in the Culver and AWWA published coloring and activity books provided to customers at events and the NCWD office. The local wholesaler (CLWA) continues to provide a list of native and drought tolerant vegetation on their website and offer various courses on water efficient landscape design and irrigation. The resources provided by CLWA are available to all NCWD customers and other residents of the Santa Clarita Valley. NCWD will continue to expand its efforts to promote water efficient landscape and irrigation practices throughout the district. At the end of 2003/04, The Engineering and Conservation Department began applying customer data to the districtís GIS mapping system to start gathering necessary information and data to establish water budgets. The information will also help the district in identify ideal candidates for landscape surveys and/or water budgets based on their lot size, location, topographic features and water usage history.

6. Do you have irrigated landscaping at your facilities? yes

a. If yes, is it water-efficient? yes

b. If yes, does it have dedicated irrigation metering? yes

7. Do you provide customer notices at the start of the irrigation season? yes

8. Do you provide customer notices at the end of the irrigation season? yes

D. Landscape Conservation Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

E. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

F. Comments

There are no listed expenditures for BMP 5 for 2002/03 since any costs for landscape /irrigation educational material and guidebooks was included in expenditures for BMP 7 (Public Information Programs). Estimated expenditures specifically for educational material on water

efficient landscape/irrigation are $2,343.30 for the 3 Sunset Magazine guidebooks, and approximately $1,500 to $2,000 for various education materials from AWWA and the Culver Company. Staff hours and miscellaneous costs are also calculated under BMP 7. NCWD is investigating installing a CIMIS weather station for district customers to use to obtain accurate (local) ET values to improve the efficiency of their irrigation systems. The district will be increasing its efforts to promote water efficient irrigation and will be developing a landscape survey program targeting top water using meters (per square foot landscape area). NCWD filed a late exemption in November 2004 for the District's second reporting period (2005/06) for implementing BMP 5. The exemption was filed since NCWD currently does not have the staff or budgeted funds to implement a landscape survey program, however the district will actively seek funding sources for such a program.

Reported as of 5/18/05

BMP 06: High-Efficiency Washing Machine Rebate Programs

Reporting Unit:	BMP Form Status:	Year:
Newhall County Water District	**100% Complete**	**2003**

A. Implementation

1. Do any energy service providers or waste water utilities in your service area offer rebates for high-efficiency washers? — no

   a. If YES, describe the offerings and incentives as well as who the energy/waste water utility provider is.

   NCWD did not offer a rebate program in 2002-03. Los Angeles County Sanitation Districts 32 & 26 (LACSD) and Southern California Edison did not offer any type of rebate for water efficient clothes washers.

2. Does your agency offer rebates for high-efficiency washers? — no
3. What is the level of the rebate? — 0
4. Number of rebates awarded. — 0

B. Rebate Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? — no

   a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

   N/A

D. Comments

N/A

Reported as of 5/18/05

BMP 06: High-Efficiency Washing Machine Rebate Programs

Reporting Unit:	BMP Form Status:	Year:
Newhall County Water District	**100% Complete**	**2004**

A. Implementation

1. Do any energy service providers or waste water utilities in your service area offer rebates for high-efficiency washers? — no

   a. If YES, describe the offerings and incentives as well as who the energy/waste water utility provider is.

   Los Angeles County Sanitation Districts or LACSD, (specifically 32 & 26) offer a cost reduction of 20%, 40% or 60% for customers that reduce their wastewater (sewer) discharge by 20% or more. The reduction is calculated based on a 12 month comparison of water usage as shown on the customer's water bill (from NCWD). If they reduced their bill 20%, they receive a 20% reduction on their fees. Customers must reduce their water usage (and thus discharge) by at least 20% in order to qualify for the financial incentives. Installing a water efficient clothes washer could generate 20% water savings and therefore qualify the customer for a reduction. However, neither LACSD nor Southern California Edison offers a rebate specifically for high efficiency clothes washers. Thus, at this time NCWD is not offering a complementing rebate to customers.

2. Does your agency offer rebates for high-efficiency washers? — no
3. What is the level of the rebate? — 0
4. Number of rebates awarded. — 0

B. Rebate Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? — no

   a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

   N/A

D. Comments

NCWD currently does not have the staff or funds to implement a water efficient clothes washer rebate program. NCWD will reassess the cost-effectiveness of such a program as funding sources change and/or Southern California Edison or LACSD implement a specific clothes washer rebate program.

Reported as of 5/18/05

BMP 07: Public Information Programs

Reporting Unit:	BMP Form Status:	Year:
Newhall County Water District	**100% Complete**	**2003**

A. Implementation

1. Does your agency maintain an active public information program to promote and educate customers about water conservation? yes

a. If YES, describe the program and how it's organized.

NCWD has a comprehensive public outreach and education program to promote water conservation and water use efficiency. The district efforts are designed to target the various classes of customers including (single & multi-family) residential, CII and large landscape. For several years the district has been releasing a quarterly newsletter to the entire customer base to inform customers on district upgrades and additions to improve the water quality and service, recognition of employee excellence, and education on new district policies and programs. Most importantly, the newsletter includes a "Water Awareness" section that provides customers with useful tips and recommendations to be water efficient and to reduce water waste. The newsletters also include a seasonal article describing how to increase water efficiency such as how to set your summer irrigation schedule or how to protect pipes from freezing temperatures in the winter. In addition to the newsletter, NCWD includes a bill notice (or by-line) with important reminders and water conservation tips. For example, the bill notice in May 2003 reminded customers to change out their old toilets and receive a ULFT rebate voucher from the district. NCWD also includes bill stuffers in the customer*s monthly water bill several times a year to promote conservation programs and/or to provide general information on conservation. NCWD participates in 4 major community events (River Rally, CLWA Open House, Emergency Expo and The Street Fair) to further reach out to the customers and the general public. At these events and at the district office, customers can obtain pamphlets, guidebooks, conservation promo items and children*s coloring and activities books on water conservation, and other informative material. NCWD maintains an extensive inventory of information resource material on conservation, leak detection, water safety, district operations, water quality (annual reports), and more. In FY 2002-03 NCWD expanded its website to include a úWater Conservationî section which includes easy tips for conserving water. NCWD continues to expand all areas of public outreach and education

2. Indicate which and how many of the following activities are included in your public information program.

Public Information Program Activity	Yes/No	Number of Events
a. Paid Advertising	no	0
b. Public Service Announcement	no	0
c. Bill Inserts / Newsletters / Brochures	yes	5
d. Bill showing water usage in comparison to previous year's usage	yes	
e. Demonstration Gardens	yes	1
f. Special Events, Media Events	yes	4
g. Speaker's Bureau	no	
h. Program to coordinate with other government agencies, industry and public interest groups and media	yes	

B. Conservation Information Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	14930.85	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

In 2002/03 the BMP 7 (Public Information Programs) budget was not separately defined and therefore only actual expenditures are provided. Expenditures were taken from a general account that is used for various uses including public outreach and education, employee supplies and uniforms, and other marketing uses. The expenditures were calculated based on the development and production (printing, mailing, etc.) costs associated with the PR material and events, as well as the employee time expended. Various levels of staff participated in public outreach efforts including management, customer service, accounting, and technical field staff. Therefore, an average hourly employee rate of $37.14 was used which includes auxiliary costs such as insurance, worker*s compensation, taxes and other fees. With a total of 7,715 meter accounts and an estimated population of 28,000, NCWD expended $1.94 per meter account or $0.53 per person.

Reported as of 5/18/05

BMP 07: Public Information Programs

Reporting Unit:	BMP Form Status:	Year:
Newhall County Water District	**100% Complete**	**2004**

A. Implementation

1. Does your agency maintain an active public information program to promote and educate customers about water conservation? yes

a. If YES, describe the program and how it's organized.

NCWD continued to maintain a comprehensive public outreach and education program to promote water conservation and water use efficiency in FY 2003/04. In 2003/04 NCWD identified that irrigation constituted a significant portion of the districtÌs water usage and therefore added new information material to educate and promote water efficient irrigation (to residential customers). The District provided the Sunset Magazine series to all new homeowners and made them available to customers attending public events and to customers at the NCWD office. The Sunset magazine series included; Ìsmart Water & Energy Use in the West,Ó ÏHow to Water Your Garden,Ó and ÏWater-Wise Gardening for California.Ó NCWD continued to release a quarterly newsletter to the entire customer base to inform customers on district upgrades and additions to improve the water quality and service, recognition of employee excellence, education on new district policies and programs and water conservation. The newsletters also continued to include seasonal articles describing how to increase water efficiency for indoor and outdoor water usage. In May of 2003, NCWD included a bill notice (or by-line) in the customerÌs monthly water bill to remind customers to change out their old toilets and receive a ULFT rebate voucher from the district. A separate postcard was also sent to advertise the valley wide Residential ULFT Rebate Program sponsored and organized by the local wholesaler (CLWA). The district works with the wholesaler and the other local water retailers in the Santa Clarita Valley to promote water efficiency and conservation through various PR campaigns, advertising and newspaper articles. Since the annual city Street Fair was not held September 2003, NCWD only participated in 3 major community events (River Rally, CLWA Open House, and the Emergency Expo) to further reach out to the customers and the general public. At these events and at the district office, customers can obtain pamphlets, guidebooks, conservation promo items and childrenÌs coloring and activities books on water conservation, and other informative material. NCWD maintains an extensive inventory of information resource material on conservation, leak detection, water safety, district operations, water quality (annual reports), and more. NCWD continued to expand the ÏWater ConservationÓ section of the district website adding new easy tips for conserving water and links to useful information sites.

2. Indicate which and how many of the following activities are included in your public information program.

Public Information Program Activity	Yes/No	Number of Events
a. Paid Advertising	no	0
b. Public Service Announcement	no	0
c. Bill Inserts / Newsletters / Brochures	yes	6
d. Bill showing water usage in comparison to previous year's usage	yes	
e. Demonstration Gardens	yes	1
f. Special Events, Media Events	yes	3

g. Speaker's Bureau	no	0
h. Program to coordinate with other government agencies, industry and public interest groups and media	yes	

B. Conservation Information Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	10000
2. Actual Expenditures	25692.01	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

In mid 2003/04 a separate BMP budget account was created to better record expenses related to the BMP programs. Therefore, the expenditures for BMP 7 in 2003/04 are recorded under two separate accounts in the districtÌs budget and expenditures report. Most of the recorded BMP expenses were for BMP 7 (Public Information Programs) such as design and printing costs, educational and promotional item purchases and other related costs. The expenditures were calculated based on the development and production (printing, mailing, etc.) costs associated with the PR material and events, as well as the employee time expended. Various levels of staff participated in public outreach efforts including management, customer service, accounting, and technical field staff. Therefore, an average hourly employee rate of $37.14 was used which includes auxiliary costs such as insurance, workerÌs compensation, taxes and other fees. With a total of 8,531 meter accounts and an estimated population of 32,000, NCWD expended $3.01 per meter account or $0.80 per person.

Reported as of 5/18/05

BMP 08: School Education Programs

Reporting Unit:
Newhall County Water District

BMP Form Status:
100% Complete

Year:
2003

A. Implementation

1.Has your agency implemented a school information program to promote water conservation? yes

2. Please provide information on your school programs (by grade level):

Grade	Are grade-appropriate materials distributed?	No. of class presentations	No. of students reached	No. of teachers' workshops
Grades K-3rd	yes	47	1410	0
Grades 4th-6th	yes	23	700	0
Grades 7th-8th	yes	0	0	0
High School	yes	0	0	0

3. Did your Agency's materials meet state education framework requirements? yes

4. When did your Agency begin implementing this program? 01/01/1993

B. School Education Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

N/A

D. Comments

The education program is provided entirely by our wholesaler (CLWA) on our behalf since 1993 for K-6 and 7-12, however the program has been unsuccessful at reach students and teachers in grades 7-12. Students travel to CLWA for their workshops and presentations which include a tour of CLWA's drought tolerant and native vegetation garden and classes how water science, conservation and composting. The actual number of workshops held was not provided to NCWD, therefore an estimated value is provided in this report. The estimated number of presentations was based on the total number of participating students assuming 30 students per workshop or presentation. Currently, CLWA does not offer curriculum workshops teachers on water conservation and related topics.

Reported as of 5/18/05

BMP 08: School Education Programs

Reporting Unit:	BMP Form Status:	Year:
Newhall County Water District	**100% Complete**	**2004**

A. Implementation

1.Has your agency implemented a school information program to promote water conservation? yes

2. Please provide information on your school programs (by grade level):

Grade	Are grade-appropriate materials distributed?	No. of class presentations	No. of students reached	No. of teachers' workshops
Grades K-3rd	yes	29	844	0
Grades 4th-6th	yes	22	650	0
Grades 7th-8th	yes	0	0	0
High School	yes	0	0	0

3. Did your Agency's materials meet state education framework requirements? yes

4. When did your Agency begin implementing this program? 01/01/1993

B. School Education Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

N/A

D. Comments

CLWA continues to organize and implement a school education program on our behalf of NCWD and the other water retailers in the Santa Clarita Valley since 1993 for K-6. In 2003-04, grades and 7-12 students and teachers did not participate. CLWA is working on developing a program in 2005 specifically targeted at grades 7-12. The actual number of workshops held was not provided to NCWD for 2003-04, therefore an estimated value is provided in this report. The estimated number of presentations was based on the total number of participating students assuming 30 students per workshop or presentation. Currently, CLWA does not offer curriculum workshops teachers on water conservation and related topics.

Reported as of 5/18/05

BMP 09: Conservation Programs for CII Accounts

Reporting Unit:	BMP Form Status:	Year:
Newhall County Water District	**100% Complete**	**2003**

A. Implementation

1. Has your agency identified and ranked COMMERCIAL customers according to use?	yes
2. Has your agency identified and ranked INDUSTRIAL customers according to use?	yes
3. Has your agency identified and ranked INSTITUTIONAL customers according to use?	yes

Option A: CII Water Use Survey and Customer Incentives Program

4. Is your agency operating a CII water use survey and customer incentives program for the purpose of complying with BMP 9 under this option? **no**

CII Surveys	Commercial Accounts	Industrial Accounts	Institutional Accounts
a. Number of New Surveys Offered	0	0	0
b. Number of New Surveys Completed	0	0	0
c. Number of Site Follow-ups of Previous Surveys (within 1 yr)	0	0	0
d. Number of Phone Follow-ups of Previous Surveys (within 1 yr)	0	0	0

CII Survey Components	Commercial Accounts	Industrial Accounts	Institutional Accounts
e. Site Visit	no	no	no
f. Evaluation of all water-using apparatus and processes	no	no	no
g. Customer report identifying recommended efficiency measures, paybacks and agency incentives	no	no	no

Agency CII Customer Incentives	Budget ($/Year)	No. Awarded to Customers	Total $ Amount Awarded
h. Rebates	0	0	0
i. Loans	0	0	0
j. Grants	0	0	0
k. Others	0	0	0

Option B: CII Conservation Program Targets

5. Does your agency track CII program interventions and water **no**

savings for the purpose of complying with BMP 9 under this option?	
6. Does your agency document and maintain records on how savings were realized and the method of calculation for estimated savings?	no
7. Estimated annual savings (AF/yr) from site-verified actions taken by agency since 1991.	0
8. Estimated annual savings (AF/yr) from non-site-verified actions taken by agency since 1991.	0

B. Conservation Program Expenditures for CII Accounts

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

N/A

D. Comments

Based on NCWD signatory date of the MOU, the district does not need to implement a CII conservation program until FY 2004-05. NCWD's Customer Service staff began preparations for a CII program in 2002-03 by sorting accounts by the BMP class codes such as commercial, industrial, large landscape, etc. The class codes were applied to the Inhance (customer service and billing database) System to use for future CII programs.

Reported as of 5/18/05

BMP 09: Conservation Programs for CII Accounts

Reporting Unit:	BMP Form Status:	Year:
Newhall County Water District	**100% Complete**	**2004**

A. Implementation

1. Has your agency identified and ranked COMMERCIAL customers according to use?	yes
2. Has your agency identified and ranked INDUSTRIAL customers according to use?	yes
3. Has your agency identified and ranked INSTITUTIONAL customers according to use?	yes

Option A: CII Water Use Survey and Customer Incentives Program

4. Is your agency operating a CII water use survey and customer incentives program for the purpose of complying with BMP 9 under this option? no

CII Surveys	Commercial Accounts	Industrial Accounts	Institutional Accounts
a. Number of New Surveys Offered	0	0	0
b. Number of New Surveys Completed	0	0	0
c. Number of Site Follow-ups of Previous Surveys (within 1 yr)	0	0	0
d. Number of Phone Follow-ups of Previous Surveys (within 1 yr)	0	0	0

CII Survey Components	Commercial Accounts	Industrial Accounts	Institutional Accounts
e. Site Visit	no	no	no
f. Evaluation of all water-using apparatus and processes	no	no	no
g. Customer report identifying recommended efficiency measures, paybacks and agency incentives	no	no	no

Agency CII Customer Incentives	Budget ($/Year)	No. Awarded to Customers	Total $ Amount Awarded
h. Rebates	0	0	0
i. Loans	0	0	0
j. Grants	0	0	0
k. Others	0	0	0

Option B: CII Conservation Program Targets

5. Does your agency track CII program interventions and water no

savings for the purpose of complying with BMP 9 under this option?	
6. Does your agency document and maintain records on how savings were realized and the method of calculation for estimated savings?	no
7. Estimated annual savings (AF/yr) from site-verified actions taken by agency since 1991.	0
8. Estimated annual savings (AF/yr) from non-site-verified actions taken by agency since 1991.	0

B. Conservation Program Expenditures for CII Accounts

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

N/A

D. Comments

NCWD did not have a CII Survey program in 2003-04 as the MOU was signed in March 2002. During 2003-04, NCWD began gather necessary data and information to implement a CII Survey or conservation program for the next reporting period (2005-06) as scheduled.

Reported as of 5/18/05

BMP 09a: CII ULFT Water Savings

Reporting Unit: **Newhall County Water District** | BMP Form Status: **100% Complete** | Year: **2003**

1. Did your agency implement a CII ULFT replacement program in the reporting year? If No, please explain why on Line B. 10. — No

A. Targeting and Marketing

1. What basis does your agency use to target customers for participation in this program? Check all that apply.

Consumption ranking
Potential savings
Oldest meter

a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

NCWD did not implement a CII ULFT program during the 2003-04 reporting period, however a program is in potential development (as part of a CII survey program) for the 2004-05 that will identify target customers based on the facilities water usage (consumption) volume, water savings potential and if the site has plumbing fixtures installed or replaced prior to January 1992.

2. How does your agency advertise this program? Check all that apply.

Direct letter
Bill insert
Bill message
Newsletter
Telephone
Web page
Radio PSAs
Newspapers
Trade publications
Other print media
Trade shows and events
Telemarketing

a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

All BMP programs are advertised in our district newsletter, through newspaper articles, our website, customer calls, bill inserts and other applicable and other cost effective means. Although a CII toilet rebate program was not implemented in 2003-04 reporting period, the above marked advertising efforts were included for the residential ULFT rebate program (5/2003 & 5/2004).

B. Implementation

1. Does your agency keep and maintain customer participant information? (Read the Help information for a complete list of all the information for this BMP.) — Yes

2. Would your agency be willing to share this information if the CUWCC did a study to evaluate the program on behalf of your agency? — Yes

3. What is the total number of customer accounts participating in the program during the last year ? — 0

CII Subsector	Number of Toilets Replaced			
4.	Standard	Air	Valve Floor	Valve Wall

	Gravity Tank	Assisted	Mount	Mount
a. Offices	0	0	0	0
b. Retail / Wholesale	0	0	0	0
c. Hotels	0	0	0	0
d. Health	0	0	0	0
e. Industrial	0	0	0	0
f. Schools: K to 12	0	0	0	0
g. Eating	0	0	0	0
h. Govern-ment	0	0	0	0
i. Churches	0	0	0	0
j. Other	0	0	0	0

5. Program design.

Rebate or voucher
Direct installation
Direct installation with customer co-payment
Direct distribution
Direct distribution with customer co-payment
Retrofit on resale

6. Does your agency use outside services to implement this program? Yes

a. If yes, check all that apply.

Community Based Organization
Plumbing contractors/subcontracts

7. Participant tracking and follow-up.

Letter
Telephone

8. Based on your program experience, please rank on a scale of 1 to 5, with 1 being the least frequent cause and 5 being the most frequent cause, the following reasons why customers refused to participate in the program.

a. Disruption to business	4
b. Inadequate payback	5
c. Inadequate ULFT performance	2
d. Lack of funding	4
e. American's with Disabilities Act	1
f. Permitting	2
g. Other. Please describe in B. 9.	3

9. Please describe general program acceptance/resistance by customers, obstacles to implementation, and other isues affecting program implementation or effectiveness.

Although a specific program has not been implemented, several CII customers have been informally surveyed during customer service phone calls and at public events. regarding participation in district programs. From the provided customer input, the above rankings were determined for reasons for not participating in conservation and rebate programs.

10. Please provide a general assessment of the program for this reporting year. Did your program achieve its objectives? Were your targeting and marketing approaches effective? Were program costs in line with expectations and

budgeting?

N/A - CII ULFT Retrofit program was not implemented in NCWD.

C. Conservation Program Expenditures for CII ULFT

1. CII ULFT Program: Annual Budget & Expenditure Data

	Budgeted	Actual Expenditure
a. Labor	0	0
b. Materials	0	0
c. Marketing & Advertising	0	0
d. Administration & Overhead	0	0
e. Outside Services	0	0
f. Total	0	0

2. CII ULFT Program: Annual Cost Sharing

a. Wholesale agency contribution	0
b. State agency contribution	0
c. Federal agency contribution	0
d. Other contribution	0
e. Total	0

D. Comments

N/A - CII ULFT Retrofit program was not implemented in NCWD.

Reported as of 5/18/05

BMP 09a: CII ULFT Water Savings

Reporting Unit:	BMP Form Status:	Year:
Newhall County Water District	**100% Complete**	**2004**

1. Did your agency implement a CII ULFT replacement program in the reporting year? If No, please explain why on Line B. 10. — No

A. Targeting and Marketing

1. What basis does your agency use to target customers for participation in this program? Check all that apply.

   a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

   N/A

2. How does your agency advertise this program? Check all that apply.

   a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

   N/A

B. Implementation

1. Does your agency keep and maintain customer participant information? (Read the Help information for a complete list of all the information for this BMP.)

2. Would your agency be willing to share this information if the CUWCC did a study to evaluate the program on behalf of your agency? — Yes

3. What is the total number of customer accounts participating in the program during the last year ? — 0

CII Subsector	Number of Toilets Replaced			
4.	Standard Gravity Tank	Air Assisted	Valve Floor Mount	Valve Wall Mount
a. Offices	0	0	0	0
b. Retail / Wholesale	0	0	0	0
c. Hotels	0	0	0	0
d. Health	0	0	0	0
e. Industrial	0	0	0	0
f. Schools: K to 12	0	0	0	0
g. Eating	0	0	0	0
h. Govern-ment	0	0	0	0
i. Churches	0	0	0	0
j. Other	0	0	0	0

5. Program design.

6. Does your agency use outside services to implement this program? — No

a. If yes, check all that apply.

7. Participant tracking and follow-up.

8. Based on your program experience, please rank on a scale of 1 to 5, with 1 being the least frequent cause and 5 being the most frequent cause, the following reasons why customers refused to participate in the program.

a. Disruption to business	4
b. Inadequate payback	5
c. Inadequate ULFT performance	2
d. Lack of funding	4
e. American's with Disabilities Act	1
f. Permitting	2
g. Other. Please describe in B. 9.	3

9. Please describe general program acceptance/resistance by customers, obstacles to implementation, and other isues affecting program implementation or effectiveness.

N/A - NCWD did not implement a CII ULFT Rebate program in 2003/04. Refer to BMP 9(a) 2002/03 regarding general acceptance/resistance by customers for all BMP and other conservation programs within in NCWD.

10. Please provide a general assessment of the program for this reporting year. Did your program achieve its objectives? Were your targeting and marketing approaches effective? Were program costs in line with expectations and budgeting?

N/A

C. Conservation Program Expenditures for CII ULFT

1. CII ULFT Program: Annual Budget & Expenditure Data

	Budgeted	Actual Expenditure
a. Labor	0	0
b. Materials	0	0
c. Marketing & Advertising	0	0
d. Administration & Overhead	0	0
e. Outside Services	0	0
f. Total	0	0

2. CII ULFT Program: Annual Cost Sharing

a. Wholesale agency contribution	0
b. State agency contribution	0
c. Federal agency contribution	0
d. Other contribution	0
e. Total	0

D. Comments

A CII ULFT Rebate Program was not implemented in 2003/04. The district is reviewing the cost-effectiveness of incorporating a ULFT Rebate program with the CII Survey project.

Reported as of 5/18/05

BMP 11: Conservation Pricing

Reporting Unit:	BMP Form Status:	Year:
Newhall County Water District	**100% Complete**	**2003**

A. Implementation

Rate Structure Data Volumetric Rates for Water Service by Customer Class

1. Residential	
a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$2610115.2
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$4971003.58
2. Commercial	
a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$195845.76
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$426019.58
3. Industrial	
a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$26484.48
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$37008.69
4. Institutional / Government	
a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$220239.36
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$0
5. Irrigation	
a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$468008.64
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$605189.36
6. Other	
a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided

c. Total Revenue from Volumetric Rates	$48438.72
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$490129.57

B. Conservation Pricing Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

All NCWD customers are metered and billed based on their usage and standard monthly fees and other miscellaneous charges. NCWD received $6,704,884.61 in revenue for volumetric and non-volumetric charges (as a total for all classes). Non-volumetric revenue collected from institutional customers is incorporated in the commercial class non-volumetric revenue. The volumetric revenue for each class was calculated using the flat rate of $0.80/ccf and the class usage values as provided in the Customer Account and Usage Worksheet.

Reported as of 5/18/05

BMP 11: Conservation Pricing

Reporting Unit:	BMP Form Status:	Year:
Newhall County Water District	**100% Complete**	**2004**

A. Implementation

Rate Structure Data Volumetric Rates for Water Service by Customer Class

1. Residential	
a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$2695841.28
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$5672106.46
2. Commercial	
a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$182603.52
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$458349.06
3. Industrial	
a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$40423.68
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$67094.02
4. Institutional / Government	
a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$213618.24
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$0
5. Irrigation	
a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$507735.36
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$809294.6
6. Other	
a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric	

Rates	$18817.92
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$462445.13

B. Conservation Pricing Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	30000
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

All NCWD customers are metered and billed based on their usage and standard monthly fees and other miscellaneous charges. NCWD received $7,603,691.87 in revenue for volumetric and non-volumetric charges (as a total for all classes). Non-volumetric revenue collected from institutional customers is incorporated in the commercial class non-volumetric revenue. The volumetric revenue for each class was calculated using the flat rate of $0.80/ccf and the class usage values as provided in the Customer Account and Usage Worksheet. NCWD budgeted for a water rate structure study to identify the most effective rate structure for residential customers to increase water conservation while meeting revenue goals. The study evaluated several water districts' and other retailers' rate structures based on the impact on conservation, revenue, customer service and satisfaction, and implementation and maintenance time and effort. The NCWD Board voted to implement a tiered rate structure for individually metered residential customers starting January 2005.

Reported as of 5/18/05

BMP 12: Conservation Coordinator

Reporting Unit:	BMP Form Status:	Year:
Newhall County Water District	**100% Complete**	**2003**

A. Implementation

1. Does your Agency have a conservation coordinator?	yes
2. Is this a full-time position?	no
3. If no, is the coordinator supplied by another agency with which you cooperate in a regional conservation program ?	yes
4. Partner agency's name:	Castaic Lake Water Agency (Wholesaler)
5. If your agency supplies the conservation coordinator:	
a. What percent is this conservation coordinator's position?	35%
b. Coordinator's Name	Paula Forsberg
c. Coordinator's Title	Customer Service Manager
d. Coordinator's Experience and Number of Years	Customer Service 22 years
e. Date Coordinator's position was created (mm/dd/yyyy)	03/01/2002
6. Number of conservation staff, including Conservation Coordinator.	5

B. Conservation Staff Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	30000	30000
2. Actual Expenditures	27000	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

N/A

D. Comments

The budget and expenditures are strictly estimates based on the number of estimated staff hours used for BMP programs including gathering the Base Year data for the BMP reporting requirements. An estimated 535-550 hours of staff time went into BMP programs for 2002-03. An average employee per hour estimated cost including benefits and other miscellaneous charges is approximately $37.14, however management and supervisory level staff also participated in BMP efforts.

Reported as of 5/18/05

BMP 12: Conservation Coordinator

Reporting Unit:	BMP Form Status:	Year:
Newhall County Water District	**100% Complete**	**2004**

A. Implementation

1. Does your Agency have a conservation coordinator?	yes
2. Is this a full-time position?	yes
3. If no, is the coordinator supplied by another agency with which you cooperate in a regional conservation program ?	no
4. Partner agency's name:	Castaic Lake Water Agency (CLWA)
5. If your agency supplies the conservation coordinator:	
a. What percent is this conservation coordinator's position?	85%
b. Coordinator's Name	Melinda Weinrich
c. Coordinator's Title	Environmental Conservation Specialist
d. Coordinator's Experience and Number of Years	Conservation/Program Management/Consulting 10 years
e. Date Coordinator's position was created (mm/dd/yyyy)	05/10/2004
6. Number of conservation staff, including Conservation Coordinator.	6

B. Conservation Staff Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	30000	60000
2. Actual Expenditures	35000	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

N/A

D. Comments

A new position was created in May of 2004 in order to address the conservation issues within the district and to meet the requirements of the BMP under CUWCC. The Conservation Coordinator works with the Customer Service staf, field team, engineering and other departments as needed. As a small district, the entire staff works on some aspect of the BMP and other water conservation programs at the district such as working at public events, providing data and reports, mapping participation, etc.

Reported as of 5/18/05

BMP 13: Water Waste Prohibition

Reporting Unit:	BMP Form Status:	Year:
Newhall County Water District	**100% Complete**	**2003**

A. Requirements for Documenting BMP Implementation

1. Is a water waste prohibition ordinance in effect in your service area? yes

a. If YES, describe the ordinance:

NCWD's Ordinance (Water Conservation) was adopted in 2/1991 due to water supply conditions in the district's service area. The purpose of the ordinance is to provide a water conservation plan to minimize the effect of shortage of water supplies on the customers of the district. The ordinance sets parameters or irrigation hours and schedules to optimize water efficiency and prevent water waste. The ordinance also states that it is the duty of all persons to inspect for leaks and damages to indoor and outdoor plumbing and fixtures and to repair as necessary as soon as possible. The ordinance also lists prohibited use of water for washing vehicles, for cleaning and operating decorative fountains and for serving water in restaurants, cafeterias and other food service locations. A copy of the complete ordinance was submitted to the CUWCC as an attachment to this BMP report.

2. Is a copy of the most current ordinance(s) on file with CUWCC? no

a. List local jurisdictions in your service area in the first text box and water waste ordinance citations in each jurisdiction in the second text box:

1. LA County Sanitation District (32 & 26) 2. City of Santa Clarita 3. County of Los Angeles	1. Ordinance Prohibiting the Installation of Certain Water Softening Appliances 2. City Code, Title 9 Health & Safety, Chapter 9.38 (Water Conservation & Water Waste), Chapter 10.04 Runoff Water & Pollution 3. County Code, Title 11 Health & Safety, Chapter 11.38 (Water & Sewer) * All the above listed ordinances and codes were submitted to the CUWCC for reference.

B. Implementation

1. Indicate which of the water uses listed below are prohibited by your agency or service area.

a. Gutter flooding	yes
b. Single-pass cooling systems for new connections	no
c. Non-recirculating systems in all new conveyor or car wash systems	no
d. Non-recirculating systems in all new commercial laundry systems	no
e. Non-recirculating systems in all new decorative fountains	yes
f. Other, please name See listed measures below (B2) & in attached Ordinance 101	yes

2. Describe measures that prohibit water uses listed above:

1. Watering lawns and landscaped areas more than once a day. 2.

Watering lawns and landscaped areas between 10am through 5pm 3. Causing water to runoff into the street, storm drains, gutters, parking lots, etc. 4. Not repairing leaks or broken indoor and outdoor plumbing and fixtures. 5. Serving water to customers in restaurants, cafeterias or other food service location unless the customer specifically request water

Water Softeners:

3. Indicate which of the following measures your agency has supported in developing state law:

a. Allow the sale of more efficient, demand-initiated regenerating DIR models.	yes
b. Develop minimum appliance efficiency standards that:	
i.) Increase the regeneration efficiency standard to at least 3,350 grains of hardness removed per pound of common salt used.	yes
ii.) Implement an identified maximum number of gallons discharged per gallon of soft water produced.	yes
c. Allow local agencies, including municipalities and special districts, to set more stringent standards and/or to ban on-site regeneration of water softeners if it is demonstrated and found by the agency governing board that there is an adverse effect on the reclaimed water or groundwater supply.	yes
4. Does your agency include water softener checks in home water audit programs?	no
5. Does your agency include information about DIR and exchange-type water softeners in educational efforts to encourage replacement of less efficient timer models?	yes

C. Water Waste Prohibition Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

N/A

E. Comments

Copies of NCWD's Ordinance 101 as well as the LA County, Los Angeles County Sanitation District (LACSD) and city of Santa Clarita's ordinances and codes related to water waste were submitted to the CUWCC as an attachment to these 2003-04 BMP reports.

Reported as of 5/18/05

BMP 13: Water Waste Prohibition

Reporting Unit:	BMP Form Status:	Year:
Newhall County Water District	**100% Complete**	**2004**

A. Requirements for Documenting BMP Implementation

1. Is a water waste prohibition ordinance in effect in your service area? yes

a. If YES, describe the ordinance:

NCWD's Ordinance (Water Conservation) was adopted in 2/1991 due to water supply conditions in the district's service area. The purpose of the ordinance is to provide a water conservation plan to minimize the effect of shortage of water supplies on the customers of the district. The ordinance sets parameters or irrigation hours and schedules to optimize water efficiency and prevent water waste. The ordinance also states that it is the duty of all persons to inspect for leaks and damages to indoor and outdoor plumbing and fixtures and to repair as necessary as soon as possible. The ordinance also lists prohibited use of water for washing vehicles, for cleaning and operating decorative fountains and for serving water in restaurants, cafeterias and other food service locations. A copy of the complete ordinance was submitted to the CUWCC as an attachment to this BMP report.

2. Is a copy of the most current ordinance(s) on file with CUWCC? yes

a. List local jurisdictions in your service area in the first text box and water waste ordinance citations in each jurisdiction in the second text box:

1. City of Santa Clarita 2. County of Los Angeles	1. Title 9 Health & Safety, Chapter 9.38 & Chapter 10.4 Stormwater & Urban Runoff Pollution Control (see submitted documents) 2. County Codes, Title 11 Health & Safety, Chapter 11.38 (Water & Sewers)

B. Implementation

1. Indicate which of the water uses listed below are prohibited by your agency or service area.

a. Gutter flooding	yes
b. Single-pass cooling systems for new connections	no
c. Non-recirculating systems in all new conveyor or car wash systems	no
d. Non-recirculating systems in all new commercial laundry systems	no
e. Non-recirculating systems in all new decorative fountains	yes
f. Other, please name See list of measures below & in Ordinance 101 (attached)	yes

2. Describe measures that prohibit water uses listed above:

1. Watering lawns and landscaped areas more than once a day. 2. Watering lawns and landscaped areas between 10am through 5pm 3. Causing water to runoff into the street, storm drains, gutters, parking lots, etc. 4. Not repairing leaks or broken indoor and outdoor plumbing and fixtures. 5. Serving water to customers in restaurants, cafeterias or other food service location unless the customer specifically request water.

Water Softeners:

3. Indicate which of the following measures your agency has supported in developing state law:

a. Allow the sale of more efficient, demand-initiated regenerating DIR models. yes

b. Develop minimum appliance efficiency standards that:

i.) Increase the regeneration efficiency standard to at least 3,350 grains of hardness removed per pound of common salt used. yes

ii.) Implement an identified maximum number of gallons discharged per gallon of soft water produced. yes

c. Allow local agencies, including municipalities and special districts, to set more stringent standards and/or to ban on-site regeneration of water softeners if it is demonstrated and found by the agency governing board that there is an adverse effect on the reclaimed water or groundwater supply. yes

4. Does your agency include water softener checks in home water audit programs? no

5. Does your agency include information about DIR and exchange-type water softeners in educational efforts to encourage replacement of less efficient timer models? yes

C. Water Waste Prohibition Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

N/A

E. Comments

Copies of NCWD's Ordinance 101 as well as the LA County and city of Santa ClaritaÃs ordinances and codes related to water waste were submitted to the CUWCC as an attachment to these 2003-04 BMP reports.

Reported as of 5/18/05

BMP 14: Residential ULFT Replacement Programs

Reporting Unit:	BMP Form Status:	Year:
Newhall County Water District	**100% Complete**	**2003**

A. Implementation

	Single-Family Accounts	Multi-Family Units
1. Does your Agency have program(s) for replacing high-water-using toilets with ultra-low flush toilets?	yes	no

Number of Toilets Replaced by Agency Program During Report Year

Replacement Method	SF Accounts	MF Units
2. Rebate	69	0
3. Direct Install	0	0
4. CBO Distribution	0	0
5. Other	0	0
Total	**69**	**0**

6. Describe your agency's ULFT program for single-family residences.

The ULFT (residential) Rebate program was conducted by the area wholesaler (CLWA) for pre-1993 single family homes in the Santa Clarita Valley. All the local retailers participated including Valencia Water Company, Santa Clarita Water District and LA County District 36. CLWA promoted the program in the local paper and throughout the community. NCWD released additional PR notices to district customers in the quarterly newsletter, on the monthly water bill (by-line) and with a postcard notices regarding the program. The program started May 1, 2003. Customers were required to contact the district (by phone or in person) to receive a rebate form to complete. NCWD made a copy of the rebate form for district records and to log which customers received rebates and those who also returned the voucher forms. Customers had 30 days upon receiving their voucher sheet and rebate number to purchase a ULFT and return the voucher form and their receipt to NCWD or the wholesaler. NCWD forwarded all forms to CLWA for final processing. Santa Clarita Water District coordinated the processing of the rebate checks and tallied participation. Once a customer returned their voucher form and ULFT receipt, they were mailed a rebate check for either $20 or $40. Customers who purchased ULFT between $50 and $75 received a $20 rebate and $40 for ULFT above $75. There was no limit on the number of rebates allocated per customers, however no customer took more than 3 voucher forms. The program lasted until the end of May 2003 with NCWD customers receiving 69 total rebates.

7. Describe your agency's ULFT program for multi-family residences.

CLWA selected to only target single-family residents for the 2003 ULFT Rebate Program.

8. Is a toilet retrofit on resale ordinance in effect for your service area? no

9. List local jurisdictions in your service area in the left box and ordinance citations in each jurisdiction in the right box:

1. City of Santa Clarita 2. Los Angeles County	There is currently no ordinance requiring retrofit of toilets (to ULFT) upon resale in the Santa Clarita Valley.

B. Residential ULFT Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	5000
2. Actual Expenditures	3946.57	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

N/A

D. Comments

The 2003-03 ULFT Rebate Program Budget was based on the employee time and effort, program marketing and PR efforts and miscellaneous supplies and costs. The costs are as follows: 1. Printing cost for ULFT Rebate Program notification postcard - $393.21 2. Postcard Postage to 3,500 qualified customers (at $0.23/postcard) - $805.00 3. Staff Time of 74 hours at $37.14/hour (average wage with benefit costs) - $2,748.36 Total Costs $3,946.57

Reported as of 5/18/05

BMP 14: Residential ULFT Replacement Programs

Reporting Unit:	BMP Form Status:	Year:
Newhall County Water District	**100% Complete**	**2004**

A. Implementation

	Single-Family Accounts	Multi-Family Units
1. Does your Agency have program(s) for replacing high-water-using toilets with ultra-low flush toilets?	yes	yes

Number of Toilets Replaced by Agency Program During Report Year

Replacement Method	SF Accounts	MF Units
2. Rebate	104	5
3. Direct Install	0	0
4. CBO Distribution	0	0
5. Other	0	0
Total	**104**	**5**

6. Describe your agency's ULFT program for single-family residences.

CLWA coordinated a residential ULFT rebate program for all the local retailers in the Santa Clarita Valley (including NCWD). The rebate program starts on May 1st offering rebates to eligible customers (with toilets installed prior to 1992) to receive a rebate for purchasing a ULFT. Customers received a $30 rebate for ULFT from $50 to $75, and $60 rebate for ULFTs over $75. Retailers receive a percentage of the available rebate funds ($20,000 for entire program) based on their customer population or eligible residents. Customers had 30 days to return their voucher form with their ULFT receipt in order to receive their rebate check. NCWD had such a high demand from customers that a waiting list had to be created. Over 135 customers were signed up on the waiting list to receive a voucher form if additional program funding became available.

7. Describe your agency's ULFT program for multi-family residences.

NCWD allowed multi-family residents to receive a rebate for the purchase of a ULFT through the CLWA. Previously, the rebate was only offered to single-family residents. Two landlords (or property owners) received rebates to update their rental facilities and two tenants received rebates. There was no limit on the number of rebates allocated per person; however District staff confirmed the number of toilets needed for any customers who request more than 3 rebates.

8. Is a toilet retrofit on resale ordinance in effect for your service area? no

9. List local jurisdictions in your service area in the left box and ordinance citations in each jurisdiction in the right box:

City of Santa Clarita & LA County	There is no retrofit on resale ordinance in the Santa Clarita Valley.

B. Residential ULFT Program Expenditures

	This Year	Next Year

1. Budgeted Expenditures	5000	3000
2. Actual Expenditures	4417.31	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

N/A

D. Comments

Budget for Residential ULFT Rebate Program includes the following calculated costs: 1. Staff time (approximately 50 hours) - Preparation & implementation - Planning meetings - PR efforts, mail outs, bill stuffers, etc. - Creating rebate forms and database - Translating program documents into Spanish 2. Printing and postage cost for postcard notice to customers 3. Creating & incorporating bill stuffers 4. Miscellaneous Costs (supplies & materials & other costs)

Reported as of 5/18/05

Appendix G
Draft Water Shortage Contingency Resolution/Ordinance

(This appendix contains examples that were adopted in 1991 to address water shortage conditions and will be used as the model for future water shortage contingency ordinance.)

Appendix I

DROUGHT EMERGENCY WATER SHARING AGREEMENT

1. Parties. The parties to this agreement are: Valencia Water Company, Santa Clarita Water Company, Los Angeles County Waterworks District No. 36-Val Verde, Newhall County Water District, and the Castaic Lake Water Agency.

2. Critical Water Shortage Conditions. The State of California is experiencing a fifth year of drought, which has caused critical water shortages in many areas of the state, including the service area of the Castaic Lake Water Agency. The Agency has recently been informed that the State Water Project will have insufficient water to meet its demands for the coming year.

3. Water Sharing Agreement. In order to alleviate the emergency water shortage caused by the Drought and by insufficient agency water to meet demands, the undersigned parties agree to cooperate in sharing available water from all sources among themselves without regard to water, contractual or other rights for the duration of the emergency, and to facilitate among themselves water transfers, exchanges, and wheeling arrangements.

4. Preservation of Rights. By entering into this emergency water pooling and transfer, the parties do not waive their individual claims to water rights, or to contractual or other claims to water or the use of water. Each party agrees that no party hereto will lose any water right, contract right, or other entitlement to water by entering into this agreement,

nor shall any party attempt to use this agreement or the emergency exchange of water as a basis for a claim against any other party of a continued right to the use of that water. This agreement shall not be construed as constituting any alteration in the respective priorities or terms of any of the rights held by any party, nor as an admission with respect to any rights or claims. Each party further agrees that no party hereto will lose any water or other right by a claim of non-use by another party, prescription, or dedication to public use by entering into this agreement.

5. Termination. This agreement shall terminate upon the cessation of drought conditions affecting the service area of the Castaic Lake Water Agency, or January 1, 1992, whichever is sooner, but may be extended by mutual consent of all the parties.

6. Counterparts. This agreement shall be executed in counterparts, each of which shall be deemed an original.

7. Effective Date. The effective date of this agreement shall be that date upon which all the parties hereto have executed the agreement.

Valencia Water Company

Date: FEBRUARY 13, 1991

Attest:

by _____

_____

Santa Clarita Water Company

by W. J. Manthei

Date: February 26, 1991

Attest:

Benjamin L. Borelli

Los Angeles County Waterworks
District No. 36

by ORIGINAL SIGNED BY

Date: 8/27/91

Attest:

~~Pg~~ 21

Newhall County Water District

by ORIGINAL SIGNED BY

Date: 2/19/91

Attest:

~~Pg~~ 22

Castaic Lake Water Agency

by ORIGINAL SIGNED BY

Date: 2/28/91

Attest:

~~Pg~~ 23

s/Los Angeles County Waterworks District No. 36

Date: AUG 27 1991

by Michael D. Antonovich

Attest:
ATTEST: LARRY J. MONTEILH
EXECUTIVE OFFICER —
CLERK OF THE BOARD OF SUPERVISORS
By Lynne C. Valle, Deputy

s/Newhall County Water District

Date:

Attest:

by

s/Castaic Lake Water Agency

Date: 2/28/91

Attest:

by

APPROVED AS TO FORM
DE WITT W. CLINTON, County Counsel

BY
DEPUTY

ADOPTED
BOARD OF SUPERVISORS
COUNTY OF LOS ANGELES

S 9 1 AUG 27 1991

LARRY J. MONTEILH
EXECUTIVE OFFICER

s/ Newhall County Water District Date: 2/19/71

Attest:

by [signature] President [signature] Secy

s/ Castaic Lake Water Agency Date: _____

Attest:

by _____ _____

s/Los Angeles County Waterworks
District No. 36

Date:

Attest:

by

s/Newhall County Water District

Date:

Attest:

by

s/Castaic Lake Water Agency

Date: 2/28/91

Attest:

by

Appendix II

RESOLUTION NO.804

RESOLUTION OF THE BOARD OF DIRECTORS OF CASTAIC LAKE WATER AGENCY RECOGNIZING REDUCTIONS IN REQUESTED DELIVERY OF STATE WATER PROJECT SUPPLY FOR YEAR 1991 AND MANDATING A PROGRAM OF WATER CONSERVATION IN THE SANTA CLARITA VALLEY

WHEREAS, the Castaic Lake Water Agency is a public entity organized and operating pursuant to the California Water Code, Appendix, Chapter 103, and is primarily empowered to supply water at wholesale to retail water distributors within the Santa Clarita Valley; and

WHEREAS, the Agency's source of water is by contract with the State Water Project of the California Department of Water Resources; and

WHEREAS, the State Water Project, and the entire State of California is experiencing protracted drought conditions of unprecedented recent duration; and

WHEREAS, the California Department of Water Resources in a letter dated February 2, 1991 advised the Agency to plan for "severe reductions" in its State Water Project supply; and

WHEREAS, the letter further reported, "there is a 50% probability that the Department will only be able to deliver about half of the water requested for municipal and industrial use in 1991"; and

WHEREAS, half of the requested State Water Project supply of the Castaic Lake Water Agency would be 13,050 acre feet: and

WHEREAS, the retail water distributors within the Santa Clarita Valley operate ground water production facilities that have been planned to make up some portion of the delivery reductions in State Project Water; and

WHEREAS, the retail water distributors and the Agency, have pursuant to Water Code, Sections 10610 through 10656, adopted a URBAN WATER MANAGEMENT PROGRAM for retail sales which contains water conservation measures including, metering, leak detection, public education, public information, home retrofit devices, drip and sprinkler irrigation restrictions, and a landscape suggestion for use of drought tolerant plantings; and

WHEREAS, heretofore, the Castaic Lake Water Agency adopted Resolution No. 667 relating to a voluntary water conservation program to reduce water consumption by 10 percent; and

WHEREAS, it is now essential to enact a mandatory program;

NOW, THEREFORE, BE IT RESOLVED that this Agency's Board of Directors does hereby find and determine the following:

1. That the General Manager of the Agency be authorized to execute a "Drought Emergency Water Sharing Agreement" with the local water purveyors to make it clear that emergency drought sharing of Agency water supplies during year 1991 not result in any waiver of contractual or other right to use of Agency water.

2. That the General Manager confer with the retail water purveyors to coordinate the distribution and use of the limited State Project Water supply to maximize the distribution of the ground water production capacity of the combined facilities operated by the retail water purveyors.

3. That the Agency request both the City of Santa Clarita and the County of Los Angeles to adopt mandatory water use ordinances with terms generally as follows:

I. A WATER CONSERVATION ORDINANCE WHICH SHALL TERMINATE ON JANUARY 1, 1992 UNLESS RENEWED OR TERMINATED EARLIER

A. Hose Watering-Prohibition.

No person shall hose-water or wash down any sidewalks, walkways, driveways, parking areas, or other paved surfaces. Willful violation hereof shall be an infraction punishable by a fine of $100.00 for the first infraction and $500.00 each for subsequent infraction.

B. Watering of Lawns and Landscaping

1. No person shall water or cause to be watered any lawn or landscaping between the hours of 10:00 a.m. and 5:00 p.m.

2. No person shall water or cause to be watered any lawn or landscaping more than once a day.

3. No person shall water or cause to be watered any lawn or landscaping to such an extent that runoff into adjoining streets, parking lots or alleys occurs due to incorrectly directed or maintained sprinklers or excessive watering.

4. It shall be the duty of all persons to inspect all hoses, faucets and sprinkling systems for leaks and to cause all leaks to be repaired as soon as is reasonably practicable.

5. Willful violation hereof shall be an infraction punishable by a fine of $100.00 for the first infraction and $500.00 each for subsequent infractions.

C. Indoor Plumbing and Fixtures.

1. It shall be the duty of all persons to inspect all accessible indoor plumbing and faucets for leaks and to cause all leaks to be repaired as soon as is reasonably practicable.

2. Any new or replacement toilets installed in any residence or business shall be of a low-flow variety.

3. Willful violation hereof shall be an infraction punishable by a fine of $500.00.

D. Washing Vehicles

No vehicle of any type may be washed, except at a commercial car wash, unless such vehicle is washed by using a hand-held bucket or a water-hose equipped with an automatic shutoff nozzle. No person shall leave a water hose running while washing a vehicle or at any other time. Willful violation hereof shall be an infraction punishable by a fine of $100.00 for the first infraction and $500.00 each for subsequent infraction.

E. Public Eating Places

No restaurant, cafeteria, coffee shop, or other public place where food is sold or served shall serve drinking water to any customer unless specifically requested to do so by such customer. Willful violation hereof shall be an infraction punishable by a fine of $100.00 for the first infraction and $500.00 each for subsequent infractions.

F. Decorative Fountains

No person shall use water to clean, fill, or maintain levels in decorative fountains unless such water flows through a recycling system. Willful violation hereof shall be an infraction punishable by a fine of $100.00 for the first infraction and $500.00 each for subsequent infractions.

4. That the above cited three paragraphs are deemed appropriate as PHASE ONE of the Agency's mandatory conservation program with recognition of the possibility that the California Department of Water Resources may declare deeper finite reductions for the municipal and industrial water supplies of the State Water Project. Residents of the Agency are put on notice that further and additional phases of the mandatory conservation program may be enacted by the Agency and could include the following:

A. Odd/Even landscape irrigation restriction, based upon address

B. A financial penalty of say triple the water rate for metered water service that exceeds historic use

C. Complete prohibition of landscape irrigation

I, the undersigned, hereby certify: That I am the duly appointed and acting Secretary of the Castaic Lake Water Agency, and that at a special meeting of the Board of Directors of said Agency held on Monday, February 11, 1991, the foregoing Resolution No. 804 was duly and regularly adopted by said Board, and that said resolution has not been rescinded or amended since the date of its adoption, and that it is now in full force and effect.

Betty L. Castleberry
Secretary

DATED: 2/12/91

Appendix III

ORDINANCE NO. 101

WATER CONSERVATION ORDINANCE OF
NEWHALL COUNTY WATER DISTRICT

* * * * * * * * * * * * * * *

BE IT ORDAINED BY THE BOARD OF DIRECTORS OF NEWHALL COUNTY WATER DISTRICT, LOS ANGELES COUNTY, CALIFORNIA AS FOLLOWS:

Section 1: Because of the water supply conditions prevailing within the District's service area, the general welfare requires that water resources available to the District be put to the maximum beneficial use to the extent to which they are capable, and that the waste or unreasonable use, or unreasonable method of use of water be prevented, and that the conservation of such water be practiced with the view to the reasonable and beneficial use thereof in the interest of the people of the District, and for the public welfare. The purpose of this Ordinance is to provide a water conservation plan to minimize the effect of a shortage of water supplies on the customers of the District.

Section 2: No customer of the District shall make, cause, use or permit the use of water from the District in a manner contrary to any provision of this Ordinance.

Section 3: Watering of Lawns or Landscaping.

(a) No person shall water or cause to be watered any lawn or landscaping between the hours of 10:00 a.m. and 5:00 p.m.

(b) No person shall water or cause to be watered any lawn or landscaping more than once a day.

(c) No person shall water or cause to be watered any lawn or landscaping to such an extent that runoff into adjoining streets, parking lots or alleys occurs due to incorrectly directed or maintained sprinklers or excessive watering.

(d) It shall be the duty of all persons to inspect all hoses, faucets and sprinkling systems for leaks and to cause all leaks to be repaired as soon as is reasonably practicable.

Section 4: Indoor Plumbing and Fixtures.

(a) It shall be the duty of all persons to inspect all accessible indoor plumbing and faucets for leaks and to cause all leaks to be repaired as soon as is reasonably practicable.

(b) For new or replacement toilets installed in any residence or business, local low-flow types are recommended.

Section 5: Washing Vehicles. No vehicle of any type may be washed, except at a commercial car wash, unless such vehicle is washed by using a hand-held bucket or a water-hose equipped with an automatic shutoff nozzle. No person shall leave a water hose running while washing a vehicle or at any other time.

Section 6: Public Eating Places. No restaurant, cafeteria, coffee shop or other public place where food is sold or served shall serve drinking water to any customer unless specifically requested to do so by such customer.

Section 7: No person shall use water to clean, fill or maintain levels in decorative fountains unless such water flows through a recycling system.

Section 8: Water Conservation Kits. Water conservation kits are available without charge to the District's customers at the District's office. In most cases, the kits include a plastic displacement bag, two sets of shower flow restrictors, two dye tablets to check for toilet leaks and a brochure which explains the use of the kit. The kits are to be installed by the District's customers.

Section 9: Effective Date. The water use restrictions of this Ordinance are effective immediately. Other provisions of this Ordinance are effective on March 21, 1991.

ADOPTED, SIGNED AND APPROVED by the Board of Directors of NEWHALL COUNTY WATER DISTRICT this 19th day of February, 1991.

MARY JUNE HERRINGTON, President
of the Board of Directors of the
NEWHALL COUNTY WATER DISTRICT

A T T E S T:

JAMES E. JINKS, Secretary of
the Board of Directors of the
NEWHALL COUNTY WATER DISTRICT

STATE OF CALIFORNIA)
) ss.
COUNTY OF LOS ANGELES)

I hereby certify that the foregoing Ordinance No. 101 was duly and regularly adopted and passed by the Board of Directors of the NEWHALL COUNTY WATER DISTRICT at a regular meeting thereof on the 19th day of February, 1991 by the following vote of the members thereof:

AYES:	DIRECTORS:	Herrington, Hayes, Wade, Agajanian and Whiteside
NOES:	DIRECTORS:	None
ABSENT:	DIRECTORS:	None
ABSTAINED:	DIRECTORS:	None

JAMES E. JINKS, Secretary of
the Board of Directors of the
NEWHALL COUNTY WATER DISTRICT

ORDINANCE NO. 102

ORDINANCE AMENDING SECTION 3 OF ORDINANCE NO. 101 OF NEWHALL COUNTY WATER DISTRICT RE WATER CONSERVATION

* * * * * * * * * * * * * * *

BE IT ORDAINED BY THE BOARD OF DIRECTORS OF NEWHALL COUNTY WATER DISTRICT, LOS ANGELES COUNTY, CALIFORNIA AS FOLLOWS:

Section 1: Section 3 of Ordinance No. 101 is amended to provide as follows:

"Section 3: Watering of Lawns or Landscaping.

(a) No person shall water or cause to be watered any lawn or landscaping between the hours of 8:00 a.m. and 6:00 p.m.

(b) No person shall water or cause to be watered any lawn or landscaping more than once a day, or for a period of time not to exceed ten minutes per watering station or cycle.

(c) No person shall water or cause to be watered any lawn or landscaping to such an extent that runoff into adjoining streets, parking lots or alleys occurs due to incorrectly directed or maintained sprinklers or excessive watering.

(d) It shall be the duty of all persons to inspect all hoses, faucets and sprinkling systems for leaks and to cause all leaks to be repaired as soon as is reasonably practicable."

Section 2: The provisions of this Ordinance shall be effective on November 19, 1991.

ADOPTED, SIGNED AND APPROVED by the Board of Directors of NEWHALL COUNTY WATER DISTRICT this 15th day of October, 1991.

MARY JUNE HERRINGTON, President of the Board of Directors of the NEWHALL COUNTY WATER DISTRICT

A T T E S T:

JAMES E. JINKS, Secretary of the Board of Directors of the NEWHALL COUNTY WATER DISTRICT

STATE OF CALIFORNIA)
) ss.
COUNTY OF LOS ANGELES)

I hereby certify that the foregoing Ordinance No. 102 was duly and regularly adopted and passed by the Board of Directors of the NEWHALL COUNTY WATER DISTRICT at a regular meeting thereof on the 15th day of October, 1991 by the following vote of the members thereof:

AYES: DIRECTORS: Herrington, Hayes, Wade, Agajanian and Whiteside

NOES: DIRECTORS: None

ABSENT: DIRECTORS: None

ABSTAINED: DIRECTORS: None

JAMES E. JINKS, Secretary of the Board of Directors of the NEWHALL COUNTY WATER DISTRICT

Appendix IV

ORDINANCE NO. 91-16

AN ORDINANCE OF THE CITY OF SANTA CLARITA
ADDING CHAPTER 9.38 TO TITLE 9
OF THE SANTA CLARITA MUNICIPAL CODE

WHEREAS, the State of California is experiencing a prolonged drought; and

WHEREAS, the delivery of State Project Water to the Castaic Lake Water Agency has been reduced by 90% of the requested delivery levels.

THE CITY COUNCIL OF THE CITY OF SANTA CLARITA DOES HEREBY ORDAIN AS FOLLOWS:

Section 1. The Santa Clarita Municipal Code is amended adding Chapter 9.38 to Title 9 relating to water conservation to read as follows:

CHAPTER 9.38

WATER CONSERVATION

Sections:

9.38.010 Drought Committee

A. A drought committee shall be established, whose function shall be:

1. to review all available data on water consumption, water supply and ground water conditions;

2. to evaluate the level of compliance with the terms of this Ordinance;

3. to evaluate the level of achievement of the stated water consumption reductions;

4. to make recommendations to the City Council concerning the timing of and need for implementation of future additional water restrictions as may be developed; and

5. to make recommendations to the water purveyors in the City of Santa Clarita concerning additional measures to encourage water conservation, including but not limited to; conservation goals for individual water accounts, surcharges for excessive water use and the installation of flow restriction devices in water services.

B. The members of the Drought Committee shall include representatives from the staff of the City of Santa Clarita, the Upper Santa Clara Water Committee, other appointees as the City Council deems appropriate, and the staff of the Castaic Lake Water Agency.

9.38.015 Water Conservation Regulations

A. Water conservation shall be achieved through the restriction and/or prohibition of various types of water use. The restrictions and prohibitions shall be implemented immediately.

B. The following conditions and restrictions shall apply to the use of water within the City of Santa Clarita:

1. Hose Water Prohibition.

a. No person shall hose-water or wash down any sidewalks, walkways, driveways, parking areas, or other paved surface.

2. Watering of Lawns and Landscaping.

a. No person shall water or cause to be watered any lawn or landscaping between the hours of 8:00 a.m. and 6:00 p.m. except as provided in Section 9.38.015.B.2.e.

b. Lawns and landscaping shall be watered no more frequently than every other day.

c. No person shall water or cause to be watered any lawn or landscaping to such an extent that runoff into adjoining streets, parking lots or alleys occurs due to incorrectly directed or maintained sprinklers or to excessive watering.

d. It shall be the duty of all persons to inspect all hoses, faucets and sprinkling systems for leaks and to cause all leaks to be repaired as soon as is reasonably practicable.

e. Commercial gardeners and landscapers, municipal water uses, commercial nurseries, golf courses and other water-dependent industries shall not water or cause to be watered any lawn of landscaping between the hours of 10:00 a.m. and 3:00 p.m., and no more frequently than every other day, unless reclaimed water is used.

f. The maintenance and testing of irrigation systems may be performed without the restrictions specified in Section 9.38.015.B.2.a and 9.38.015.B.2.e.

3. Indoor Plumbing.

   a. Accessible indoor plumbing and fixtures must be inspected for leaks and repaired as soon as reasonably practicable.

   b. New and replacement toilets, showers and faucets shall be of a low-flow type. New or replacement faucets shall be equipped with aerators.

4. Washing Vehicles.

   a. Vehicles must be washed by hand-held bucket or with a hose equipped with automatic shutoff nozzle. Hoses may not be left running.

   b. These restrictions shall not be applied to commercial vehicle washing facilities and operations.

5. Public Eating Places.

   a. Water may be served only upon request by the customer.

6. Decorative Fountains.

   a. Water may not be used to clean, fill or maintain levels in decorative fountains unless the fountain has a water recycling system.

7. Landscaping and Irrigation Plans.

   a. All new landscaping and irrigation improvements shall be approved by the City of Santa Clarita Director of Parks and Recreation prior to construction.

   b. No person or entity shall be required to implement any landscaping requirements of any association, developer or governing agency until the termination of this ordinance.

C. Conservation Goal

1. The goal of this Water Conservation Ordinance is to achieve at least 25% reduction of overall water consumption within the City of Santa Clarita.

9.38.020 Penalties.

A. Willful violations of the terms of this Ordinance shall be subject to written warnings and/or citations. A written warning shall be issued upon the first violation of any part of this Ordinance. The second violation shall result in a fine of $50.00. The third violation shall result in a fine of $100.00, and all subsequent violations shall result in a fine of $300.00 for each violation.

9.38.025 Termination of Ordinance.

A. This Ordinance shall terminate on January 1, 1992, unless renewed or termination earlier by ordinance.

Section 2. The City Council hereby declares that the provisions of this Ordinance are severable and if for any reason a court or competent jurisdiction shall hold any sentence, paragraph or section of this Ordinance to be invalid, such decision shall not affect the validity of the remaining parts of this Ordinance.

Section 3. This Ordinance is adopted as an urgency measure. The facts of the urgency are these: The State of California is currently suffering from the effects of a five-year drought, and the deliveries of State Project water to local water agencies are being reduced. This Ordinance restricts or prohibits certain types of water usage. The immediate enactment of this Ordinance is therefore necessary to ensure the adequacy of the water supply for the City of Santa Clarita and is thereby directly related to public health, safety and welfare. Therefore, this Ordinance shall be effective immediately upon adoption.

Section 4. The City Clerk shall certify to the passage of this Ordinance and shall cause it to be published in the manner prescribed by law.

9.38.030 Ordinance 91-12 Amended

A. Ordinance 91-12 is hereby amended, deleting Section 9.38.015.b.8 in its entirety.

PASSED, APPROVED AND ADOPTED this 13th day of March, 1991.

CARL BOYER, MAYOR

ATTEST:

DONNA GRINDEY, CITY CLERK

STATE OF CALIFORNIA)
COUNTY OF LOS ANGELES) ss.
CITY OF SANTA CLARITA)

I, Donna M. Grindey, City Clerk of the City of Santa Clarita, do hereby certify that the foregoing Ordinance No. 91-16 was duly adopted as an urgency ordinance at a regular meeting of the City Council on the 13th day of March, 1991, by the following four-fifths vote, to wit:

AYES: COUNCILMEMBERS Darcy, Heidt, McKeon, Boyer

NOES: COUNCILMEMBERS Klajic

ABSENT: COUNCILMEMBERS None

CITY CLERK

AGN:gmm-394

ORDINANCE NO. 91-48

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF SANTA CLARITA, CALIFORNIA, AMENDING CHAPTER 9.38 OF THE SANTA CLARITA MUNICIPAL CODE RELATING TO WATER CONSERVATION

THE CITY COUNCIL OF THE CITY OF SANTA CLARITA, CALIFORNIA, DOES ORDAIN AS FOLLOWS:

SECTION 1. The Santa Clarita Municipal Code is hereby amended at Subsection 9.38.015.B.2.b to read as follows:

b. Lawns and landscaping shall be watered no more than 10 minutes per watering station or cycle per day.

SECTION 2. The Santa Clarita Municipal Code at Subsection 9.38.015.B.2.e is hereby amended to read as follows:

e. Commercial gardeners and landscapers, municipal water uses, commercial nurseries, golf courses and other water-dependent industries shall not water or cause to be watered any lawn or landscaping between the hours of 10:00 a.m. and 3:00 p.m., and no more than 10 minutes per watering station or cycle per day unless reclaimed water is used. This subsection does not apply to residential lawns which are subject to the time limitations indicated in the other subsections of this Ordinance.

SECTION 3. Section 9.38.015.C.1 is hereby amended to read as follows:

1. The goal of this Water Conservation Ordinance is to achieve a significant reduction of overall water consumption within the City of Santa Clarita.

SECTION 4. This Ordinance is adopted as an urgency measure. The facts of the urgency are these: The State of California is currently suffering from the effects of a five-year drought, and the deliveries of State Project water to local water agencies are being reduced. This Ordinance restricts or prohibits certain types of water usage. The immediate enactment of this Ordinance is therefore necessary to ensure the adequacy of the water supply for the City of Santa Clarita and is thereby directly related to public health, safety and welfare. Therefore, this Ordinance shall be effective immediately upon adoption.

SECTION 5. The City Clerk shall certify to the passage of this Ordinance and shall cause it to be published in the manner prescribed by law.

PASSED, APPROVED AND ADOPTED this 8th day of October, 1991.

Carl Boyer

Carl Boyer, Mayor

ATTEST:

Donna M. Grindey

Donna M. Grindey, City Clerk

STATE OF CALIFORNIA)
COUNTY OF LOS ANGELES) ss
CITY OF SANTA CLARITA)

I, Donna M. Grindey, City Clerk of the City of Santa Clarita, do hereby certify that the foregoing Ordinance No. 91-48 was duly adopted as an urgency ordinance at a regular meeting of the City Council on the 8th day of October, 19 91 by the following four-fifths vote, to wit:

AYES: COUNCILMEMBERS: Darcy, Heidt, McKeon, Boyer

NOES: COUNCILMEMBERS: Klajic

ABSENT: COUNCILMEMBERS: None

Donna M. Grindey

Donna M. Grindey, City Clerk

Appendix V

ORDINANCE NO. 91-0046U

An urgency ordinance amending Title 11, Chapter 11.38 of the Los Angeles County Code relating to Water and Sewers to add Part 4, Water Conservation.

The Board of Supervisors of the County of Los Angeles ordains as follows:

Section 1. Title 11, Chapter 11.38 of the County Code is amended by adding Part 4, to read:

Part 4. Water Conservation Requirements For The Unincorporated Los Angeles County Area.

Section 11.38.620 Hose Watering Prohibition. No person shall hose water or wash down any sidewalks, walkways, driveways, parking areas or other paved surfaces, except as is required for the benefit of public health and safety. Willful violation hereof shall be an infraction punishable by a fine of $100.00 for the first infraction and $500.00 each for subsequent infractions.

Section 11.38.630 Watering of Lawns and Landscaping.

a). No person shall water or cause to be watered any lawn or landscaping between the hours of 10:00 a.m. and 5:00 p.m.

b). No person shall water or cause to be watered any lawn or landscaping more than once a day.

c). No person shall water or cause to be watered any lawn or landscaping to such an extent that runoff into adjoining streets, parking lots or alleys occurs due to incorrectly directed or maintained sprinklers or excessive watering.

d). It shall be the duty of all persons to inspect all hoses, faucets and sprinkling systems for leaks and to cause all leaks to be repaired as soon as is reasonably practicable.

e). Willful violation hereof shall be an infraction punishable by a fine of $100.00 for the first infraction and $500.00 each for subsequent infractions.

Section 11.38.640 Indoor Plumbing and Fixtures.

a). It shall be the duty of all persons to inspect all accessible indoor plumbing and faucets for leaks and to cause all leaks to be repaired as soon as is reasonably practicable.

b). Willful violation hereof shall be an infraction punishable by a fine of $500.00.

Section 11.38.650 Washing Vehicles.
No motor vehicle, boat, trailer or other type of mobile equipment may be washed, except at a commercial car wash or with reclaimed water, unless such vehicle is washed by using a hand-held bucket or a water-hose equipped with an automatic shutoff nozzle. No person shall leave a water hose running while washing a vehicle or at any other time. Willful violation hereof shall be an infraction punishable by a fine of $100.00 for the first infraction and $500.00 each for subsequent infractions.

Section 11.38.660 Public Eating Places.
No restaurant, hotel, cafeteria, cafe or other public place where food is sold or served shall serve drinking water to any customer unless specifically requested to

do so by such customer. Willful violation hereof shall be an infraction punishable by a fine of $100.00 for the first infraction and $500.00 each for subsequent infractions.

Section 11.38.670 Decorative Fountains.
No person shall use water to clean, fill or maintain levels in decorative fountains, ponds, lakes, or other similar aesthetic structures unless such water flows through a recycling system. Willful violation hereof shall be an infraction punishable by a fine of $100.00 for the first infraction and $500.00 each for subsequent infractions.

Section 2. This ordinance shall terminate on January 1, 1993, unless renewed or terminated earlier by ordinance.

Section 3. Due to the severity of the drought in the State of California, there is an immediate need to prohibit the wasting of water in the Los Angeles County unincorporated area to better utilize the available water supplies. This ordinance is urgently needed for the preservation of the public health, safety and general welfare and shall take effect immediately.

Section 4. This ordinance shall be published in

Metropolitan News Enterprise

a newspaper printed and published in the County of Los Angeles.

Michael D. Antonovich
Chairman

ATTEST:

Executive Officer
Board of Supervisors
of the County of Los Angeles

I hereby certify that at its meeting of March 21, 1991, the foregoing ordinance was adopted by the Board of Supervisors of said County of Los Angeles by the following vote, to wit:

Ayes:	Noes:
Supervisors Gloria Molina	Supervisors None
Edmund D. Edelman	
Deane Dana	
Michael D. Antonovich	

Executive Officer
Board of Supervisors
of the County of Los Angeles

Effective Date: March 21, 1991

Operative Date: _____

I hereby certify that pursuant to Section 25103 of the Government Code, delivery of this document has been made.
LARRY J. MONTEILH
Executive Officer
Clerk of the Board of Supervisors
By _____ DEPUTY

APPROVED AS TO FORM:
DE WITT W. CLINTON
County Counsel
By _____
GERALD F. CRUMP
Chief Assistant County Counsel

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. . . S A M P L E N O T I C E . . .

LOS ANGELES COUNTY WATER WASTING ORDINANCE
NOTICE OF WARNING

Date _____

Address: _____
_____
_____
_____

Dear Customer:

Due to the severity of the current drought, the County Board of Supervisors, on March 21, 1991, adopted an Ordinance that specifies a number of water saving measures. The Ordinance applies to the unincorporated areas of the County and includes the following provisions:

__ Washing down of paved surfaces is prohibited, except as required for public health and safety.

__ Lawn and landscape watering is prohibited between the hours of 10:00 a.m. and 5:00 p.m.

__ Landscape watering that results in runoff into adjoining streets, parking lots or alleys due to misdirected sprinklers or excessive watering is prohibited.

__ Leaking hoses, faucets and sprinkling systems must be repaired as soon as is reasonably practicable.

__ Leaks to indoor plumbing systems must be repaired as soon as is reasonably practicable.

__ Washing of a motor vehicle, boat or trailer is prohibited except at a commercial car wash or with a hand-held bucket or water hose equipped with an automatic shutoff nozzle.

__ Serving drinking water to customers at public eating places is prohibited unless specifically requested by such customers.

__ Water cannot be used in decorative fountains, ponds, lakes and other similar aesthetic structures unless the water flows through a recycling system.

We observed the violation(s) of the above noted provisions on your property. We request your support in complying with the provisions of this ordinance so that we can avoid unnecessary waste and stretch our limited water supplies for the duration of the drought. Violation of this Ordinance is punishable by a fine of up to $500. If you have any questions regarding this ordinance or its enforcement please contact (your office and phone number).

(WW3901)

Appendix VI

RESOLUTION

ADOPTING A WATER SHORTAGE CONTINGENCY PLAN
FOR THE SANTA CLARITA WATER COMPANY

WHEREAS, the California Legislature enacted Assembly Bill 11X during the 1991 Extraordinary Session of the California Legislature (an act to amend the California Water Code Sections 10620, 10621, 10631, and 10652, and to add Section 10656 to the California Water Code, relating to water); and

WHEREAS, AB 11X mandates that every urban water supplier providing municipal water directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre feet of water annually to develop a Water Shortage Contingency Plan; and

WHEREAS, AB 11X mandates that said Plan be filed with the California Department of Water Resources by January 31, 1992; and

WHEREAS, the Santa Clarita Water Company is an urban supplier of water providing water to more than 3,000 customers, and has therefore prepared and circulated for public review a Draft Water Shortage Contingency Plan, in compliance with the requirements of AB 11X, has held a properly noticed public hearing on January 29, 1992, regarding said Draft Plan, and has thereafter prepared a Final Water Shortage Contingency Plan;

NOW, THEREFORE, BE IT RESOLVED by the Santa Clarita Water Company's Board as follows:

1. A Final Water Shortage Contingency Plan is hereby adopted and is attached hereto as Exhibit "A" hereof, which exhibit is hereby incorporated herein;

2. The President is hereby authorized and directed to file the Plan with the California Department of Water Resources;

3. The President is hereby also authorized to follow lawful procedures to declare a Water Shortage Emergency and to implement this Water Shortage Contingency Plan; and

4. The President shall recommend to the Santa Clarita Water Company's Board additional procedures, rules, and regulations to carry out effective and equitable allocation of water resources during a water shortage.

Appendix VI

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ADOPTING A WATER SHORTAGE CONTINGENCY PLAN
FOR THE SANTA CLARITA WATER COMPANY

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WHEREAS, AB 11X mandates that every urban water supplier providing municipal water directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre feet of water annually to develop a Water Shortage Contingency Plan; and

WHEREAS, AB 11X mandates that said Plan be filed with the California Department of Water Resources by January 31, 1992; and

WHEREAS, the Santa Clarita Water Company is an urban supplier of water providing water to more than 3,000 customers, and has therefore prepared and circulated for public review a Draft Water Shortage Contingency Plan, in compliance with the requirements of AB 11X, has held a properly noticed public hearing on January 29, 1992, regarding said Draft Plan, and has thereafter prepared a Final Water Shortage Contingency Plan;

NOW, THEREFORE, BE IT RESOLVED by the Santa Clarita Water Company's Board as follows:

1. A Final Water Shortage Contingency Plan is hereby adopted and is attached hereto as Exhibit "A" hereof, which exhibit is hereby incorporated herein;

2. The President is hereby authorized and directed to file the Plan with the California Department of Water Resources;

3. The President is hereby also authorized to follow lawful procedures to declare a Water Shortage Emergency and to implement this Water Shortage Contingency Plan; and

4. The President shall recommend to the Santa Clarita Water Company's Board additional procedures, rules, and regulations to carry out effective and equitable allocation of water resources during a water shortage.

ORDINANCE NO. 112
AN ORDINANCE AMENDING ORDINANCE 101
WATER CONSERVATION, SHORTAGE, DROUGHT AND
EMERGENCY RESPONSE
ORDINANCE OF
NEWHALL COUNTY WATER DISTRICT

* * * * * * * * * * * * * * * * * ** * * * * * * * *

Be it ordained by The Board of Directors of Newhall County Water District, Los Angeles County, California, Ordinance No. 101 is amended to read as follows:

Section 1: ***PURPOSE*****:** The specific provisions of this Ordinance are necessary and proper to conserve water resources and minimize cost to the District and its customers. The District requires that water resources available to the District be put to the maximum beneficial use, and that water efficient practices be used to reach this objective. The District further finds that its water supplies may be reduced because of drought, failure of facilities, or catastrophic events such as earthquakes and regional power failures. Anti-waste and water conservation requirements are necessary to achieve demand reduction without unneeded hardship.

Section 2: ***DEFINITIONS AND TERMS:***

- ***A. Water efficient practices****:* Cost-effective practices that require the least amount of water to generate the greatest benefit (water and cost savings) to the customer.
- ***B. Water Waste:*** To use or expend water carelessly or needlessly.
- ***C. Water User:*** Business or residential customer of the District.
- ***D. Water Conservation Stages:*** The General Manager shall determine the conservation stage, except that the Board shall determine any conservation stage more restrictive than Stage 1. A water deficiency occurs when the current or near-term water demand exceeds the current or near-term water supply.
  - ***Stage 1***. Water deficiencies range between 1 and 15 percent.
  - ***Stage 2.*** Water deficiencies range from more than 15 and up to 25 percent.
  - ***Stage 3.*** Water deficiencies range from more than 25 and up to 35 percent.
  - ***Stage 4.*** Water deficiencies are more than 35 percent.
- ***E. Water Deficiency:*** A water deficiency occurs when the current or near-term water demand exceeds the current or near-term water supply, based on a yearly assessment. (Percent or deficiency = (1 – water supply/water demand) x 100

Section 3: ***WATER CONSERVATION ACTION PLAN:*** This plan establishes water conservation measures to be taken in response to current and anticipated levels of deficiency in State and/or local water supplies. No Water User shall waste water or make, cause, or permit the use of water for any purpose contrary to any provision of this Ordinance, or in quantities in excess of the use permitted by the conservation stage in effect pursuant to this Ordinance.

3.1 Efficient Water Use. *Because more severe effects of a water shortage are often brought about due to wasteful water use habits carried over from times of sufficient supply, certain voluntary water-use practices are encouraged at all times.*

3.1.1 Outdoor Water Use Efficiency Guidelines and Recommendations:

a) Sprinklers should be maintained and adjusted so that overspray, runoff, and water waste is avoided. The most effective and water-efficient irrigation should be used, and drip irrigation should be considered where appropriate.

b) All leaks in plumbing and irrigation systems should be repaired promptly

c) Vehicles should be washed using a hose equipped with automatic shutoff nozzle.

d) Sidewalks, walkways, driveways, parking lots or any other hard-surfaced areas should not be washed down, except for health and safety purposes.

e) Low-water-use native or drought-tolerant vegetation should be used to minimize the need for irrigation. Plants and trees with similar water needs should be grouped together for most efficient irrigation. (Please see our website ncwd.org for more information and links to other websites listing drought tolerant plants.)

f) Landscape should be installed in a manner that will reduce the amount of water needed for irrigation. For example, the use of mulches and watering basins is encouraged where appropriate.

g) Irrigation should occur during optimal watering hours, avoiding wind and heat. The following hours are considered the most efficient hours for NCWD customers to effectively irrigate lawns and landscaped areas:

Winter/Fall (November through April) – 6 PM to 10 AM

Spring/Summer (May through October) –8 PM to 9 AM

h) Water usage on any decorative fountains, ponds or other types of water streams should be minimized by incorporating a water recycling system so the water is continually recovered and reused.

i) Pool and spa safety covers or evaporation-reducing water treatments should be considered if safe and appropriate for the situation. These will help minimize water loss due to evaporation. Pool and spa chemistry should be balanced and maintained to help reduce the frequency of pool/spa draining and refilling.

3.1.2 Indoor Water Use Efficiency Guidelines and Recommendations:

a) All leaks and/or damage to faucets, toilets, and indoor pipes should be repaired immediately.

b) Low flow devices for indoor plumbing fixtures including faucets, kitchen spray nozzles, toilets, and showers should be used where possible.

c) Install 1.0 gallon per flush (gpf) ultra low-flow toilets or dual-flush toilets.

d) Water-efficient Energy Star® approved appliances including, but not limited to, clothes washers and dishwashers should be used.

e) Clothes washers and dishwashers should be run using full loads to maximize water efficiency.

f) A source specific hot water dispenser or a whole house hot water recirculation system should be considered. These devices generate hot water within seconds, minimizing running the water until it is hot.

g) All commercial establishments where food or beverages are provided should encourage the serving of water to their customers only when specifically requested by the customer.

3.1.3 ***New Construction Water Efficiency Guidelines:*** As new technology advances, builders of new structures or persons retrofitting existing facilities should consider options such as evapotranspiration-controlled sprinkler systems, grey water or non-potable water systems (where legally acceptable), storm water cisterns, and landscape designs minimizing the use of turf and water-intensive plants. Businesses should review industry-specific guidance for ways to reduce water usage and should consider programs such as multi-pass cooling towers and process water recycling.

3.2 ***Water Conservation Stage 1 –:*** *At this stage of water deficiency, the Water Users are strongly encouraged to adhere to all the guidelines in section 3.1, Water Use Efficiency Guidelines. The following practice is also strongly suggested during Stage 1 water deficiencies:*

a) Outdoor irrigation of all vegetation including lawns and landscaping is limited to three times per week and no more than 10 minutes per watering station. Irrigation should occur during the following hours:

Winter/Fall (November through April) – 6 PM to 10 AM

Spring/Summer (May through October) – 8 PM to 9 AM

3.3 ***Water Conservation Stage 2:*** *At this stage of water deficiency, Efficient Water Use Guidelines (3.1.1-3.1.2 above) and Stage 1 practices (3.2 above) become mandatory requirements. Further mandatory practices during Stage 2 are as follows:*

a) All new landscaping shall be limited to widely accepted drought-tolerant plants requiring less than typical water requirements.

b) No new lawns, whether by seed or sod, shall be installed.

c) No filling of pools or spas. Water levels may be maintained.

3.4 Water Conservation Stage 3: *At this stage of water deficiency, Efficient Water Use Guidelines (3.1.1-3.1.2 above), Stage 1 practices (3.2 above), and Stage 2 practices (3.3 above) become mandatory requirements. Further mandatory practices during Stage 3 are as follows:*

a) No new applications for service will be accepted.

b) No water for grading will be allowed.

c) Washing vehicles is prohibited, except at commercial facilities that recycle water.

d) Street cleaning with potable water is prohibited.

3.5 Water Conservation Stage 4: *At this stage of water deficiency, Efficient Water Use Guidelines (3.1.1- 3.1.2 above), Stage 1 practices (3.2 above), Stage 2 practices (3.3 above), and Stage 3 practices (3.4 above) become mandatory requirements. Further mandatory practices during Stage 4 are as follows:*

a) Outdoor irrigation of all vegetation including lawns and landscaping is prohibited. Existing trees and larger shrubs will be exempt.

b) No new landscaping shall be permitted.

Section 4: ENFORCEMENT:

4.1 Efficient Water Use and Stage 1 Enforcement:

a) Any notification to the District of signs or indications of water leaks or water waste will be documented. The District will confirm the water waste prior to any further action.

b) The District shall determine the action to be taken to inform the Water User of the guidelines in this Ordinance and to encourage more efficient and cost-effective water use.

4.2 Stage 2, 3 and 4 Enforcement. *The General Manager, and other District authorized representatives have the duty and are authorized to enforce provisions of Stage 2, 3, and 4 of this Ordinance. If a violation is ongoing, the District may disconnect service until the violation is corrected.*

4.2.1 First Violation. For a first violation, the District shall issue a verbal warning to the Water User and recommend corrective action.

4.2.2 Second Violation. For a second violation, the District shall issue a written warning to the Water User, and a fine of $40 shall be added to the Water User's bill at the property where the violation occurred if the corrective action is not taken within 30 days after receiving the written warning.

4.2.3 Third Violation. For a third violation, a fine of $100 shall be added to the Water User's bill at the property where the violation occurred if the corrective action is not taken within 30 days after receiving the written warning. In addition to the fine, the Board or the General Manager may require installation of a flow-restricting device on the Water User's service connection.

4.2.4 ***Fourth Violation.*** For the fourth and any additional violations, a fine of $250 shall be added to the Water User's bill at the property where the violation occurred. The District may also discontinue the Water User's water service at the property where the violation occurred. Re-connection shall be permitted only when there is reasonable protection against future violations, such as a flow-restricting device on the customer's service connection, as determined at the District's discretion.

4.3 ***District Enforcement Costs.*** District shall be reimbursed for its costs and expenses in enforcing the provisions of this Ordinance, including such costs as District incurs for District staff to investigate and monitor the Water User's compliance with the terms of this Ordinance. Charges for installation of flow-restricting devices or for discontinuing or restoring water service, as the District incurs those charges, shall be added to the Water User's bill at the property where the enforcement costs were incurred.

Section 5: ADMINISTRATION:

5.1 ***General.*** The provisions of this Ordinance shall be administered and enforced by the District through the General Manager, who may delegate such enforcement to one or more employees or contractors of the District. The District may implement additional demand reduction practices, including surcharges, rationing, and specific water allocations, in times of severe shortage or emergency situations.

5.1.1 ***Water Utility Accounts.*** Accounts shall not be established for new customers, including the transfer of accounts upon change of ownership, until the customer agrees to comply with the provisions of this Ordinance. In pursuing the objectives of this Ordinance, the General Manager shall seek the cooperation of other water purveyors within the District's service area. The District will request that other water purveyors not permit the establishment of new accounts until the customer agrees to comply with the provisions of this Ordinance.

5.1.2 ***Discretionary Exemptions.*** The Board may, in its discretion, exempt Water Users and individual facilities of Water Users from the provisions of this Ordinance, or impose reasonable conditions in lieu of compliance with this Ordinance, if the Board finds that any of the following conditions exist:

- ***a)*** Hardship. The requirements of this Ordinance would cause an unnecessary and undue hardship upon the Water User, the Water User facility or the public.
- ***b)*** Health and Safety. Strict compliance with the requirements of this Ordinance would create an emergency condition, as determined by the Board or other governmental entity with appropriate jurisdiction, affecting the health, protection or safety of the Water User or the public.

c) No Impact on Water Use. The granting of the exemption or imposition of reasonable conditions in lieu of compliance with this Ordinance would not increase the quantity of water consumed by the Water User or otherwise adversely affect service to other Water Users. In other words, the Water User will create an offset. In granting any such relief, the departure from the requirements of this Ordinance shall be limited to the minimum necessary to address the circumstances upon which such departure is required by a Water User.

5.1.3 ***Appeals.*** Any customer or applicant for a water service may appeal any decision under this Ordinance to the Board whose decision shall be final.

ADOPTED, APPROVED AND SIGNED by the Board of Directors of NEWHALL COUNTY WATER DISTRICT this 14th day of July, 2005.

_____
MARIA GUTZEIT, President of the
Board of Directors of
NEWHALL COUNTY WATER DISTRICT

ATTEST:

_____
Karin J. Russell, Secretary of the
Board of Directors of
NEWHALL COUNTY WATER DISTRICT

Appendix H
References

Appendix H
REFERENCE LIST

The following documents were used in the preparation of the 2005 Urban Water Management Plan for the Santa Clarita Valley:

2000 Urban Water Management Plan, Castaic Lake Water Agency, Newhall County Water District, Santa Clarita Water Company, Valencia Water Company, December 2000, prepared by SA Associates, Reiter/Lowry/Consultants, and Black & Veatch.

2000 Urban Water Management Plan Groundwater Perchlorate Contamination Amendment and Other Amendments, Castaic Lake Water Agency, CLWA Santa Clarita Water Division, Newhall County Water District, Valencia Water Company, January 2005, prepared by Luhdorff & Scalmanini Consulting Engineers.

2001 Update Report: Hydrogeologic Conditions in the Alluvial and Saugus Formation Aquifer Systems, prepared for Santa Clarita Valley Water Purveyors, July 2002, prepared by Richard C. Slade and Associates, LLC (RCS).

2004 Santa Clarita Valley Water Report, Castaic Lake Water Agency, CLWA Santa Clarita Water Division, Los Angeles County Waterworks District 36, Newhall County Water District, Valencia Water Company, May 2005, prepared by Luhdorff & Scalmanini Consulting Engineers.

2004a. Regional Groundwater Flow Model for the Santa Clarita Valley: Model Development and Calibration, prepared for the Upper Basin Water Purveyors (Castaic Lake Water Agency, Santa Clarita Water Division of CLWA, Newhall County Water District, and Valencia Water Company), April, prepared by CH2M HILL.

2004b. Final Report: Analysis of Perchlorate Containment in Groundwater Near the Whittaker-Bermite Property, presented in Support of the 97-005 Permit Application, prepared for the Upper Basin Water Purveyors (Castaic Lake Water Agency, Santa Clarita Water Division of CLWA, Newhall County Water District, and Valencia Water Company), December, prepared by CH2M HILL.

Analysis of Groundwater Basin Yield, Upper Santa Clara River Groundwater Basin, East Subbasin, Los Angeles County, California, prepared for Upper Basin Water Purveyors: Castaic Lake Water Agency, Newhall County Water District, Santa Clarita Water Division of CLWA, and Valencia Water Company, August 2005, prepared by CH2M HILL and Luhdorff & Scalmanini Consulting Engineers.

California Department of Water Resources, California's Groundwater, Bulletin 118, Santa Clara River Valley Groundwater Basin, Santa Clara River Valley East Subbasin, February, 2004.

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Castaic Lake Water Agency 2002 Groundwater Banking Project (Semitropic Groundwater Banking Program) Negative Declaration, August 2002, prepared by Science Applications International Corporation.

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Castaic Lake Water Agency Draft Environmental Impact Report – Supplemental Water Project Transfer of 41,000 Acre-Feet of State Water Project Table A Amount, June 2004, prepared by Science Applications International Corporation.

Castaic Lake Water Agency Draft Report, Recycled Water Master Plan, May 2002, prepared by Kennedy/Jenks Consultants.

Castaic Lake Water Agency Final Environmental Impact Report – Supplemental Water Project Transfer of 41,000 Acre-Feet of State Water Project Table A Amount, December 2004, prepared by Science Applications International Corporation.

Castaic Lake Water Agency Groundwater Containment, Treatment, and Restoration Project, Mitigated Negative Declaration, August 2005, prepared by Black & Veatch.

Castaic Lake Water Agency Groundwater Management Plan – Santa Clara River Valley Groundwater Basin, East Subbasin, December 2003, prepared by Luhdorff & Scalmanini Consulting Engineers.

Castaic Lake Water Agency Recycled Water Master Plan Program Environmental Impact Report Notice of Preparation and Initial Study, April 2005, prepared by BonTerra Consulting.

Castaic Lake Water Agency/Rosedale-Rio Bravo Water Storage District (RRBWSD) Water Banking and Exchange Program Draft Environmental Impact Report, August 2005, prepared by Science Applications International Corporation.

Castaic Lake Water Agency, Water Supply Reliability Plan Draft Report, September 2003, prepared by Kennedy/Jenks Consultants.

Hydrogeologic Assessment of the Saugus Formation in the Santa Clara Valley of Los Angeles County, California, February 1988, prepared by Richard C. Slade and Associates, LLC (RCS).

Hydrogeologic Investigation: Perennial Yield and Artificial Recharge Potential of the Alluvial Sediments in the Santa Clarita River Valley of Los Angeles County, California, December 1986, prepared by Richard C. Slade and Associates, LLC (RCS).

Impact and Response to Perchlorate Contamination, Valencia Water Company Well Q2, prepared for Valencia Water Company, April 2005, prepared by Luhdorff & Scalmanini Consulting Engineers.

Los Angeles Superior Court Decision on Riverpark

SUPERIOR COURT OF CALIFORNIA

COUNTY OF LOS ANGELES

SIERRA CLUB, et al., Petitioner, vs. CITY OF SANTA CLARITA, et al., Respondent.	CASE NO. BS 098 722 DECISION ON SUBMITTED MATTER
NEWHALL LAND AND FARMING, Real Party in Interest.	

Having taken the matter under submission on May 31, 2005, having considered all the evidence admitted and the parties' oral and written arguments, the Court rules as follows:

Petitioners Sierra Club, Center for Biological Diversity, Friends of the Santa Clarita River, and California Water Impact Network ("Petitioners") seek a Writ of Mandate commanding Respondents City of Santa Clarita and Santa Clarita City Council ("City" or "Respondents") to set aside its decision certifying the Final Environmental Impact Report ("FEIR") and approving the Project known as Riverpark in favor of Real Party in Interest Newhall Land and Farming ("Newhall").

The Riverpark project is located on a 695.4-acre site. Originally, Riverpark proposed 1,183 residential units, consisting of 439 single-family homes and 744 apartments, and 40,000 square feet of commercial development, a trail system, a 29-acre active/passive park along the Santa Clara River, and approximately 442 acres of open space area, including most of the Santa Clara River. (2:1 AR, Tab 4, 340-42 [Draft EIR, § 1.0, Project Description].) Through the public hearing process, the project was revised by converting the apartments to condominiums or townhouses, reducing to 1,123 the residential units and to 16,000 square feet commercial development, and preserving additional areas of the Santa Clara River and its south fork. (10 AR, Tab 12, 11742-44 [FEIR, Project Revisions and Additional Information].) Further hearings in 2005 reduced the residential units to 1,089, consisting of 432 single family homes and 657 condominium/townhouses, and provided for the preservation of more land and river areas, totaling 788 acres (470-acres on-site) for recreation and open space. (10 AR 11742-44; 9 AR, Tab 11, 11418-22.) Included among the 318 off-site acres are the remaining portions of the south fork of the Santa Clara River owned by RPI, and 37 acres of the Santa Clara River significant ecological area ("SEA").

Project approvals included a General Plan Amendment, a Zone Change, a vesting tentative tract map, a conditional use permit to build in excess of two stories and a maximum of 50-feet, Hillside Innovative Application, a permit for vehicular gating, a variance to reduce setback requirements and to build sound walls in excess of 7 feet, Hillside Development Application, and an Oak Tree Permit. (1 AR, Tab 2, 9-114; 2 AR 259.)

The Planning Commission held 9 hearings and on 12/21/04 recommended that the City Council certify the EIR and adopt a Statement of

Overriding Considerations for impacts that could not be mitigated to a less than significant level. (1 AR, Tab 2, 9-22 [App. Reso.]; 7:2 AR, Tab 9, 8079-81 [12/21/04 Hearing Transcript]; 73 AR, Tab 652, 51639-43 [12/21/04 Staff Report].)

The City Council held 3 hearings and certified the EIR on 5/24/05, unanimously approving the project on 6/14/05. (1 AR, Tab 2, 22-26; 1 AR, Tab 3, 115-229.)

Petitioner filed within Petition for Writ of Mandate alleging non-compliance with CEQA.

To establish violation of the California Environmental Quality Act ("CEQA"), Petitioner must show an abuse of discretion in that the County either failed to proceed in the manner required by law or the determination or decision is not supported by substantial evidence. (Code Civ. Proc., § 1094.5(b); Pub. Resources Code, §§ 21168, 21168.5.) When CEQA non-compliance is alleged, the Court reviews the entire record to see if substantial evidence supports the challenged determinations.

"Substantial evidence" is defined as "enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion, even though other conclusions might also be reached." (14 Cal. Code Regs., § 15384(a); Laurel Heights Improvement Assn. v. Regents of University of California (1988) 47 Cal.3d 376, 393.) Substantial evidence may include facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts, but not argument, speculation, unsubstantiated opinion, or clearly erroneous evidence. (Pub. Resources Code, §§ 21080(e)(1)(2), 21082.2(c).)

"[I]n applying the substantial evidence standard, the reviewing court must resolve reasonable doubt in favor of the administrative

finding and decision. As such, if there are conflicts in the evidence, their resolution is for the agency." (River Valley Preservation Project v. Metropolitan Transit Development Board (1995) 37 Cal. App. 4th 154, 168.) Determinations in an EIR must be upheld if supported by substantial evidence, and the mere presence of conflicting evidence in the administrative record does not invalidate them. (Chaparral Greens v. City of Chula Vista (1996) 50 Cal.App.4th 1134, 1143.) An agency's approval of an EIR may not be set aside on the ground that an opposite conclusion would have been equally or more reasonable. (Laurel Heights Improvement Assn. v. Regents of University of California (1988) 47 Cal.3d 376, 393.) The Court's role is not to substitute its judgment for that of the local agency representatives, but to enforce legislatively mandated CEQA requirements. (Citizens of Goleta Valley v. Board of Supervisors (1990) 52 Cal.3d 553, 564.) The Court passes only upon the EIR's sufficiency as an informative document, not upon the correctness of its environmental conclusions. (Laurel Heights at 392.)

I. City Properly Relied on the 41,000 AFY Water Transfer for Planning Purposes

Petitioners contend that the City is legally precluded from relying on water from the transfer of 41,000 AFY acre feet per year ("AFY") of State Water Project ("SWP") water to the local SWP wholesaler, Castaic Lake Water Agency ("CLWA") ("41,000 AFY transfer") for planning purposes, and the EIR's reliance on water supplies is not supported by substantial evidence.

The water for the Riverpark project is to be supplied by CLWA.

In 1999, CLWA entered into a contract with the Kern Delta Water District for transfer of 41,000 acre feet per year (AFY) as part of the

"Monterey Agreement."[1] The CLWA certified an EIR for the 41,000 AFY transfer tiered on the earlier program EIR that had been prepared for the Monterey Agreement.

In Planning and Conservation League v. Dept. of Water Resources (2000) 83 Cal.App.4th 892 ("PCL"), the PCL challenged the Monterey Agreement program EIR. The Court of Appeal held that the EIR should have been prepared by DWR as the lead agency, rather than by one of the contractors, and that a new EIR must be prepared and certified by DWR. The Court did not invalidate the Monterey Agreement or enjoin the water transfers effected thereunder, but directed the trial court to consider under CEQA section 21168.9 whether the Monterey Agreement should remain in place pending preparation of DWR's new EIR, and to retain jurisdiction pending certification of DWR's EIR.

In Friends of Santa Clara River v. CLWA (2002) 95 Cal.App.4th 1373 ("Friends I"), the Court of Appeal ordered CLWA's EIR decertified because it had been tiered from the Monterey Agreement EIR, adjudged inadequate: "We have examined all of appellant's other contentions and find them to be without merit. If the PCL/tiering problem had not arisen, we would have affirmed the judgment." (Friends, supra, at 1387.) The Court did not issue any ruling affecting CLWA's ability to continue to use and rely on water supplies from the 41,000 AFY Transfer, leaving it to the trial court's discretion whether to enjoin CLWA's use of the water pending its completion of a new EIR. (Friends, supra, at 1388.)

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[1]An excellent history of the SWP and the role of Department of Water Resources ("DWR") in the management of the SWP, the Monterey Agreement and amendments, and relevant litigation is set forth in Calif. Oak Foundation v. Santa Clarita, 133 Cal.App.4th 1219 (2005).

In September 2002, on remand to the Los Angeles County Superior Court, the Friends petitioners applied under CEQA section 21168.9 to enjoin CLWA from continuing to use and rely on water from the 41,000 AFY Transfer. The trial court rejected that request, and in December 2003, the Court of Appeal affirmed the trial court's ruling allowing CLWA to continue to use and rely on water from the 41,000 AFY Transfer pending completion of its new EIR. (Id.; see also, Friends of the Santa Clara River v. Castaic Lake Water Agency, 2003 WL 22839353 ("Friends II"] at Tab 7, 5 AR 4180-97.)

Meanwhile, on 5/5/03, before the trial court acted on remand, the parties to the PCL litigation entered into the Monterey Settlement Agreement.[2] Section II of that agreement provides that SWP would continue to be administered and operated in accord with both the Monterey Amendments and the terms of the Monterey Settlement Agreement. (5:1 AR, Tab 7, 4367.) The Monterey Settlement Agreement did not invalidate or vacate the Monterey Amendments, or any water transfer effected under them.

A. PCL, Friends of the Santa Clara River and California Oak do not preclude reliance on the 41,000 AFY Water Transfer

Petitioners contend that legal uncertainties surrounding the 41,000 AFY transfer due to the PCL and Friends lawsuits preclude the City from relying on water from that transfer for planning purposes. Specifically, Petitioners contend that because PCL requires the Department of Water Resources ("DWR") to prepare an EIR analyzing the

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[2]On 6/6/03, the Sacramento County Superior Court issued its Order under CEQA section 21168.9, approving both the Monterey Settlement Agreement, and the continued operation of the SWP pursuant to the Monterey Amendment and the approved Monterey Settlement Agreement. (See 6 AR, Tab 8, 6557; 8 AR, Tab 10, 9775-78 [Order].)

effects of the eight SWP water transfers completed under the Monterey Agreement, none of those transfers, including the 41,000 AFY transfer, can be relied on for planning purposes until DWR has completed and certified that EIR. Moreover, Petitioners contend that the Court of Appeal so held in California Oak Foundation v. City of Santa Clarita (2005) 133 Cal.App.4th 1219.

PCL, Friends and California Oak (discussed infra) do not preclude reliance on the 41,000 AFY transfer for planning purposes.

While the Courts of Appeal could have simply said that all EIRs requiring reliance on the 41,000 AFY transfer, must await the certification of a new FEIR by DWR (and resolution of any litigation challenging such FEIR), they have not done that.

Although the Court in Friends and California Oak observed that CLWA "may be able to cure the PCL problem by awaiting action by the [DWR] complying with the PCL decision, then issuing a subsequent EIR, supplement to EIR, or addendum . . . tiering upon a newly certified Monterey Agreement EIR" (California Oak, supra, 133 Cal.App.4th at 1230, n.6), neither court said that the CLWA and City of Santa Clarita must await the DWR FEIR.

CLWA certified a new EIR on the 41,000 AFY Transfer on 12/22/04. (Tab 10, 8:2 AR 10441-480 [CLWA Resolution certifying the EIR]; see also Tab 637, 63 AR 43468-44683 [CLWA FEIR]; Tab 12, 10 AR 11750 [Final Riverpark EIR Project Revisions and Additional Information.) This new EIR analyzes the effects of the 41,000 AFY Transfer without tiering from the Monterey Agreement EIR.[3] Although CLWA's EIR is currently being

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[3]The CLWA EIR concludes that the Monterey Settlement Agreement neither requires that DWR's new EIR be certified before CLWA can certify its new EIR for the 41,000 AFY Transfer, nor requires that DWR's new EIR

challenged, CEQA requires that the EIR be conclusively presumed to comply with CEQA, until a court has judged it deficient. (See. e.g., CEQA, § 21167.3(b), CEQA Guidelines, § 15231; see also, Barthelemy v. Chino Basin Water Dist., supra, 38 Cal.App.4th 1609, 1617.)

Since the prior CLWA EIR for the 41,000 AFY Transfer was overturned solely because it tiered from a later-decertified Monterey Agreement EIR, and CLWA has now certified an EIR approving the 41,000 AFY Transfer without tiering from the Monterey Agreement EIR,[4] the City reasonably included water from the 41,000 AFY Transfer in CLWA's supplies, after considering at length the current status of all litigation.[5]

B. The 41,000 AFY transfer is sufficiently certain and the Monterey Settlement Agreement does not preclude Respondents from relying on said transfer in its EIR pending DWR's preparation of its EIR.

As argued by Respondents, three provisions in the Monterey Settlement Agreement, read together, refute Petitioners' argument that the 41,000 AFY Transfer was excluded from Attachment E because it was a non-permanent transfer, which may not be used for planning purposes.

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serve as the EIR for that Transfer. (Tab 637.63 AR 43987-92 [CLWA Master Response to Comments].) These conclusions are consistent with Friends II, that the 41,000 AFY Transfer is *not* legally bound to the PCL litigation or to DWR's new EIR. (Tab 7, 5:1 AR 4195-4196.)

[4]Although DWR is in the process of certifying its own EIR pursuant to PCL and the Monterey Settlement Agreement, DWR approved CLWA's preparation of its EIR in a comment letter on the Draft EIR, and noted that CLWA's Draft EIR "adequately and thoroughly discusses the proposed project and its impacts," and "adequately discusses the reliability of the SWP, pre- and post-Monterey Amendment conditions, future conditions and SWP operations." (Tab 637, 63 AR 43482-83.)

[5]Respondents' Riverpark EIR discusses the prior litigation and devotes 8 pages to discussion of the litigation surrounding CLWA's EIR on the 41,000 AFY Transfer in its response to comments alone. (Tab 8, 6 AR 6551-6559.)

Section III(C)(4) requires DWR to conduct an "[a]nalysis of the potential environmental impacts relating to" all eight of the completed water transfers, not just of the 41,000 AFY Transfer (Tab 7. 5:1 AR 4368-69) and to analyze all of the transfers in the same manner, even though seven of them, defined in the Agreement as the "Attachment E Transfers," were beyond challenge. (Id. [Section III(C)(4)j; Tab 7, 5:1 AR 4370 [Sections III(D), III(E)].) Section III(D) precludes challenges to the Attachment E Transfers, which had been litigated in other forums or had become final without challenge by the expiration of limitation periods. (Tab 7. 5:1 AR 4370.) Section III(E) acknowledges the jurisdiction of Los Angeles Superior Court over the then-ongoing Friends litigation challenging CLWA's EIR on the 41,000 AFY Transfer (Tab 7, 6 5:1 AR 4370) pending completion of CLWA's new EIR, but does not distinguish the 41,000 AFY Transfer from the Attachment E transfers otherwise.

The Monterey Settlement Agreement does not prohibit reliance on the 41,000 AFY Transfer. All of the water transfers were effected as permanent transfers under the Agreement and are to be analyzed in the same way in DWR's new EIR, as required by Section III(C)(4).

Petitioner contends that the continued availability of the 41,000 AFY transfer is uncertain until DWR has concluded its EIR and that under California Oak, the City may not presume that the outcome of DWR's environmental review will be the continued availability of the 41,000 AFY.

DWR, however, has recognized the 41,000 AFY Transfer as a permanent transfer under the Monterey Agreement by entering into Amendment No. 18 to CLWA's agreement, which increases its Table A Amount by 41,000 AFY (Tab 10, 8:1 AR 9212-14), and has since consistently allocated water

supplies to CLWA based on that entitlement (Tab 4, 2:2 AR 1015-17 [DEIR]). Furthermore, as noted supra, DWR also submitted positive comments on CLWA's Draft EIR. (Tab 637, 63 AR 43482-83).

DWR's analysis of the 41,000 AFY Transfer in its new EIR will be part of a broader analysis of past and future permanent transfers of Table A Amounts, and will not constitute the EIR for the 41,000 AFY transfer. (5:1 AR, Tab 7, 4369.) As noted supra, PCL, Friends and the Monterey Settlement Agreement do not prohibit CLWA's preparation of its new EIR addressing the impacts of the 41,000 AFY transfer. (Tab 637, 63 AR 43987-92 [CLWA Master Response to Comments].)

California Oak, being most recent, deserves further discussion. In California Oak, the Court struck down the City's certification of an earlier EIR for an industrial project because it did not address the legal uncertainties surrounding the 41,000 AFY Transfer. California Oak did not bar the use of water from the 41,000 AFY transfer for all planning purposes. It criticized the City's failure to explain its reasoning for relying on the 41,000 AFY transfer, but held that it was up to the City to determine whether or not to rely on the 41,000 AFY transfer in its planning. The Court stated: "*[T]he question is whether the entitlement should be used for purposes of planning future development*, since its prospective availability is legally uncertain. *Although this decision must be made by the City*, the EIR is intended to serve as an informative document to make government action transparent. Transparency is impossible without a clear and complete explanation of the circumstances surrounding the reliability of the water supply." (Id. at 1237-38; emphasis supplied.) Before relying on water from the 41,000 AFY transfer for planning purposes, the City must "present a reasoned analysis of the significance . . . [or insignificance] of the

decertification of the EIR for the Castaic purchase; how demand for water would be met without the 41,000 AFY entitlement; or why it is appropriate to rely on the 41,000 AFY transfer in any event." (Id. at 1244.)

The Court in California Oak ruled that the EIR contained an inadequate discussion, in fact no discussion at all, of the uncertainty regarding the 41,000 AFY transfer in the EIR itself, but only references to it in the appendices, and responses to comments. The text of the EIR did not mention the decertification of the CLWA EIR, or that "entitlements are not really entitlements, but only 'paper' water." (California Oak, supra, 133 Cal.App.4th at 1236.) From the EIR, the Court could only assume that City concluded the 41,000 AFY would continue to be available, but found that the lack of a forthright discussion of a significant factor that could affect water supplies was antithetical to the purpose of an EIR to reveal to the public the basis on which officials approve or reject environmental action. (Id. at 1237-38). Thus, the Court held that the EIR failed to inform the public of the litigation uncertainties surrounding the 41,000 AFY transfer, and substantial evidence did not support the City's decision to rely on water from that transfer for planning purposes.

Here, by contrast, the City discussed the 41,000 AFY transfer and its uncertainties at considerable length, both in the EIR and throughout the review process. (See infra, pp. 12-16.) The PCL, Friends, Friends II, and California Oak decisions were all discussed. The City concluded that it was likely that the 41,000 AFY would be available for the project. By the time the City Council held it first Riverpark hearing on 1/25/05, the City also had before it CLWA's certified new EIR for the 41,000 AFY transfer, which was not the case in California Oak.

The Riverpark EIR adequately discloses the uncertainties regarding the 41,000 AFY transfer and discusses them forthrightly.

C. Substantial evidence supports reliance on 41,000 AFY water transfer and the EIR's analysis of the transfer is not flawed

Petitioners contend that substantial evidence does not support the City's decision to rely on water from the 41,000 AFY Transfer.

As noted, California Oak held that, as long as the city has analyzed the uncertainties surrounding this water supply, it is within the City's province to decide whether to rely on the 41,000 AFY Transfer for planning purposes.

The EIR and the Administrative Record contain substantial evidence supporting the City's decision that water from the 41,000 AFY Transfer can be relied on as part of CLWA's supplies.

CLWA, the SWP and the reliability of its water supplies, the Monterey Agreement, the PCL litigation, the Monterey Settlement Agreement, CLWA's Table A Amounts, and the Friends litigation are all extensively discussed in the EIR. The City specifically discloses that a future adverse judgment invalidating the Monterey Agreement could affect CLWA's ability to use water from the 41,000 AFY transfer and adversely affect CLWA's water supplies over the long term, but that, based on the information discussed, CLWA (the experts concerning water supply) believed that such a result "is unlikely to >unwind' executed and completed agreements with respect to the permanent transfer of SWP Water Amounts." (Tab 4,2:2 AR 1014-15; see also, Tab 8,6:2 AR 6551-59 [TR-3].) Further, the EIR notes the 41,000 AFY Transfer was completed in 1999, CLWA has paid approximately $47 million for the additional Table A Amount, the monies have been delivered, the sales price has been financed through CLWA by tax-exempt bonds, and DWR has increased CLWA's

SWP maximum Table A Amount and delivered or made available to CLWA the 95,200 AFY because it was a permanent transfer/reallocation of SWP Table A entitlement between SWP contractors." (Tab 4, 2:2 AR 1013.) Included in the EIR's Appendices and referenced in the EIR, are the 19 documents supporting the EIR's analyses, including the PCL decision, the Monterey Settlement Agreement, the Sacramento County Superior Court's "Order Pursuant to Public Resources Code Section 21168.9," the Friends decision, the Los Angeles County Superior Court's Judgment on remand in the Friends litigation, CLWA's final EIR for the 41,000 AFY Transfer, and CLWA's Resolution certifying that EIR.

The City responded to numerous comments challenging the EIR's conclusion that CLWA could rely on the 41,000 AFY Transfer for planning purposes. Due to the number of comments, and the amount of information required to respond, the City prepared a "master" response on this subject, TR-3 (Tab 8, 6:2 AR 6551-59). TR-3 reviews the information disclosed in the EIR's Water Services section regarding the 41,000 AFY Transfer and the Friends litigation, then responds to comments asserting that: (i) the PCL litigation and Monterey Settlement Agreement preclude CLWA from using or relying on that water transfer, and (ii) because the Monterey Settlement Agreement requires DWR to prepare a new EIR on the Monterey Agreement, CLWA cannot rely on the water transfer until that new EIR is completed. The City also prepared responses to individual comment letters on the 41,000 AFY Transfer[6] All of these comments and

[6]See, for example, responses to comments from the Santa Clarita Organization for Planning and the Environment (Tab 8, 6 AR 5962-66, 6689-6717), Petitioners Sierra Club (Tab 8, 6 AR 6194-6201, 6370, 6737-66, 6829-30), California Water Impact Network (Tab 8, 6 AR 6273-74, 6767-75), Friends (Tab 8, 6 AR 6387, 6835-36), and from a law firm involved in the PCL litigation (Tab 8, 6 AR 6275-78, 6776-83).

responses are included in the Riverpark Final EIR.

The City's Planning Commission also held a study session on the subject of the reliability of available water supplies. (Tab 9, 7 AR 7480-92.)

Ultimately, the City reviewed all of this information, and the views expressed in the EIR, by CLWA, and by commentators opposed to the City considering the 41,000 AFY Transfer, and determined it was appropriate for the City to rely on those SWP supplies. (Tab 2, 1 AR 9-114 [App. Reso]; Tab 3. 1 AR 174-220 [CEQA Findings].) The City explained that its determination to allow Riverpark to rely on the 41,000 AFY Transfer was supported by the information in the EIR for four main reasons: (i) nothing in the Monterey Settlement Agreement or in any court decision precludes that reliance; (ii) nothing in the Monterey Settlement Agreement precludes CLWA from preparing and certifying its revised EIR for that transfer as instructed by the Court of Appeal in the Friends decision and, in fact, the Settlement Agreement was carefully crafted to leave that EIR and any required remedies to the Los Angeles County Superior Court; (iii) the fact that DWR is preparing an EIR that will analyze all of the water transfers under the Monterey Agreement does not preclude CLWA from preparing and certifying its revised EIR, as instructed by Friends; and (iv) CLWA's Final EIR re-approving the transfer had been certified without tiering from the Monterey Agreement EIR. (Tab 8, 6:2 AR 6558-59 [TR-3]; Tab 10, 8:2 AR 10441-10480; Tab 12, 10 AR 11750.)

As directed by California Oak, the City here has analyzed in considerable detail the uncertainties surrounding the AFY water transfer and explained the basis for its reliance on that transfer. The City's

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determinations are not an abuse of discretion, but supported by substantial evidence.

Petitioners' contention that the City makes false statements about the transfer (OB 7-9) is not borne out by the record.

The City's statement reads: "Because the 41,000 AF was a permanent water transfer, because DWR includes the 41,000 AF in calculating CLWA's share of SWP Table A Amount, and because the courts have not prohibited CLWA from using or relying on those additional SWP supplies, the City has determined that it remains appropriate for the Riverpark project to include those water supplies in its water supply and demand analysis, while acknowledging and disclosing uncertainty created by litigation." (Tab 8, 6:2 AR 6768-69.)

This statement is qualified and explained by the City's extensive discussion of the legal uncertainties arising from litigation, supra, and is not misleading. The statement cannot be taken out of context and must be read in light of other statements and evidence in the record. As regards "reliance on the fact that DWR counts the 41,000 AFY in Table A amounts, DWR has acknowledged the 41,000 AFY Transfer by continuously delivering SWP water, including water from the Transfer, to CLWA for many years. The Monterey Settlement Agreement treats the 41,000 AFY Transfer identically to the Appendix E Transfers. The City's discussion of the reliability of SWP water supplies, including the 41,000 AFY Transfer water, is a discussion relating to the ability of the SWP to deliver only such supplies as are available on a year-to-year basis. (See, e.g., Tab 4, 2:2 AR 1022-30.) The City discussed the reliability of available SWP supplies under average, dry and critical dry years, and that there would be sufficient supplies to meet Riverpark's demand and cumulative demand. (Id. at 1051-70.)

Unlike California Oak, the record shows that the City considered the 41,000 AFY transfer in the EIR, including the legal uncertainties, the reliability of available supplies of SWP water in general, and concluded, based on substantial evidence, that it was appropriate to rely on those supplies for planning purposes. The City also considered and responded to numerous comments. After 12 hearings before the Planning Commission and City Council, the City certified the EIR and approved Riverpark, knowing that water supplies from the 41,000 AFY Transfer were to some degree uncertain, but explaining the reasoning for its determinations and the evidence that supported it. That is all that CEQA and California Oak require.

II. Impacts on Biological Resources were Appropriately Evaluated

Petitioner contends that the project's impact on three special-status species, the western spadefoot toad ("Toad"), the San Diego back-tailed jackrabbit ("Jackrabbit") and the holly-leaf cherry woodlands ("Holly-Leaf") must be considered significant because they are "rare" within the meaning of CEQA, the EIR's responses to comments by Department of Fish and Game ("DFG") were inadequate, as were mitigation measures for the Toad and Jackrabbit.

CEQA Guidelines section 15065(a) provides: "A lead agency shall find that a project may have a significant effect on the environment and thereby require an EIR to be prepared for the project where there is substantial evidence, in light of the whole record, that . . . : (1) The project has the potential to . . . substantially reduce the number or restrict the range of an endangered, rare or threatened species . . . ." (Guidelines, § 15065(a); 51 AR 33996.)

Here, an EIR was prepared and the impacts on the Toad, Jackrabbit, and Holly-Leaf considered. Petitioner contends that, to assess the

significance of the project impacts on the Toad, Holly-Leaf, and Jackrabbit, the EIR was required to determine whether the species are "rare" under Guidelines section 15380(b)(2)(A), which defines "rare" as "[a]lthough not presently threatened with extinction, the species is existing in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens."

The EIR's conclusions with regard to these species are supported by substantial evidence.

Toad

The EIR concluded that impacts on the Toad would be significant and unavoidable (Tab 7, 5:2 AR 5774, 5827).

The EIR describes the Toad as a special-status species (Tab 7, 5:2 AR 5720-5730, 5737, 5831-36; see also Tab 9, 7:2 AR 8572 [Revised Draft EIR ("RDEIR")]), and defines "special-status wildlife" to include rare species, that is, State Species of Special Concern and Federal Species of Concern. (Tab 7, 5:2 AR 5728.) The EIR notes that Toads were found in three seasonal rainpools created by human disturbances in the middle of areas planned for development: in the right-of-way for the extension of Newhall Ranch Road, in the middle of Planning Area A-1, and in the middle of Planning Area B (Tab 7, 5:2 AR 5832-34). The potential impacts on the Toad were analyzed in accordance with CEQA and City thresholds and found to be significant (id. at 5750-53, 5774). Mitigation was recommended in the form of pre-construction surveys, preparation of a Resource Management and Monitoring Plan ("RMMP"), design and construction of new enhanced Toad habitat and implementation of a capture and relocation and monitoring program. Ultimately the EIR concluded that the impacts would remain significant and unavoidable, because such measures have not yet been proven to he highly effective,

and because of the possibility that not all of the individual Toads could be successfully captured and relocated (id. at 5811).

The City's responses to comments and its actions addressed DFG's concerns (Tab 8, 6:1 AR 5880-86 [DFG letter], Tab 8, 6:2 AR 6621-30 [response]), and those of other commentators (see, e.g., Tab 8, 6:1 AR 5876-77 [Santa Monica Mountains Conservancy letter], Tab 8, 6:2 AR 6610-14 [response]). The City followed DFG's recommendations, the City's "Western Spadefoot Toad Habitat Enhancement and Mitigation Plan" ("Toad Plan") was created by the City's expert biologist in consultation with DFG and was ultimately approved by DFG.

Substantial evidence in the record supports the City's decision to mitigate the impacts on the Toad rather than reconfigure the Project. Such evidence included opinion of City's expert biologist that the Toad Plan was likely to succeed, and DFG's approval of that Plan. It properly exercised its discretion to consider the remaining impacts on the Toad to be significant and unavoidable, and adopted a Statement of Overriding Considerations for the Toad. (Tab 3, 1 AR 145-150, 155-163, esp. 159 [SOC].) Arguments similar to Petitioners' arguments here were rejected in Defend the Bay v. City of Irvine (2004) 119 Cal.App.4th 1261, 1276-77.

Jackrabbit

For the Jackrabbit, the Revised DEIR determined that "[b]ecause this species is not state or federally listed as Endangered or Threatened, because it is considered relatively abundant in suitable habitat areas within its range, and because the direct loss of individual jackrabbits is expected to be low, it is expected that the regional population would not drop below a self-sustaining level with the implementation of this project," the loss of any individual

jackrabbits would not be considered a significant impact. (Tab 7, 5:2 AR 5775.)

The EIR identifies the Jackrabbit as a State and federal special-status species, and determined the significance of impacts on that species based on CEQA and City thresholds that recognize substantial adverse effects on special-status species and substantial reduction of habitat as being significant impacts (Tab 7. 5:2 AR 5750-53). Based on field surveys (see, e.g., Tab 7, 5:2 AR 5707-08 [RDEIR, § 4.6; Tab 6, 4 AR 4153-54), the EIR reported that Jackrabbits. which occur in a variety of habitats, had been sighted on-site in the riverbed, open terraces and disked fields, but that because those areas are disturbed, the overall quality of the habitat on site suitable for Jackrabbits was only moderate. (Tab 7, 5:2 AR 5735, 5739, 5775; Tab 9, 7:2 AR 8572 [RDEIR].) The EIR noted that the Project had been designed to include all NRMP applicable mitigation measures for the areas in and adjacent to the Santa Clara River (Tab 7. 5:2 AR 5754-61, and 5789-5800 [RDEIR, § 4.61; Tab 9, 7:2 AR 8576 [RDEIR]), including preconstruction surveys, capture and relocation, and riparian habitat creation enhancement. (Id. at 5757-5759, and 5793-95 [RDEIR, § 4.6]; see also, Tab 9, 7:2 AR 8541-42 [RDEIR]).

The EIR concluded that project-level impacts would be less than significant, not just because Jackrabbit is not a listed species and does not require heightened protection, but also because the species is abundant where it occurs, and, since it is mobile and would likely disperse to nearby better habitat rather than be killed as the site is developed, few individuals would be lost due to development of the site. (Tab 7, 5:2 AR 5775.) Nevertheless mitigation including preparation of an RMMP and preconstruction surveys of areas outside the NRMP areas for

the potential capture and relocation of special-status species was recommended. (Tab 7, 5:2 AR 5800-01, 5809-10; Tab 9,7:2 AR 8543-45, 8584-85 [RDEIR pages].) The EIR also concluded that the project-level and cumulative impacts on an aggregate of 280 acres of habitat, in general, necessarily including that for Jackrabbits, would be significant and unavoidable even after mitigation (Tab 7, 5:2 AR 5761-62, 5811, 5825-26, 5827). A Statement of Overriding Considerations was adopted for these impacts. (Tab 3, 1 AR 145-163.)

The City did not ignore DFG's comments, but in response to DFG, stated that it had considered the NRMP and its EIS/EIR, which had earlier analyzed impacts on the Jackrabbit within the NRMP area (in and adjacent to the Santa Clara River), and found those impacts to be significant and imposed mitigation to reduce them to a less than significant level. (Tab 8, 6:2 AR 6622-23.) Those mitigation measures, the City explained, had been incorporated into the Project as design features, and that Riverpark scaled back the activities permitted by the NRMP, so that the activities within the NRMP area would have even less of an impact on the Jackrabbit than the NRMP EIS/EIR had determined. (Tab 8, 6:2 AR 6622-24.)

Development was moved further back from the Santa Clara River to protect riparian resources, including Jackrabbit habitat (including bank stabilization in a portion of the site). A public trail that had been proposed in the riverbed was moved out to join the pedestrian/bike bridge over the Aqueduct. (Tab 8, AR 6623-24; see also Tab 2, Tab 4, Tab 12 [FEIR, Final Project Revisions]; Tab 11) The City also explained that the mitigation requiring preconstruction surveys and capture and relocation was more definitive than DFG described B more than simply forcing individuals to disperse. As to cumulative impacts, the City

noted that because the NRMP's mitigation measures had been imposed on all of the land between the eastern border of Riverpark vest to Castaic Creek, and because Riverpark had been revised to preserve even more upland, the EIR had concluded that cumulative impacts on the species would be less than significant. (Tab 8, AR 6624.)

DFG disputed the EIR's conclusions without challenging the City's survey methodology. (Tab 8, AR 5882.) As the City's response to DFG's comment letter shows, the City considered DFG's comments, but disagreed with them. The City's response did not assert that the EIR relied solely upon the NRMP EIS/EIR's analysis of impacts on the Jackrabbit. (Tab 8, AR 6622-24.) Rather, the EIR conducted its own independent analysis. (Tab 7 [RDEIR, § 4.6]; Tab 6 [survey report]; Tab 9 [RDEIR].) The City's responses to DFG contained a reasoned explanation based on scientific information. (See CEQA Guideline ' 15088.) The City was not required to accept DFG's opinions over those of its own expert. (Assn. of Irritated Residents, supra, at 1394-97; Laurel Heights I, supra, 47 Cal.3d at 393-93.)

Substantial evidence supports the EIR's conclusions on the Jackrabbit. The evidence shows the EIR conducted its own analysis of the impacts on the Jackrabbit, and did not rely solely upon the NRMP EIS/EIR for that analysis.

Holly-Leaf Cherry Scrub

The surveys conducted by the Project's expert botanist concluded that the plant community identified was not "holly-leaf cherry woodlands," but "holly-leaf cherry scrub" ("HLCS"), which is different and one not specified in DFG's List of California Terrestrial Natural Communities recognized by the California Natural Diversity Data Base (i.e. without any State or federal protection). (Tab 7, AR 5716-17; Tab

416, 53 AR 37223, 37247 and Tab 6, 4 AR 3363, 3387 [DEIR appendices, 2003 and 2002 rare plant surveys Tab 8, 6:2 AR 6627 [response to DFG comments].)

Based on the evidence, including the rare plant surveys conducted in 2002 and 2003, and supporting evidence (Tab 6, AR 3359-82, 3383-95), the EIR reported the expert botanist's identification of the plant community on-site as HLCS (Tab 7, 5:2 AR 57 16-17). The EIR properly defined the class of plants that were considered to be "special status plants" (Tab 7, 5.2 AR 5722), and did not include HLCS within that class based on the botanist's expert opinion. Based on CEQA and City thresholds, the EIR concluded that the permanent disturbance of 3.6 acres of HLCS, which did not support special-status plant or wildlife species and is not considered to be sensitive by the resource agencies, was not significant (Tab 7. 5.2 AR 5767). As noted before, the EIR concluded that the project-level and cumulative impacts from disturbing an aggregate of 280 acres of habitat, in general, necessarily including HLCS, would be a significant impact, and unavoidable even after mitigation, and, a Statement of Overriding Considerations was adopted as to this impact (Tab 3, AR 145-163).

The City's response to DFG's comments on the HLCS was not "dismissive." The City responded that based on scientific and other information the identified plant community was not "holly-leafed cherry woodland," but HLCS, because the canopy did not amount to a woodland canopy, and that DFG does not include HLCS within its list of special status plant communities. Also because only 3.6 acres of habitat would be permanently impacted by the Project, and HLCS "stand of trees" was not considered a sensitive plant community as identified by the DFG, the

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loss of the 3.6 acres would be less than significant under CEQA. (Tab 8, AR 6627.)

Substantial evidence supports the conclusions that the HLCS on site was not a special status species, and that impacts to it alone would not be significant.

III. Description of the Project and Mitigation Measures

Petitioners contend that the EIR fails as an informational document to adequately describe the project or the mitigation measures, misstates the public and agency concerns raised in comment letters, and fails to meaningfully respond to them.

The EIR adequately describes impact on the Santa Clara River and is not misleading

Petitioners contend the project will damage the river and the EIR and the City's staff reports mislead by "perpetuat[ing] the myth that the project will improve the condition of the river," (OB 16-17) and by the statement in Final EIR that the project "has been designed to preserve the Santa Clara River corridor." (AR 28.)

A review of the record discloses extensive discussion in the EIR and staff reports concerning the encroachment into the Santa Clara River and the impacts to it. Among other things, the EIR discloses that the Project would install buried bank stabilization in the western portion of the site, but not the eastern portion where the river corridor would remain substantially undisturbed up to the eastern boundary where the Newhall Ranch Road Golden Valley Road Bridge would be built. (See Tabs 4, 5, 7, 11, 12.) There is evidence that buried bank stabilization is less harmful to the river and its resources than traditional cement stabilization, yet protects adjacent development adequately (Tab 11, 9 AR 10739-47 [FEIR, App. C. Functional AssessmentC Summary], 10877-90

[id., Hybrid Functional Assessment/Riverpark], 11180-97 [FEIR, App. G, Additional Hydrology and Water Quality Analyses], 11202-19 [id., Addendum No. 1], 11405-17 [id., App. J, Additional Flood and Floodplain Modifications data]). Furthermore, revisions to the Project would lessen intrusion into the SEA and protect mature riparian resources that serve as habitat (id., esp. Tab 11, 9 AR 11419-22, 11516 [FEIR App. K. Project Revisions and Additional Information]; Tab 12, 10 AR 11741-61 [FEIR Final Project Revisions]; Tab 11, 9 AR 11224-35 [FEIR App. 1. 7/20/04 Staff Report]). Other evidence shows that the overall (temporary and permanent) intrusion into the SEA was reduced from the original 37 acres to 32.1 acres, and the permanent intrusion from 24 to 16.9 acres. (Tabs 11, 12.) The Project was also revised to dedicate approximately 318 off-site acres, including the approximately 141-acre "Round Mountain" site containing 37 acres of Santa Clara River SEA, which will in part further offset the Project's impacts on biological resources and the floodplain (Tab 12). The City nevertheless still considered the Project's intrusion into the Santa Clara River SEA to be a significant and unavoidable impact, and included it in the Statement of Overriding Considerations (Tab 7.)

Thus, the City did not "ignore Riverpark's encroachment into the river." It considered at great length the Project's impacts on the river and adjacent areas and required changes in the Project to reduce those impacts.

The EIR adequately describes the project setting and is not misleading

The City found that "the proposed project is appropriate for the subject property," "proposes considerably lower densities than existing nearby developments," and that "[b]y proposing a maximum of 1,089

residential units and approximately 16,000 square feet of commercial space, the project proposes development that would be substantially less dense and less intense than those that both the current and the proposed land use classifications would allow." (1 AR 30.)

Petitioners contend the finding is incorrect, because the City "never actually calculated the number of residential units that can actually be built on the site," and the site's physical characteristics, such as topography, constrain the number of units that can be built on any given parcel.

The findings relating to the project setting are adequate under CEQA and not misleading. Prior to the approval of the General Plan Amendment and Zone Change proposed by the Project, the City's General Plan designations for the site permitted development more dense and intense than the now-approved designations. (See, e.g., Tab 4, 2:1 AR 346-48 [DEIR, § 1.0, Project Description], 830-837 [Id., § 4.7, Land Use]; Tab 4, 18 2:2 AR 947-52.)

There is no requirement the City must calculate exact number of units which actually can be built.

The EIR adequately describes on-site and off-site dedications to the City

Petitioners contend the EIR does not "adequately describe both the on-and off-site [land] dedications, which the City considers a significant benefit, and has identified as one main bases [sic] for over-riding the project's significant adverse impacts," and City staff and the EIR do not discuss in an Agenda Report to the City Council a Planning Commissioner's comments during a debate on whether the Commission would consider the Project's proposed dedication of portions of the South Fork of the Santa Clara River to be a benefit under the

City's Ridgeline Preservation and Hillside Development Ordinance (OB 24-28.)

Preliminarily, these issues were not raised during the administrative process and, consequently, are now barred. (CEQA, § 21177(a); see Park Area Neighbors v. Town of Fairfax (1994) 29 Cal.App.4th 1442, 1447-48.) Moreover, the dedications were not offered as mitigation measures, but as benefits in connection with the City's issuance of a Statement of Overriding Considerations and the Hillside Development Application. (Tab 3. 1 AR 147-1 50.)

In any case, CEQA requires that an EIR analyze a project's adverse environmental impacts, not its benefits. (See, e.g., CEQA, § 21002.1(a).) Dedication of on-site and off-site open space to the City to be preserved in perpetuity does not create adverse environmental impacts. Even so, the EIR does discuss the attributes of these land dedications. The on-site land to be dedicated was discussed extensively in the Draft EIR (see. e.g., Tab 4, AR 367 [DEIR, § 1.0, Project Description]; Tab 4, 2:2 AR 1214-44 [id., § 4.12, Parks and Recreation]; Tab 7, 5:2 AR 5689-5827 [RDEIR, § 4.6, Biological Resources]), as well as in City staff reports (Tab 604,61 AR 42947-42953; Tab 652, 73 AR 51639-51650; Tab 652, 73 AR 51651-51811; Tab 666, 74 AR 51913-51925; Tab 674, 74 AR 52073-52085; Tab 2-3, 1 AR 9-227) and in Planning Commission hearings (Tab 3, 1 AR 147-150). The attributes and benefits of the off-site land dedications are discussed in the Final EIR (see, e.g., Tab 12. 10 AR 11742-61 [FEIR. Final Project Revisions]; Tab 11, 9 AR 11419-22, 11516 [FEIR. App. K, map, land use table, new SEA chart]).

Failure to discuss comments in the agenda report is not fatal here. The Planning Commission debated which Project attributes should be considered as benefits in connection with their decision whether to

recommend approval of the Hillside Development Application, for which Newhall had submitted its Innovative Application Compliance Report. The EIR analyzed the land being dedicated to the extent necessary to inform the City and the public, and based on that information, the Planning Commission ultimately voted on which Project benefits it viewed as supporting the Hillside Development Application, including, without limitation, the on- and off-site land dedications (Tab 9,7:2 AR 8079-81 [12/21/04 HT]; Tab 652, 73 AR 51639-45, esp. 51643 [12/21/04 Staff Report]; Tab 2, 1 AR 15-18 [App. Reso.]). All of this information was before the City Council.

The EIR adequately describes on and off-site dedications and does not fail as an informational document in other respects.

IV. Alternatives Were Considered as Required by CEQA

An EIR's alternatives analysis must include a reasonable range of alternatives to the project that would feasibly obtain the basic objectives of the project and evaluate the comparative merits of the alternatives. (Guidelines, § 15126.6(a).)

Petitioners contend that the City's rejection of Alternative 2, the Santa Clara River Reduced Bank Stabilization Alternative, in the EIR and in its Findings was "disingenuous and pretextual, and therefore contrary to the mandates of CEQA" and not supported by substantial evidence.

Substantial evidence supports the determinations made by the City in rejecting Alternative 2 and finding that, due to the revisions to the Project, that alternative was no longer environmentally superior.

The City rejected Alternative 2 for multiple reasons.

After analyzing Alternative 2's impacts as compared to those of the Project as originally proposed, the EIR concluded that, while this alternative would reduce impacts in certain environmental areas

(including biological resources) and create similar impacts in other areas, it would create greater impacts on population/housing/employment and parks and recreation, and would not meet five of the project objectives. (Tab 4, 2:2 AR 1490-1500.) The EIR noted that the project objectives of (1) providing a substantial number of new housing units adjacent to existing and planned infrastructure, service, transit and transportation corridors and employment areas to accommodate projected growth, and (2) developing a range of housing types accommodating a range of incomes and commercial opportunities, would not be met due to the reduction in residential units (all of which were single-family units). (Tab 4, AR 1499.) The objective of providing adequate flood protection, including bank stabilization where necessary, would not he met because the alternative does not provide for bank stabilization. The objectives of providing sufficient parks to satisfy park dedication requirements and meet regional needs, and of providing a range of active/passive recreational opportunities, would not be met due to the reduction in the size of the flatter, active portion of the proposed 29-acre park. (Id.; see also 1497.)

As noted above, the original Project was substantially revised over the course of the 24 public hearings. The Project as revised and approved: (1) Moved all development back to the resource line established by the Planning Commission, which reduced the Project's intrusion into the SEA and protected mature riparian resources that serve as habitat (Id.. esp. Tab 11, 9 AR 11419-22, 11516 [FEIR App. K, Project Revisions and Additional Information]; Tab 12, 10 AR 11741-61 [FEIR, Final Project Revisions]; Tab 11,9 AR 11224-35 IFEIR App. 1,7/20/04 Staff Report]), (2) Moved the equestrian trail out of the river (Id. esp. Tab 12, 10 AR 11741-61 [FEIR, Final Project Revisions]),

(3) Reduced the Project's overall (temporary and permanent) intrusion into the SEA from the original 37 acres to 32.1 acres, and its permanent intrusion from 24 to 16.9 acres, 7.5 of which are attributable to the construction of Newhall Ranch Road and one of which is attributable to the Santa Clara River Trail (Id. esp. Tab 11, 9 AR 11516 [FEIR App. K, new SEA chart]; Tab 12, 10 AR 11741-61 [FEIR. Final Project Revisions]), (4) Was conditioned on an absolute prohibition of construction of any lots within the new FEMA floodplain boundaries (Tab 11, 9 AR 11406-09 [CLOMR]: Tab 12, 10 AR 11756, 11757-58 [FEIR, Final Project Revisions].) (5) Relocated the Newhall Ranch Road/Golden Valley Road Bridge abutments farther out of the active channel of the river, resulting in reduced impacts to biological resources in those riparian areas (Tab 11, 9 AR 11410-17 [FEIR App. J, Technical Memorandum Hydraulic Design and Analysis]; Tab 12, 10 AR 11758 [FEIR, Final Project Revisions]) and (6) Dedicated approximately 318 off-site acres, including, inter alia, the ARound Mountain" site containing 37 acres of Santa Clara River SEA, which further offset the Project's impacts on biota and the floodplain (Tab 12, 10 AR 11741-58 [FEIR, Final Project Revisions]).

Based on the evidence as regards the revised project, the City Council found that, as compared with the Project as approved, Alternative 2 was no longer environmentally superior because the new Project design reduced development, and thus impacts, in areas not affected by the revisions contemplated by Alternative 2, that although the approved Project would afford the City 94 fewer residential units, it still preserved a greater mix of housing opportunities than did Alternative 2, which reduced the number of single-family lots, and that

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the approved Project would donate substantial off-site acreage. (Tab 3, AR 139-140 [Alternatives Findings]; see also 156 & 3,156-159.)

The findings as to Alternative 2 are supported by substantial evidence and the record shows that the City Council considered and balanced all of the competing factors, and chose to approve the Project with those factors in mind.

V. City Properly Found that the Project is Consistent with General Plan Goals and Policies of Protecting Significant Natural Resources

Government Code section 66473.5 provides that "[n]o local agency shall approve a tentative tract map . . . unless . . . [it] is consistent with the general plan."

It is within the City's province, to balance the competing interests reflected in its General Plan policies, and the City has broad discretion to construe those policies in light of the plan's purposes. (San Franciscans Upholding the Downtown Plan, supra, at 678.) A reviewing court, therefore, may only ascertain whether the lead agency "considered the applicable policies and the extent to which the proposed project conforms with those policies" (id.) by considering whether, as a whole, the "'project is compatible with, and does not frustrate, the general plan's goals and policies" (Napa Citizens for Honest Government v. Napa County Board of Supervisors (2001) 91 Cal.App.4th 342, 355.) A project must be in agreement or in harmony with the applicable General Plan, "not in rigid conformity with every detail thereof." (San Franciscans Upholding the Downtown Plan, supra.)

A lead agency's determination that a project is consistent with its general plan "can be reversed only if based on evidence from which no reasonable person could have reached the same conclusion." (A Local and Regional Monitor v. City of Los Angeles (1993)16 Cal.App.4th 630, 648;

see also San Franciscans Upholding the Downtown Plan v. City and County of San Francisco (2002) 102 Cal.App.4th 656, 6771.) In approving the Project, the City considered its General Plan policies and the Project conformance to them.

Petitioners contend that the Project is inconsistent with the City's General Plan goals and policies to protect significant natural resources because its intrusions into the SEA and the floodplain are inconsistent with the General Plan requiring the developer to "enhance and preserve the SEA," and the EIR's conclusion that the project is consistent with Land Use Policy Element 5.3 by "not proposing development within the river" (2 AR 891) is not supported by the evidence in the record.

The EIR analyzes the original Project's consistency with the City's General Plan and concludes that the Project as originally proposed was consistent with Policy 1.1 of Goal I of the City's Open Space and Conservation Element because the Project preserves the Santa Clara River and much of its significant vegetation as open space (Tab 4, 2:2 AR 859-60) as shown by evidence noted above as to other issues. Furthermore, as discussed supra, the Project was later revised, further reducing the Project's overall intrusion into the SEA from 37 to 32.1 acres, and dedicating 37 undeveloped acres of SEA in the Round Mountain property.

The EIR also concludes that the Project as originally proposed was consistent with Policies 3.3 and 3.7 of Goal 3 of the City's Open Space and Conservation Element, because the EIR identifies areas of significant ecological value and natural riparian habitat and mitigates impacts to the extent possible (Tab 4, 2:2 AR 861-62: see also Tab 7. 5:2 AR 5689-5827 [RDEIR, § 4.6, Biological Resources]). Also, as

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discussed supra, the Project as approved further reduces impacts to the SEA and other sensitive resources.

The original Project was also found to be consistent with Policy 5.3 of Goal 5 to require new development to be sensitive to SEAs through creative planning techniques that avoid and minimize disturbance in these areas for these same reasons (Tab 4, 2:2 AR 890-91), a conclusion supported by the same substantial evidence that supports consistency with Goal 1, Policy 1.1 of the Open Space and Conservation Element.

Petitioners' arguments that the Project impermissibly intrudes into the SEA restate their CEQA arguments. The same evidence in the record supports the consistency findings. The Project was revised to limit intrusion into the SEA. The City's decision after circulation of the Draft EIR to protect the riparian resources and habitat by setting the resource line in the western portion of the site and moving the equestrian trail out of the river bed further ensured that the Project as approved was consistent with the General Plan policies. The Project always proposed placing 15 lots within the already disturbed SEA area next to Planning Area A-2. (See, e.g., Tab 7, 5:2 AR 5785.) Also, as revised Section 4.6 explains, even the permanent loss of 24 acres of habitat, now reduced to 16.9, is not expected to detract from the overall integrity and value of the SEA, and the Project will preserve and enhance various amounts of upland habitat in Planning Area B to serve as a buffer between the riparian habitat and development and to mitigate adverse impacts to riparian plant communities within the SEA. (Id.) The benefits of the Project's enhancements to the banks of the Santa Clara River and to its main drainage in the 29-acre park are confirmed by the Final EIR's Hybrid Functional Assessment for Riverpark (Tab 11, 9 AR 10877-90).

Substantial evidence supports the finding of consistency with the City's General Plan.

The Petition for Writ of Mandate is denied.

Counsel for Respondent is ordered to prepare, serve and lodge in Department 85 a proposed Judgment Denying the Petition for Writ of Mandate on or before August 21, 2006.

DATED: August 14, 2006

DZINTRA I. JANAVS

Dzintra I. Janavs
Judge of the Superior Court

Santa Barbara Superior Court Decision on West Creek

SUPERIOR COURT OF CALIFORNIA, COUNTY OF SANTA BARBARA			FILED
STREET ADDRESS: 1100 Anacapa St MAILING ADDRESS: CITY AND ZIP CODE: Santa Barbara, CA, 93101 BRANCH NAME:		RECEIVED	SUPERIOR COURT of CALIFORNIA COUNTY of SANTA BARBARA JAN 0 6 2006
PLAINTIFF: Santa Clarita Organization DEFENDANT: County of Los Angeles		JAN 11 2006 PAUL HASTINGS	GARY M. BLAIR, Executive Officer BY Leanna M. Pearson LEANNA M PEARSON, Deputy Clerk
ORDER AFTER HEARING			CASE NUMBER: 1043805

On October 5, 2005 a Civil Law and Motion Hearing was set before Judge James Brown on the following matter(s):

Matter(s):

(1) 08-24-05 Notice of Motion and Motion for Order Decertifying Environmental Impact Report and Expanding the Current Injunction/Opposition to Return on Writ; P's and A's -- Hrg: 10/05/2005 at 9:30 am in Dept 5, Filed by Petitioner

(2) 08-04-05 Notice of Hearing Return to Peremptory Writ of Mandate Filed by Respondent and Real Parties in Interest Hrg 10/05/05 9:30am Dept 4, Filed by Respondent

Issues Presented:

Return to Peremptory Writ of Mandate; Motion for Order Decertifying Environmental Impact Report and Expanding the Current Injunction

Findings:

Background

This is an administrative mandamus action. Respondent County (County of Los Angeles) certified a final EIR and passed resolutions approving the West Creek development. The West Creek project is a proposed mixed residential and commercial development in the Santa Clarita Valley, which is to include 2,545 homes among other things. Petitioner SCOPE (Santa Clarita Organization for Planning the Environment and the Friends of Santa Clarita River, collectively) challenged the certification of the EIR and related resolutions. The developer of the Project is real party in interest, The Newhall Land and Farming Company, a California Limited Partnership, and Valencia Corporation, a California corporation (collectively "Newhall").

On 1/10/02 Dept 3 of this court denied the petition for writ of mandate. SCOPE appealed. In a published decision, the Court of Appeal reversed.

The Court of Appeal concluded that the water service portion of the EIR was inadequate. "An [EIR] for a housing development must contain a thorough analysis that reasonably informs the reader of the amount of water available. The dream of water entitlements from the incomplete State Water Project (SWP) is no substitute for the reality of actual water the SWP can deliver." *Santa Clarita Organization for Planning the Environment v. Los Angeles County (Newhall Land and Farming Co.)* (2003) 106 Cal.App.4th 715, 717-718.

Upon reversal, the Court of Appeal ordered:

"Because the water services portion of the EIR is inadequate, the judgment is reversed. The trial court shall issue a writ of mandate vacating the certification of the EIR, shall **retain jurisdiction until the County certifies the EIR complying with CEQA** consistent with the view expressed in this opinion, and shall consider such orders it deems appropriate. (See section 21168.9 on trial court's power over EIR.)"

(*Santa Clarita v. Los Angeles County* (2003) 106 Cal.App.4th 715. Emphasis supplied.)

Upon Remittitur, SCOPE exercised a 170.6 challenge, and on 5/13/03 the matter was reassigned to this department.

On 6/27/03 this Court issued a Writ of Mandate ordering the County to vacate certification of the EIR, to revise the EIR to include the issues raised in the Court of Appeals decision, and to re-circulate for public comment.

On 6/30/05 this Court issued a decision clarifying the injunction contained in the Writ of Mandate.

On 8/4/05 RPI Newhall filed its Return to the Writ of Mandate.

On 8/24/05 SCOPE filed an Opposition to the Return and "Motion for Order Decertifying Environmental Impact Report and Expanding the Current Injunction"

The Return and Petitioner's Motion present overlapping issues and are considered here together.

The Court has considered on the merits all new developments impacting the adequacy of the EIR, having retained jurisdiction until an EIR in compliance with CEQA is certified. The Court of Appeal directed this court to "retain jurisdiction until the County certifies the EIR complying with CEQA..." (*Santa Clarita v. Los Angeles County* (2003) 106 Cal.App.4th 715. Public Resources Code §21168.9(b) provides that, "...The trial court shall retain jurisdiction over the public agency's proceedings by way of a return to the peremptory writ until the court has determined that the public agency has complied with this division." County and Newhall cite no authority that would prevent this court from considering new developments that occurred after issuance of the Writ and before certification of the revised EIR.

The certified "Revised EIR" consists of the initial EIR, an Additional Analysis concerning water services that was circulated in response to the Writ and revised in response to public comment, and a Supplement concerning perchlorate contamination, also circulated for public comment, discussed below.

The Writ of Mandate provided that "This Court will retain jurisdiction over this matter ...until such time as the Court has determined that the County has certified a revised EIR for the West Creek project that complies with the provisions of the California Environmental Quality Act..." The Writ of Mandate directed the County to take specific action regarding revision of the water supply analysis, and all water supply and demand analysis, within the EIR:

> "The water supply analysis in the EIR shall be revised to include the issues in the Court of Appeal decision, including, at a minimum, **accurate availability, reliability and supply estimates for State Water Project water** in wet, average and dry years, which estimates must be obtained from the Department of Water Resources. The County must also revise and re-assess the EIR's cumulative impacts analysis for water supply and demand, and must revise and re-assess any and all analysis contained in the EIR related to water supply and demand. The revised EIR shall then be re-circulated for public review and comment. If there are comments on the revised IER, then **adequate and detailed responses must be prepared for such comments**, as required under Public Resources Code §21092.5 and consistent with the Court of Appeal decision in this case. The County must make clear in the revised analysis that State Water Project entitlements are not equivalent to actual deliveries of water." (Emphasis supplied)

This court finds the Revised EIR does comply with CEQA, and includes accurate availability, reliability supply estimates for State Water Project Water in wet, average and dry years based upon estimates from the DWR, contains revised and re-assessed analysis for water supply and demand, makes clear that SWP entitlements are not equivalent to actual deliveries of water. The court finds that adequate detailed response has been prepared for public comments on the revised EIR. Petitioner's Request to expand the injunction will be denied.

Standard of Review

An agency's certification of an EIR is subject to judicial review, but a court's inquiry "shall extend only to whether there was a **prejudicial abuse of discretion**. Abuse of discretion is established if the agency has **not proceeded in a manner required** by law or if the determination or decision is **not supported by substantial evidence**." (Public Resources Code section 21168.5) (Emphasis supplied)

"**When the informational requirements of CEQA are not complied with, an agency has failed to proceed in 'a manner required by law'** and has therefore abused its discretion." *Save Our Peninsula Committee v Monterey County Bd. Of Supervisors* (2001) 87 Cal.App.4th 99, 118. (Emphasis supplied)

The court "does not pass upon the correctness of the EIR's environmental conclusions, but **only upon its sufficiency as an informative document**.'" *Laurel Heights Improvement Ass'n v Regents* (1998) 47 Cal.3d 376, 392. (Emphasis supplied)

An EIR must include analysis of the water supplies necessary to serve the project, including impacts related to infrastructure necessary to develop and deliver the water to the project. *Santiago County Water District v. County of Orange* (1981) 118 Cal.App.3d 818, Guidelines App G, ¶XVI(d) ("sufficient water supplies available to serve the project from existing entitlements and resources.")

An EIR "cannot simply label the possibility that [water resources] will not materialize as 'speculative,' and decline to address it." *Napa Citizens for Hones Government v Napa County Board of Supervisors,* (2001) 91 Cal.App.4th 342, 373 in which an EIR failed to provide sufficient information as to the effects the project might be expected to have on the region's water supply and the need for treatment of wastewater, so that the governing body's conclusion that project was consistent with general plan was invalid. "The County should be informed if other sources exist, and be informed, in at least general terms, of the environmental consequences of tapping such resource. Without either such information or a guarantee that the resources now identified in the FSEIR will be available, the County simply cannot make a meaningful assessment of the potentially significant environmental impacts of the Project"" *Id.* at 373-374.

The court "may not set aside an agency's approval of an EIR on the ground that an opposite conclusion would have been equally or more reasonable" and "may not...substitute [its] judgment for that of the people and their local representatives" but "can and must, however, scrupulously enforce all legislatively mandated CEQA requirements." *Citizens of Goleta Valley v. Board of Supervisors*, (1990) 52 Cal. 3d 553, 564.

"Under CEQA, an EIR is presumed adequate (Pub. Res. Code §21167.3), and the plaintiff in a CEQA action has the burden of proving otherwise." *State of California v. Superior Court*, (1990) 222 Cal. App. 3d 1416, 1419.

Return to Peremptory Writ of Mandate; Motion for Order Decertifying Environmental Impact Report and Expanding the Current Injunction

The County has complied with the directions set forth in the Peremptory Writ of Mandate issued 6/27/03 and the Writ should be discharged. The County has certified an EIR in compliance with CEQA.

The Revised EIR contains an extensive Additional Analysis concerning water supply, based on DWR estimates for actual delivery, and makes clear that water entitlements are not equal to actual delivery.

Petitioner's challenge to the Revised EIR focuses on two issues: (1) Disclosure and Reliability Conclusions concerning the Kern-Castaic Transfer of 14,000 acre foot of water per year (afy), a source of water relied on for planning purposes; and (2) Disclosure and analysis concerning Spread of Perchlorate Contamination in the aquifer, a source of water relied on for planning purposes. The two issues are discussed in turn.

(1) Kern-Castaic Transfer of 14,000 afy

The EIR relies for planning purposes on availability of a 41,000 afy transfer of State Water Project water from Kern County Water Agency to Castaic Lake Water Agency.

The County's decision that the 41,000 afy transfer from Kern to Castaic would be available for planning purposes, despite some uncertainty arising from ongoing litigation, was supported by substantial evidence and was fully disclosed such that there was no abuse of discretion by way of failure to comply with CEQA's informational requirements.

Petitioner contends there is inadequate disclosure on the reliability of a 41,000 afy transfer from Kern to Castaic, because the Revised EIR does not refer to an Exhibit E to a Settlement Agreement reached in other litigation between Castaic, the Department of Water Resources, and other parties. (The "PCL" Litigation)

A brief historical background of the 41,000 afy SWP transfer is as follows. In 1951, California's Legislature authorized construction of a State Water Project (SWP), for which voters approved a bond issued approximately eight years later. The Department of Water Resources (DWR) is operator of the State Water Project. The DWR entered into agreements with various water districts to supply water (SWP Contracts). Castaic Lake Water Agency is such one such Contractor. In the early 1990's water shortages resulted in disputes between DWP and Contractors, which were resolved by the "Monterey Agreement" and execution of the "Monterey Amendments." The Monterey Agreement allowed SWP contractors (such as Castaic and Kern) to transfer unused Table A Amounts to other SWP contractors on a permanent basis.

In a 1999 Monterey Amendment, the DWR approved a transfer of 41,000 afy from Kern County Water Agency to Castaic Lake Water Agency. The West Creek EIR presently before the court relies heavily on availability of this transfer for planning purposes.

In 1995 an EIR for the Monterey Amendments was certified. However, it was decertified following a 2000 appellate decision in *Planning and Conservation League [PCL] v. Department of Water Resources,* (2000) 83 Cal.App.4th 892. The Third District found there that the EIR for the Monterey Agreements was inadequate, and should have been prepared by DWR as the lead agency who was in the best position to assess statewide impacts of the Monterey Amendments. This decertification of the Monterey EIR is disclosed in the EIR's Additional Analysis. (Vol 59, p. 27743, §4.2.4 *Imported Water Supplies*, (c) *Monterey Agreement Environmental Review and Litigation*) This Monterey Amendment EIR litigation is generally referred to as the "PCL Litigation."

On May 5, 2003, (after the Second District's 2/27/03 decision in this West Creek case) the PCL parties reached a Settlement Agreement concerning preparation of the required new EIR for the Monterey Amendments. That Monterey Agreement EIR is not complete. The Department of Water Resources is the lead agency for the PCL Monterey Agreement EIR, and has not yet made its final decision. This fact is also disclosed in the West Creek Revised EIR.

The EIR's Revised Additional Analysis discloses that the PCL Monterey Agreement EIR has been decertified and that the court has retained jurisdiction "until DWR certifies an EIR in accordance with CEQA." (Vol. 59, p 27743, §4.2.4(c) *Monterey Agreement Environmental Review and Litigation*) The EIR's Additional Analysis also states, "The appellate court decision invalidated certification of the EIR, but did not set aside, invalidate or otherwise vacate the Monterey Agreement. In addition, no court orders have been issued to 'stay' further implementation of the Monterey Agreement." (*Ibid.*) The statement is accurate, although it is also true no court has determined whether or not agencies may rely upon the 41,000 afy transfer for planning purposes pending recertification of the Monterey Agreement EIR.

The May 5, 2003 PCL Settlement Agreement is disclosed and summarized in the EIR's Revised Additional Analysis at section 4.2.4(c) (Vol. 59, p. 27743-27744). The PCL Settlement is attached to the Revised EIR as Appendix O. (This court recognizes that disclosure in the appendixes would not, alone, be sufficient for CEQA compliance. The Court of Appeal has previously criticized Respondent herein for relying on disclosures in appendices. "It is not enough for the EIR simply to contain information submitted by the public and experts. Problems raised by the public and responsible experts require a good faith reasoned analysis in response." 106 Cal.App.4th 715, 723.)

In the May 5, 2003 PCL Settlement Agreement, the parties including DWP and Castaic Lake Water Agency agreed that certain transfers were "final" and agreed not to "hereafter challenge the effectiveness or validity of such water transfers" (Vol. 55, p.22513, Settlement Agreement §III, D)

The 41,000 afy Kern-Castaic transfer was not among those agreed "final" transfers immune from challenge. It was treated separately in section III, E of the Agreement, because parallel litigation remained pending in Los Angeles Superior Court ("*Friends*") challenging Castaic's own certification of an EIR for the 41,000 afy purchase. The PCL parties expressly deferred to *Friends* court's jurisdiction. The PCL parties expressly acknowledged in section III, E of the PCL Agreement that the Kern-Castaic transfer was subject to separate pending litigation (*Friends of the Santa Clara River v. Castaic Lake Water Agency,* LASC BS05954, "*Friends*" in which Castaic's own EIR for the 41,000 afy transfer had been challenged, and the Court of Appeal ordered the EIR decertified. The Revised EIR discloses this information. (Vol 59, 27745-27746) The *Friends* litigation has subsequently been voluntarily dismissed. On 12/22/04 Castaic certified a revised EIR for the 41,000 transfer. A new challenge to the revised EIR is pending in Los Angeles. The PCL parties agreed, "that nothing in this Settlement Agreement is intended to predispose the remedies or other action that may occur in that pending [*Friends*] litigation."

Exhibit E to the PCL Settlement Agreement is entitled "Final Permanent Table A Amount Transfers from Kern County Water Agency Subsequent to Monterey Amendments (January 1, 2003)." It lists the seven "final" transfers. The transfer from Kern to Castaic Lake Water Agency is not included. (Vol. 55, p. 22561). The Agreement is signed by the Castaic Lake Water Agency, as well as DWR. (Vol. 55, p. 22545)

The West Creek EIR and its Additional Analysis do not refer to Exhibit E of the PCL Settlement Agreement, or to the separate treatment of that transfer by the PCL parties due to the pending *Friends* litigation. Petitioner contends this is a fatal deficiency.

In the PCL Settlement Agreement, the parties including DWP and Castaic Lake Water Agency also agreed that "they will not approve any new project or activity in reliance on the 1995 EIR, that was not approved, initiated or implemented prior to March 26, 2001, and the approval, initiation or implementation of which would require a separate environmental impact report or negative declaration under CEQA (other than, or in addition to, the 1995 EIR)." (22529, §VII (A))

On the other hand, nowhere in the PCL Agreement or anywhere else in the record does DWR disavow its prior approval of the 41,000 afy transfer and its subsequently published delivery estimates continue to list the 41,000 afy transfer.

Petitioner argues that the 41,000 afy transfer is not reliable for long-term planning purposes because, before determining whether to authorize the transfer as final and permanent, the DWR must prepare an EIR analyzing state-wide impacts of such a long-term transfer. Petitioner points out that DWR is allowing Castaic to avail itself of the 41,000 afy on an interim basis, and that the DWR may ultimately determine that state wide impact of the Monterey Amendments is too great and may disapprove all or part of the 41,000 afy transfer, which is the only transfer not immune from challenge pursuant to Exhibit E.

Petitioner contends that it is speculative to consider any transfer outside the Monterey Agreements, because DWR must agree to any transfer, even if made outside the Monterey Agreement (*PCL v DWR,* (2000) 83 Cal.App.4th 892), and DWR has not done so.

This court finds that the Revised EIR adequately discloses the uncertainties arising from the pending DWR recertification process, and substantial evidence supports the County's conclusion that the transfer is reliable notwithstanding the uncertainty created by litigation and pending DWR environmental review.

The Court of Appeal directed that the Revised EIR must disclose that State Water Project entitlements cannot be taken at face value:

> "Here the draft EIR gives no hint that SWP entitlements cannot be taken at face value. It is only in response to comments and submissions by project opponents such as SCOPE that the EIR obliquely acknowledges that the entitlements may not be all they seem. Instead of undertaking a serious and detailed analysis of SWP supplies, the EIR does little more than dismiss project opponents' concerns about water supply. Water is too important to receive such cursory treatment.
>
> "The final EIR's acknowledgement that there 'could be a deficit of supply' does not cure the defect. Without some reasonably accurate estimate of SWP's ability to deliver water, it is impossible to judge how likely or how deep the deficit might be."

Santa Clarita Organization for Planning the Environment v County of Los Angeles, supra, 106 Cal.App.4th 715, 723.

The revised EIR does disclose that the 41,000 transfer is subject to DWR's assessment of the statewide environmental impacts of the Monterey Amendments. It discloses that the PCL Monterey Agreement EIR has been decertified and that the court has retained jurisdiction until DWR certifies an EIR in accordance with CEQA, as noted above.

The West Creek revised EIR discloses that the 41,000 afy transfer is subject to "**many factors** including ...**the environmental requirements associated with the Sacramento-San Joaquin Delta** (Delta), where the water supplied by the SWP is pumped into the California Aquaduct...." (Vol. 53, 19091-19097) * (Emphasis supplied)

The West Creek revised EIR discloses that, "**an adverse final judgment invalidating the Monterey agreement could affect Castaic's completed acquisition of the 41,000 AF**, which could in turn impair CLWA's supply of SWP water contracts with DWR and other SWP contractors." (Revised Additional Analysis, Vol. 59, 27747; Vol 53, 19142) It continues, "Nevertheless, CWLA believes that an adverse outcome in the Monterey Agreement litigation is not likely to adversely affect CLWA's water supplies over the long-term because (a) CWLA believes that such a result is unlikely to 'unwind' executed and completed agreements with respect to the permanent transfer of SWP water amounts; (b) existing SWP water supply contract provisions allow such transfers (without the need for the Monterey Agreement); and (c) existing law enables the CWLA to enter into contract outside the context of the Monterey Agreement. " (*Ibid.*) (Emphasis supplied)

There is further information in the Revised EIR concerning the status and reliability of the 41,000 afy transfer. Responses 1 and 3 to Letter 4 from Rossman and Moore LLP, it is disclosed that Castaic Lake Water Agency's water supply contract with the State Water Project reflect only an expectation and that under some conditions only a lesser amount will be available, relies upon the 41,000 as an amount reported in the DWR's State Water Project Delivery Reliability Report, and **acknowledges that the Monterey Settlement Agreement does not list the 41,000 afy transfer as final.**

There is substantial evidence in the record to support the decision to rely upon the 41,000 afy transfer for planning purposes. The EIR's Revised Additional Analysis, section 4.2.4 Imported SWP Water Supplies, provides a brief history of the SWP, and describes the Table A Amount as the "maximum annual allocation of SWP water." (Vol. 59, p. 27740) It describes the SWP contract for 41,000 afy, and discloses that "Because the SWP system was not fully constructed, and its capacity has been constrained due to environmental considerations and evolving policies for the Sacramento=San Joaquin Delta (Delta) not contemplated in the 1960s, **the SWP cannot reliably deliver the full amounts of supplies anticipated in the contracts in any given year.** However, in ten percent of the years, (i.e. during wet periods), DWR estimates the annual water delivery of the SWP, utilizing existing facilities, to be at or above 4.10 million AF per year (98 percent of the full Table A Amount of 4.13 million AF.) The most SWP Table A water delivered to date (2003) in any year was about 3.5 million AF in 2000, and 2003 may result in a new high for annual deliveries. The demands for SWP water are expected to increase as the population of California continues to increase." (Vol 59, pp 27740-27741)

There is further disclosure in EIR's Revised Additional Analysis, section 4.2.4, subdivision (g) SWP Supplies: "DWR water supply contracts require the SWP to deliver 4.2 million AFY to 29 SWP contractors. Although the SWP is not fully constructed and cannot yet deliver the full 4.2 million AFY, **since the end of the six year drought in 1992, the SWP has fully met SWP contractor's water needs every year, except the dry years of 1994 and 2001.** Of SWP water deliveries, about 70 percent is delivered to SWP urban contractors and about 30 percent is delivered to SWP agricultural contractors. In 2003 DWR indicates that it can deliver 90 percent (or 3.71 million AF) of SWP Table A Amount to its contractors. Ninety percent of CLWA's SWP maximum table amount of 95,200 AFY equates to 85,680 AF of water. However, as discussed more fully below, **the maximum Table A amount contractually allocated does not necessarily result in equivalent deliveries of SWP water in any given year.**" (Vol 59, p. 27754) (Emphasis supplied)

Section 4.2.4 of the Revised Additional Analysis continues at subdivision (h), *SWP Reliability*, and discloses, "SWP supplies are **subject to reduction**, especially in drought periods." (Vol 59, p. 27756). It provides that Table A Amounts, "**should not be read as a guarantee of that amount**, but rather as the tool in an allocation process that defines an individual contractor's 'slice of the pie.' The size of the 'pie' itself is determined by **many factors** including local weather conditions, the amount of winter rains and snow pack in on northern California watersheds and **the environmental requirements associated with the Sacramento-San Joaquin Delta** (Delta), where the water supplied by the SWP is pumped into the California Aquaduct....**As a result of various factors, the SWPs annual deliveries of both Table A Amount water and non-Table A Amount Water have ranged from approximately 550,000 AF to 3.52 million AF** (DWR 2003)." [Vol. 53, 19091-19097] (Emphasis supplied). The total of all contractor's maximum Table A Amounts is 4.173 million.

The EIR's Revised Additional Analysis provides a thorough discussion of reliability of water supplies from the SWP using DWR's published reliability projections. (Additional Analysis, Volume VIII, AR Vol 59 pp27630-27826)

The court does recognize that the EIR and its Additional Analysis do not provide water supply figures assuming the DWR does *not* approve the 41,000 transfer after completion of the Monterey Amendments revised EIR. The 41,000 afy transfer constitutes about 43% of the Castaic SWP water relied on by the West Creek revised EIR.

The EIR's Revised Additional Analysis concludes that, "because cumulative water supplies exceed demand, cumulative development (including the proposed West Creek project) would not result in unavoidable significant impacts on Santa Clarita Valley water resources." (Vol 59, p 27794.)

The EIRs Additional Analysis disclosed that the Castaic EIR for the transfer was decertified in the *Friends* litigation, and that preparation of a new EIR is in process. The EIRs Additional Analysis states that, "the trial court did not order CLWA to vacate its approval of the water transfer itself. Rather, the court ruled that CWLA may utilize and rely on the 41,000 AFY. The trial court allowed that the petitioner may renew its application for a prohibition on CLWA's use of the 41,000 AFY if the petitioner could provide evidence that CWLA is actually using the additional entitlement for purposes petitioner considers improper." (Vol. 59, p 27701)

Petitioner contends this summary is misleading, because it suggests that the *Friends* court allowed CWLA to "rely" on the transfer *for planning purposes,* when it did not. The court's order does not in fact approve or disapprove reliance for planning purposes:

> "Petitioner requests that the Court also prohibit respondent from using any of the 41,000 acre feet of additional water allotted to it from the subject State Water Project. **Petitioner contends that the said water will be used**

to approve new development that will not be able to be reversed if a Final Environmental Impact Report is not certified. Respondent contends that such a prohibition would prevent it from meeting the existing water needs in the area it services. Both **contentions appear to be speculative** at this time. Respondent will not be prohibited from using the water to which it is entitled, but **petitioner may renew its application for such prohibition based upon evidence of actual use** of such additional water for purposes it considers improper."

(Judgment of Los Angeles Superior Court in *Friends,* BS056954, decertifying Castaic EIR on remand, included in Appendix O to the Draft Additional Analysis, AR at Vol 54, p20658.) (Emphasis supplied)

Before this court presently County and Newhall are using the water to approve new development. Whether such reliance is appropriate, *if the uncertainties are disclosed*, appears to be a question of first impression.

On appeal in this case, Petitioner argued that the transfer was not final and could not be relied upon because the 5th Circuit Court of Appeal in *Planning and Conservation League v Dept of Water Resources* (2000) 83 Cal.App.4th 892, found the Monterey Agreement EIR defective, and the Second District in *Friends of the Santa Clara River v Castaic Lake Water Agency* (2002) 95 Cal.App.4th 1373, found CLWA's EIR for the 41,000 afy transfer to be defective, having tiered off the Monterey Agreement EIR. (Petitioner's Reply Brief on appeal, Ex 5 to Appendix filed 9/8/05 herein, p. 11.) This court does not read the Opinion of the Court of Appeal herein as rejecting or accept the argument. (*SCOPE,* 106 Cal.App.4th 720, 721-724) In the Opinion, the Court notes that Petitioner cites the *Friends* decision (decided after certification of the initial West Creek EIR) only to show that entitlements cannot be taken at face value, and goes on to conclude that because actual delivery is not adequately analyzed, the decision to approve the West Creek EIR is not supported by substantial evidence. The Court did not reach the merits of the question whether an agency may rely on the 41,000 afy transfer for planning purposes pending the DWR's environmental review of statewide impacts of the Monterey Agreements.

Reliance on the 41,000 afy transfer for planning purposes was recently addressed by Division 8 of the Second Circuit, but there the EIR failed to disclose the uncertainties surrounding the transfer. In *California Oak Foundation v City of Santa Clarita* (Nov. 2, 2005) 133 Cal.App.4th 1219, decided after this court hear oral argument in this case, the trial court erred in approving an EIR certified by the City of Santa Clarita 6/24/03 concerning the Gate King industrial business park development project, because the section discussing water supplies "did not adequately inform the public about [] uncertainties in the water supply" with regard to the 41,000 afy entitlement. (The court also rejected SCOPE's contention that the "EIR's treatment of perchlorate contamination was insufficient" *Id.* at 1226.) The EIR for the Gate King development in *California Oak Foundation,* contained "inadequate discussion –in fact, no discussion at all- of the uncertainty surrounding the transfer of the 41,000 AFY entitlement. The text of the [Gate King] EIR does not mention the decertification of the EIR for the Castaic purchase, and does not discuss the fact that entitlements are not really entitlements, but only 'paper' water...The EIR merely states, in an analysis unchanged from the draft [after public comment on the decertification issue] that Castaic's entitlement 'can fluctuate from year to year based on a number of factors...'"

The West Creek Revised EIR here contains similar language about fluctuation based on factors such as "(including "environmental requirements," and "evolving policies for the Bay-Delta") but also includes the Additional Analysis circulated for public comment with specific discussion of the *Friends* and *PCL* litigation and disclosure of the EIR decertification. In *California Oak Foundation,* by contrast, "the only discussion in the EIR of the uncertainty created by the decertification of the EIR for the Castaic purchase appears in an appendix added to the final EIR, shortly before certification...at a minimum, the text of the EIR should refer to the appendices that contain the relevant discussion." (*Id.* , at 1239) Here, disclosure was more complete.

Castaic has now certified a revised EIR, and that EIR is presumed adequate pending challenge. (*State of California v. Superior Court*, (1990) 222 Cal. App. 3d 1416, 1419.) The court does recognize that the DWR has not certified a Revised EIR for the statewide impact of the Monterey Amendments and that it does not appear the DWR would be bound by the decisions of Castaic if the DWR were ultimately to decide against all or part of the 41,000 afy.

The court in *California Oak Foundation* acknowledged that the decision whether to rely on the 41,000 afy transfer is to be made by the agency, but emphasized the importance of clear disclosure. "[T]he question is whether the entitlement should be used for purposes of planning future development, since its prospective availability is legally uncertain. Although this decision must be made by the City, the EIR is intended to serve as an informative document to make

government action transparent. Transparency is almost impossible without a clear and complete explanation of the circumstances surrounding the reliability of the water supply." (*Oak Creek, supra,* at 1237-1238.)

This court finds the issue to be a close call, but on balance finds that the uncertainties surrounding the 41,000 afy transfer are adequately disclosed and that there is substantial evidence supporting the County's decision to rely upon the 41,000 afy transfer. The court "may not set aside an agency's approval of an EIR on the ground that an opposite conclusion would have been equally or more reasonable" and "may not...substitute [its] judgment for that of the people and their local representatives..." *Citizens of Goleta Valley v. Board of Supervisors*, (1990) 52 Cal. 3d 553, 564.

"CEQA requires an EIR to reflect a good faith effort at full disclosure; it does not mandate perfection, nor does it require an analysis to be exhaustive. . . . The absence of information in an EIR, or the failure to reflect disagreement among the experts, does not per se constitute a prejudicial abuse of discretion. [Citation.] A prejudicial abuse of discretion occurs if the failure to include relevant information precludes informed decisionmaking and informed public participation, thereby thwarting the statutory goals of the EIR process. [Citation.]" *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 712.

Here, the omission of specific reference to Exhibit E did not preclude informed decisionmaking and informed public participation or thwart the goals of the EIR process.

Petitioner also contends the Revised EIR contains inadequate response to two written public comments concerning the transfer.

Two written comments were submitted on behalf of Petitioner raising the issues of finality of the Kern-Castiac Transfer, and its exclusion from Exhibit E to the PCL Agreement listing final transfers.

Comment 1 was submitted by Petitioner, transmitting correspondence on the subject between Petitioner's Counsel and the Director of the DWR regarding the outstanding EIR on the Monterey Amendments consistent with the PCL Agreement. Petitioner wrote to County:

"Please include the following correspondence between our attorney and the Department of Water resources and their response regarding the timeline for the completion of the Monterey Agreement Environmental Impact Report. **We continue to protest that you may not approve projects based on this water transfer were [sic] two environmental impact reports have been decertified.** This would mean that the **water transfer project is proceeding without any CEQA documentation**. Such action is precluded by law...." (Vol. 56, p. 24329.) (Emphasis supplied)

Enclosed was a letter from Petitioner's counsel to the Director of the Department of Water resources inquiring about the process and timeline for approval of the water transfer. Also enclosed was the DWR Director's letter in response acknowledging that the Department of Water was undergoing, and had not completed, environmental review of the impact of the 41,000 afy transfer.[1] The Director of DWR wrote, "...**DWR has not completed any draft or final analysis regarding these transfers**. Attached is an estimated schedule for completion of the EIR...." (Emphasis supplied)

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[1] Counsel wrote, "Pursuant to the Court decision in *Planning & Conservation League v. Department of Water Resources*..., the Department of Water Resources is required to prepare a new Environmental Impact Report regarding all aspects of the Monterey Amendments. I understand you will be overseeing this process. ¶ The Settlement Agreement that was entered into between all of the parties to the *PCL* case on May 5, 2003 set forth various requirements for the EIR. According to Attachment B-1 of this Settlement Agreement, the parties specifically excluded the 41,000 afy entitlements purchased by Castaic Lake Water Agency ("CLWA") emanating from the Monterey Amendments from the list of final transfers. It is therefore my understanding that your office will be evaluating the environmental impacts of the 41,000 afy transfer as part of the Environmental Impact Report for your project (the Monterey Amendments Project.) ¶ As you may also be aware, the EIR prepared by the CLWA for the 41,000 afy transfer was decertified by the Los Angeles Superior Court on November 1, 2002 in *Friends of the Santa Clara River Valley v. Castaic Lake Water Agency*...¶...please advise me of the procedural steps that DWR will take before making a determination whether or not to approve the Kern-Castaic transfer as a 'final' transfer and criteria that will be utilized for making this determination..." (Vol 56, p. 24330-24331, 5/18/04 Letter from counsel for Petitioner to Lester Snow, Director Department of Water Resources)

The DWP Director responded, "...the Department of Water Resources (DWR) is preparing an Environmental Impact Report (EIR) on the Monterey Amendments and the Settlement Agreement resulting from the court of appeal decision in Planning & Conservation League v Department of Water Resources...¶ ...the EIR will include an 'analysis of

Comment 2 is a 4/13/04 letter written on behalf of Petitioner by its counsel, objecting that the water supply analysis overstates the reliable amount of State Water Project entitlements, because "**Depending upon the outcome of DWR's analysis of the environmental impacts of Castaic's 41,000 afy project on the State Water Project's current users ...DWR may ultimately decide to deny approval of the transfer of the 41,000 acre feet yearly to Castaic as part of the Monterey Amendment program.**"[2] (Emphasis supplied)

Failure to respond to any significant public comment is an abuse of discretion. *Cleary v County of Stanislaus* (1981) 118 Cal.App.3d 348. The agency must respond in writing to written comments. 14 CCR 15088(a); *Browning-Ferris Industries City Council* (1986) 181 Cal.App.3d 852. The Revised EIR contains both topical response concerning perchlorate contamination ((Vol 54, pp 21361-21374 and 21386-21396) and specific responses to particular comment.

A specific Response to the 4/13/04 comment letter mentions decertification of the Monterey Program EIR, but does not mention the DWR's pending environmental impact analysis of the 41,000 afy transfer. The Additional Analysis does disclose the pending review, as discussed above. The Response concludes, "**Because the 41,000 AFY was a permanent water transfer, because DWR includes the 41,000 AFY in calculating CLWA's share of SWP Table A Amount, and because the courts have not prohibited CLWA from using or relying on those additional SWP supplies, the County has determined that it remains appropriate for the West Creek project to include those water supplies in its water supply and demand analysis, while acknowledging and disclosing the potential uncertainty created by litigation.**"[3] The Response also incorporates Topical Response 4 and Responses 1 and 3 to a letter from

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the potential environmental impacts relating to (a) the Attachment E transfers, and (b) the Kern-Castaic [41,000 afy] Transfer, in each case as actions that relate to the potential environmental impacts of approving the Monterey Amendments.' ...DWR has not completed any draft or final analysis regarding these transfers. Attached is an estimated schedule for completion of the EIR...." (Vol. 56, p 24332, Letter from Director Snow to counsel for Petitioner) (Emphasis supplied)

[2] Petitioner's counsel wrote, "...I. The Water Supply Analysis Overstates the Reliable Amount of State Water Project Water Entitlements Available on a Long-Term Basis from Castaic Lake Water Agency by 41,000 acre feet per year. ... ¶ Throughout he DAAEIR, the estimate of SWP water supply available for the project is improperly premised upon Castaic's claimed entitlements/allocation of 95,200 acre feet per year. .. The DAAEIR fails to disclose that of this amount of allocation (described by the Court in the SCOPE decision as 'paper water'), the transfer of 41,000 acre feet annually ('afy') has been specifically recognized by DWR to be a 'non-final' transfer of agricultural water to urban use (See the DWR/PCL Settlement Agreement Attachment E-1 [FN omitted]) ...¶The DWR/PCL settlement agreement specifically requires DWR to analyze 'the potential environmental effects' relating to the Castaic project...and to make new determinations regarding all non-final aspects of the Monterey Agreement upon completion of a new EIR...¶ Depending upon the outcome of DWR's analysis of the environmental impacts of Castaic's 41,000 afy project on the State Water Project's current users ...DWR may ultimately decide to deny approval of the transfer of the 41,000 acre feet yearly to Castaic as part of the Monterey Amendment program. ¶ Because a decision has not yet been made by DWR as to whether or not to approve the permanent transfer of the 41,000 afy allotment to Castaic, it would be speculative and without factual foundation for Los Angeles County to factor in any of the 41,000 afy in its calculations of the future water supply that will be available for West Creek's use." (Vol. 54, p. 21328-21330)

[3] More fully quoted, the response states, "...Evidence in the record supports CLWA's reliance on the 41,000 acre-feet of SWP supplies as part CLWA's SWP Table A Amount. [FN 1] Please see the West Creek Draft Additional Analysis, Section 4.2.4, at pages 4.0-5.9 through 4.0-65.

"The transfer of the 41,000 acre-feet ...was the subject of a completed contract between the parties in 1999,and imported water supply associated with that transfer became available for use by CLWA starting January 2000. The 41,000 acre-feet Transfer Agreement and the Point of Delivery Agreement ...are included in Appendix L of the Final Additional Analysis. ...

"The 41,000 acre-foot water transfer ... was evaluated previously in a Final EIR prepared by CLWA in 1999. The Second Appellate Court, Fourth Division, ordered that the EIR be decertified in January 2002 ...(Friends decision) in Appendix N of this FAA. The appellate court decertified the 1999 EIR because it tiered from the Monterey Agreement Program EIR, which itself was decertified as a result of a separate appellate court decision issued while the Friends decision was on appeal. (See Planning & Conservation League v. Department of Water Resources (2000) 83 Cal.App.4th 892 [PCL decision, Appendix P of this FAA] [FN: "For copies of the referenced opinions, decisions and other related documents, please see Appendices M, N, P and Q of the Final Additional Analysis."]

"In the Friends decision, the appellate court found that 'all other contentions ' concerning the legal adequacy of the EIR

Rossman and Moore, LLP. The referenced Responses 1 and 3 to Letter 4 from Rossman and Moore LLP disclose that Castaic Lake Water Agency's water supply contract with the State Water Project reflect only an expectation and that under some conditions only a lesser amount will be available, relies upon the 41,000 as an amount reported in the DWR's State Water Project Delivery Reliability Report, and **acknowledges that the Monterey Settlement Agreement does not list the 41,000 afy transfer as final**, but concludes that it is appropriate to include the 41,000 afy because the transfer was permanent, DWR has consistently included it in CLWA's share of the Table A Amount, and "courts have not prohibited CLWA from using and relying on" it. The Response also notes that CLWA is currently preparing a new EIR concerning the 41,000 afy transfer, and that "Nothing precludes CWLA from relying on this portion of its SWP supplies, pending completion of the new EIR."[4] (Emphasis supplied)

"The written response shall describe the disposition of significant environmental issues raised (e.g., revisions to the proposed project to mitigate anticipated impacts or objections). In particular, the **major environmental issues raised** when the lead agency's position is at variance with recommendations and objections raised in the comments **must be addressed in detail** giving reasons why specific comments and suggestions were not accepted. There must be **good faith, reasoned analysis in response**. Conclusory statements unsupported by factual information will not suffice." 14 CCR 15088(c) (Emphasis supplied)

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were 'without merit.' ...CWLA's Board of Directors decertified the 1999 EIR in the fall of 2002.

"In September 2002, the trial court was requested to prohibit CLWA from using the 41,000 acre-feet in any manner. The trial court refused to enjoin performance of the completed 41,000 acre-feet Transfer Agreement, maintained its jurisdiction over the matter, and authorized CWLA to utilize "any of the 41,000 AFY,' subject to the following order: 'Respondent [CWLA] will not be prohibited from using the water to which it is entitled, but Petitioner may renew its application for such prohibition based upon evidence of the actual use of such additional water for purposes it considers improper' [FN]

"...the Court of Appeal affirmed the trial court's judgment that CWLA use of the 41,000 AFY is not prohibited.[FN]"

"Because the 41,000 AFY was a permanent water transfer, because DWR includes the 41,000 AFY in calculating CLWA's share of SWP Table A Amount, and because the courts have not prohibited CLWA from using or relying on those additional SWP supplies, the County has determined that it remains appropriate for the West Creek project to include those water supplies in its water supply and demand analysis, while acknowledging and disclosing the potential uncertainty created by litigation."

"In the meantime, CLWA has reported to the County that it continues to prepare the new EIR for the 41,000 AFY water transfer...

"In light of the information presented in the Draft Additional Analysis and the entire record, the County believes that CLWA was entitled to use, and may continue to use, the additional SWP water supplies from the 41,000 AFY water transfer pending completion of the new EIR pursuant to CEQA, absent a subsequent order to the contrary from the Los Angeles Super Court..."

"For further responsive information, please see Topical Response 4: SWP Supplies – Reliance on the 41,000 AFY Water Transfer, and Responses 1 and 3 to Letter 4 from Rossman and Moore, LLP (Roger B. Moore), dated February 3, 2004."(Vol. 55, pp. 21458-21460, Responses to Comment Letters)

[4] More specifically, Response 1 discloses that the water supply contract with SWP contractors including CLWA to state that the Table A Amount (here 41,000 AFY) "shall not be interpreted to mean that in each year the State will be able to make that quantity of project water available to the Agency" and that the Table A Amounts "reflect an expectation that under certain conditions the Agency will receive its full Annual Table A Amount; but that under other conditions only a lesser amount, allocated in accordance with this contract, may be made available to the Agency."

Response 1 also refers to, and relies upon, amounts from the DWR's State Water Project Delivery Reliability Report, 2002, (Appendix L), which states "[t]his report provides local officials with a single source of the most current data available on SWP delivery reliability for use in local planning decisions."

Response 3 acknowledges that "Attachment E to the Monterey Settlement Agreement does not list CLWA's 41,000 AFY transfer as 'final'" but states that, "neither the appellate court nor the trial court (on remand) invalidated CLWA's permanent water transfer...," restates that it is appropriate to include the 41,000 afy because the transfer was permanent, DWR has consistently included it in CLWA's share of the Table A Amount, and "courts have not prohibited CLWA from using and relying on" it. The Response also notes that CLWA is currently preparing a new EIR concerning the 41,000 afy transfer, and that "Nothing precludes CWLA from relying on this portion of its SWP supplies, pending completion of the new EIR." (Vol 55, p. 21414-21418, FAA, Response to Comment Letters)

This court finds the Revised EIR contains adequate written response to significant public comment.

"[T]he court shall not exercise its independent judgment on the evidence but shall only determine whether the act or decision is supported by substantial evidence in the light of the whole record." *Public Resources Code* §21168)

Substantial evidence appears in record to support the decision to rely upon the 41,000 transfer based upon the fact that the Dept. of Water Resources continues to allocates and deliver the water in accordance with the 41,000 afy transfer, neither the PCL litigation not Monterey Settlement Agreement set aside any of the water transfers made under the Monterey agreement including the 41,000 transfer, the courts have not enjoined CLWAs use of the transfer, and CLWA has prepared and certified an EIR and its is presumed to be adequate despite pending legal challenges.

This court finds that the uncertainties involving the 41,000 afy transfer were adequately disclosed in the revised EIR, and substantial evidence supports the County's conclusion that it could be relied upon for planning purposes, notwithstanding the pending DWR environmental review and the fact that it is not among those transfers listed as immune from challenge in the PCL Settlement Agreement.

(2) Spread of Perchlorate Contamination Aquifer

The revised EIR also relies for planning purposes on 35,000 afy from the Alluvial Aquifer and 11,000 afy from the Saugus Formation in average years. (Vol 59, p27642)

The County's decision that these amounts would be available for planning purposes was supported by substantial evidence and was fully disclosed such that there was no abuse of discretion by way of failure to comply with CEQA's informational requirements

Petitioner has waived its challenge based on disclosure, analysis and conclusions concerning perchlorate contamination to the extent those issues were raised previously before Judge Anderle, decided, and not appealed. To the extent new information is involved (detection of contamination in two additional wells in 2002 and 2005), the Supplement of the Revised EIR adequately discloses the information and contains a reasoned (even if optimistic) analysis supported by substantial evidence concerning impact on the water supply. (Vol 53, p 19115, 19121-19132, Draft Additional Analysis, Ammonium Perchlorate discussions)

Due to perchlorate contamination, 4 wells were closed in the Saugus Formation at the time the Petition was presented to Judge Anderle, and 2 additional wells were closed in the Alluvial Aquifer. The four Alluvial wells were closed in 1997. The first Saugus well was closed in 2002 and the second in April 2005.

In its challenge to the initial EIR, Petitioner raised the perchlorate contamination issue. ("Until clean-up of the perchlorate contamination is competed – perhaps years from now—pumping form the Saugus Aquifer can not be increased without jeopardizing the health and safety of the communities relying upon that water. Petitioner's Trial Brief, 9/10/01, p. 22)

In January 2002 Judge Anderle rejected Petitioner's concerns that perchlorate contamination rendered the aquifer supply unreliable. Petitioner did not appeal that issue. Judge Anderle observed in his Statement of Decision (January 2002) that an expert hydrologist testified, "there is no evidence of widespread perchlorate contamination of the groundwater and that the groundwater that is contaminated is generally limited to that in the vicinity of the Whittaker-Bermite site..." and that "...Testimony of other experts noted that technology for effective treatment of perchlorate contamination is currently available and is not contingent on further characterization of the contamination..." (Statement of Decision, pp 15-16)

The EIR's Additional Analysis discussed the perchlorate contamination found in four Saugus wells and (at that time) one Alluvial well, and its potential impact on groundwater supply. (Vol 59, p27719-27736) Included were discussions of detected contamination, and programs to test all wells. It was reported that treatment technology was expected to return contaminated water to drinking water quality 'soon.'

The EIR states that, "technology to clean up the contamination exists and will soon be brought online, thus returning the wells to production." (Final Additional Analysis, Topical Responses, Vol 54, 21390)

The Supplement does not provide an analysis of the environmental impacts to the aquifers if the location and patterns of pumping were changed in response to contamination, and does not identify specific funding for perchlorate treatment. This issue was raised by public comment. (Vol 59, 27941)

Public disclosure concerning the contamination proceeded as follows.

In response to the Writ, the EIR's Additional Analysis was prepared and circulated. It acknowledged that four municipal supply wells in the Saugus Formation and one in the Alluvial had been taken out of service due to perchlorate contamination. (Vol 53, p19122, figures 4.0-17) It anticipated further spread of the plume, and a need to contain it. ("Slade has reported that the Saugus Aquifer is and will continue to be a viable source of water supply for the water purveyors in the Santa Clarita Valley as long as efforts remain in place to treat impacted wells on an interim basis to contain the plume." Vol. 53, p. 19123)

On March 22, 2005, the County certified the EIR and Final Additional Analysis.

Subsequently, in April 2005 the perchlorate contamination was detected in the second Alluvial Aquifer well, Well Q2. (Supplement May 2005, Vol 59, p 27853-27854, 28522)

In response, the County provided a Supplement to the Additional Analysis. (Vol 59, 27827-27909 and 27912-28160) The Supplement was circulated for 45 day review and comment, the County prepared written responses to public comment, held a public hearing, and the County then recertified the EIR, including the Additional Analysis and the Supplement.

The Supplement reports that as a result of the detection, Well Q2 had been removed from service and that the retailer, Valencia, "is pursuing rapid permitting and installation of wellhead treatment in order to return the well to water supply service." (Vol 59, 27831)

The County concluded that the development did not constitute significant new information and did not require recirculation of the Revised EIR. Also, the County concluded that after the detection there are sufficient water supplies to serve both West Creek and cumulative development. [59 27829-27830, 27834-27835, 27846]

"[B]ecause CWLA and the other retail water purveyors have found that perchlorate detected in the designated wells, including Well Q2, does not significantly effect water supplies in the Santa Clarita Valley, and that such supplies are treatable given the current remediation schedule, the County believes that perchlorate detected at Well Q2 does not constitute new or more severe impacts, particularly where Valencia Water Company has planned for some time to initiate wellhead treatment should other Alluvial wells be impacted, and Valencia already has sought permitting, and obtained funding, for wellhead treatment at Well Q2." (Vol 59, 27835)

The County did circulate the Supplement for a 45-day review and comment period, prepared written responses to public comments, and held a public hearing, after which the Board recertified the revised EIR, including the Additional Analysis and the Supplement.

Although contamination was somewhat contained at the time the initial EIR was certified, the spread of contamination was not unforeseen. Spread beyond the Whittaker-Bermite was anticipated by the prior analysis, as can be seen by its discussion of groundwater flows and testing to detect new contamination. (Vol. 59, 27718-719, 721, 724; Vol 59, 27829-830, 27846.)

Petitioner argues essentially that the conclusion is wrong. Petitioner argues that County relied upon "speculation that these wells will 'soon' reopen despite present absence of needed funding and statewide agency approvals, and despite the strong prospect that the contamination may never be cleaned up." (Motion p5) "Substantial evidence is not argument, speculation, unsubstantiated opinion or narrative, evidence that is clearly inaccurate or erroneous, or evidence of social or economic impacts that do not contribute to, or are not caused by, physical impacts on the environment." *Pulic Resource Code* §21080(e)(2)) In certifying an EIR, the agency may not rely on speculation. "[S]ubstantial evidence includes fact, a reasonable assumption predicated upon fact, or expert opinion supported by fact." *Public Resource Code* §21080(e)(1)) The conclusions are based on the findings that treatment is already underway, including installation of wellhead treatment (DHS 'best available technology') and that treatment was expected to be on line by the end of 2005. Petitioner points out that five years after certification of the initial EIR, the four originally contaminated wells have not been treated. This fact is self-evident from the information contained in the Revised EIR. The record contained substantial evidence including expert opinion based on fact to support the conclusions reached by the County concerning perchlorate contamination.

The court has received and considered:

08-04-05 Notice of Hearing Return to Peremptory Writ of Mandate Filed by Respondent and Real Parties in Interest Hrg 10/05/05 9:30am Dept 4, Filed by Respondent

08-04-05 Memorandum of Points & Authorities Joint Filed by Respondent and Real Parties in Interest in Support of Return on Peremptory Writ of Mandate, Filed by Respondent

08-04-05 Request for Judicial Notice Joint Filed in Support of Joint Memorandum of Points and Authorities of Respondent and Real Parties in Interest in Support of Return to Peremptory Writ of Mandate Declaration of Robert I McMurry in Support Thereof, Filed by Respondent

08-04-05 Certificate Certification of Additional Administrative Record as Part of the Entire West Creek Administrative Record Additional Administrative Record Vol 53-59, Filed by Respondent

08-04-05 Appendix Joint of Excerpts From Administrative Record and Additional Administrative Record Cited in Joint Memorandum of Ps and As Filed Respondent and Real Parties in Interest in Support of Return to Peremptory Writ of Mandate Declaration of Robert I McMurry Vol II, Filed by Respondent

08-04-05 Appendix Joint of Excerpts from Administrative Record and Additional Administrative Record Cited in Joint Memorandum of Ps and As Filed Respondent and Real Parties in Interest in Support of Return to Peremptory Writ of Mandate Declaration of Robert I McMurry Vol I, Filed by Respondent

08-08-05 Notice of Completion Certification and Service of West Creek Additional Administrative Record, Filed by Respondent

08-24-05 Notice of Motion and Motion for Order Decertifying Environmental Impact Report and Expanding the Current Injunction/Opposition to Return on Writ; P's and A's -- Hrg: 10/05/2005 at 9:30 am in Dept 5, Filed by Petitioner

09-08-05 Reject Letter joint appendix etc 1) The Joint Appendix's appear to be Administrative Records and must be lodged with the court, not filed. Lodged Documents must be submitted with an envelope large enough and bearing sufficient postage to

09-08-05 Document: Supplement to Certification of Additional Administrative Record as Part of the Entire West Creek Administrative Record, Filed by Respondent

09-08-05 Points & Authorities Joint Memorandum of Points and Authorities Filed by Respondent and Real Parties in Interest in Support of Return on Peremptory Writ of Mandate, Filed by Respondent

09-08-05 Proof of Service by Mail, Filed by Respondent

09-08-05 Proof of Service via Personal Service, Filed by Respondent

09-08-05 Document: Joint Appendix on Reply Filed by Respondent and Real Parties in Interest in Support of Return to Peremptory Writ of Mandate; Declaration of Robert I McMurry in Support, Filed by Plaintiff

09-08-05 Document: Joint Appendix on Reply Filed by Respondent and Real Parties in Interest in Support of Return to Peremptory Writ of Mandate, Filed by Party in Real Interest

09-21-05 Document Lodged Administrative Record-Volume 53, Lodged by Respondent

09-21-05 Document Lodged Administrative Record-Volume 54, Lodged by Respondent

09-21-05 Document Lodged Administrative Record-Volume 55, Lodged by Respondent

09-21-05 Document Lodged Administrative Record-Volume 56, Lodged by Respondent

09-21-05 Document Lodged Administrative Record-Volume 57, Lodged by Respondent

09-21-05 Document Lodged Administrative Record-Volume 58, Lodged by Respondent

09-21-05 Document Lodged Administrative Record-Volume 59, Lodged by Respondent

09-21-05 Document Lodged Administrative Record-Volume 60, Lodged by Respondent

09-21-05 Document Lodged various CDs, Lodged by Respondent

09-27-05 Reply to Respondents Response to Motion for Order Decertifying Environmental Impact Report and Expanding the Current Injunction/Surreply to Return on Writ; Points and Authorities, Received by Petitioner, Doc Sent To: sb4

09-29-05 Ex Parte Application to File Longer Memorandum; Order, Filed by Petitioner

09-29-05 Opposition (Joint) to Ex Parte Application to File Longer Memorandum;Joint Objection to, and Motion to Strike Improper Sur-Reply Brief and Request for an Award of Sanctions Against Petitioners and Their Counsel, Alyse M Lazar; Declaration of Edgar Khalatian, Filed by Party in Real Interest

09-29-05 Reply to Objection to Ex Parte Application to File Longer Memorandum and Notice of Erratum, Filed by Petitioner

09-29-05 Order, Denied [D], Filed by Petitioner

10-05-05 Minute Order Hearing: Re Compliance, Submitted with argument, Filed

11-03-05 Notice of November 2 2005 Published Court of Appeal Opinion, Filed by Petitioner

11-07-05 Objection to and Motion to Strike, Petitioners' Notice of Court of Appeal Decision, and Response to Notice/Joint, Filed by Respondent

11-09-05 Objection Petitioners and Motion to Strike Respondents Post Submittal Extra Record Evidence and Brief, Filed by Petitioner

Ruling:

Return to Peremptory Writ of Mandate; Motion for Order Decertifying Environmental Impact Report and Expanding the Current Injunction

The Request to expand the Injunction is DENIED.

The Writ is DISCHARGED

Petitioner's Motion for Order Decertifying EIR is DENIED

Respondent's Objection to, and Motion to Strike, Petitioners' Notice of Court of Appeal Decision is OVERRULED and DENIED. The court has considered the published decision reported after hearing on this matter, *California Oak Foundation v City of Santa Clarita* (Nov. 2, 2005) 133 Cal.App.4th 1219, and the parties' supplemental briefs with respect to it.

Petitioner's Objection to, and Motion to Strike, Respondents Post Submittal Extra Record Evidence and Brief is OVERRULED and DENIED except with respect to the excerpts of the unauthenticated draft EIR for the Gate-King Industrial Park project (Ex A to Respondent's 11/7/05 filing), to which the objection is SUSTAINED. The court has not considered these excerpts of the Gate-King DEIR, which were submitted after hearing, are not authenticated, and are not the proper subject of judicial notice.

SO ORDERED

Dated: January 6, 2006

JAMES W. BROWN

James W. Brown
JUDGE OF THE SUPERIOR COURT

SUPERIOR COURT OF CALIFORNIA, COUNTY OF SANTA BARBARA	FILED
STREET ADDRESS: 1100 Anacapa Street MAILING ADDRESS: CITY AND ZIP CODE: Santa Barbara, California 93101 BRANCH NAME: Santa Barbara-Anacapa Division	SUPERIOR COURT of CALIFORNIA COUNTY of SANTA BARBARA JAN 10 2006 GARY M. BLAIR, Executive Officer BY Leanna M. Pearson LEANNA M PEARSON, Deputy Clerk
Caption: **Santa Clarita Organization vs County of Los Angeles**	
CLERK'S CERTIFICATE OF MAILING	CASE NUMBER: **1043805**

I certify that I am not a party of this action and that a true copy of the foregoing was mailed first class, postage prepaid in a sealed envelope addressed as shown, and that the mailing of the foregoing and execution of this certificate occurred at Santa Barbara, California, on (date) 01/10/2006 Re: Order After Hearing.

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NEWHALL RANCH™
Newhall Ranch Company

REVISED ADDITIONAL ANALYSIS
(REVISED TEXT, FIGURES AND TABLES)

to the

NEWHALL RANCH SPECIFIC PLAN
and
WATER RECLAMATION PLANT
FINAL ENVIRONMENTAL IMPACT REPORT

Project # 94087
SCH # 95011015

Volume VIII
(Revised Text, Figures and Tables)

Prepared For:

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May 2003

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EXECUTIVE SUMMARY

In April 2001, the County of Los Angeles publicly circulated the Draft Additional Analysis for the Newhall Ranch Specific Plan and Water Reclamation Plant Final Environmental Impact Report ("Final EIR") (SCH No. 95011015). In October 2001, the County then publicly circulated a Final Additional Analysis (consisting of Comments and Responses to Comments) as part of Additional Analysis review proceedings before the County of Los Angeles Regional Planning Commission. As discussed more fully below, the purpose of the Additional Analysis is to address six issues raised by the trial court in litigation regarding the adequacy of the prior Newhall Ranch Final EIR. Since public circulation of the Newhall Ranch Draft Additional Analysis and Final Additional Analysis, additional information has been presented, which resulted in the County's decision to revise and recirculate portions of the Draft Additional Analysis.

This Revised Draft Additional Analysis has been prepared to describe changes to the sources of water for the Specific Plan, to provide an update regarding sensitive plant species occurring on the Specific Plan site, to provide additional alternatives to the Specific Plan and to correct minor errors in the prior Draft Additional Analysis (April 2001). The four revised sections indicated below are intended to replace the corresponding sections in the prior Draft Additional Analysis. For example, the Water Resources section (**Section 2.5**) presented in this document completely replaces the Water Resources section (Section 2.5) presented in the prior Draft Additional Analysis (April 2001). The SEA General Plan Consistency section (**Section 2.4**) presented in this document completely replaces the SEA General Plan Consistency section (Section 2.4) presented in the prior Draft Additional Analysis (April 2001). Edited copies of the four revised sections, showing the revisions made in underline and strikeout format, are available for review at the County of Los Angeles Public Library and County of Los Angeles Department of Regional Planning, 320 West Temple Street, 13th Floor, Los Angeles, California 90012. Contact Mr. Lee Stark.

The following sections of the Draft Additional Analysis have been revised and replaced:

- **Executive Summary,**
- **Section 1.0, Introduction and Project Description**
- **Section 2.5 ,Water Resources**, and
- **Section 2.4, SEA General Plan Consistency.**

In addition, the following two new sections have been added to the Draft Additional Analysis:

- **Section 2.6, Spineflower and Other Sensitive Plant Species**, and
- **Section 2.7, Additional Alternatives.**

This document also presents the unchanged sections of the Draft Additional Analysis, and hence, represents a complete up-to-date version of the Newhall Ranch Specific Plan Additional Analysis.

PROJECT DESCRIPTION AND BACKGROUND

The applicant has prepared the Newhall Ranch Specific Plan which covers a total of 11,963 acres. The Specific Plan as originally approved by the County of Los Angeles Board of Supervisors includes a potential buildout of 21,615 dwelling units on 4,835 acres (including an 18-hole golf course, 10 neighborhood parks and seven schools), 630 acres of mixed uses (including residential, office, and retail commercial uses), 67 acres of commercial uses, 256 acres of business park uses (including light manufacturing, warehousing and distribution), 37 acres of visitor serving uses, 6,138 acres of open area, 3 community parks on 186 acres, and 367 acres of arterial roads and community facilities (including a new 6.9 million gallon per day water reclamation plant, one library and two fire stations). As a result of Board of Supervisors action, the amount of development allowed under the Specific Plan and the development footprint have been reduced. Specifically, the number of dwelling units allowed has been reduced by 730 units, from 21,615 to 20,885 units, the amount of commercial development has been reduced by approximately 132,000 square feet, and the development footprint has been reduced by 85 acres. The Specific Plan would build out over approximately 25 to 30 years, based upon market conditions. It should be noted that these revisions to the Specific Plan result in a reduction in the Specific Plan's water demand by 285 acre-feet per year, from a total of 17,680 to 17,395 acre-feet per year. In addition, the demand for energy, the number of traffic trips generated, the amount of wastewater generated and the corresponding impacts (*e.g.*, noise emissions, air emissions, *etc.*) also decrease. In order to present a worst-case analysis of impact potential, the traffic, water and floodplain modification analyses presented in this document still assume the larger Specific Plan as it was originally approved by the Board of Supervisors. The analysis of SEA General Plan Consistency has been updated to reflect the smaller development footprint. For additional information regarding the reductions in impact potential of the Specific Plan, *see*, Topical Response 13 presented in Volume VI of the Final Additional Analysis, dated May 2003.

In March 1999, the County of Los Angeles Board of Supervisors (the County) certified the Final Environmental Impact Report (FEIR) for the Newhall Ranch Specific Plan and Water Reclamation

Plant (WRP) (SCH No. 95011015), and approved the Newhall Ranch Specific Plan and WRP. Subsequently, various parties challenged the County's certification of the Final EIR and approval of the Specific Plan and WRP in a consolidated action in Kern County Superior Court entitled, *United Water Conservation District v. County of Los Angeles, et al.*, Case No. 239324 RDR. The trial court found that the FEIR required additional analysis with regard to the following issues: (1) traffic impacts to Ventura County arterial roadways exiting State Routes 23 and 126; (2) biological impacts to the Ventura County portion of the Salt Creek wildlife corridor; (3) biological impacts in the Santa Clara River corridor caused by channelization and bank hardening; (4) adequacy of water sources for the proposed Specific Plan, including impacts caused by employment of the Aquifer Storage and Recovery (ASR) alternative; and (5) the alternative of siting the Specific Plan's Water Reclamation Plant off-river, including an analysis of biological impacts of that siting. The trial court also instructed the County to ensure that the Specific Plan is consistent with the County General Plan policies requiring protection of natural resources in Significant Ecological Areas (SEAs) as those standards apply to SEA 23, and the General Plan Development Monitoring System (DMS) policies as they relate to water supplies. Consequently, the Court set aside approval of the Specific Plan and WRP, and FEIR certification, but only with respect to the six issues discussed above. The trial court upheld approval of the Specific Plan and WRP, and the FEIR certification with respect to all other issues raised in the action.

The purpose of this Additional Analysis is to address each of the six issues raised by the trial court. The following provides a summary of the environmental impact analysis and proposed mitigation contained in each technical section. Included are the questions posed by the trial court along with the answers to the questions posed. Brief summaries of the new Draft Additional Analysis sections are also provided.

ENVIRONMENTAL IMPACT AND MITIGATION SUMMARY

Traffic on Ventura County Arterials exiting SR-126 and SR-23

Question: What traffic impact would the Specific Plan have on Ventura County arterials exiting SR-126 and SR-23 if the traffic impact methodologies employed in analyzing the Specific Plan's traffic impacts in Los Angeles County were extended to the analysis of the Plan's traffic impacts on arterial roadways in Ventura County until the 1 percent impact standard is reached?

Answer:

Traffic generated by the Newhall Ranch Specific Plan will not cause a significant impact to arterial roadways in Ventura County exiting SR-126 and SR-23 using the one percent standard. It should be noted that the original Newhall Ranch Traffic Analysis contained in the Final EIR was prepared using traffic forecast data from the Santa Clarita Valley Consolidated Traffic Model (SCVCTM). This traffic-forecasting model was developed jointly by the County of Los Angeles and the City of Santa Clarita to facilitate the analysis of transportation needs in the Santa Clarita Valley. The model was developed as a "windowed" model in which the Santa Clarita Valley study area was extracted as a window of the overall region. As a windowed model, the SCVCTM features only the land use and highway network within the Santa Clarita Valley and has a set of "cordons" which define the edges of the modeled area. These cordons are designated points on the highway network where regional traffic from outside the window enters and exits the modeled area. Since the time the original traffic study was conducted, the Ventura County Transportation Commission has prepared a long-range Ventura Countywide Traffic Model ("VCTM"). The VCTM is based on the regional land use database produced by the Southern California Association of Governments. The database contains land use information on existing and future development patterns for the five county Southern California region. Consequently, it is possible to more accurately determine the Specific Plan's impacts to Ventura County arterial roadways.

The analysis contained in **Section 2.1** of this Additional Analysis demonstrates that the Specific Plan will not have a significant impact (*i.e.*, a one percent or more contribution) on any Ventura County arterial roadways exiting SR-126 or SR-23. Therefore, the Specific Plan will not result in significant impacts to any arterial roads in Ventura County and no mitigation beyond that identified in the Final EIR is required (*See,* **Section 4.0** below for a copy of the Mitigation Monitoring Program). Staff of the Ventura County Transportation Commission reviewed the analysis presented later in this document and indicated their concurrence with the significance conclusions reached (*See,* letter dated October 4, 2000 in Appendix 2.1(a)).

Salt Creek Corridor

Question: What effect does the Newhall Ranch Specific Plan have on the Salt Creek Corridor situated in Ventura County, caused by the shifting of wildlife into the Salt Creek Corridor?

Answer:

The Newhall Ranch Specific Plan will not significantly effect wildlife movement in the Salt Creek Corridor. Wildlife movement within the Salt Creek watershed occurs primarily along the general direction of the drainages between the Santa Susana Mountains and the Santa Clara River Valley. These routes are used because they follow the gentlest topography and more open habitat. Wildlife movement between watersheds to the east and west are easiest at the upper and lower ends of the watersheds. At the lower ends, canyons merge in the Santa Clara River Valley and are generally flat with less steep ridges. At the upper ends of the watersheds, the ridgeline of the Santa Susana Mountains provides less steep connections to the upper reaches of the canyons and adjacent watersheds.

As part of the original approval of the Newhall Ranch Specific Plan, the County of Los Angeles Board of Supervisors established a one-half mile wide buffer south of the Santa Clara River and a one-eighth of a mile buffer north of the river between all development proposed as part of the Specific Plan and the Ventura County line. Direct impacts to habitats in the Potrero Creek watershed in Los Angeles County from the proposed Newhall Ranch Specific Plan are important to the Salt Creek watershed. Habitat loss in the Potrero Creek watershed would potentially cause a shift in some wildlife populations to undisturbed habitats in the Salt Creek watershed in both Los Angeles and Ventura County. Habitat losses in the Potrero Creek watershed would also potentially affect the long-term movement of wildlife within this watershed and within the Salt Creek watershed in both Ventura County and Los Angeles County. However, no direct impacts to that portion of the Salt Creek watershed in Ventura County would occur in association with the Specific Plan because no development is proposed there, and all development proposed as part of the Specific Plan would occur no closer than one-half mile to Ventura County.

It is also important to understand that the Specific Plan will build out over a 20 to 30 year period. Consequently, the displacement of wildlife species, primarily larger mammals, would occur incrementally over a much-extended period of time. These larger wildlife species (*e.g.*, mountain lion, deer, bobcat, and coyote) generally have home ranges that are not confined only to one watershed, and would be expected to be displaced in relatively small numbers. In contrast, the smaller wildlife species will more likely suffer from direct mortality because of land development, and would not be displaced into adjacent watersheds. This time factor allows for a very gradual shift (*i.e.*, over a period of decades) of wildlife use/movement for those animals able to move a distance of more than one-half mile from the Specific Plan area in Los Angeles County to adjacent undeveloped areas, including the Salt Creek watershed in Ventura County. These very gradual (and temporary) increases in wildlife use/movement in the Salt Creek watershed in both Los Angeles County and Ventura County would be

easier to absorb with wildlife movement over many, many years (*i.e.*, the animals would have more time to adapt to the available resources or would have time to move out of the Salt Creek watershed to adjacent watersheds). Therefore, the direct impacts of habitat loss in the Specific Plan area on wildlife movement within the Salt Creek watershed, and particularly the Ventura County portion given its distance away from proposed development, would not be significant. Please see **Section 2.2** of the Additional Analysis for further information on this topic.

Floodplain Modifications

Question: What are the biological impacts on the Santa Clara River corridor due to channelization, increased flow velocities and bank hardening?

Answer:

The proposed drainage improvements would maintain the key hydraulic characteristics that largely determine the overall mosaic of habitats in the river. Development of the Specific Plan would increase runoff from upland areas due to increased impervious surfaces (*e.g.*, pavement, roads, and buildings). The project has an effect out to a point about four miles downstream of the Specific Plan site in Ventura County. Beyond this point, the Specific Plan has no impacts to flows. The increase in runoff ranges from 3 percent for high flows to 7 percent for the 2-year event. For high frequency floods (2-year, 5-year, and 10-year), the proposed floodplain modifications would not hinder flows or reduce the floodplain area. Instead, these flows would spread across the river channel, unaffected by the bank protection because the river would have sufficient width to allow these flows to meander and spread out further than they would under pre-project conditions.

It is only during more infrequent floods (20-year, 50-year and 100-year events) where flows would spread out to the buried bank stabilization (but no further). This would limit the area of the floodplain during these infrequent flood events, causing inundation over a smaller area because the bank protection will prevent flooding of formerly adjacent floodplain areas. However, the reduction in floodplain area caused by bank protection does not create a significant increase in overall velocities or water depth, because the volume of flow carried in these shallow, slow-moving areas along the margins of the river is small. Moreover, variations are localized and limited in scope, especially when viewed in the entirety of the river corridor within the Specific Plan site and downstream. Therefore, the overall mosaic of habitats in the river would be maintained because the key hydraulic characteristics would not be significantly different under the Specific Plan. Based on these results, the floodplain modifications associated with the Specific Plan (*i.e.*, bank protection and bridges) would

not cause significant changes to key hydraulic characteristics, and therefore, would not alter the amount and "pattern" of aquatic, wetland, and riparian habitats in the river at the Specific Plan site and downstream in Ventura County. Please see **Section 2.3** of this Additional Analysis for further information on this topic.

SEA General Plan Consistency

Question: Is the Specific Plan consistent with the Los Angeles County General Plan policies requiring protection of natural resources in SEAs as those standards apply to SEA 23?

Answer: Yes

The Newhall Ranch Specific Plan is considered highly compatible with biotic resources in SEA 23 and is consistent with County of Los Angeles policies related to protection of natural resources in SEAs. The Newhall Ranch Specific Plan proposes changes to SEA 23 resulting in a reduction of land area of 315 acres within SEA 23. The revised SEA 23 would contain approximately 975 acres. Approximately 23 acres of the total area redesignated involves sensitive habitat (14 acres added, 8 acres redesignated to Open Area, and one acre redesignated for development). However, the proposed changes to the SEA area must be understood in context. In this case, only a very small amount of sensitive habitat area (*i.e.*, one acre, or 0.08 percent of the existing SEA) is being removed from the existing boundaries of SEA 23 due to proposed development. In fact, the existing amount of sensitive riparian habitat that would occur in SEA 23 would actually increase under the Specific Plan by a net of five acres (instead of the 103-acre decrease, which was proposed to be redesignated in the original Final EIR); 14 acres of sensitive riparian habitat would be added to the SEA, one acre would be redesignated for development of non-residential land uses, and 8 acres would be redesignated from SEA 23 and permanently preserved in the Open Area designation because it is not riparian in nature, for the most part, or represents relatively small fragments of sensitive habitat isolated from the riparian resources of the river.

The 315-acre reduction of land area in existing SEA 23 indicated above was calculated as follows: 355 acres were removed for development, *plus* 22 acres removed and preserved elsewhere in the Specific Plan, for a total of 377 acres, *less* 62 acres of land that is added to SEA 23, for a net reduction in SEA 23 of 315 acres. The redesignations were made with consideration to the type and quality of the habitat and the purpose of the SEA 23 (preservation of riparian habitats and associated species). A detailed description of the disposition of land removed from the existing SEA 23 is provided in **Section 2.4** for

each habitat category. **Table 2.4-3, Proposed Changes to Existing SEA 23,** provides a summary of the proposed changes to existing SEA 23.

A total of 355 acres presently in SEA 23 are proposed for development as part of the Newhall Ranch Specific Plan. However, only a very small amount of that land is considered sensitive (*i.e.*, one acre). As shown in **Figure 2.4-4, Habitat Redesignated for Residential and Non Residential Land Uses in Existing SEA 23,** the vast majority of the land either is already in a disturbed condition, in agricultural production or dominated by ruderal or weedy plant species. **Figure 2.4-5, Habitat Redesignated from Existing SEA 23 and Habitat Proposed to be Added to SEA 23,** indicates that 335 acres (or 89 percent of the 377 acres being redesignated for residential, non-residential and Open Area land use) are in a disturbed condition, 19 acres (or 45 percent of the 377 acres being redesignated for residential, non-residential and Open Area land use) are dominated non-sensitive habitat types, and one acre (or 0.3 percent of the 377 acres being redesignated for residential, non-residential and Open Area land use) are dominated by sensitive habitat types. The types of land uses that would be constructed on the one acre of sensitive habitat types includes: Mixed-Use and three Major Highways with bridge crossings over the Santa Clara River (.41) acres. In addition, buildout of the Specific Plan would require the placement of two utility crossings across the River as well as the placement of buried bank stabilization and grouted and rip-rap where required to protect property from flooding. However, impacts associated with utility crossings and buried bank stabilization (43 acres) would be temporary in that areas impacted during construction would be revegetated with native species upon completion of construction activities consistent with the Specific Plan and Federal and State resource permit requirements. Dependent upon the permitting process, revegetation will be completed within three to five years from the time of impact. As a result, potential impacts would be minimized and movement paths of animals would be unimpeded. Areas proposed for development within SEA 23 are illustrated in **Section 2.4, Figure 2.4-6, Existing SEA 23 (River Corridor Special Management Area) Redesignated for Residential and Non Residential Land Use.**

The land use plan proposed as part of the Newhall Ranch Specific Plan has been designed to minimize impacts to sensitive resources, and where avoidance is not possible, to minimize impacts where feasible. A total of 380 acres of sensitive habitat areas exist within SEA 23 and only one acre (or 0.3 percent of sensitive habitat areas and 0.08 percent of the original SEA) would be directly impacted by development. An additional five acres of sensitive riparian habitat would be added to the SEA, increasing the total amount of sensitive riparian habitat in the SEA from 380 to 385 acres. The entire 385 acres would remain protected in open space areas as part of the SEA 23 (River Corridor SMA). Eight acres of sensitive riparian habitat would be redesignated from SEA 23 to Open Area. This is consistent with criteria one that requires setting aside of appropriate and sufficient undisturbed area.

Development on land already disturbed poses no direct impacts to resources found within SEA 23. Of the one acre of sensitive habitat redesignated in the SEA, 0.5 acre of sensitive riparian habitat is being removed to accommodate non-residential land uses and 0.5 acre is being removed to accommodate necessary infrastructure. As illustrated on **Figure 2.4-8**, the affected land represents small patches of disconnected habitat distributed throughout the Specific Plan area rather than a contiguous patch of land that provides higher habitat value. Based on the above information, the Newhall Ranch Specific Plan is compatible with the sensitive resources found within existing SEA 23. *See,* **Section 2.4** of the Additional Analysis for further information on this topic.

Water Resources

An adequate supply of water is available to meet the demands of the Specific Plan without creating significant environmental impacts, and the proposed Saugus Groundwater Banking/ASR program is feasible.

Introduction

The County of Los Angeles and the Newhall Ranch applicant are responding to the Court's decision and direction to demonstrate availability of identified water supplies by now relying on two primary sources of water supply—Newhall's historical use of agricultural water to benefit its land in Los Angeles County, and water purchased from the Nickel Family LLC in Kern County (the "Nickel Water"). The right of the beneficial use of Newhall's agricultural water resource is well established under California law.[1] This agricultural water will be available as agricultural production until it is phased out by urban development. There would be a limit placed on the amount of groundwater used so that it would not exceed the amount already used for agricultural purposes. This agricultural water supply has historical long-term availability and reliability and is an established supply. The Alluvial and Saugus aquifers have consistently been at or near their highest levels in the past several years and are not in an overdraft condition. The first source is the applicant's historical alluvial groundwater produced in the County of Los Angeles that is presently committed to agriculture uses. The second source is the applicant's purchase of 1,607 acre-feet per year of water from Nickel Family LLC in Kern County (the "Nickel Water"). This water is 100 percent reliable on a year-to-year basis, and not subject to the annual fluctuations that can occur in dry year conditions. Pursuant to Nickel's contract water rights, the water delivered to Nickel for sale to Newhall must be high quality water, acceptable for delivery into the California aqueduct. In addition, delivery of the water to Nickel

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1 *See,* the California Supreme Court's decision, *City of Barstow v. Mojave Water Agency* (2000) 23 Cal.4th 1224.

being sold to Newhall is mandatory and unaffected by annual hydrologic conditions. The Nickel Water would only be needed on the Specific Plan site in years when all of the Newhall Agricultural Water has been used, which is estimated to occur after the 20th year of project construction. Up to that point in time, the unused Nickel Water would be available for storage in groundwater banking programs on an annual basis, which would then be used as a dry year supplemental supply. The water would be delivered through the Kern County Water Agency and the State Water Project (SWP) system. Because these two independent primary water sources meet the potable water needs of the Specific Plan, no potable water would be needed from State Water Project (SWP) and Castaic Lake Water Agency (CLWA). The non-potable demand would be met by the use of reclaimed water supplied by the Newhall Ranch water reclamation plant and the reclaimed water supplied by CLWA.

Furthermore, Newhall Ranch has undertaken several major steps to enhance the reliability of the water supply for the Newhall Ranch Specific Plan. Specifically, the Newhall Ranch applicant has accomplished the following:

- Secured 7,648 acre-feet per year (AFY) of additional SWP water entitlement from landowners who are served by a member agency of the Kern County Water Agency.
- Purchased 55,000 AF of groundwater banking storage capacity, which includes the ability to use up to 4,950 AF of water during dry years as a water supply from the Semitropic Water Storage District.
- Determined through comprehensive groundwater testing that the local Saugus aquifer can be successfully used for groundwater banking through an aquifer storage and recovery (ASR) program.
- Along with members of the "Downstream Water Users", including the United Water Conservation District, forwarded a unanimously supported request to the State Department of Water Resources (DWR) to amend the 1978 Castaic Creek Flood Flow agreement, thereby making these flows available for use in groundwater banking and for other appropriate beneficial water uses. This step improves the potential to use Castaic Creek flood flows.
- Determined that CLWA could provide the applicant with supplemental water supplies, if needed.

The relationships between Newhall Ranch water demand and supply in normal/average and dry years are provided below in **Tables ES-1** and **ES-2**, and are illustrated in **Chart ES-1**.

Analysis

Provided below are the questions posed by the trial court with regard to Newhall Ranch water resources along with the answers to each question posed.

Chart ES-1

Question: Is Sufficient Water Available for Build-out of the Specific Plan?

Answer: Yes

An adequate amount of water is available to meet the needs of the Specific Plan. In fact, actions being taken by the Specific Plan applicant will result in even more water being made available to the Specific Plan than is needed to meet its water need. The primary sources of water for the Specific Plan consist of existing supplies that are available for use today in the Santa Clarita Valley. To ensure that adequate water is available for the Specific Plan, the Specific Plan will rely on the following sources of water:

(a) Newhall Ranch Water Supplies

- **Existing Newhall Agricultural Water.** The project applicant would meet potable water demands of the Specific Plan by using Newhall's historical alluvial groundwater produced in Los Angeles County which is presently committed to agricultural uses. No additional groundwater would be pumped over historical and present amounts; instead, the water presently used to irrigate crops would be treated and then used to partially meet the potable water needs of the Specific Plan.

- **Nickel Water.** The applicant has secured water under contract with Nickel Family LLC in Kern County. This water is 100 percent reliable on a year-to-year basis, and not subject to the annual fluctuations that can occur in dry year conditions. The water would be delivered through the Kern County Water Agency and the SWP system. The Nickel Water would only be needed on the Specific Plan site in years where all of the Newhall Agricultural Water has been used, which is estimated to occur after the 20th year of project construction. Up to that point in time, the unused Nickel Water would be available for storage in groundwater banking programs on an annual basis, which would then be used as a dry year supplemental supply.

- **Semitropic Groundwater Banking Project.** The project applicant has entered into an agreement to reserve and purchase water storage capacity of up to 55,000 acre-feet in the Semitropic Water Storage District Groundwater Banking Project. The stored water could be extracted in dry years in amounts of up to 4,950 AFY from the project. This supply will be used as a water source for the Specific Plan in dry years only. Sources of water that can be stored in this banking project include, but are not limited to, Nickel Water, Newhall/SWP supplies, and Other CLWA Supplies.

- **Newhall Ranch Reclaimed Water.** Reclaimed water from the Specific Plan's water reclamation plant will be used to meet a portion of the Specific Plan's non-potable water need.

- **CLWA Reclaimed Water.** Planned recycled water from the Valley's two existing water reclamation plants will be used to meet the remainder of the Specific Plan's non-potable water need.

Table ES-1
Newhall Ranch Specific Plan
Normal/Average Year Potable and Non-Potable Water Usage
(acre-feet/year)

	Demand	Supply	
		7,038	Newhall Agricultural Water (a)
		1,607	Nickel Water (b)
Potable	8,645	8,645	
		5,344	Newhall Ranch Reclaimed Water
		3,691	CLWA Reclaimed Water
Non-Potable	9,035	9,035	
Total (c)	**17,680**	**17,680**	

(a) Firm groundwater supply historically and presently used by the applicant for agricultural irrigation purposes on its agricultural land in The County of Los Angeles.
(b) The applicant has secured water under contract with Nickel Family LLC in Kern County. This water is 100 percent reliable on a year-to-year basis, and not subject to the annual fluctuations that can occur in dry year conditions. The water would be delivered through the Kern County Water Agency and the SWP system.
*(c) See, **Table 2.5-25, Summary of Newhall Ranch Water Demands.***

Additional Programs to Enhance Reliability of Supplies

Groundwater Banking Program for Dry Years (h)			Supplemental Supplies
	4,500	4,500	CLWA SWP and Other Supplies (g)
Saugus Groundwater Banking/ ASR Program (e)			
		4,566	Newhall/SWP Water (d)
		7,043	Castaic Creek Flood Flows (f)
Total	**4,500**	**16,109**	

*(d) Newhall/SWP water (7,648 acre-feet per year of annual entitlement) secured by the applicant from landowners served by a member agency of the Kern County Water Agency, which would be delivered through SWP facilities to CLWA. This source would be reduced to approximately 59.7 percent in average years as discussed in **Section 2.5, Water Resources** (4,566 = 7,648 x 0.597).*
(e) The Saugus Groundwater Banking/ASR Program involves injecting or "banking" 4,500 AFY of treated Newhall/ SWP water or other available water at times when those sources are readily available in normal/average years. During drought periods, up to 4,100 AFY would be withdrawn from the groundwater bank to partially meet Specific Plan dry year water demand.
(f) Subject to approval by DWR, Castaic Creek flood flows could be used in normal/average years, when available, as a water source for the Semitropic Groundwater Banking Project (through a water transfer), or for the Saugus Groundwater Banking/ASR Program. This supply is variable; in some years, the flood flows are not available.
(g) In addition to Newhall/SWP Water and Castaic Creek Flood Flows, CLWA SWP entitlement and other CLWA supplies could be used as a source of water for injection into the Semitropic and Saugus Groundwater Banks.
(h) CLWA's SWP entitlement is 95,200 acre-feet per year. The amount of the water shown above is not a limitation on the amount of CLWA SWP supplies that could be used as a source of water; however, the CLWA supplies are only considered a supplemental source for Newhall Ranch, because the applicant has taken steps to secure its own primary potable water supplies.

Table ES-2
Newhall Ranch Specific Plan
Dry Year Potable and Non-Potable Water Usage
(acre-feet/year)

	Demand (c)	Supply	
		7,038	Newhall Agricultural Water (a)
		1,607	Nickel Water (b)
		865	Semitropic Groundwater Banking Project (e)
Potable	9,510	9,510	
		5,344	Newhall Ranch Reclaimed Water
		4,595	CLWA Reclaimed Water
Non-Potable	9,939	9,939	
Total	**19,449**	**19,449**	

(a) Firm groundwater supply historically and presently used by the applicant for agricultural irrigation purposes on its agricultural land in The County of Los Angeles.
(b) The applicant has secured water under contract with Nickel Family LLC in Kern County. This water is 100 percent reliable on a year-to-year basis, and not subject to the annual fluctuations that can occur in dry year conditions. The water would be delivered through the Kern County Water Agency and the SWP system.
(c) Demands are projected to increase in a dry year by approximately 10 percent due to a lack of local rainfall.

Additional Programs To Enhance Reliability Of Supplies

	Supplemental Supplies	
	3,044	Newhall/SWP Water (d)
	4,085	Semitropic Groundwater Banking Project (e)
	4,100	Saugus Groundwater Banking/ASR Program (f)
Total	**13,701**	

(d) Newhall/SWP water (7,648 acre-feet per year of annual entitlement) secured by the applicant from landowners served by a member agency of the Kern County Water Agency, which would be delivered through SWP facilities to CLWA. This source would be reduced to approximately 39.8 percent in dry years as discussed in ***Section 2.5, Water Resources*** *(3,044 = 7,648 x 0.398). This water is not related to CLWA's 95,200 AF entitlement.*
(e) The project applicant has entered into an agreement to secure water storage capacity of up to 55,000 acre-feet in the Semitropic Water Storage District Groundwater Banking Project. The stored water would be extracted in dry years in amounts of up to 4,950 AFY from the project. This supply will be used as a water source for the Specific Plan in dry years only. The storage capacity will be filled in the initial years (beginning in year 2005) from available water before Newhall Ranch demand requires this supply. Afterward, further demand for this water in wet/average years, on an as needed basis, could be met by banking excess Newhall/SWP Water, Castaic Creek Flood Flows, CLWA SWP entitlement and other supplies as available.
(f) The Saugus Groundwater Banking/ASR Program involves injecting or "banking" 4,500 AFY of treated Newhall/SWP water or other available water at times when those sources are readily available in normal/average years. During drought periods, up to 4,100 AFY would be withdrawn from the groundwater bank to partially meet Specific Plan water demand.

(B) Supplemental Water Supplies

Even though enough water already exists to meet the needs of the Specific Plan, the applicant has taken the following actions in order to enhance the reliability of Specific Plan water supplies:

- **Newhall/SWP Water** – The applicant has secured 7,648 AFY of water under contract from landowners served by a member agency of the Kern County Water Agency.

- **Semitropic Groundwater Banking Project** – The applicant has purchased up to 55,000 acre-feet of groundwater storage capacity in the Semitropic Groundwater Bank, located in Kern County, and will utilize in dry years water stored in that bank during average/normal and wet years. Sources of water that could be stored in this banking project include, but are not limited to, Nickel Water, Newhall/SWP supplies, and Other CLWA Supplies.

- **Saugus Groundwater Banking/ASR Program** – In dry years, the applicant will utilize water stored in the proposed Saugus Groundwater Bank (also termed Aquifer Storage and Recovery (ASR)) in normal and wet years.

- **Castaic Creek Flood Flows** – Subject to approval by the State Department of Water Resources (DWR), Castaic Creek flood flows could be used in wet and normal/average years, when available, as a water source for the Semitropic Groundwater Banking Project (through water transfers) and the Saugus Groundwater Banking/ASR Program. This supply source is variable; in drier years, the flood flows are not available.

- **CLWA SWP and Other Supplies** – A relatively small portion of CLWA's existing SWP Table A water entitlement could be used, if needed, to supplement a portion of the Specific Plan's potable water need. As a SWP contractor, CLWA may also obtain additional SWP supplies from or through DWR in connection with other programs. The CLWA supplies are only considered a supplemental source for Newhall Ranch because the applicant has taken steps to secure its own primary potable water supplies. When available in wet and normal/average years, excess CLWA SWP water and other supplies available to CLWA could be used in addition to Newhall/SWP water and Castaic Creek flood flows as a source of water for storage in the Semitropic Groundwater Banking Project (through water transfers) and the Saugus Groundwater Banking/ASR Program.

The surplus of water created by existing water sources and the actions of the applicant will ensure an adequate supply of water for the Specific Plan without creating significant impacts on existing water supplies or downstream water users. For additional information on this topic, please see **Section 2.5, Water Resources.**

Question: Is the Saugus Groundwater Banking/ASR Program Feasible?

Answer: Yes

The results of injection and recovery tests conducted by the applicant demonstrate that implementing a groundwater banking/ASR program in the Saugus Formation is feasible. The determination that the Saugus Groundwater Banking program is feasible is based on the actual injection and pumping tests conducted at wells in the Saugus Formation from July 2000 through October 2000, as well as groundwater modeling. (*See, Newhall Ranch ASR Impact Evaluation,* CH2MHill; and *Assessment of the Hydrogeologic Feasibility of Injection and Recovery of Water in the Saugus Formation, Santa Clarita Valley, California,* Slade.) The testing and the modeling show that there is no discernible effect on Alluvial water levels or the Santa Clara River, from either Saugus Formation well injection or pumping. For additional information on this topic, please see **Section 2.5, Water Resources, Subsection 2.5.5.3(d)(5)** entitled, **Saugus Groundwater Banking/ASR Program**.

Question: Is the Newhall Ranch Specific Plan Consistent with the General Plan Development Monitoring System Policies as They Relate to Water Supplies?

Answer: Yes

The Newhall Ranch Specific Plan is consistent with the County's General Plan DMS policies as they relate to water supplies. This analysis has been completed to determine if sufficient water supplies will be available for the Specific Plan under the County's General Plan Development Monitoring System (DMS) requirements. Because two independent primary water sources have been secured to meet the potable water needs of the Specific Plan, no additional potable water would be needed from State Water Project (SWP) and the Castaic Lake Water Agency (CLWA) supplies. For additional information on this topic, please see **Section 2.5, Water Resources, Subsection 2.5.5.4(a)(1)** entitled, **DMS General Plan Consistency**.

Water Reclamation Plant Alternatives

Question: What are the impacts associated with siting the WRP off-river, including an analysis of the biological impacts of that siting?

Answer:

Non-River Alternative - The non-river alternative would entail constructing the WRP at a location more removed from the Santa Clara River than the proposed location. It is expected that slightly less land would be required for the WRP under this alternative (approximately 9 acres compared to 15 acres under the proposed project because the non-river site is not as confined). The WRP would be at a slightly higher elevation and, therefore, would require some pumping, resulting in higher costs for construction, operation and maintenance, and higher energy costs. With the exception of those topics described below, all other environmental impacts associated with this alternative (such as traffic, *etc.*) are considered similar to those created by the proposed project and would merely be relocated to another site as a result of this alternative.

Development of the WRP under this alternative would require the conversion of approximately 9 acres of prime farmland. Because construction of the WRP on this alternative site would slightly decrease impacts to agricultural resources by approximately 0.5 acre, the Non-River Alternative is slightly superior to the proposed project from an agricultural resources perspective when considering only the plant itself. However, it should be noted that if the WRP is not constructed on this alternative site, the 9 acres of agricultural land present on the alternative site would still be converted to residential land uses under the Specific Plan. Similarly, if the WRP is constructed at this alternative site and not the proposed project site, the 9.5 acres of agricultural land on the proposed project site would still be converted to urban land uses (*i.e.*, Business Park). Under either the proposed project or this alternative site, all the agricultural land (18.5 acres) would be converted to urban uses regardless of the alternative site selected. Consequently, this alternative is not necessarily environmentally superior to the proposed project with respect to agricultural resource impacts.

From a biological perspective, implementation of this alternative would decrease the magnitude of impacts to sensitive vegetation communities, because the alternative site contains no sensitive habitats. This alternative would result in an increase in energy consumption because it would require a greater amount of energy to pump waste up grade to the treatment plant. A consequence of this increased energy consumption would be the generation of air emissions in amounts incrementally greater than under the proposed project.

This Alternative would be located immediately adjacent to planned Low-Medium Residential land uses, which are incompatible with a WRP. Under the proposed project, the WRP would not be located adjacent to incompatible land uses. Rather, it would be located adjacent to planned Business Park uses.

With regard to noise generation and land use compatibility, therefore, the proposed project is environmentally superior to the Non-River Alternative.

In light of these facts, on balance, the Non-River Alternative is considered environmentally superior with regard to impacts on sensitive biological habitats, and is not considered environmentally superior to the proposed project with regard to impacts to air quality, energy consumption and noise. Please see **Section 3.0** of this Additional Analysis for further information on this topic.

NEW DRAFT ADDITIONAL ANALYSIS SECTIONS

Spineflower and Other Sensitive Plant Species

Section 2.6 summarizes the pertinent history and background relating to an endangered plant called the San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*; "spineflower") and other sensitive plant species on Newhall Ranch, including surveys conducted by the applicant and the California Department of Fish and Game (CDFG). **Section 2.6** includes an analysis of direct, indirect and cumulative impacts on the spineflower and other sensitive plant species due to development of the Newhall Ranch Specific Plan and WRP. While such an analysis is typically completed at the time subdivision maps allowing construction are proposed, this document addresses potential impacts to spineflower and other sensitive plants at the program level. **Section 2.6** also sets forth a comprehensive set of mitigation measures as part of a program to, in combination with the mitigation measures already presented in the Revised Draft EIR for the Newhall Ranch Specific Plan and WRP, avoid or minimize impacts to the spineflower and other sensitive plant species that may be found on the site. Environmental documents to be prepared for future subdivision maps will also present measures and/or programs necessary to mitigate potential impacts to spineflower and other sensitive plants. It should be noted that in order to reduce the potential for impacts to spineflower, the Board of Supervisors has required revisions to the Specific Plan. Specifically, the Board has eliminated residential and non-residential land uses from the 64-acre California Department of Fish and Game spineflower conservation easement area described in Topical Response 10 (*See,* Final Additional Analysis Volume III, dated March 2003). This results in a reduction in residential development of 730 units and a reduction in commercial development of approximately 132,000 square feet. To present a worst-case analysis, **Section 2.6, Spineflower and Other Sensitive Plant Species,** of the Additional Analysis still assumes that the land use designations proposed for the conservation easement area would still be developed.

Existing Setting - A total of 10 sensitive plants have been observed on the Newhall Ranch site. Of those 10, four are unconfirmed at the time of this writing due to seasonal limitations or on-going discussion among botanical experts. The six confirmed sensitive plants include: Peirson's morning-glory, Island mountain-mahogany, San Fernando Valley spineflower, Southern California black walnut, Southwestern spiny rush, and Short-joint beavertail. Of these, the only plant on the state's endangered species list is the spineflower. The four unconfirmed sensitive plants include: Club-haired mariposa lily, Slender mariposa lily, Marcescent dudleya (*Dudleya cymosa* ssp. *marcescens*) or Santa Monica Mountains dudleya (*Dudleya cymosa* ssp. *ovatifolia*), and Los Angeles sunflower. Three unconfirmed plants will require current year flowers to positively identify. Because of the similarity of morphological characteristics between several species and subspecies of sunflower potentially occurring in this region, the specific taxonomic identify of observed sunflower has not been confirmed at this time. If confirmed, it is a plant that was thought to be extinct.

The original Draft Additional Analysis (2001) discussed the spineflower on the Newhall Ranch Specific Plan site. Specifically, the original Draft Additional Analysis described the spineflower's historical range and habitat requirements, and confirmed the presence of spineflower on the Grapevine Mesa location of Newhall Ranch. As part of more recent rare plant surveys, spineflower was also observed at two additional locations on Newhall Ranch: Airport Mesa and San Martinez. Approximately 6.3 acres (or 0.05 percent) of the 11,963-acre Newhall Ranch is known to support spineflower.

Direct Impacts of the Specific Plan - As indicated above, spineflower was observed in three general locations within the Specific Plan area: Airport Mesa, Grapevine Mesa, and San Martinez. Some populations of the spineflower are in locations that could be directly or indirectly affected by development associated with Specific Plan implementation, while other populations are located within areas that will be protected as open space. Based on field survey estimates, approximately 6.1 acres of habitat supporting spineflower plants are located within a development-related land use area; and 0.18 acres of habitat supporting spineflower plants are located in proposed open space areas in the Grapevine Mesa area. Until more detailed project-level subdivision maps and plans are prepared, it is assumed that all land within an area zoned for development will be converted. Therefore, any spineflower populations within these areas have been determined at this time to be directly impacted (*i.e.*, removed from the site) by buildout of the Specific Plan. As noted above, the short-joint beavertail cactus, a CNPS List 1B plant species, was also observed during the surveys. Two plant taxa were observed during surveys that, due to the dry field conditions during 2002, did not permit definitive identification of these taxa to the species level. These taxa include *Calochortus* and *Dudleya*. Both the *Calochortus* and *Dudleya* observations occurred in areas proposed for development under the

Specific Plan. Surveys would need to be conducted during next year's blooming season to confirm the exact species of these taxa.

A population of *Helianthus* was also discovered in a wetland area along the Santa Clara River. Because of the similarity of morphological characteristics between several species and subspecies of *Helianthus* potentially occurring in this region, the specific taxonomic identify of this single population of plants is not yet confirmed at this time. However, impacts to *Helianthus* are not considered significant because the population is located within an Open Area, which would prohibit development in that area.

An additional seven plant species that are state- or federally-listed as threatened or endangered, and 10 species listed by the CNPS as a List 1 or List 2 species, were not observed but were determined to have at least a moderate potential to occur within the Specific Plan area (DUDEK 2002). The locations of any other plant species observed during the course of the spineflower surveys were mapped as illustrated in Appendix 2.6.

Impacts to any plants located within the Specific Plan area that are state- or federally-listed as threatened or endangered (*e.g.*, the spineflower) or listed as CNPS List 1 or List 2 plant species (*e.g.*, the cactus), are regarded as significant impacts under CEQA. Impacts to remaining plants are not considered significant if they are not expected to occur onsite, have a low potential of occurring, or are of a relatively low sensitivity. If future surveys confirm the *Calochortus* species to be one of the CNPS List 1B plants potentially occurring in the area, or the *Dudleya* to be one of the federally-listed threatened species known to occur in the region, the loss of occupied habitat of either of these species, directly or indirectly, would be considered a significant impact.

Indirect Impacts of the Specific Plan - Indirect impacts to sensitive plants would occur to those habitat areas adjacent to or within proposed development areas, after implementation of the project-specific subdivision maps and associated grading plans. Specifically, the spineflower and other sensitive plant species are vulnerable to certain indirect effects associated with proposed development of Newhall Ranch. Because the character of the property will be altered from its current grazing and agricultural uses to a master planned community, the viability of the spineflower and other sensitive plant species depends upon an understanding of the indirect effects of proposed development in the vicinity of known sensitive plant populations. Indirect impacts to sensitive plants are normally associated with the following factors.

(a) Non-native invasive plant species;

(b) Non-native invasive animal species;

(c) Vegetation clearing for fuel management or creation of roads and trails;

(d) Trampling;

(e) Changes in hydrological conditions (*i.e.*, increases in water supply due to urban irrigation and runoff);

(f) Chemical pollutants (*e.g.*, herbicides, pesticides, fertilizers); and

(g) Increased fire frequency.

Indirect impacts to spineflower and other sensitive plants, all seven indirect impacts/edge effects are considered significant in connection with the proposed development of Newhall Ranch, absent implementation of the Newhall Ranch mitigation program described in **Section 2.6.**

Conclusion - Because actions are to be taken that would be sufficient to minimize the take of the spineflower, fully mitigate the loss, and create additional spineflower populations, both onsite and offsite, the impacts to the spineflower are considered significant, but mitigable under CEQA and the CEQA *Guidelines*. This finding nevertheless requires the project applicant to obtain an incidental take permit(s) from CDFG after project approval, and the take permit(s) will not be issued unless CDFG makes findings of "no jeopardy" regarding the spineflower. A summary of the types of actions/measures to be followed include:

- Spineflower Special Study Mitigation Overlay;
- Spineflower Preserves;
- Connectivity, Reserve Design and Buffers;
- Preserve Protection/Fencing;
- Preserve Protection/Hydrological Alterations;
- Engineering, Design and Grading Modifications;
- Fire Management Plan;
- Water Flow Diversion and Management Program;
- A Biological Monitor;

- Construction Impact Avoidance Measures, including water control, storm water flow redirection, and treatment of graded slopes;
- Reassessment Requirement;
- Newhall Ranch Monitoring and Management Program;
- Translocation/Reintroduction Program; and
- Notification of and Limitation on On-going Agricultural Activities.

For additional information regarding all the mitigation measures being required, *see* **Section 2.6, Spineflower and Other Sensitive Plant Species**.

Additional Alternatives

In keeping with CEQA's requirement that an EIR assess a range of reasonable alternatives to a project, and given the information regarding the spineflower located on the Specific Plan site and the potential for significant impacts to the plant, this Revised Draft Additional Analysis identifies an expanded analysis of "Alternative 1 - No Project Alternative", and provides three additional alternatives to the Specific Plan that are specifically intended to address potentially significant impacts to the spineflower. These alternatives are referred to as "Alternative 7 – Spineflower Translocation Alternative", "Alternative 8 – Spineflower Avoidance Alternative I" and "Alternative 9 – Spineflower Avoidance Alternative II". Please note that Alternatives 2 through 6 were already adequately analyzed in the Newhall Ranch Revised Draft EIR (March 1999).

Alternative 1 – No Project Alternative - The No Project Alternative is required by the CEQA *Guidelines*, and it compares the impacts which might occur if the site is left in its present condition with those that would be generated by the proposed Specific Plan. Under the No Project Alternative, the Specific Plan site would remain as vacant land with on-going oil and natural gas operations; agricultural activities would remain along the Santa Clara River Corridor, on the mesas overlooking the River, and in the wider canyon bottoms; and cattle grazing would remain in Potrero Canyon, along the River, and in other upland and mountainous portions of the Specific Plan site. In addition, Southern California Edison Company and Southern California Gas Company would retain their on-site facilities and the site would continue to be used for motion picture filming.

Although nothing would change within the Specific Plan boundaries under this scenario, the disturbance associated with retaining existing uses on the site would continue. For instance, grazing and on-going farming activities onsite would continue to disturb the soil surface and existing onsite

vegetation. While such disturbances would continue with the No Project Alternative, they would be of lesser magnitude than the Specific Plan, although some areas that would be protected under the Specific Plan would continue to be disturbed under the No Project Alternative.

In addition, under the No Project Alternative, the applicant would continue with its farming/agricultural, grazing and oil and gas operations. The continuation of farming/agricultural operations could also legally intensify over most portions of Newhall Ranch. In particular, the spineflower population areas existing on Newhall Ranch could be converted legally to row crops or dry farming. Similarly, spineflower population areas could continue to be subject to on-going cattle grazing. On Newhall Ranch, the known spineflower populations occur in agricultural production areas, including farming and cattle grazing. In short, without implementation of the Specific Plan, including its revised mitigation program relating to the spineflower and other sensitive plant species, the onsite spineflower populations could be lawfully damaged or otherwise destroyed in connection with existing and on-going agricultural/farming/grazing operations.

Based solely on environmental criteria, however, the No Project Alternative would be considered environmentally superior to the Specific Plan because the potential Specific Plan-related impacts described in Section 4.0 of Newhall Ranch Revised Draft EIR (March 1999) would not occur. However, by retaining the Specific Plan site under existing conditions, most of the applicant's Specific Plan objectives would not be met and, if development does not occur on the site, the anticipated future demand for housing[2] and commercial services would likely stimulate development elsewhere in the Santa Clarita Valley, including development in less accessible areas of the Valley with environmental resources that may be comparable to or of greater value than those found on the Specific Plan site. Section 2.7 states that because implementation of this alternative would not meet the applicant's objectives for the site and would likely just divert urban development from this site to another, the alternative is not considered acceptable.

Alternative 7 – Spineflower Translocation Alternative (Same Amount of Development, Spineflower Populations Translocated On site) - The primary purpose of Alternative 7 is to avoid significant impacts to the on-site spineflower populations by actively translocating all known spineflower plants and seed bank to a location on the Specific Plan site suitable for spineflower growth, including the collection of top soils containing spineflower plants and seed bank, so that the top soil could be relocated to the same relocation area(s) as the translocated spineflower plants. The basis for this alternative is found in the California Native Plant Protection Act (Fish and Game Code, Sections 1900-

2 *See*, Southern California Association of Government population projections for project census tracts, Newhall Ranch Revised Draft EIR, Section 4.21, Population, Housing and Employment.

1913). Consistent with the legal protections afford by the Native Plant Protection Act, this alternative would protect all known onsite spineflower populations for ten days until CDFG salvages the plants through transplantation or translocation activities within the Specific Plan site.

Under Alternative 7, the Specific Plan site would be developed consistent with the Specific Plan Land Use Plan; the same amount of residential, commercial, industrial and other proposed land uses would occur on the site. However, as part of this alternative, several potential translocation areas are designated on the Specific Plan site. The spineflower potentially impacted by implementation of the Specific Plan, without mitigation, presently occupy over 6 acres of land area. While the amount of land set aside for this purpose has not been quantified, given the overall size of the Newhall Ranch area, at least 24 acres of relocation area could be readily found in onsite locations suitable for this species (24 acres allows for a 4:1 replacement ratio).

Given that Alternative 7 would result in the same amount of development as the proposed Specific Plan, the direct and indirect impacts of Alternative 7 would be the same as the Specific Plan with the exception of potential impacts to the spineflower and other resources that may be located within the translocation area. While all the Specific Plan objectives would be met with this alternative, Alternative 7 may not necessarily be considered environmentally superior to the Specific Plan with respect to spineflower impacts. While plants, along with the topsoil, would be salvaged and moved to areas containing spineflower plants collected and placed in translocation areas, temporary disturbance to most of the spineflower populations would occur during this process. In addition, some of the translocation areas would not have the same degree of connectivity to proposed open area that would occur under the Specific Plan. Conversely, the mitigation plan proposed as part of the Specific Plan would result in the direct preservation in place of significantly more of the known spineflower plant area and would result in several more mitigation features (*i.e.*, connectivity, buffering, providing hydrologic protection of spineflower areas, managing water flow, *etc.*) than would be provided under this Alternative. Consequently, Alternative 7 is not considered as favorable from a rare plant perspective as the Specific Plan.

Alternative 8 – Spineflower Avoidance Alternative I (21,182 Units, Four Percent Reduction in Residential Development, 13 Percent Reduction in Non-Residential Development, Smaller Footprint) - The primary purpose of Alternative 8 is to avoid or minimize the potentially significant direct and indirect biological impacts to the spineflower created by the Specific Plan by reducing the amount of development and by reducing the footprint upon which such development would occur. Under this alternative, a setback of 150 feet from populations of spineflower is proposed. In doing so, many other impacts which could occur as a result of site development might also be reduced in magnitude.

Alternative 8 proposes 21,182 Residential units, 5.24 million square feet of Commercial uses, a water reclamation plant, and a golf course (It should be noted that the commercial square footage indicated is an estimate only for impact evaluation purposes). Development under Alternative 8 would not occur at or near most areas that have known populations of spineflower. This alternative assumes that a minor "take", or impact, would occur to small spineflower populations that are isolated and/or would occur in other areas to allow for the construction of major infrastructure components, such as the extension of Magic Mountain Parkway through the site to future Potrero Canyon Road would impact the spineflower near Grapevine Mesa. In addition, many of the proposed spineflower mitigation measures proposed in **Section 2.7** would not occur.

Because some of the environmental impacts of the Specific Plan would be avoided or minimized with Alternative 8, it is environmentally superior to the Specific Plan in some respects (*e.g.*, air quality impacts, traffic impacts, noise impacts, etc). However, Alternative 8 has been rejected in favor of the Specific Plan because Alternative 8 too narrowly limits the range of housing opportunities provided and because many of the basic objectives of the Specific Plan identified in the Project Description of this EIR (Revised Draft EIR Section 1.0) would not be achieved. In addition, when compared with the Specific Plan with the proposed mitigation to spineflower impacts, the preserved spineflower populations under this alternative would not be connected to proposed open areas as proposed under the Specific Plan. In addition, grazing activities would continue with Alternative 8 in the High Country SMA and in areas not within spineflower preserve boundaries. Also, the applicant has indicated that the Open Areas of the High Country Special Management Area would not be dedicated for public use, but would remain in private ownership with no provision for public access. From a biological standpoint, the reduction in grading and avoidance of most on-site spineflower populations under Alternative 8 could environmentally outweighs the loss to the public of the High Country Special Management Area. However, this alternative also allows a "take", or impact, to occur to small spineflower populations that are isolated and/or in other areas to allow for the construction of major infrastructure components, such as the extension of Magic Mountain Parkway. When compared with the Specific Plan with the proposed mitigation to spineflower impacts presented in **Section 2.6**, the preserved spineflower populations would not be connected to proposed open areas as proposed under the Specific Plan. Nor would other proposed mitigation measures occur. Specific measures proposed within the Revised Draft Additional Analysis that would not occur with this alternative include:

- the Agency consultation provisions proposed in **Section 2.6**;
- the provision of Spineflower Special Study Mitigation Overlays;
- the creation of managed preserves as described in **Section 2.6**;

- the connectivity and buffer provisions as described in **Section 2.6**;
- the provision for future engineering, design and grading review and modifications;
- the monitoring and management provisions as described in **Section 2.6**; and
- consultation provisions regarding on-going agricultural activities.

In effect, under Alternative 8 populations of spineflower would essentially be surrounded by proposed development within 150 feet with fencing to prohibit trespass, thereby eliminating any connection to open space areas and the active preserve management and consultation provisions proposed as mitigation in **Section 2.6**. Based on this information, Alternative 8 is not biologically superior to the Specific Plan with respect to impacts to the spineflower. For all the reasons provided in **Section 2.7**, Alternative 8 has been rejected in favor of the proposed Specific Plan as mitigated.

Alternative 9 – Spineflower Avoidance Alternative II (20,281 Units, Eight Percent Reduction in Residential Development, 20 Percent Reduction in Non-Residential Development, Smaller Footprint) - The primary purpose of Alternative 9 is, like Alternative 8, to avoid or minimize the potentially significant direct and indirect biological impacts to the spineflower created by the Specific Plan by reducing the amount of development and by reducing the footprint upon which such development would occur. Under this alternative, a setback of 300 feet from populations of spineflower is proposed. In doing so, many other impacts which could occur as a result of site development might also be reduced in magnitude. Alternative 9 proposes 20,281 Residential units, 4.98 million square feet of Commercial uses, a water reclamation plant, and a golf course (It should be noted that the commercial square footage indicated is an estimate only for impact evaluation purposes). Development under Alternative 9 would not occur at or near most areas that have known populations of spineflower.

Because some of the environmental impacts of the Specific Plan would be avoided or minimized with Alternative 9, it is environmentally superior to the Specific Plan in some respects (*e.g.*, air quality impacts, traffic impacts, noise impacts, etc). However, Alternative 9 has been rejected in favor of the Specific Plan because Alternative 9 too narrowly limits the range of housing opportunities provided and because many of the basic objectives of the Specific Plan identified in the Project Description of this EIR (Revised Draft EIR Section 1.0) would not be achieved. In addition, when compared with the Specific Plan with the proposed mitigation to spineflower impacts, the preserved spineflower populations would not be connected to proposed open areas to the same degree as they would be under the mitigation proposed for the Specific Plan. In addition, grazing activities would continue with Alternative 9 in the High Country SMA and in areas not within spineflower preserve boundaries. Also, the applicant has indicated that the Open Areas of the High Country Special Management Area would not be dedicated for public use, but would remain in private ownership with no provision for

public access. From a biological standpoint, the reduction in grading and avoidance of most on-site spineflower populations under Alternative 9 could environmentally outweighs the loss to the public of the High Country Special Management Area. However, this alternative also allows a "take", or impact, to occur to small spineflower populations that are isolated and/or in other areas to allow for the construction of major infrastructure components, such as the extension of Magic Mountain Parkway. When compared with the Specific Plan with the proposed mitigation to spineflower impacts presented in **Section 2.6**, the preserved spineflower populations would provide a small degree of connectivity to open areas; however, the degree of connectivity would not be as great as would occur under the mitigation proposed for the Specific Plan. Nor would other proposed mitigation measures occur. Specific measures proposed within this Draft Additional Analysis that would not occur with the alternative include:

- the Agency consultation provisions proposed in **Section 2.6**;
- the provision of Spineflower Special Study Mitigation Overlays;
- the creation of managed preserves as described in **Section 2.6**;
- the connectivity and buffer provisions as described in **Section 2.6**;
- the provision for future engineering, design and grading review and modifications;
- the monitoring and management provisions as described in **Section 2.6**; and
- consultation provisions regarding on-going agricultural activities.

In effect, under Alternative 9 populations of spineflower would essentially be surrounded by proposed development within 300 feet with fencing to prohibit trespass, thereby eliminating any connection to open space areas and the active preserve management and consultation provisions proposed as mitigation in **Section 2.6**. Based on this information, Alternative 9 is not biologically superior to the Specific Plan with respect to impacts to the spineflower. For all the reasons provided in **Section 2.7**, Alternative 9 has been rejected in favor of the proposed Specific Plan as mitigated.

1.0 INTRODUCTION AND PROJECT DESCRIPTION

In April 2001, the County of Los Angeles publicly circulated the Draft Additional Analysis for the Newhall Ranch Specific Plan and Water Reclamation Plant Final Environmental Impact Report ("Final EIR") (SCH No. 95011015). In October 2001, the County then publicly circulated a Final Additional Analysis (consisting of Comments and Responses to Comments) as part of Additional Analysis review proceedings before the County of Los Angeles Regional Planning Commission. As discussed more fully below, the purpose of the Additional Analysis is to address six issues raised by the trial court in litigation regarding the adequacy of the prior Newhall Ranch Final EIR. Since public circulation of the Newhall Ranch Draft Additional Analysis (DAA) and Final Additional Analysis (FAA), additional information has been presented, which resulted in the County's decision to revise and recirculate portions of the Draft Additional Analysis.

This Revised Draft Additional Analysis has been prepared to describe changes to the sources of water for the Specific Plan, to provide an update regarding sensitive plant species occurring on the Specific Plan site, to provide additional alternatives to the Specific Plan and to correct minor errors in the prior Draft Additional Analysis (April 2001). The four revised sections indicated below are intended to replace the corresponding sections in the prior Draft Additional Analysis. For example, the Water Resources section (**Section 2.5**) presented in this document completely replaces the Water Resources section (Section 2.5) presented in the prior Draft Additional Analysis (April 2001). The SEA General Plan Consistency section (**Section 2.4**) presented in this document completely replaces the SEA General Plan Consistency section (Section 2.4) presented in the prior Draft Additional Analysis (April 2001). Edited copies of the four revised sections, showing the revisions made in underline and strikeout format, are available for review at the County of Los Angeles Public Library and County of Los Angeles Department of Regional Planning, 320 West Temple Street, 13th Floor, Los Angeles, California 90012. Contact Mr. Lee Stark.

The following sections of the Draft Additional Analysis have been revised and replaced:

- **Executive Summary,**
- **Section 1.0, Introduction and Project Description**
- **Section 2.5, Water Resources**, and
- **Section 2.4, SEA General Plan Consistency.**

In addition, the following two new sections have been added to the Draft Additional Analysis:

- **Section 2.6, Spineflower and Other Sensitive Plant Species,** and
- **Section 2.7, Additional Alternatives.**

This document also presents the unchanged sections of the Draft Additional Analysis, and hence, represents a complete up-to-date version of the Newhall Ranch Specific Plan Additional Analysis.

1.1 INTRODUCTION

In March 1999, the County of Los Angeles Board of Supervisors (the County) certified the Final Environmental Impact Report (FEIR) for the Newhall Ranch Specific Plan and Water Reclamation Plant (WRP) (SCH No. 95011015), and approved the Newhall Ranch Specific Plan and WRP. Subsequently, various parties challenged the County's certification of the FEIR and approval of the Specific Plan and WRP in a consolidated action in Kern County Superior Court entitled, *United Water Conservation District v. County of Los Angeles, et al.*, Case No. 239324 RDR. The trial court found that the FEIR required additional analysis with regard to the following issues: (1) traffic impacts to Ventura County arterial roadways exiting State Routes 23 and 126; (2) biological impacts to the Ventura County portion of the Salt Creek wildlife corridor; (3) biological impacts in the Santa Clara River corridor caused by channelization and bank hardening; (4) adequacy of water sources for the proposed Specific Plan, including impacts caused by employment of the Aquifer Storage and Recovery (ASR) alternative; and (5) the alternative of siting the Specific Plan's Water Reclamation Plant off-river, including an analysis of biological impacts of that siting. The trial court also instructed the County to ensure that the Specific Plan is consistent with the County General Plan policies requiring protection of natural resources in Significant Ecological Areas (SEAs) as those standards apply to SEA 23, and the General Plan Development Monitoring System (DMS) policies as they relate to water supplies. Consequently, the Court set aside approval of the Specific Plan and WRP, and FEIR certification, but only with respect to the six issues discussed above. The trial court did not set aside approval of the Specific Plan and WRP or the FEIR certification, with respect to any other issues.

For further information regarding the Additional Analysis, the following documents are attached in Appendix 1.0 of the RDAA: (a) Peremptory Writ of Mandate issued by the Kern County Superior Court; (b) Letter to the Honorable Board of Supervisors, County of Los Angeles, from Lloyd W. Pellman, County Counsel, dated August 17, 2000, which discusses the recommended action to be taken by the Board of Supervisors regarding certification of the FEIR and approval of the Newhall Ranch Specific Plan and

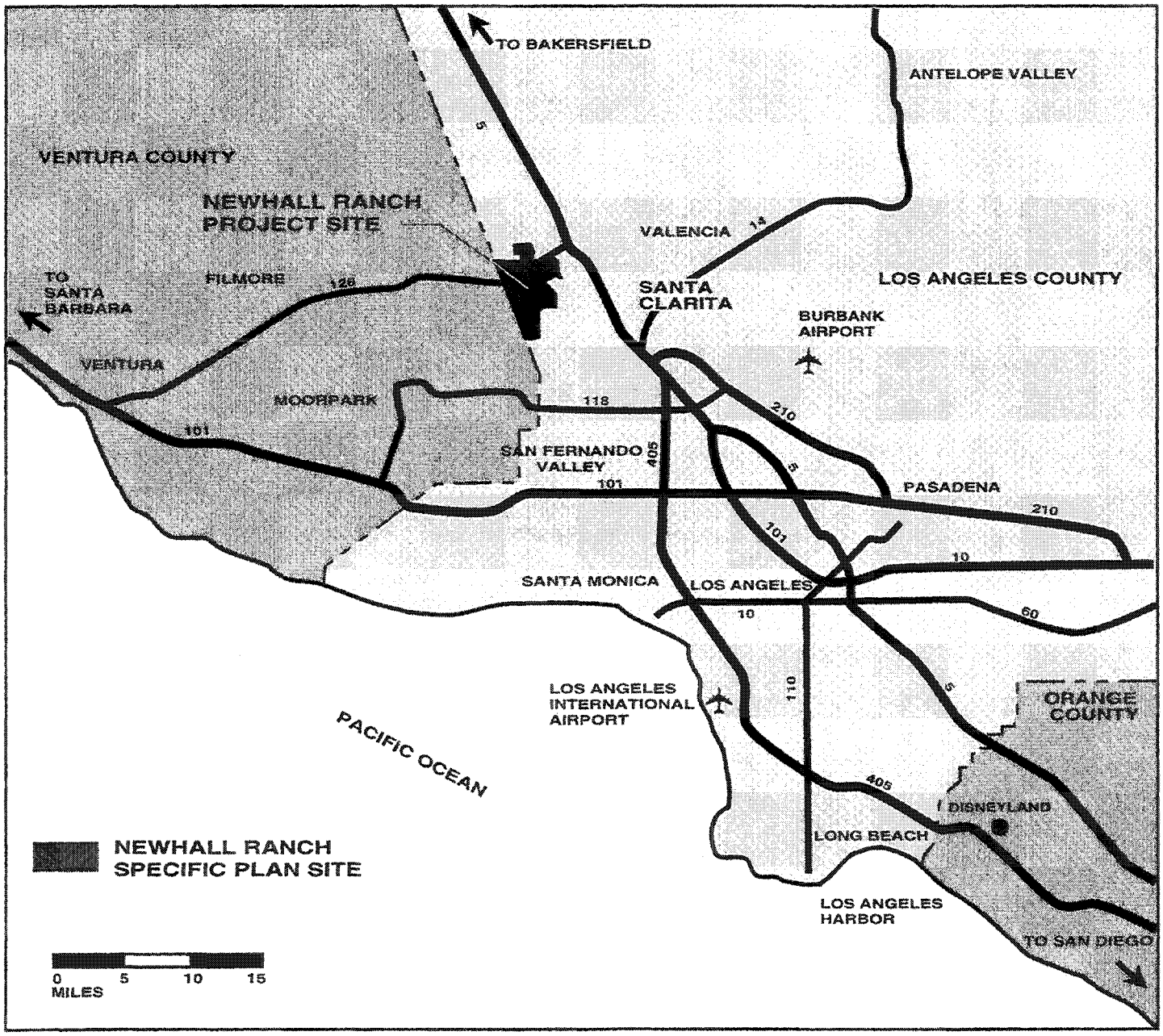
WRP; and (c) Resolution of the Board of Supervisors, adopted August 29, 2000, including a copy of the trial court's Writ.

The County of Los Angeles, through the Department of Regional Planning, is the "lead agency" in connection with the preparation of this Additional Analysis to the FEIR. The purpose of this Additional Analysis is to address each of the six issues discussed above. To be consistent with the trial court's order, this Additional Analysis is presented in six technical sections, one section for each of the issues that the trial court directed be further studied. An additional section entitled, **2.6 Spineflower and Other Sensitive Plant Species**, was added to the analysis due to the existence of additional information. The final Mitigation Monitoring Plan from the Final Newhall Ranch Specific Plan and WRP EIR is found in **Section 4.0** of this document. Each of the sections indicated above, except those relating to traffic in Ventura County and water supply, were provided to the County of Los Angeles Significant Ecological Area Technical Advisory Committee (SEATAC) for review. As a result of that review, changes to the analysis were made in response to SEATAC comments.

1.2 PROJECT DESCRIPTION

The Newhall Ranch Specific Plan covers a total of approximately 11,963 acres. As directed by the trial court, the County will again consider approval of the Specific Plan and WRP, but only with respect to the additional analysis of the six issues discussed above. The revised Specific Plan, as approved by the County of Los Angeles Board of Supervisors in March 1999, includes 21,615 dwelling units on 4,835 acres (including an 18-hole golf course, 10 neighborhood parks and seven schools), 630 acres of mixed uses (including residential, office, and retail commercial uses), 67 acres of commercial uses, 256 acres of business park uses (including light manufacturing, warehousing and distribution), 37 acres of visitor serving uses, 6,138 acres of open area, 3 community parks on 186 acres, and 367 acres of arterial roads and community facilities (including a new 6.9 million gallon per day water reclamation plant, one library and two fire stations). The build-out of the Specific Plan is projected to occur over approximately 25 to 30 years, depending upon economic and market conditions. The build-out of the Newhall Ranch Specific Plan would eventually result in an on-site resident population of approximately 60,000 persons. As a result of Board of Supervisors' action, the amount of development allowed under the Specific Plan and the development footprint have been reduced. Specifically, the number of dwelling units allowed has been reduced by 730 units, from 21,615 to 20,885 units, the amount of commercial development has been reduced by approximately 132,000 square feet, and the development footprint has been reduced by 85 acres. It should be noted that these revisions to the Specific Plan result in a reduction in the Specific Plan's water demand by 285 acre-feet per year, from a total of 17,680 to 17,395 acre-feet per year. In addition, the demand for energy, the number of traffic trips generated, the amount of wastewater

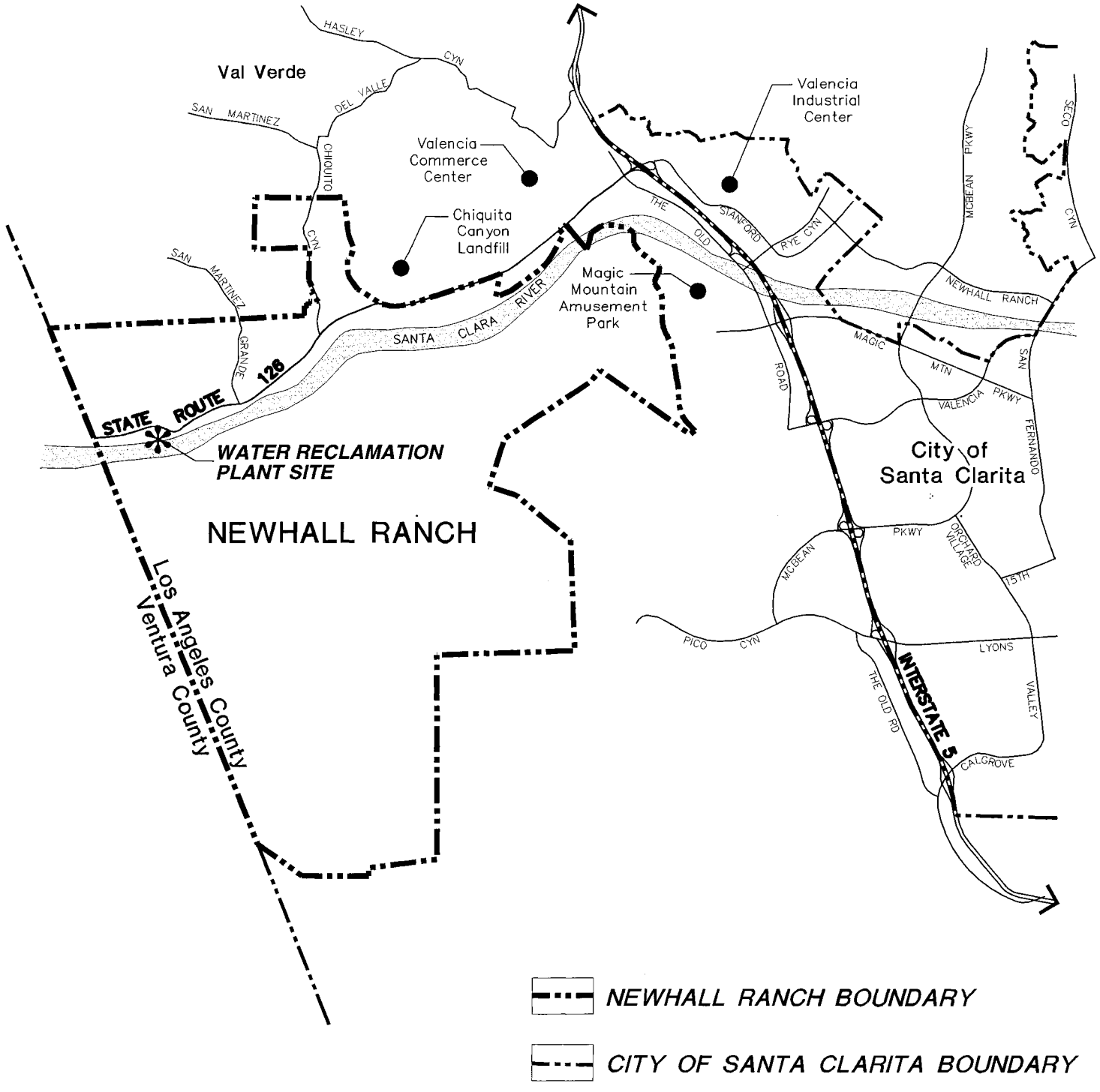
generated and the corresponding impacts (*e.g.*, noise emissions, air emissions, *etc.*) also decrease. In order to present a worst-case analysis of impact potential, the traffic, water and floodplain modification analyses presented in this document still assume the larger Specific Plan as it was originally approved by the Board of Supervisors. The analysis of SEA General Plan Consistency has been updated to reflect the smaller development footprint. For additional information regarding the reductions in impact potential of the Specific Plan, *see* Topical Response 13 presented in Volume VI of the Final Additional Analysis, dated May 2003. The location of the Specific Plan area and WRP site are illustrated on **Figures 1.0-1** and **1.0-2**. The amended and approved Newhall Ranch land use plan and statistical summary are shown in **Figure 1.0-3** and **Table 1.0-1**, respectively.



NEWHALL RANCH™
SPECIFIC PLAN
Prepared For: Newhall Ranch Company

EXHIBIT 1.0-1
REGIONAL LOCATION

Computer Mapping by FORMA Systems



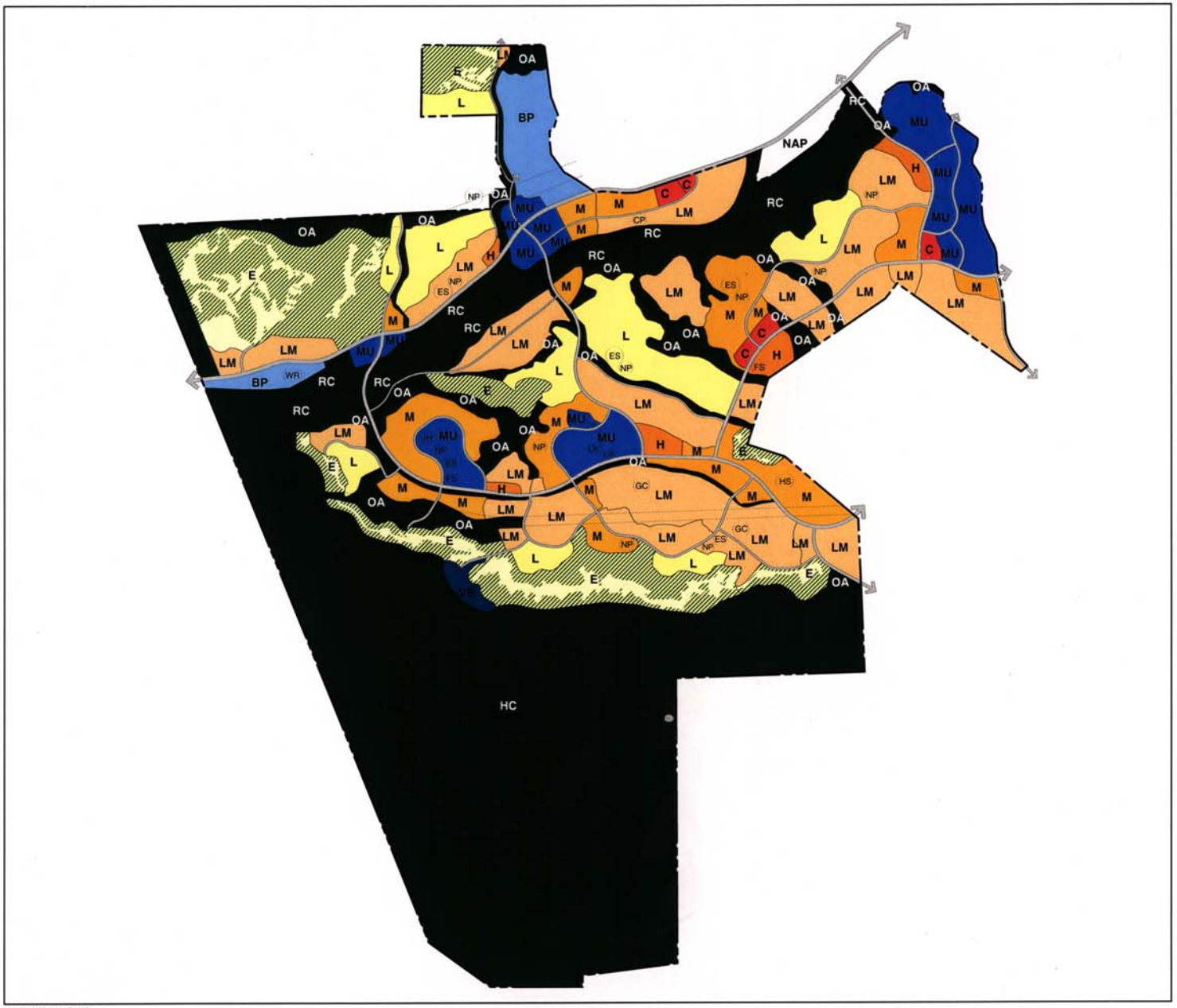
NEWHALL RANCH™
SPECIFIC PLAN

Prepared For: Newhall Ranch Company

EXHIBIT 1.0-2
VICINITY MAP

Computer Mapping by FORMA Systems

FEBRUARY 1999



NEWHALL RANCH®
SPECIFIC PLAN
Prepared For: Newhall Ranch Company

- E — ESTATE RESIDENTIAL
- L — LOW RESIDENTIAL
- LM — LOW-MEDIUM RESIDENTIAL
- M — MEDIUM RESIDENTIAL
- H — HIGH RESIDENTIAL
- MU — MIXED USE
- C — COMMERCIAL (RETAIL/OFFICE)
- BP — BUSINESS PARK
- VS — VISITOR SERVING
- OA — OPEN AREA
- RC — RIVER CORRIDOR SPECIAL MANAGEMENT AREA (SEA #23)
- HC — HIGH COUNTRY SPECIAL MANAGEMENT AREA (SEA #20)
- ROADS
- SCE/UTILITY EASEMENTS

LAND USE OVERLAYS (POTENTIAL LOCATIONS):

- (CP) COMMUNITY PARK
- (NP) NEIGHBORHOOD PARK
- (ES) ELEMENTARY SCHOOL
- (JH) JUNIOR HIGH SCHOOL
- (HS) HIGH SCHOOL
- (GC) GOLF COURSE
- (LK) COMMUNITY LAKE
- (FS) FIRE STATION
- (S) ELECTRICAL SUBSTATION
- (LIB) LIBRARY
- (WR) WATER RECLAMATION PLANT

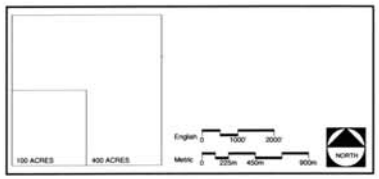


EXHIBIT 1.0-3
LAND USE PLAN

FEBRUARY 1999

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Table 1.0-1
Land Use Plan Statistical Breakdown
(Table 2.3-1 from Specific Plan)

LAND USES	Gross Acres	Dwelling Units	Second Units [1]
Residential:			
Estate [1]	1,324.0	423	423
Low	744.4	671	
Low-Medium	1,781.7	6,000	
Medium	841.0	7,371	
High	121.8	2,319	
Subtotal	4,812.9	16,784	423
Mixed-Use and Non-Residential:			
Mixed Use [2]	628.7	4,101	
Commercial	67.2		
Business Park	248.6		
Visitor Serving	36.7		
Subtotal	981.1	4,101	0
Major Open Areas:			
High Country SMA	4,184.6		
River Corridor SMA	974.8		
Open Area	1,010.4		
Subtotal	6,169.8	0	0
TOTAL	**11,963.8**	**20,885**	**423**
(Total Units including Second Units [1])		21,308	

	Land Use Overlays	Approx. Acre Allocation
10	Neighborhood Parks	50 ac
5	Elementary Schools	35 ac
1	Junior High School	25 ac
1	High School	45 ac
1	Golf Course	180 ac
2	Fire Stations	2 ac
1	Library	2 ac
1	Water Reclamation Plant	15 ac
1	Lake	15 ac
3	Community Parks	181 ac
1	Electrical Substation	2 ac
	Arterial Roads	331 ac

[1] *Within each Estate lot, one (1) Second Unit is eligible to be constructed with the approval of a CUP (See, Second Units, Section 3.9). This may increase the total number of permitted dwelling units of 21,615 by 423, to a maximum total units of 22,038.*

[2] *Mixed-use includes commercial and residential uses.*

2.0 ENVIRONMENTAL ANALYSIS

PURPOSE

*This section presents the additional analysis of five of the six specific issues previously analyzed in the Newhall Ranch Specific Plan and Water Reclamation Plant Final EIR, as required by the trial court. Issues addressed in this section include: Traffic in Ventura County (**Section 2.1**); Salt Creek Corridor (**Section 2.2**); Floodplain Modifications (**Section 2.3**); SEA General Plan Consistency (**Section 2.4**); and Water Resources (**Section 2.5**). An additional section entitled, **Spineflower and Other Sensitive Plant Species (Section 2.6)** has been added to the analysis due to the existence of additional information.*

Additional analysis of the sixth specific issue, Water Reclamation Plant Alternatives, is presented in **Section 3.0**.

The trial court found that analysis of all other issues in the Newhall Ranch Specific Plan and Water Reclamation Plant Final EIR was adequate and complete, and no additional analysis of those issues is required.

2.1 Traffic in Ventura County

2.1.1 INTRODUCTION

On page 3 of the Writ (Appendix 1.0(a)), the trial court found that the Newhall Ranch Final EIR did not demonstrate that the local roadways exiting State Routes 126 and 23 in Ventura County would not be impacted above the 1 percent impact criterion used in the EIR; therefore, there was no basis for the County's finding that traffic impacts would not be significant on those roads in Ventura County.

In light of its ruling, the trial court directed Los Angeles County to extend the traffic impact methodologies employed in analyzing the Specific Plan's traffic impacts in Los Angeles County to the analysis of the Specific Plan's traffic impacts on arterial roadways in Ventura County until the 1 percent impact criterion used in the EIR is reached. In addition, the trial court directed that the supplemental analysis include an assessment of the project's traffic impacts on arterial roads in Ventura County, including the identification of feasible mitigation measures. Finally, the trial court directed that the County adopt such additional or revised findings as may be necessary to comply with CEQA and the trial court's Writ.

In response to the trial court's direction, this section summarizes the results of the supplemental traffic analysis, discusses project impacts on arterial roads in Ventura County and identifies whether any additional recommended mitigation measures are required.

2.1.2 SOURCES

The information presented in this section is supported by the original traffic analysis contained in the Final EIR and is based on the results of a supplemental traffic analysis prepared for Los Angeles County by Austin-Foust Associates, Inc. A copy of the supplemental traffic report and associated technical memorandum are presented in Appendix 2.1 of ~~this~~ the Additional Analysis.

2.1.3 BACKGROUND AND METHODOLOGY

2.1.3.1 Background

The original Newhall Ranch Traffic Analysis contained in the Final EIR was prepared using traffic forecast data from the Santa Clarita Valley Consolidated Traffic Model (SCVCTM). This traffic-forecasting model was developed jointly by the County of Los Angeles and the City of Santa Clarita to

facilitate the analysis of transportation needs in the Santa Clarita Valley. The model was developed as a "windowed" model in which the Santa Clarita Valley study area was extracted as a window of the overall region. As a windowed model, the SCVCTM features only the land use and highway network within the Santa Clarita Valley and has a set of "cordons" which define the edges of the modeled area. These cordons are designated points on the highway network where regional traffic from outside the window enters and exists the modeled area.

The modeled approach used for the Los Angeles County traffic analysis permits a realistic forecasting of conditions with and without the proposed Specific Plan for areas within the Santa Clarita Valley. However, the prior traffic analysis did not provide the same forecasting ability outside of that area (*e.g.*, Ventura County). Furthermore, at the time that analysis was carried out, there was no comparable traffic modeling capability in Ventura County, nor an available regional model which could provide the necessary data. Therefore, it was not possible to apply the methodologies that were used in Los Angeles County to Ventura County arterial roadways.

Despite the lack of a Ventura County traffic model, Los Angeles County addressed the Specific Plan's impacts in Ventura County, to the extent possible, using information obtained from the SCVCTM. Although, as discussed above, the forecasting ability of the SCVCTM does not extend west of the Los Angeles/Ventura County line, one of the cordons of the SCVCTM model area is State Route 126 at the County line. As with all the external traffic relationships in the SCVCTM, future volumes at this cordon point were derived from regional traffic forecast data and incorporated into the SCVCTM as traffic entering and leaving the modeled area at the cordon point. Thus, the SCVCTM provides a specific future *without-project* volume of traffic crossing the County line at this cordon point.

To evaluate the Specific Plan's traffic impacts in Ventura County, the Newhall Ranch EIR utilized a simplistic approach which provided impact data for SR-126 at the County line. Under this approach, the Specific Plan's project trips figure for SR-126 at the County line (two percent of total project trips, based on the SCVCTM cordon data) was simply added to the estimated future traffic on SR-126. However, "project impact volumes" derived through traffic modeling are substantially lower than figures obtained through this simple additive approach. Consequently, this simplistic approach substantially *overstated* the Specific Plan's *actual* traffic impacts to SR-126 at the County line. Furthermore, recognizing this overestimation of impacts on SR-126, the Newhall Ranch Final EIR concluded that the Specific Plan would cause minimal impacts to local arterial roads in Ventura County. However, at the time the Newhall Ranch EIR was prepared, no modeling data was available to directly support this conclusion. Specific reasons for the overstatement of Specific Plan impacts to SR-126 at the County line are described below.

(a) Project Trips versus Project Impact Volumes

There are two important concepts involved in determining the traffic impacts of a project in a long-range context: (i) "project trips" and (ii) "project impact volumes". Both of these concepts involve information relating to the project and both are typically obtained from traffic forecasting models. The project trips concept describes the number of project trips on a given roadway link (*i.e.*, trips to or from the project). That number is derived from the project trip distribution value for the link. Each roadway link in the study area has a project trip distribution value which is the percent of total project traffic on that link. The project trips figure for a given roadway link is calculated by multiplying the project trip distribution value for that link by the total number of trips generated by the project. For example, if the project trip distribution value for a given roadway link is two percent and the total number of project trips is 1,000, this means the link in question will be carrying two percent of the total project trips, or 20 project trips.

"Project impact volumes" are determined through a comparison of long-range traffic volumes on a roadway link with and without the project. The difference in the with- and without-project volumes is the "project impact volume". This figure is used to analyze a project's traffic impacts. Crucial to an understanding of traffic impact methodology is the fact that, for a given roadway link, the "project impact volume" figure is not the same as the number of "project trips" for that link (even though this may appear to be a logical interpretation of "project trips"). Project trips are not simply added to the no-project volume on a link to derive with-project volumes. No-project and with-project volumes are estimated independently using a traffic model, and then the no-project volume is subtracted from the with-project volume. In producing these two sets of future traffic forecasts, it is assumed that all land uses outside the project area and their associated trip generation are exactly the same with or without the project. However, the trip patterns for each forecast change when some trips are directed to the project, and trips directed to other locations under a no-project scenario are redirected to the project. As part of this redirection, or "redistribution", trips to or from the project will use many of the same roadways, thereby not actually adding "new" trips to those roadways.

To further assist in understanding this redistribution effect, two commonly-used traffic modeling concepts, the "fixed population and employment base" and the "redistribution effect", are described below. These concepts are applied by both Los Angeles County and Ventura County in their traffic modeling efforts, and were applied to assess the Specific Plan's impacts to Los Angeles County arterial roadways.

(b) The Fixed Population and Employment Base Concept

This concept assumes that the land uses designated in the General Plans of the jurisdiction in which a proposed project is located (in this case, Los Angeles County), as well as the land uses designated in the general plans of outlying jurisdictions (*e.g.*, Ventura County), remain unchanged in the traffic model. Consequently, there is no change in the estimated future trip generation of those communities as a result of a proposed project (in this case, Newhall Ranch). This concept is known as fixing the population and employment base, and it is important because it is only through using this method that a proposed project's land uses can be added to the traffic model. The model can then redistribute the traffic generated by a proposed project, and the "no-project," and the "with project" scenarios can describe the impact of adding specific land uses to a specific geographic location. In other words, trips that originate in a proposed project (in this case, Newhall Ranch) and have a destination in a remote community (such as Ventura County) do not change the total trip generation for that community's land uses (Ventura County). With or without the proposed project, that community (Ventura County) will continue to generate and attract the same *number* of trips. The only potential change is to the *origin* or *destination* of the trips that will be generated by that community's land uses.

(c) The Redistribution Effect Concept

The great majority of a project's traffic trips are to destinations within the project's local area (*i.e.*, the project area itself and the remainder of the Santa Clarita Valley). Such local project traffic is exemplified by and includes trips to shopping, services, school, recreation and some employment. The remaining minority of traffic trips are not to local destinations, but to regional destinations greater distances away (such as destinations within Ventura County). Those trips will be a combination of trips to "attractors" in that remote area (*i.e.*, to jobs, shopping or recreation) and trips attracted from that area (*e.g.*, Ventura County residents working in Newhall Ranch or shopping or visiting).

In long-term traffic modeling (such as that used by both Los Angeles County and Ventura County), it is assumed that land use patterns at and around the outlying regional destinations (*e.g.*, Ventura County) generate a fixed number of trips (*i.e.*, the "fixed base" described above). Under this fixed base concept, the project being modeled (in this case, Newhall Ranch) would not change the *number* of trips being generated by the land uses in the outlying region (*e.g.*, in Ventura County), but may, as noted above change the *origins* or *destinations* of the trips generated by the land uses in the outlying region. For example, consider an office land use in Ventura County 35 miles from the Los Angeles County/Ventura County line which in the future attracts 10,000 trips per day. The long-term traffic model would show that a small proportion of those trips (say 500) are expected to travel from outside Ventura County (*e.g.*,

from Los Angeles County). Let us say that those trips are expected to travel from Los Angeles County along the Ventura Freeway and the SR-126 corridors. Now Newhall Ranch is added to the model in northern Los Angeles County. Clearly, Newhall Ranch would have no influence on the *number* of trips that would be attracted by the office land use in Ventura County—it would remain 10,000 trips. This is the fixed base concept—the number of trips generated are fixed. However, the model will now show that the traffic patterns on regional roadways (*i.e.*, SR-126 and Ventura Freeway) have changed. The trips have been redistributed, resulting in a slight increase in trips on SR-126 and a slight decrease on Ventura Freeway. However, apart from the changes on these two corridors, no "new" trips occur on local roadways in the outlying region as a result of Newhall Ranch being added to the model.

This redistribution effect is important in estimating the impacts of a project. It is accounted for in all long-range traffic analyses, and is a basic feature of the traffic modeling procedures used to identify project impacts. If project trips were simply added to the network, then double-counting would occur (the additive method would assume that the trip generation in non-project areas increases) and the project trip impacts would be substantially overstated. In short, an accurate forecast of a project's traffic impacts is impossible without adjusting for the redistribution effect and that adjustment can only be calculated through traffic modeling.

2.1.3.2 Methodology

Since the time the original traffic study was prepared, a long-range Ventura Countywide Traffic Model ("VCTM") has been prepared by the Ventura County Transportation Commission. The VCTM is based on the regional land use database produced by the Southern California Association of Governments. The database contains land use information on existing and future development patterns for the five county Southern California regions. Consequently, it has been possible to more accurately determine the Specific Plan's impacts to Ventura County arterial roadways. The VCTM includes the whole region (rather than being a windowed formulation as with the SCVCTM). Therefore, the VCTM has the capability of examining the effect of land uses outside of Ventura County, such as those in the Santa Clarita Valley. Accordingly, the VCTM was used to derive both the Specific Plan's project trip distribution and the project impact volumes for arterial roadway links in Ventura County (the same process as was used for the Newhall Ranch study area in Los Angeles County).

2.1.4 EXISTING CONDITIONS

2.1.4.1 County Highway System

The Ventura County highway system comprises part of the Ventura County General Plan Circulation Element and is referred to as the "Regional Road Network". The Regional Road Network was adopted in December 1989, and is currently being updated as part of the Countywide General Plan Amendment scheduled for adoption in 2001. **Figure 2.1-1** shows this highway system for the northeastern part of Ventura County, which is the area addressed in this additional analysis. Existing and predicted future traffic volumes for this roadway network are shown in **Figure 2.1-2.**

2.1.4.2 Highway Capacity

For the Ventura County road system, Ventura County evaluates traffic volumes using average daily traffic (ADT) volumes and capacities that are defined according to different levels of service (LOS). The LOS capacity values established by Ventura County for specific roadway types are as follows:

Average Daily Traffic (ADT) Thresholds

LOS	Class I			Class II	Class III
	2 Lanes	4 Lanes	6 Lanes	2 Lanes	2 Lanes
A	2,400	19,000	29,000	1,500	350
B	5,600	28,000	42,000	3,900	2,000
C	10,000	38,000	57,000	7,000	3,300
D	16,000	47,000	70,000	11,000	5,900
E	27,000	58,000	87,000	21,000	16,000

For two-lane roads, there are three "classes" which are based on a variety of physical and operational attributes (design speed, pavement width, *etc.*). The different capacities for each class reflect the carrying ability of the roadway under its specific class designation.

The "level of service" (LOS) scale is used to evaluate road performance. The LOS levels range from A to F, with LOS A representing free-flow traffic conditions and LOS F representing severe traffic congestion. Descriptions of the quality of traffic flow for the different LOS ranges are shown on **Table 2.1-1**. Various operating LOS policy standards have been established which serve as a guideline for evaluating observed traffic conditions and as a target for evaluating future traffic conditions.

At the local level, Ventura County uses LOS D as the desirable performance level for its arterial roadways. Therefore, the ADT thresholds for LOS D represent the "capacity" for the designated

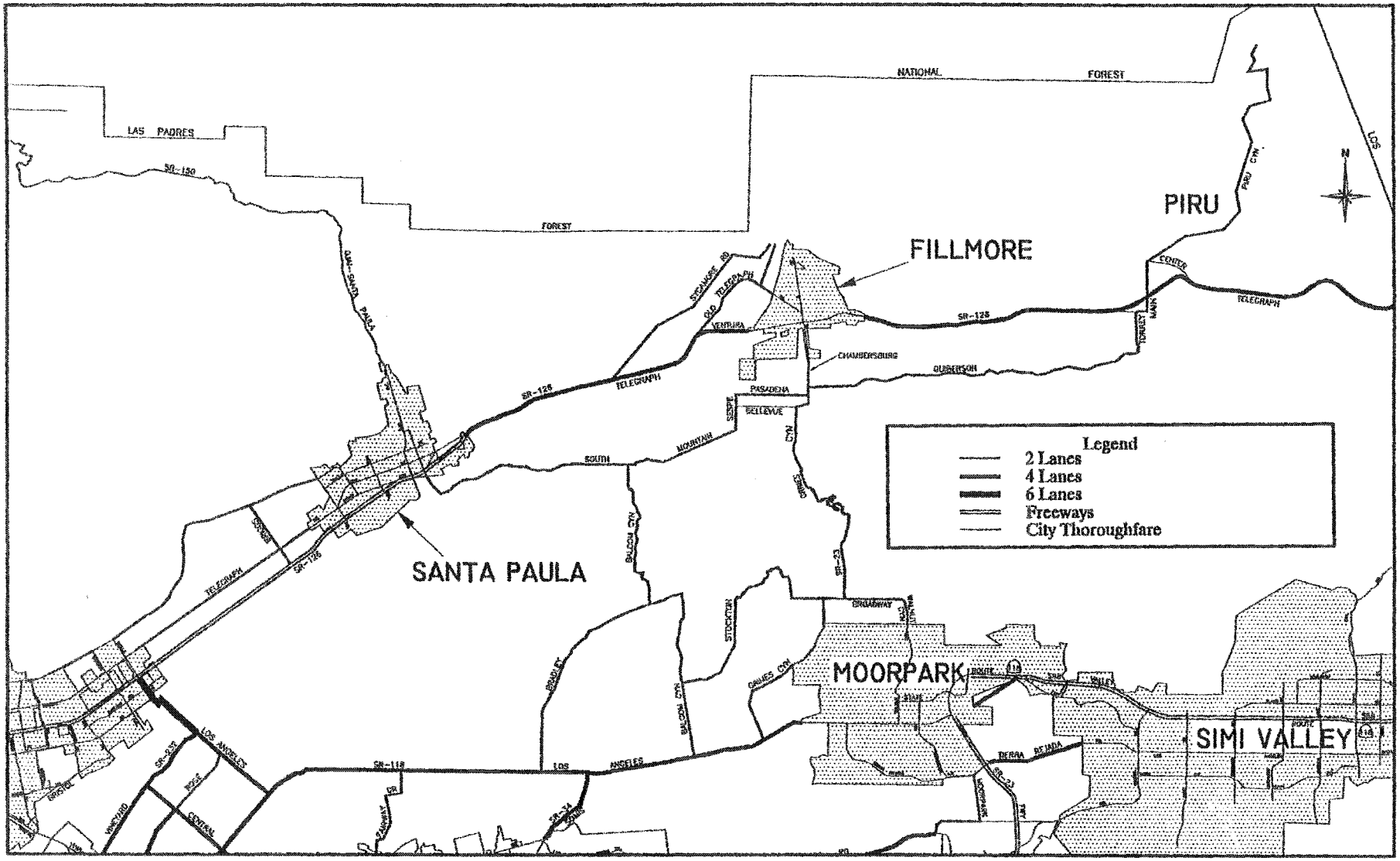

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FIGURE 2.1-1
STUDY AREA HIGHWAY SYSTEM

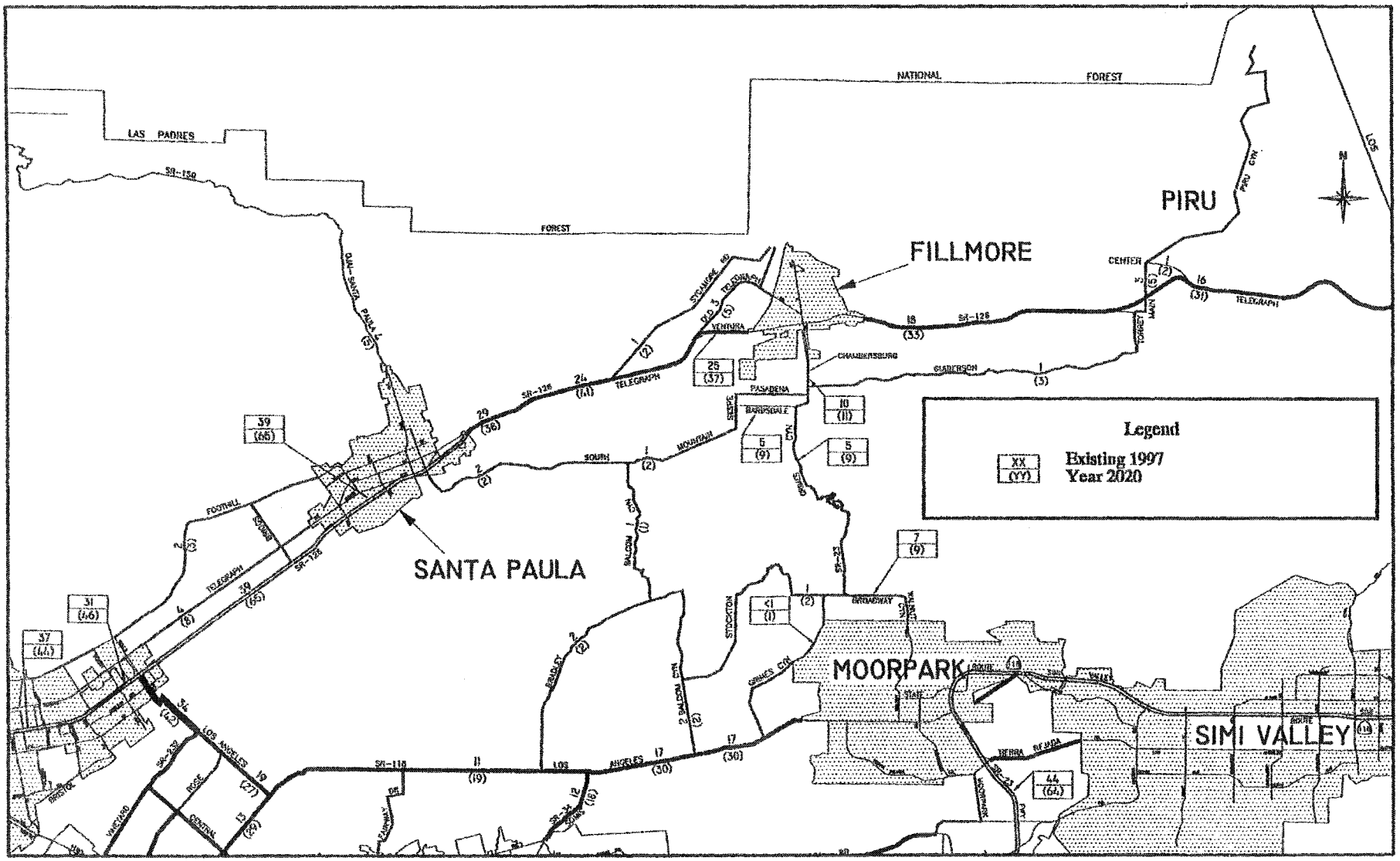

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FIGURE 2.1-2

EXISTING AND PREDICTED ADT VOLUMES ON STUDIED ROADWAY SEGMENTS

arterial roadways in Ventura County, and a volume to capacity (V/C) ratio of 1.0 would represent the maximum volume for LOS M. A V/C ratio of greater than 1.0 would cause the roadway to operate at LOS E or F under this criterion.

Table 2.1-1
Level of Service Descriptions

Level of Service	Traffic Flow Quality	V/C Value
A	Excellent operation. All approaches to the intersection appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation.	0 - .60
B	Very good operation. Many drivers begin to feel somewhat restricted within platoons of vehicles This represents stable flow. An approach to an intersection may occasionally be fully utilized and traffic queues start to form.	.61 - .70
C	Good operation. Occasionally drivers may have to wait more than 60 seconds, and back ups may develop behind turning vehicles. Most drivers feel somewhat restricted.	.71 - .80
D	Fair operation. Cars are sometimes required to wait more than 60 seconds during short peaks. There are no long-standing traffic queues. This level is typically associated with design practice for peak periods.	.81 - .90
E	Poor operation. Some long-standing vehicular queues develop on critical approaches. Delays may be up to several minutes.	.91 - 1.00
F	Forced flow. Represents jammed conditions. Back ups from locations downstream or on the cross street may restrict or prevent movements of vehicles out of the intersection approach lanes; therefore, volumes carried are not predictable. Potential for stop and go type traffic flow.	Above 1.00

Source: Highway Capacity Manual, Special Report 209, *Transportation Research Board, Washington D.C., 1985 and* Interim Materials on Highway Capacity, MCHRP Circular 212, *1982.*

2.1.5 SIGNIFICANCE THRESHOLD CRITERIA

The traffic impact analysis contained in the Newhall Ranch Specific Plan and WRP Final EIR used specific significance threshold criteria to identify the Specific Plan's traffic impacts to Los Angeles County arterial roadways. Those criteria are summarized in **Table 2.1-2**. The analysis used long-range average daily traffic (ADT) volumes to identify project impacts, and the criteria listed in **Table 2.1-1** were applied to the volume to capacity (V/C) ratios on roadway segments within the defined study area

This impact analysis uses a one percent criterion to identify those Ventura County arterial roadways off the State Routes on which the Specific Plan causes a "measurable" increase in traffic. That is, all roadway segments with a measurable change in traffic volume (*i.e.*, one percent or greater) due to the Specific Plan

were identified and then an analysis was performed, to determine if the project caused or contributed to a deficiency.

Table 2.1-2
Significance Threshold Criteria

I. ARTERIAL HIGHWAYS

To evaluate project impacts on the arterial highway system, long-range volumes with and without the project are compared using average daily traffic (ADT) volume to capacity (V/C) ratios.[1] Three types of impacts are identified:

P This refers to a location which has a V/C of less than or equal to 1.00 without the project and greater than 1.00 with the project. Hence, it can be considered a significant adverse impact of the project where mitigation is necessary.

C Contribution - This is where the no-project V/C is greater than 1.00 and the project has a contribution of more than one percent. The project, hence contributes to a future deficiency, but does not cause that deficiency.

A Several arterials in the City of Santa Clarita have special capacity augmentation, this capacity augmentation being needed for either no-project volumes or both no-project and project volumes. Where the project contributes traffic to such a location, then the amount of capacity augmentation that will be needed is increased. The project, hence, causes a potential impact at such locations, and is therefore identified here as a project impact of which the project has a share of the total impact.

In all cases, a project contribution of one percent or more is considered to be a measurable impact and is used as the impact criteria. Hence, V/Cs for those locations where the project measurably contributes to the total volume are examined, and if any of the above impact types are found, then the location is identified as being impacted by the project.

II. STATE HIGHWAYS AND FREEWAYS

Capacities are taken from the appropriate Caltrans Route Concept Reports, and V/C ratios calculated. Project has significant impact if the V/C is increased by more than .01 and the link is deficient.

[1] ADT capacity values are as follows:

Facility Type	ADT Capacity
Augmented Major Highway	76,000
Major Highway (6-lanes)	54,000
Major Highway (4-lanes)	36,000
Major Highway (2-lanes)	18,000
Secondary Highway (4-lanes)	32,000
Secondary Highway (2-lanes)	16,000

2.1.6 IMPACTS ANALYSIS

In applying the significance threshold criteria, a determination must be made of whether the traffic conditions on a given roadway link are "deficient" or will be made so by the addition of Specific Plan traffic. To perform the same impact analysis for Ventura County arterial roads as was performed for Los Angeles County arterial roads, the same roadway deficiency standard should be applied. However, the County of Ventura employs a roadway deficiency standard *different* from that used in Los Angeles County. In Los Angeles County, a roadway link is considered "deficient" if the ADT volume exceeds the capacity for LOS E. In Ventura County, the deficiency standard is LOS D. In assessing the significance of the Specific Plan's traffic impacts to Ventura County arterials, this analysis considered both the Los Angeles County *and* Ventura County roadway deficiency standards. It should be noted that the augmented arterial significance criterion used in Los Angeles County (actually, the City of Santa Clarita) is not applicable to Ventura County roadways, and hence has not been used in this supplemental study.

Figure 2.1-3 presents the Specific Plan's project impact volumes on Ventura County arterial roadways, together with the year 2020 volumes on those roadways. Year 2020 volumes and corresponding levels of service for the County roadway links are summarized in **Table 2.1-3**, together with the traffic volume differences due to Newhall Ranch. It should be noted that impact data was derived for all of Ventura County and the area shown here for which roadway link data has been listed is the area within where measurable project impacts occur.

Under the applicable significance threshold criteria, the Specific Plan has a significant impact if the project contribution is one percent or greater and the location is deficient (or the contribution has caused the link to become deficient). As demonstrated by the data contained in **Figure 2.1-3** and **Table 2.1-3**, the Specific Plan will not have a significant impact (*i.e.*, a one percent or more contribution) on any Ventura County arterial roadways exiting SR-126 or SR-23. Therefore, the Specific Plan will not result in any significant impacts to any arterial roads in Ventura County. The Ventura County Transportation Commission (VCTC) staff reviewed the analysis presented in this document, and indicated their concurrence with the significance conclusion reached (*See*, VCTC letter dated October 4, 2000, in Appendix 2.1(a)).

Table 2.1-3
2020 ADT Level of Service Summary - Ventura County Roadways

Roadway	Limits	Lanes	Class	2020 ADT	NR Incr. Amt.	(%)	2020 V/C (LOS D)		2020 V/C (LOS E)	
							Cap. *	V/C	Cap. *	V/C
Balcom Canyon Rd.	South Mountain Rd. to Bradley Rd.	2	III	1,000	0	(0%)	5,900	.17	16,000	.06
Bardsdale Rd.	Sespe to Grimes Canyon	2	II	2,000	3	(.1%)	11,000	.18	21,000	.10
Bradley Rd.	Balcom Canyon Road to Los Angeles Ave.	2	II	2,000	0	(0%)	11,000	.18	21,000	.10
Briggs Rd.	Foothill to Santa Paula Fwy.	2	II	3,000	0	(0%)	11,000	.18	21,000	.10
Grimes Canyon Rd.	Broadway to Los Angeles Ave. (SR-118)	2	III	2,000	14	(.7%)	5,900	.34	16,000	.13
Guiberson Rd.	Chambersburg Rd. to SR-126	2	II	3,000	0	(0%)	11,000	.27	21,000	.14
Main St. (Piru)	Telegraph Rd. (SR-126) to Center St.	2	II	5,000	24	(.4%)	11,000	.45	21,000	.24
Old Telegraph Rd.	Telegraph Rd (SR-126) to Fillmore city limit	2	II	5,000	0	(0%)	11,000	.45	21,000	.24
Sespe St./Pasadena Ave.	South Mountain Rd. to Chambersburg Rd. (SR-23)	2	II	1,000	0	(0%)	11,000	.17	21,000	.05
South Mountain Rd.	Santa Paula city limit to Sespe St.	2	II	2,000	3	(.1%)	11,000	.18	21,000	.10
Stockton Rd.	Balcom Canyon Rd. to Broadway	2	II	2,000	4	(.2%)	11,000	.18	21,000	.10
Telegraph Rd.	Ventura city limit to Santa Paula city limit	2	I	8,000	8	(.1%)	16,000	.50	27,000	.30

Abbreviations: NR = Newhall Ranch; Incr. Amt. = increment amount; SR = State Route; ADT = average daily traffic; LOS = level of service; V/C = volume to capacity ratio; % = percentage increase in traffic volumes due to Specific Plan.

* *Notes: See, table below.*

Average Daily Traffic (ADT) Thresholds					
	Class I			Class II	Class III
LOS	2 Lanes	4 Lanes	6 Lanes	2 Lanes	2 Lanes
A	2,400	19,000	29,000	1,500	350
B	5,600	28,000	42,000	3,900	2,000
C	10,000	38,000	57,000	7,000	3,300
D	16,000	47,000	70,000	11,000	5,900
E	27,000	58,000	87,000	21,000	16,000

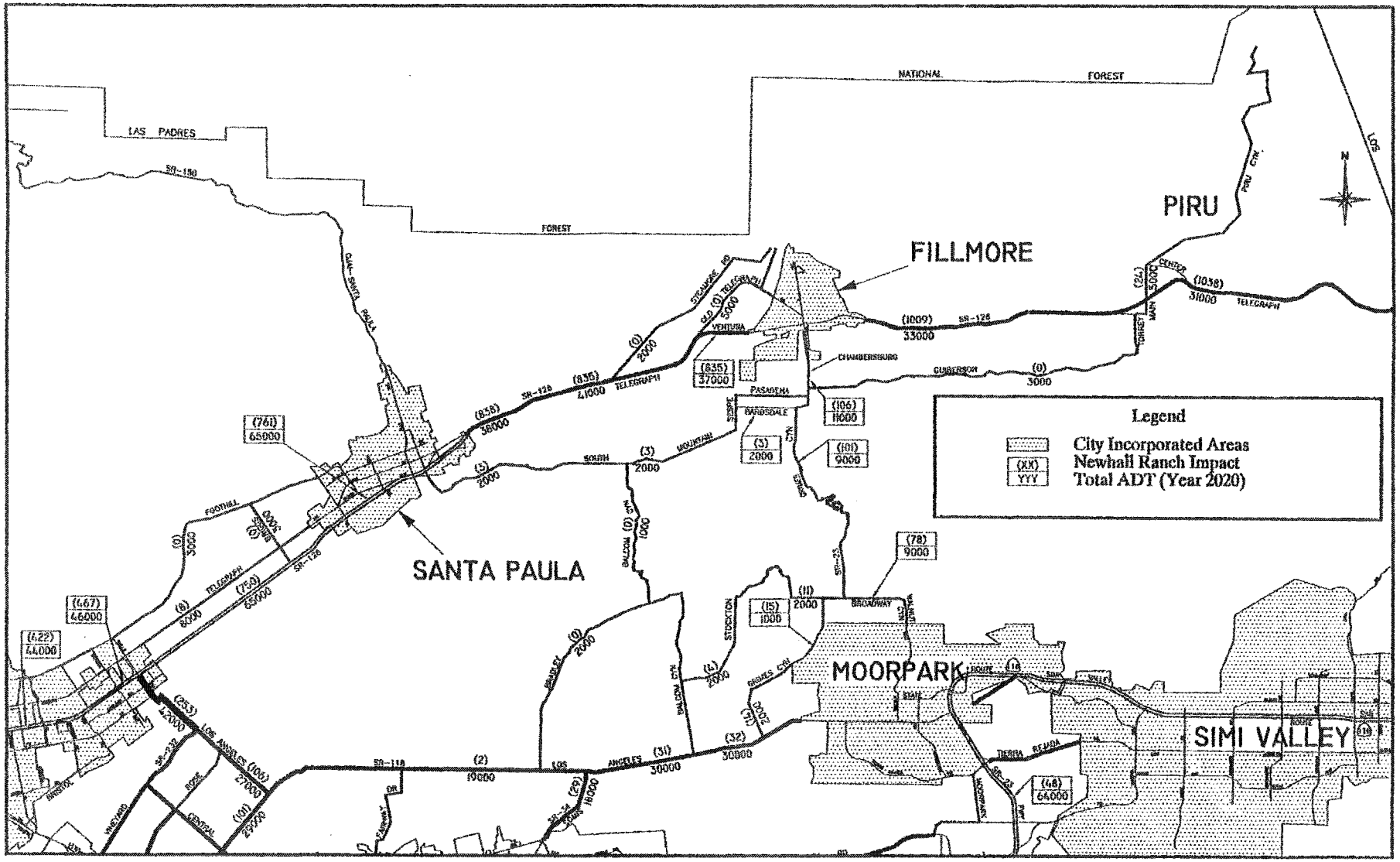

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FIGURE 2.1-3

SPECIFIC PLAN IMPACTS ON VENTURA COUNTY ROADWAYS

In Notice of Preparation response letters, dated November 30, 2000, and December 13, 2000, Ventura County is still pursuing the claim, raised in the prior Newhall Ranch litigation, that *cumulative* traffic impacts of the Newhall Ranch Specific Plan in Ventura County have not been mitigated. Ventura County's cumulative traffic impacts claim, including the claim for mitigation of such impacts, was not acknowledged by the trial court as a claim requiring any further analysis. Accordingly, the cumulative traffic analysis presented in the Final EIR is considered to be adequate and complete. Because all cumulative traffic issues were adequately addressed in the Final EIR, this Additional Analysis does not further address this topic.

In addition, in a Notice of Preparation response letter, dated December 12, 2000, the Ventura County Air Pollution Control District (APCD) requested that vehicle air emissions resulting from project-related traffic exiting SR-126 and SR-23 onto Ventura County arterial roadways be examined in the Additional Analysis. The legal challenge brought by Ventura County over the adequacy of the Final EIR specifically included claims regarding the EIR's air quality analysis, particularly the analysis of air quality impacts in Ventura County. The trial court found the air quality analysis presented in the Final EIR did not require any further air quality analysis in response to Ventura County's claims. Because all air quality issues have been adequately addressed in the Final EIR, this Additional Analysis does not further address this topic beyond the information provided below.

The Final EIR acknowledged that the air quality impacts of Newhall Ranch are not limited by jurisdictional boundaries. The South Coast Air Basin transports pollutants to and receives air pollutants from the coastal portions of Ventura and Santa Barbara counties. This is why the Final EIR evaluated Specific Plan impacts from a regional perspective as evidenced by the inclusion of air monitoring data from the Piru station, located approximately five miles west of the Newhall Ranch Specific Plan in Ventura County.

Section 4.10, Air Quality, of the Draft EIR also found that "the proposed Specific Plan would generate total regional emissions which would exceed SCAQMD recommended thresholds for each identified pollutant. As the amount of emissions would exceed the recommended thresholds, this impact would be considered significant." (*See,* Draft EIR pages 4.10-25 and 26). Mitigation measures provided in the EIR would reduce the project's contribution to the total regional pollutant inventory in Los Angeles County and in downwind areas, such as Ventura County, to the maximum degree feasible. However, this impact was considered unavoidably significant even with implementation of all feasible mitigation. The County of Los Angeles Board of Supervisors weighed project benefits against this impact and adopted the necessary CEQA findings and Statement of Overriding Considerations. The trial court did not set aside the County's findings as they related to air quality impacts and mitigation.

In addition to an evaluation of project impacts to regional pollutant inventories, the Final EIR addressed additional indicators of air quality impacts to assess local conditions. The foremost localized pollutant of concern involving motor vehicles is Carbon Monoxide (CO).[1] Traffic congested roadways and intersections have the potential to generate localized high levels of CO within approximately 1,000 feet of the roadway. Localized areas where ambient concentrations exceed State and/or Federal standards are termed CO "hotspots". Based on the air quality modeling conducted as part of the EIR, the EIR indicated that:

> "the CALINE4 screening procedure predicts that, under worst-case conditions, future CO concentrations at each intersection would not exceed the State or Federal 1- and 8-hour ppm standards with the development of the proposed Specific Plan, and no significant CO hotspot impacts would occur to sensitive receptors in the vicinity of these intersections."

The analysis conducted as part of the EIR was for locations on and near the Specific Plan site where the majority of Specific Plan-related traffic would travel. For areas further removed from the Specific Plan site (such as Ventura County), Specific Plan-related traffic trips would diminish in number relative to the amount of non-Specific Plan traffic trips traveling on Ventura County roads. Consequently, CO emissions at such locations removed from the Specific Plan site and attributable to the Specific Plan would also diminish. If no significant CO impacts would be created near the Specific Plan site on roads carrying a relatively greater amount of Specific Plan traffic, then no significant CO impacts would occur at locations in Ventura County carrying less Specific Plan traffic. In addition, it should be noted that the amount of traffic generated by the Specific Plan that would travel on Ventura County roads has been reduced since the EIR analysis by virtue of the reduction in units in the Specific Plan imposed by the Los Angeles County Board of Supervisors. Consequently, CO emissions generated by the Specific Plan in Ventura County (found to be less than significant in the EIR analysis upheld by the trial court) would create even less magnitude in Ventura County under the revised Specific Plan.

2.1.7 MITIGATION MEASURES

No mitigation beyond that previously identified in the EIR is required as no new significant impacts were identified.

2.1.8 UNAVOIDABLE SIGNIFICANT IMPACTS

No unavoidable significant impacts would occur to local roadways in Ventura County exiting SR-23 and SR-126 as a consequence of the Newhall Ranch Specific Plan and Water Reclamation Plant.

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1 State of California Department of Transportation, Office of Transportation Laboratory, *Air Quality Technical Analysis Notes* (Sacramento, California: California Department of Transportation, June 1988, p. 1100-1.)

2.2.1 INTRODUCTION

On page 3 of the Writ (Appendix 1.0(a)), the trial court found that the Newhall Ranch Specific Plan and Water Reclamation Plant Final EIR (EIR) did not adequately determine the project's effect on the Salt Creek Corridor situated in Ventura County. Specifically, the trial court found that because no study was undertaken of the Salt Creek Corridor lying within Ventura County to ascertain the effect of the restriction of wildlife movement for 2.1 to 5.1 miles east of that Corridor, there was no substantial evidence justifying the finding reached in the EIR that there was no significant impact to the Corridor in Ventura County. The trial court also found that because the EIR had concluded that wildlife movement would be focused toward the west side of the project down Salt Creek, the lack of study of the Ventura County portion of the Corridor left a "vacuum" in the record concerning the impact of the westward shift of wildlife into the Corridor.

The trial court then directed Los Angeles County to determine the project's effect on the Salt Creek Corridor situated in Ventura County, and to include an assessment of feasible mitigation measures in response to the identification of significant adverse impacts, if any. The trial court also directed the County to consider the supplemental information and adopt such additional or revised findings as may required to comply with CEQA and the trial court's Writ.

In response to the trial court's direction, this section summarizes the findings contained in the study undertaken of the project's effects on the Salt Creek Corridor situated in Ventura County. This section also addresses Specific Plan impacts to the Corridor in Ventura County, and identifies and analyzes mitigation measures proposed by Ventura County and others. In addition, the section incorporates, where appropriate, the written comments from interested agencies, organizations and individuals in response to the NOP circulated by Los Angeles County. In response to the NOP, Ventura County submitted an article prepared by its biology consultant, David Magney (Magney submittal). The Magney submittal includes text and supporting articles relating to the subject of wildlife movement in corridor areas. At the request of Los Angeles County, the EIR biological consultant and others reviewed the text of the Magney submittal and the articles cited in the submittal to determine their accuracy and applicability to the questions raised by the trial court regarding Specific Plan impacts on animal movement in the Ventura County portion of the Salt Creek corridor. Based on a review of the Magney submittal text and articles cited in the submittal, the EIR biological consultant and others determined that many of the articles were inaccurately cited in the text of the Magney submittal or were inapplicable to

the questions raised by the trial court. For further information regarding those findings, please refer to Appendix 2.2(f) of the Additional Analysis.

2.2.2 STUDY OBJECTIVES

The Draft EIR concluded on page 4.6-49 that development within the Specific Plan area would significantly and unavoidably impact wildlife movement on the Specific Plan site (within Los Angeles County). Specifically, the analysis concluded that:

> "While the Specific Plan preserves the primary and highest quality movement corridor found on the site (the Salt Creek corridor), as well as other periodic canyon connections between the River and the uplands, the impact potential of implementation of the Newhall Ranch Specific Plan on the movement of resident wildlife species is considered significant due to the reduction in open land available for wildlife movement between the River and upland areas.... Note that a portion of the Salt Creek movement corridor occurs within the Specific Plan Area, with the remaining portion of the corridor occurring in Ventura County. Any future project proposed in Ventura County that would fragment this corridor would significantly impact the connection of the High Country SMA and Santa Susana Mountains with the Santa Clara River and the Los Padres and Angeles National Forests located to the north. Therefore, any future action taken in this portion of Ventura County should strongly consider this important ecological feature."

This technical biological analysis was prepared to address the court's ruling that directed Los Angeles County to study the effect on that portion of the Salt Creek corridor situated in Ventura County caused by the shifting of wildlife into the Salt Creek corridor due to the proposed development of the Newhall Ranch Specific Plan in Los Angeles County. The specific objectives of this analysis are to:

(1) Describe the existing pattern of habitat types and wildlife movement within the Salt Creek watershed and adjacent Potrero Creek watershed in both Los Angeles County and Ventura County; and

(2) Evaluate how this existing pattern of wildlife movement within the Salt Creek and adjacent Potrero Creek watershed may be impacted by development of the proposed Newhall Ranch Specific Plan as described in the Specific Plan and EIR.

The analysis will also indicate whether or not the Specific Plan would significantly impact the movement of wildlife in the Salt Creek watershed due to implementation of the proposed Specific Plan. It should be noted that because the proposed Specific Plan is at the general plan and zoning stages only, the Final EIR (and ~~this~~ the Additional Analysis) does not, and cannot, analyze impacts or propose mitigation measures associated with subsequent project-specific plans and subdivision maps. For that reason, the County elected to use a "program" or "first-tier" EIR for purposes of analyzing the potential environmental effects associated with the long-range development of the Specific Plan. This approach was upheld by the trial court. If complete approval of the Newhall Ranch Specific Plan is reaffirmed, the County will require

further, more detailed, environmental review as the adopted Specific Plan moves through a series of separate but related implementation decisions, from possible approval of specific development projects to approval of specific subdivision maps. Each of these possible future approvals is subject to the CEQA review process. For these reasons and because this Additional Analysis ordered by the court is a continuation of the environmental processing of the Program Final EIR (focusing on the six issues specified by the court), the analysis that follows has been prepared at the "program" level. Consequently, the methods and protocols used to complete the study were those appropriate for a program level of analysis.

This analysis focuses on the watersheds in and adjacent to the Newhall Ranch Specific Plan site. A watershed analysis provides a discussion of appropriate ecological landscape units, encompassing large areas of wildlife habitat, topographic features, and water resources on a scale that affects both the distribution and movement of animals. This type of analysis is appropriate because the movement of animals, especially larger mammals, tends to follow stream courses and ridgelines, which are topographic features that define watersheds.

2.2.3 METHODS

This analysis is the result of a collaborative effort by two consulting firms: RECON, located in San Diego, California, and Impact Sciences, Inc., located in Agoura Hills, California, both of which maintain substantial experience addressing the biological impacts of land development projects and Specific Plans. Résumés for the biologists contributing to this effort are presented in Appendix 2.2(e). To accomplish the objectives of this analysis, the existing physical and biological conditions of the greater Salt Creek watershed, both in Los Angeles County and Ventura County, as well as the adjacent watersheds in Los Angeles County (*e.g.*, Potrero Watershed) are described based on extensive field visits of these areas that have occurred during varying seasons over several years by numerous biologists. Other watersheds in Los Angeles and Ventura Counties are not addressed in this analysis because the potential indirect impacts to wildlife, such as light and glare impacts, occur in the eastern portion of the Salt Creek watershed; and the balance of the watershed (the western portion) will not be disturbed. Consequently, it is appropriate to study only the Salt Creek Watershed and adjacent Los Angeles County watersheds. This "existing conditions" analysis includes a review of available data and mapping of the Salt Creek watershed in both Los Angeles County and Ventura County, as well as a review of the plant and animal species occurring or expected to occur in the Salt Creek corridor and Potrero Creek corridor.

The existing vegetation communities located in the Salt Creek watershed in Ventura County had not been previously mapped. Therefore, this area was mapped in the field using recent aerial photography.

Additional field observations of wildlife use were noted by RECON (2000) and Impact Sciences (2000 and 2001), particularly from Salt Creek's confluence with the Santa Clara River in Ventura County, eastward across the Salt Creek Corridor and Los Angeles County/Ventura County jurisdictional boundary line, and into Los Angeles County.

In order to understand the level of use of the Salt Creek watershed by wildlife following buildout of the Newhall Ranch Specific Plan, additional focused analyses of the Salt Creek watershed and adjacent watersheds were conducted. The additional analyses included:

(1) New field mapping of the vegetation communities within the Salt Creek watershed in Ventura County to accompany the vegetation mapping already conducted in Los Angeles County during preparation of the Final EIR;

(2) New field observation of wildlife, tracks, scat, and other sign in the Salt Creek and Potrero Creek watersheds in order to augment observations made in the field by biologists over the past decade;

(3) A new assessment of potential wildlife use within the Salt Creek watershed and between this watershed and adjacent watersheds as determined by small mammal trapping, bird counts, mammal sign counts, and motion-sensitive photography, as well as the relationship of species distributions with vegetation communities; and

(4) Evaluation of the potential for animal movement based on topographic characteristics within the Salt Creek watershed and between this watershed and adjacent watersheds that would be impacted by implementation of the Specific Plan. Relevant published studies and documentation regarding wildlife movement corridors in the region were also compiled and reviewed.

2.2.3.1 Methodology/Vegetation Map of the Salt Creek Watershed

The portion of the Salt Creek watershed within Los Angeles County and the Newhall Ranch Specific Plan area had been previously mapped (Impact Sciences 1997). As part of this analysis, portions of the Salt Creek watershed within Ventura County and areas located outside of the Specific Plan area to the southeast, but within Los Angeles County, were mapped by RECON. Aerial photographs (1998) were used as a base map at a scale of 1 inch = 600 feet.

On June 16, 2000, RECON conducted a field visit of the Salt Creek watershed to map the vegetation within Ventura County and areas outside the Specific Plan area in Los Angeles County. Mapped areas included the portion of the Salt Creek watershed between the jurisdictional boundary with Los Angeles County and the western limit of the Salt Creek watershed, and areas to the southeast where the watershed extends beyond the limits of the Newhall Ranch Specific Plan area into the Santa Susana Mountains.

The vegetation communities were classified according to Holland (1986), the same classification used in the Specific Plan EIR. Boundaries between vegetation types were identified on the aerial photograph and classified by habitat type (*i.e.*, grassland, coastal sage scrub, oak woodland, *etc.*). The field maps were then matched with the existing vegetation map of the Specific Plan area along the Los Angeles County/Ventura County jurisdictional boundary and to other locations outside of the Specific Plan within Los Angeles County as discussed above. The supplemental vegetation map was then digitized by technicians at Psomas & Associates and added to the existing base maps for the Newhall Ranch Specific Plan area.

2.2.3.2 Methodology/Observation of Wildlife

Canyon bottoms and stream courses are typically used as movement corridors by various wildlife species —particularly the larger, wider ranging, ground-dwelling animals, such as bobcat, fox, coyote, deer, and mountain lion. However, it is important to note that movement between and within large open space areas are not confined to these features. Assuming no other man-made or unnatural barriers or disturbances exist, most of these species will also move along ridgelines and up and down sloped areas to access food, water, and other essential requirements. From a regional perspective, while the Salt Creek and Potrero Creek canyons and drainages courses are likely to be used by these species to access the Santa Clara River, individual animals can and will freely use adjacent ridgelines and move up and down slopes between these and other watersheds as part of their overall movement patterns.

RECON biologists have conducted no less than 20 separate field surveys of the Newhall Ranch Specific Plan site and its surrounding areas, including Newhall Land and Farming Company holdings in Ventura County. In addition, RECON has completed field surveys of lands within and adjacent to the Santa Clara River corridor upstream and downstream of Newhall property in Los Angeles County and Ventura County as part of their effort to complete the "Santa Clara River Enhancement and Management Plan" (SCREMP). To augment the already extensive wildlife field surveys conducted throughout the project area, additional observations of wildlife or their sign were made by RECON during field surveys in June and July 2000. Impact Sciences then conducted additional field surveys of the Potrero Creek and Salt Creek corridors (defined as the creek drainage and immediately adjacent riparian and upland habitat) within Los Angeles County and Ventura County in June and September 2000, and again in February, March and April 2001. The 2001 surveys were focused within the Potrero Creek corridor in Los Angeles County and that portion of Salt Creek in Ventura County. Efforts concentrated on evaluating wildlife movement and use of the Salt Creek and Potrero Creek drainage areas to gain access to the Santa Clara River (please see Appendix 2.2(c) for the results of the recent surveys). The 2000 and earlier studies were conducted in Salt Creek Canyon in Ventura County and Los Angeles County extending one mile from the

County line. The recent 2001 surveys were conducted in areas of the Salt Creek corridor in Ventura County and in areas of Potrero Creek in Los Angeles County.

During the 2001 surveys, wildlife counts were conducted along pre-determined and random transects parallel to the stream corridor in each canyon. Wildlife counts were conducted on a total of 6 days. Birds were identified by direct observation and by call. Mammals were identified by direct observation, tracks, and scat. Motion-sensitive camera stations were also positioned at two different locations in the Salt Creek corridor for a total of 15 days.

Portions of the Salt Creek watershed within Los Angeles County and the Newhall Ranch Specific Plan were studied during the prior biological surveys described above. Direct observation of animals or their sign were documented during those studies. Small mammal trapping efforts were also conducted at selected locations along Salt Creek over three days in June 1995.

Table 2.2-1 below identifies those wildlife species observed during the recent February, March, and April 2001 surveys of the Salt Creek and Potrero Creek corridors. Tables of observed or potentially occurring plant and wildlife species that were prepared as part of previous studies and surveys of the Salt Creek and Potrero watershed areas can be found in Appendix 2.2(d).

2.2.3.3 Methodology/Wildlife Utilization of the Salt Creek Watershed and Adjacent Watersheds

Wildlife utilization of the Salt Creek watershed in Ventura County and adjacent watersheds in Los Angeles County was assessed by analysis of the distribution of existing vegetation communities and the wildlife that would use these types of habitats. The distribution of habitat types, in general, provides a basis for wildlife use because animal species tend to favor certain habitat types over others. Some species are highly restricted to a habitat type, for example, riparian bird species such as the yellow-breasted chat and the least Bell's vireo breed almost exclusively in willow habitats associated with stream courses and not in upland habitats. Other species can be more general in their habitat use, such as deer or other large mammals. Large mammals can use many habitat types, upland or riparian, for shelter, food, and breeding activities.

Examination of the distribution of habitat types and wildlife species observed within the Salt Creek watershed in Ventura County and adjacent watersheds within Los Angeles County and the Specific Plan area can provide information regarding the potential for wildlife movement within and between these areas. This analysis was accomplished by comparing the distribution patterns of habitat types within the

Salt Creek watershed in Ventura County with those in the Los Angeles portion of the watershed, as well as through use of wildlife observation and utilization data gathered during recent and past field studies.

Table 2.2-1
Wildlife Species Observed within the Salt Creek and Potrero Creek Study Area

Amphibians and Reptiles			
western fence lizard	*Sceloporus occidentalis*		
western toad	*Bufo boreas*		
Pacific chorus frog	*Pseudacris [Hyla] regilla*		
Birds			
great blue heron	*Ardea herodias*	turkey vulture	*Cathartes aura*
California quail	*Callipepla californica*	white-tailed kite	*Elanus leucurus*
ferruginous hawk	*Buteo regalis*	Cooper's hawk	*Accipiter cooperi*
red-tailed hawk	*Buteo jamaicensis*	American kestrel	*Falco sparverius*
gull	*Larus* sp.	killdeer	*Charadrius vociferus*
great horned owl	*Bubo virginianus*	greater roadrunner	*Geococcyx californianus*
mourning dove	*Zenaida macroura*	Nuttall's woodpecker	*Picoides nuttallii*
acorn woodpecker	*Melanerpes formicivorus*	northern flicker	*Colaptes auratus*
downy woodpecker	*Picoides pubescens*	Say's Phoebe	*Sayornis saya*
black phoebe	*Sayornis nigricans*	scrub jay	*Aphelocoma coerulescens*
violet-green swallow	*Tachycineta thalassina*	chestnut-backed chickadee	*Parus rufescens*
wrentit	*Chamaea fasciata*	oak titmouse	*Baeolophus inornatus*
bushtit	*Psaltriparus minimus*	common raven	*Corvus corax*
California thrasher	*Toxostoma redivivum*	loggerhead shrike	*Lanius ludovicianus*
Brewer's blackbird	*Euphagus cyanocephalus*	ruby-crowned kinglet	*Regulus calendula*
brown-headed cowbird	*Molothrus ater*	spotted towhee	*Pipilo erythrophthalmus*
western bluebird	*Sialia mexicana*	California towhee	*Pipilo fuscus*
European starling	*Sturnus neglecta*	dark-eyed junco	*Junco hyemalis*
yellow-rumped warbler	*Dendroica coronata*	lesser goldfinch	*Carduelis psaltria*
house finch	*Carpodacus erythrinus*	lark sparrow	*Chondestes grammacus*
song sparrow	*Melospiza melodia*		
Mammals			
coyote	*Canis latrans*	red fox	*Vulpes macrotis*
striped skunk	*Mephitis mephitis*	gray fox	*Urocyon cineroargenteus*
bobcat	*Felis rufus*	mule deer	*Odocoileus hemionus*
mountain lion	*Felis concolor*	raccoon	*Procyon lotor*
Audubon's cottontail	*Sylvilagus audubonii*	California ground squirrel	*Spermophilus beecheyi*
woodrat	*Neotoma* sp.	pocket gopher	*Thomomys bottae*

2.2.3.4 Methodology/Impacts to Animal Movement within the Salt Creek Watershed

Direct impacts to animal movement within the Salt Creek watershed in Ventura County that may occur due to the implementation of the Newhall Ranch Specific Plan were determined by an analysis of the types and acreage of habitat types that would be lost in the Salt Creek watershed and adjacent watersheds within Los Angeles County. Potential indirect impacts to the Salt Creek watershed in Ventura County from factors such as light, intrusion by domestic animals, intrusion by humans, and noise were determined based on the proximity of the edge of the Specific Plan development to the Salt Creek watershed in Ventura County. Potential cumulative impacts to the Salt Creek watershed in Ventura County were determined by examination of the potential for future impacts to the watershed from proposed projects both in Ventura County and Los Angeles County.

It is noted that several planning programs are now in place in Ventura County that limit development within the Salt Creek watershed situated in Ventura County. For example, passage of the Save Open Space and Agricultural Resources (SOAR) initiative by Ventura County voters on November 3, 1998 limits future development of land along the Salt Creek corridor in Ventura County.[1] The SOAR initiative requires that land designated as Agricultural, Open Space or Rural in the County General Plan remain so designated unless redesignated by vote of the people. There are limited exceptions, however, the initiative remains in effect through December 31, 2020. In addition, the County of Ventura and the City of Fillmore jointly adopted by ordinance the Fillmore/Piru Greenbelt on October 10, 2000. The purpose of this Greenbelt is to promote the agricultural and open space land conservation goals and policies contained in the General Plans of the City of Fillmore and the County of Ventura. The Greenbelt designation covers land located between the City of Fillmore and the Ventura County/Los Angeles County boundary line. *See,* Appendices 2.2(a) and 2.2(b) for copies of the SOAR Initiative and Piru/Fillmore Greenbelt Ordinance.

An integral part of the analysis of wildlife movement within the Salt Creek watershed in Ventura County is to determine the ability of wildlife species to move and disperse through or between portions of the Salt Creek watershed and adjacent watersheds of Los Angeles County in relation to the potential impacts from the proposed Newhall Ranch Specific Plan. The area over which a wildlife species may range

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1 The SOAR initiative was passed by both Ventura County voters as well as voters within the Cities of Camarillo, Moorpark, Oxnard, Simi Valley, Ventura, and Thousand Oaks. Generally, the cities used ordinances to establish urban growth boundaries. The purpose was to define a boundary within which development is planned to take place for a given time period. During this time, urban services would be restricted to areas within the boundary. No form of discretionary entitlement will be granted by a city that will result in urban land uses placed outside of this boundary.

differs greatly among species as does each species ability to disperse to these areas. For example, most birds can move and disperse easily over large areas and long distances provided that there is habitat for the particular species. Large mammals, such as deer, coyote, and bobcat, also have relatively large ranges, and have the ability to disperse long distances. Small mammals, such as rodents, have relatively small ranges with less ability to disperse long distances. Thus, potential impacts to wildlife movement must consider the species' ability to move and disperse between the areas of concern. In this case, consideration of a species' ability to move and disperse to portions of the Salt Creek watershed in Ventura County due to implementation of the Newhall Ranch Specific Plan is important to an accurate characterization of potential impacts.

2.2.4 EXISTING CONDITIONS

The following section describes wildlife movement from a regional perspective. The section also describes existing conditions in the Salt Creek watershed in both Ventura County and Los Angeles County, as well as in other nearby watersheds in the Specific Plan area. The general physical boundaries of the watersheds are described. The distribution of the vegetation communities, or habitat types, in the Salt Creek watershed in Ventura County and Los Angeles County and adjacent watersheds in Los Angeles County are discussed in relation to the wildlife species that may utilize these areas. Finally, the section discusses wildlife movement and dispersal between the Salt Creek watershed in Ventura County and that portion in Los Angeles County and adjacent watersheds.

2.2.4.1 Regional Wildlife Movement

To understand the role of the Salt Creek watershed in animal movement, it is important to point out that Salt Creek is but one small part of a larger regional wildlife movement interface that exists between the Los Padres/Angeles National Forest and the Santa Susana Mountains. This interface spans a distance of approximately 35 miles, from approximately Saticoy on the west in Ventura County to Castaic Junction on the east in Los Angeles County. As shown on **Figure 2.2-1**, the Newhall Ranch Specific Plan site is an approximately 2 to 5 mile-wide portion (6 to 14 percent) of this 35-mile wide interface. Consequently, the Salt Creek corridor constitutes just one of six major "corridors" that exist in this broad interface area.

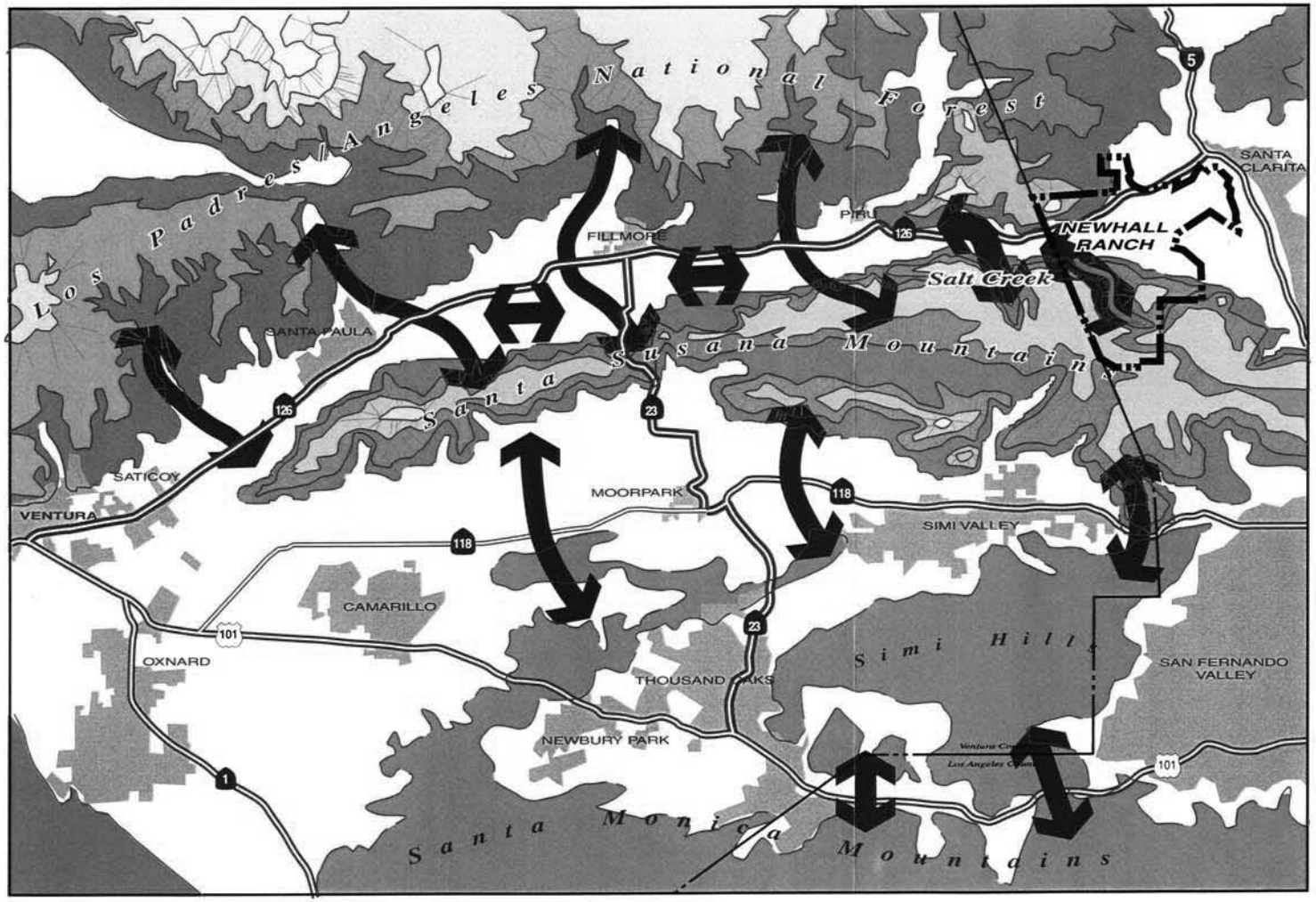
The connection of large natural habitat areas is of regional biological importance. The Santa Clara River and the High Country portions of the Specific Plan site are important parts of the regional biological setting. It is also important that regional avenues for movement continue between the Los Padres/Angeles National Forests, the Santa Clara River and the Santa Susana Mountains. It is from this

regional perspective that the Newhall Ranch Specific Plan reflects a local connection between the Santa Clara River and the Santa Susana Mountains.

The Final EIR discusses and illustrates the regional conservation context of the Specific Plan area (*See,* pages 4.6-30 to 4.6-32), and describes how the Specific Plan site relates to Ventura County. As stated in the Final EIR:

> "[t]he primary connectivity of the Newhall Ranch is to large undeveloped areas of open area to the south and west in the Santa Susana Mountains.... The eastern end of the Santa Susana Mountains is potentially connected to several other surrounding undeveloped areas, including the Simi Hills and the Santa Monica Mountains to the south. However, these connections are limited by intervening urban development in Simi Valley, the San Fernando Valley, other communities in Ventura and Los Angeles Counties.... The Santa Clara River is an important riparian corridor that connects the Specific Plan area with habitat to the east and west.... North of the River, wildlife movement from the surrounding hills to the River is somewhat facilitated by existing canyon connections (*e.g.*, San Martinez Grande Canyon and to a lesser degree Chiquito Canyon), although SR-126 poses a barrier to wildlife movement. Caltrans improvements to SR-126 in Ventura County include the provision of three agricultural undercrossings that may function as wildlife undercrossings. Connection to the west along the Santa Susana Mountains and rugged terrain of the lower foothills above the River is still good due to lack of development."

Figure 2.2-1 shows how the Newhall Ranch Specific Plan site fits into the regional animal movement setting, which includes the Santa Clara River Valley and the mountainous regions of Ventura County and adjacent Los Angeles County. The Final EIR, Section 4.6, Biological Resources, also describes and illustrates the "Major Existing and Proposed Open Areas and Undeveloped Lands (within 10 miles of Newhall Ranch)", many of which occur in Ventura County (*See,* pages 4.6-32 and 33 and Figure 4.6-5), and the "Actual or Potential Wildlife Movement and Gene Flow Between Surrounding Open Areas and Reserves to the Newhall Ranch Specific Plan Area" (*See,* page 4.6-34). Salt Creek is important not because is it is one of the last remaining open space connections between the Los Padres/Angeles National Forests and the Santa Susana Mountains, but because is it part of the larger wildlife movement interface. Regarding the SR-126 undercrossings identified in the EIR, Caltrans and since completed the widening of SR-126 from Fillmore in Ventura County to the I-5 freeway in Los Angeles County. As part of that widening project, undercrossings were installed under SR-126 at three locations. One undercrossing is located approximately seven tenths of a mile west of the County line near the confluence of Salt Creek and the Santa Clara River. The second undercrossing is located approximately one mile west of the County line near the Newhall Orchard. The third undercrossing is located approximately two miles west of the County line near the Rancho Camulos historical site.



NEWHALL RANCH
Newhall Ranch Company

LEGEND

SPECIFIC PLAN BOUNDARY

POTENTIAL WILDLIFE MOVEMENT

IMPACT SCIENCES INC.

NORTH

Statute Miles 0 1 2 3

Kilometers 0 1 2 3

FIGURE 2.2-1
WILDLIFE MOVEMENT

The undercrossings are approximately 15 to 20 feet in height and 20 to 25 feet in width. Each are constructed with soft bottoms, with sides and ceilings of concrete and metal stamping. Daytime lighting in each is good.

At the local level, the Newhall Ranch Specific Plan site has been used for decades to graze cattle, agriculture activities, and oil and natural gas production. These activities have resulted in the fencing of large areas, the conversion of thousands of acres of once native vegetation to non-native vegetation, and the creation of a network of unpaved and paved roads servicing the oil well sites, other oil-related infrastructure and agricultural areas. Taking these site constraints into consideration, the analysis of the Newhall Ranch property began with consideration of the biological resources on site within a regional context. It was clear from the initial stages of the planning effort that the Santa Clara River and the High Country of the Santa Susana Mountains were the key resources on the site, although high resource values exist elsewhere on the site. A detailed regional scale assessment of the resources within the river and High Country areas led to the decision to incorporate those resources into the open area configuration proposed in the Newhall Ranch Specific Plan. Please see Specific Plan, Section 2.2, Design Constraints and Opportunities.

2.2.4.2 Watersheds

The Salt Creek watershed straddles the jurisdictional boundary between Los Angeles County and Ventura County (**Figure 2.2-2, Newhall Ranch Watersheds**). The Salt Creek watershed drains directly into the Santa Clara River approximately one-half mile west of the boundary line in Ventura County. Outside the Specific Plan boundaries, the Salt Creek watershed abuts the Tapo Canyon watershed to the west, the Santa Susana Mountains to the south, and the Pico Canyon watershed to the southeast. Within the Newhall Ranch Specific Plan area, the Salt Creek watershed abuts the Potrero Creek watershed, which separates it from the other five minor Specific Plan watersheds to the east by more than 6,000 feet. These watersheds (Long Canyon and several unnamed tributaries) are directly connected to the Santa Clara River through their own drainage systems. The upper ends of these watersheds are dead ends for wildlife movement because of existing, approved, or pending developments to the east and south of the Newhall Specific Plan area. This analysis focuses on the Salt Creek watershed in Ventura County and Los Angeles County and the adjacent Potrero watershed within the Newhall Ranch Specific Plan area in Los Angeles County.

(a) Salt Creek Watershed

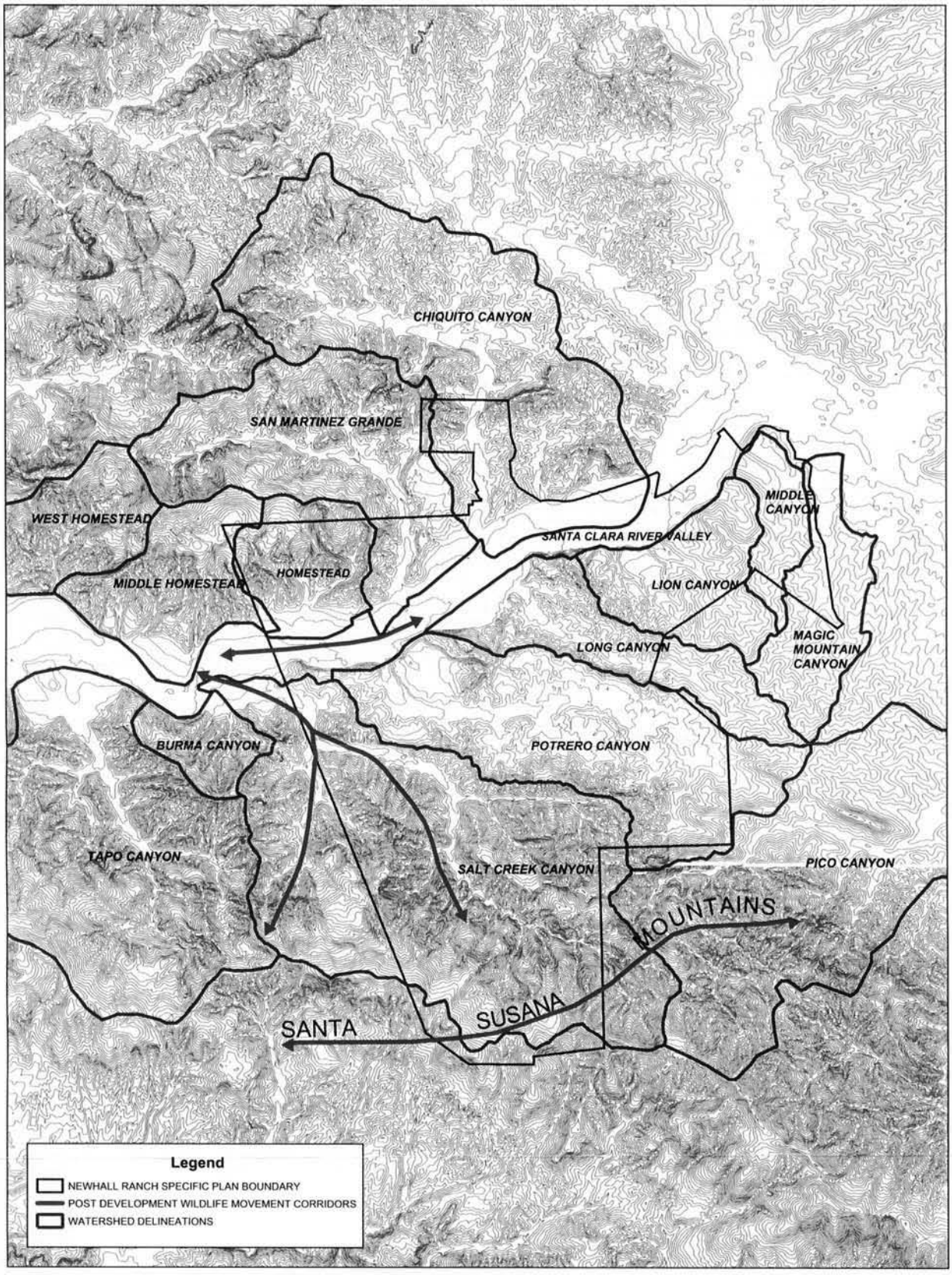
The Salt Creek watershed encompasses approximately 5,816 acres. Of this total, approximately 1,519 acres are within Ventura County between the jurisdictional boundary with Los Angeles County and the western limit of the watershed. A steep ridgeline between Potrero Canyon and Salt Creek Canyon/Grave Canyon form the eastern limit of the Salt Creek watershed in Los Angeles County. The ridge line of the Santa Susana Mountains (3,100 feet above mean sea level) forms the southern limits of the Salt Creek watershed in both Los Angeles County and Ventura County. The western limit of the Salt Creek watershed is in Ventura County and is formed by a ridgeline that separates Tapo Canyon and Salt Creek Canyon. The Salt Creek watershed terminates to the north where Salt Creek Canyon merges with the Santa Clara River Valley in Ventura County (825 feet above mean sea level).

Wildlife movement within the Salt Creek watershed is expected to occur along the general direction of the drainages between the Santa Susana Mountains and the Santa Clara River Valley. These routes are used because they follow the gentlest topography and more open habitat. Wildlife movement between watersheds to the east and west are easiest at the upper and lower ends of the watersheds. At the lower ends, canyons merge in the Santa Clara River Valley and are generally flat with less steep ridges. At the upper ends of the watersheds, the ridgeline of the Santa Susana Mountains provides less steep connections to the upper reaches of the canyons and adjacent watersheds.

(b) Potrero Creek Watershed

The Potrero Creek watershed encompasses approximately 3,029 acres, all within Los Angeles County and mostly within the Newhall Ranch Specific Plan area. Steep ridge lines of the northerly foothills of the Santa Susana Mountains to the east and west of Potrero Canyon form the limits of this watershed. The ridgeline of the Santa Susana Mountains (1,900 feet above mean sea level) forms the southern limit of the watershed and the northern limit is at the confluence of Potrero Canyon and the Santa Clara River Valley (875 feet above mean sea level).

Wildlife movement in the Potrero Creek watershed is similar to that described for the Salt Creek watershed. Most animal movement is expected to occur in a north/south direction within Potrero Canyon between the Santa Susana Mountains and the Santa Clara River Valley. Animal movements to the east and west are easiest at the upper and lower ends of the watershed. Ridgelines at the upper edge of the watershed provide an east/west connection between the Potrero Creek watershed and adjacent watersheds. The broad, relatively flat central portions of Potrero Canyon provide an easy east/west connection for animals to move to adjacent watersheds, while the narrow mouth of Potrero Canyon provides access to the Santa Clara River for animals to move along this regional corridor described below.



NEWHALL RANCH
Newhall Ranch Company

FIGURE 2.2-2
NEWHALL RANCH WATERSHEDS

0 1,000 2,000 4,000 Feet
FORMA
10-31-00
nh_watershedexhibit.mxd

(c) Salt Creek and Potrero Watersheds: Wildlife Movement from a Regional Perspective

As stated above, wildlife movement within the Salt Creek and Potrero Creek watersheds is focused on movement to and from the Santa Clara River Valley and open space located in the Santa Susana Mountains. The Santa Clara River Valley includes an important riparian corridor along the Santa Clara River that connects these watersheds with habitats to the east and west. The Salt Creek and Potrero watersheds serve as connections between the upland habitats to the south of the river valley and the habitats along the Santa Clara River. Large expanses of undeveloped land in the Santa Susana Mountains allow for the movement of wildlife down to the river and back through the canyons and ridges of these two watersheds.

As indicated above, the Salt Creek and Potrero watersheds are but one small part of a larger regional wildlife interface that currently exists between the Santa Clara River Valley and the Los Padres/Angeles National Forest lands to the north and Santa Susana Mountains to the south. This interface with the Santa Clara River Valley spans approximately 35 miles from Saticoy to the west in Ventura County to Castaic Junction to the east in Los Angeles County (*See,* **Figure 2.2-1**, above). The connection of the Salt Creek and Potrero Creek watersheds to the Santa Clara River Valley make up approximately 2.5 miles (or approximately 7 percent) of the entire regional wildlife movement interface. The role of the Salt Creek and Potrero watersheds on wildlife movement at a regional scale plays a role in the determination of potential cumulative impacts to regional wildlife movement not only in the portion of the Salt Creek watershed in Ventura County, but along the entire regional interface with the Santa Clara River Valley.

2.2.4.3 Vegetation and Wildlife Use

This section of the existing condition portion of the analysis describes the vegetation communities present in the Salt Creek watershed in Ventura County and Los Angeles County, as well as those present in the Potrero Creek watershed. Wildlife use of these vegetation communities or habitat types is discussed with respect to the distribution of the different land cover categories and existing land use patterns in the watersheds.

(a) Existing Vegetation Within the Watersheds

The distribution of the vegetation communities or land cover types for the Salt Creek and Potrero Creek watersheds are shown on **Figure 2.2-3, Pre-Project Habitat - Potrero and Salt Creek Canyons Watershed**

Exhibit. The area of each of the land cover types by watershed is given in **Table 2.2-2, Land Cover Distribution in the Potrero and Salt Creek Watersheds.**

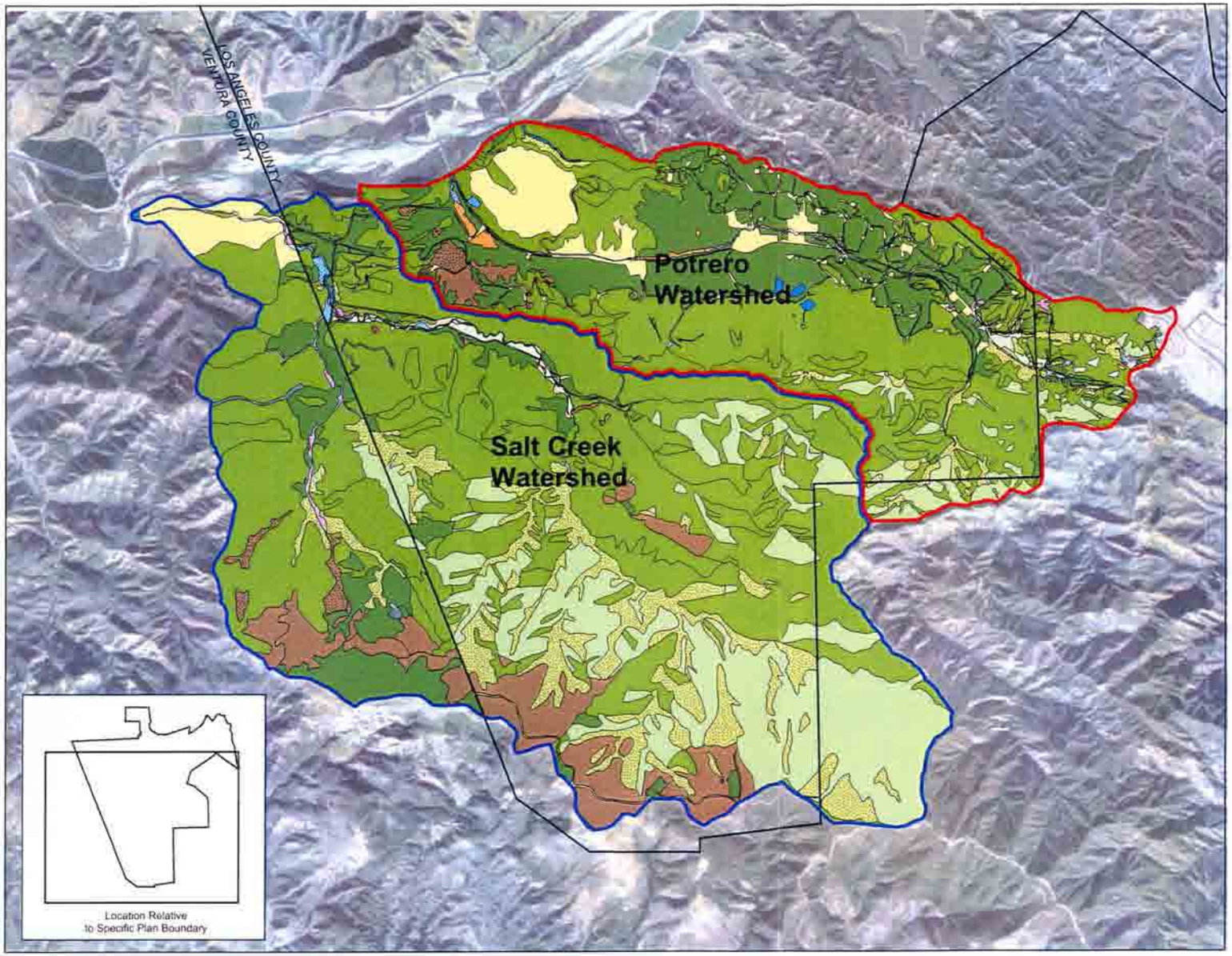
Table 2.2-2
Land Cover Distribution in the Potrero and Salt Creek Watersheds [1]

Land Cover	Potrero Creek Watershed	Salt Creek Watershed	
		Ventura County	Los Angeles County
Agriculture	323	110	36
Alluvial Scrub	4	0	16
Coastal Sage Scrub	1,385	747	2,107
Coastal Sage Scrub/Grassland	98	92	28
Elderberry Scrub	2	0	0
Grassland	816	282	138
Great Basin Scrub	15	2	31
Live Oak Woodland	96	53	559
Mixed Chaparral	160	24	1,063
Mule Fat Scrub	19.5	20	6
Mesic Meadow	15.4	0	0
Cattle Stock Ponds	6	0	0.2
Valley Oak Savannah	33	147	306
Valley Oak Woodland	22	33	5
Willow Scrub	3	0	2
Olive orchard	-	3	0
Disturbed	31	6	0
Total	**3,028.9**	**1,519**	**4,297.2**

[1] *Does not include portion of watersheds outside Specific Plan in Los Angeles County.*

Agricultural activities are found along the lower portions of the Salt Creek watershed in Ventura County. The flatter portions of this area (approximately 180 acres) is presently leased by the Newhall Land and Farming Company for the cultivation of organic vegetables including onions, broccoli, spinach, carrots and squash. The balance of the area is used for cattle grazing (approximately 50 acres). In the past, the entire area, at times, has been used for cattle grazing and for growing walnut trees. The portion of the Salt Creek corridor that occurs in Ventura County is approximately 5,000 feet in length and 2,000 feet in width (or approximately 230 acres) as measured from the County line on the east to the confluence of the river on the west, and from the river on the north to the base of the mountains on the south.

Photographs of the Los Angeles County portion of the Salt Creek watershed are provided in the Final EIR, Appendix 4.6. **Figure 2.2-4** presents photographs of the Ventura County portion of the lower watershed. As shown, the area in between the County line and the Santa Clara River is used primarily for row crop cultivation. At the time the photographs were taken (September 2000), most of the area had been disked in preparation for planting. At the confluence of Salt Creek and the Santa Clara River, a relatively thick stand of riparian vegetation exists. However, the creek itself is more sparsely vegetated



NEWHALL RANCH
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L E G E N D

SALT CREEK WATERSHED
POTRERO WATERSHED
NEWHALL RANCH SPECIFIC PLAN BOUNDARY

VEGETATION

- AGRICULTURAL AND OTHER DEVELOPED USES
- ALLUVIAL SCRUB
- ALLUVIAL SCRUB ADJACENT
- ALLUVIAL SCRUB/MULE FAT SCRUB
- COAST LIVE OAK WOODLAND
- COASTAL SAGE SCRUB
- COASTAL SAGE/GRASSLAND
- ELDERBERRY SCRUB
- GRASSLAND
- GREAT BASIN SCRUB
- GREAT BASIN SCRUB RIPARIAN ADJACENT
- MESIC MEADOW
- MIXED CHAPARRAL
- MULE FAT SCRUB
- MULE FAT SCRUB ADJACENT
- MULE FAT SCRUB/VALLEY FRESHWATER MARSH
- CATTLE STOCK POND
- SOUTHERN WILLOW SCRUB
- SOUTHERN WILLOW SCRUB ADJACENT
- VALLEY OAK SAVANNA
- VALLEY OAK WOODLAND

FORMA

FIGURE 2.2-3
PRE-PROJECT HABITAT
POTRERO AND SALT CREEK
CANYONS WATERSHED EXHIBIT

LOCATION 1 Facing east looking into Salt Creek Canyon.

LOCATION 2 Confluence of Salt Creek with Santa Clara River.

LOCATION 2 Confluence of Salt Creek with Santa Clara River.

NEWHALL RANCH
Newhall Ranch Company

IMPACT SCIENCES INC

FIGURE 2.2-4
PHOTOGRAPHS OF
SALT CREEK WATERSHED

due to its lower soil moisture compared with the River. Coastal sage scrub, coastal sage scrub/grassland, and grassland dominate the majority of the upland land cover on the lower elevations. Shaded slopes and small canyons support areas of live oak woodland. The upland habitats of the upper elevations of the Salt Creek watershed support large areas of valley oak savannah and grasslands. Creeks at the lower elevations are vegetated with mule fat scrub.

The portion of the Salt Creek watershed in Los Angeles County is dominated by coastal sage scrub at lower elevations. Mixed chaparral and live oak woodland replace coastal sage scrub habitats at higher elevations of the watershed. Salt Creek is vegetated with mule fat scrub and alluvial scrub.

The Potrero Creek watershed is dominated by the grasslands and agricultural areas of the broad canyon floor of Potrero Canyon. Coastal sage scrub is dominant on the steep slopes of Potrero Canyon with limited areas of live oak woodland and valley oak savannah. Mesic Meadow is also found in this watershed (*See,* **Figure 2.2-3, Pre-Project Habitat - Potrero and Salt Creek Canyons Watershed Exhibit**).

(b) Existing Land Uses within the Watersheds

The existing distribution of vegetation communities and land cover categories in the Salt Creek and Potrero watersheds are dramatically different. The differences are based on past land use history (*e.g.*, cattle grazing, oil fields, and farming) of the watersheds and their topographic extent. Existing land use in the Salt Creek and Potrero watersheds are shown on **Figure 2.2-5, Existing Land Use - Potrero and Salt Creek Canyons Watershed Exhibit**.

The majority of the Potrero Creek watershed area is within the broad valley of Potrero Canyon. Land uses within the Potrero Creek watershed are characterized primarily by on-going cattle grazing, agricultural activities, and historic petroleum extraction. These activities have degraded much of the vegetation found in this watershed. The only relatively intact vegetation communities, primarily coastal sage scrub, mixed chaparral, and oak woodlands, occur on the steep slopes of Potrero Canyon and at the upper end of the watershed.

The Salt Creek watershed also has been the site of on-going cattle grazing and agricultural activity. Vegetation in this watershed is dominated by coastal sage scrub, mixed chaparral, and oak woodlands. The Salt Creek watershed in Ventura County is characterized by much higher topographic relief than the portion in Los Angeles County and the Potrero Creek watershed, including both steep slopes and greater elevation difference from the Santa Clara River to the Santa Susana Mountains ridgeline (*See,* **Figure 2.2-2, Newhall Ranch Watersheds**). Steep slopes, especially on the Salt Creek side bound the ridgeline

separating the Salt Creek watershed in Los Angeles County from the Potrero Creek watershed. Another ridgeline separates the Ventura County portion of the Salt Creek watershed from the portion in Los Angeles County.

(c) Wildlife Use

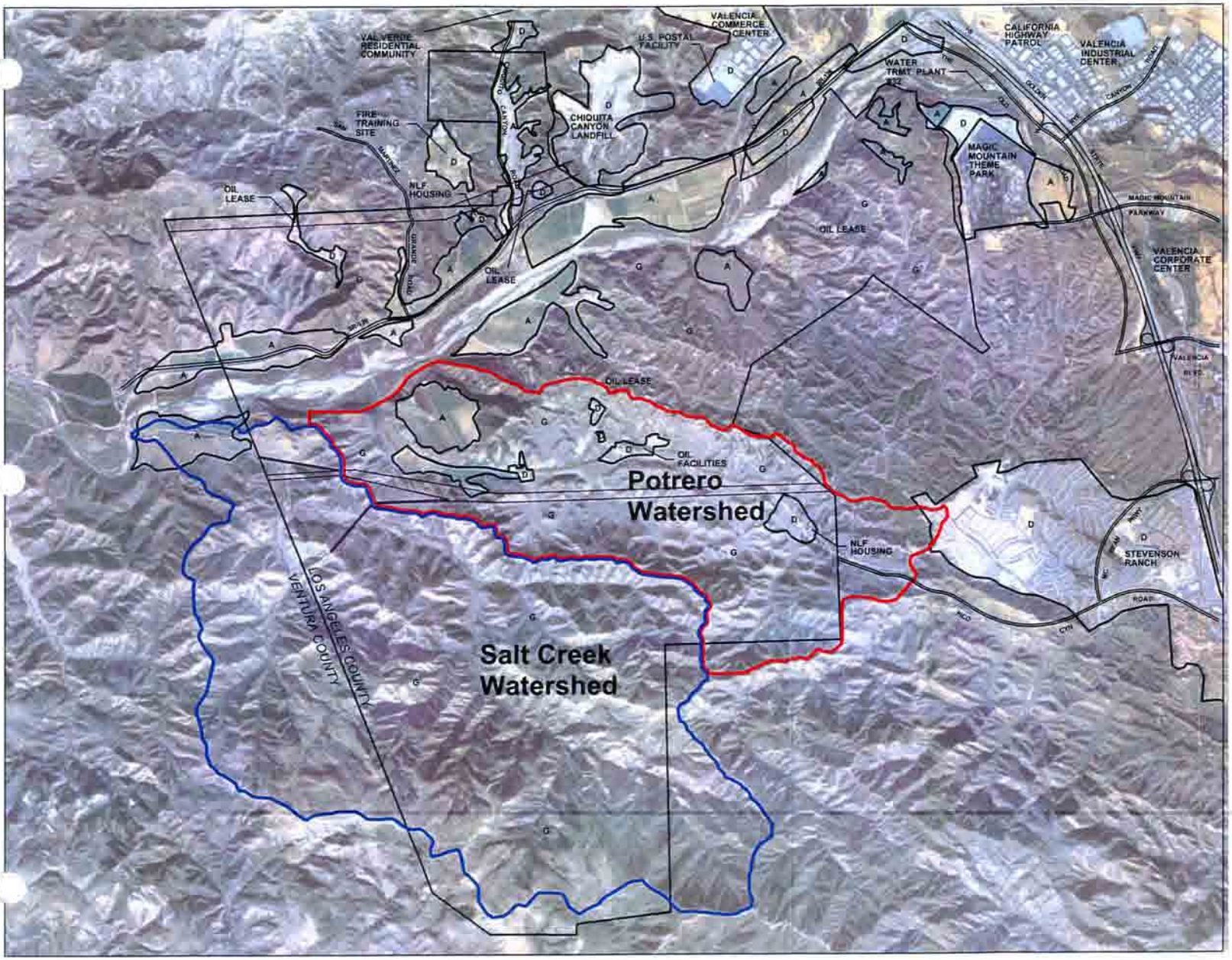
Wildlife use of the Salt Creek watershed should be different than the Potrero Creek watershed based on differences in the types of habitat that dominate the two watersheds. A large portion of the Potrero Creek watershed is dominated by non-native grasslands. Grasslands, in general, support a lower diversity of wildlife than do scrubs or woodlands. Rodents and other small mammals do well in grasslands, but the diversity of species is generally low. Birds of prey and large mammals, such as deer and coyote, use grasslands as a source of food (*i.e.*, prey and browse), but not for shelter or breeding activities.

The Salt Creek watershed supports larger areas of native scrub and woodland habitats, and thus, supports a more diverse assemblage of wildlife species. Scrub and woodland habitats provide food, shelter, and breeding areas for large mammals. A more diverse small mammal assemblage was observed in this watershed due to the greater diversity in community structure, or layers, within the vegetation (*i.e.*, herbaceous layer, shrub layer, tree layer). This increased community structure also supports a higher diversity of bird species over grasslands due to the presence of a greater variety of nest sites that are better protected from predators.

Abundant signs of mule deer and coyote, and to a lesser extent bobcat, occur throughout the Salt Creek watershed in Ventura County and Los Angeles County (Impact Sciences 2001 and RECON 1996). Higher levels of use occur in the scrub (*e.g.*, coastal sage scrub, mixed chaparral) and woodland (live oak and valley oak) habitats, as these areas provide both cover and potential food resources. To some extent, the non-native grasslands within the Salt Creek watershed in both counties provide forage for mule deer and predatory species such as coyote and raptors.

2.2.4.4 Animal Movement

Animal movement is discussed below in two ways. First, a brief discussion of animal movement concepts is presented as a basis for understanding how conclusions are drawn from the impact analysis presented later in this report. Second, a discussion of direct observations of wildlife movement in the Salt Creek watershed in Ventura County is presented.



NEWHALL RANCH
Newhall Ranch Company

L E G E N D

- SCE/UTILITY EASEMENTS
- EXISTING ROADS
- A AGRICULTURE
- D DEVELOPMENT
- G CATTLE GRAZING
- SALT CREEK WATERSHED
- POTRERO WATERSHED
- NEWHALL RANCH SPECIFIC PLAN BOUNDARY

FORMA

FIGURE 2.2-5
EXISTING LAND USE
POTRERO AND SALT CREEK
CANYONS WATERSHED EXHIBIT

(a) Concepts of Animal Movement

The pattern of animal movement through any landscape is species specific, responds to the individual species' life history requirements, and is affected by the relative fragmentation of the landscape. The primary reasons that animals move are to:

(1) Make use of their home range for foraging, reproduction, and shelter;

(2) Disperse from their natal site, typically as they approach sexual maturity; and

(3) Migrate seasonally between two locations, although this is not typically important to most species in Southern California.

In addition to the movement of individual animals throughout their lifetime, the movement of individuals, especially through dispersal, is an important aspect of the "metapopulation dynamics" of the local population. A metapopulation is defined as a population of populations and refers to the patchiness with which species are distributed (Gilpin and Hanski 1991). The movement of individuals between distinct natural or fragmented habitat patches (*i.e.*, different populations) in a larger area is important in natural recolonization events that help to sustain populations in other areas (*i.e.*, maintenance of the metapopulation).

A third level of importance for animal movement has to do with maintenance of genetic continuity within populations. As few as one individual per generation can maintain the genetic connection between populations, even in more fragmented environments, providing for both maintenance of genetic similarity within the metapopulation and for the maintenance of genetic diversity.

(b) Observations of Wildlife Movement

Observation of animals, scat, tracks, and other sign have been made by biologists performing a variety of surveys throughout the Newhall Ranch Specific Plan area, including the Salt Creek and Potrero Creek watersheds, over the past decade. Additionally, observation of many species, particularly large mammals and raptors, have been noted by ranch personnel using the areas within the Specific Plan and areas within the Salt Creek watershed in Ventura County. Some of these observations have been made in that portion of the Salt Creek watershed in Ventura County because access to the upper elevations of the Specific Plan area in the Santa Susana Mountains is gained by roads that traverse the watershed in Ventura County. The most recent observations of wildlife in the Ventura County portion of the Salt Creek watershed were made during surveys conducted in June 2000 and February, March and April 2001.

(1) Salt Creek Watershed

Wildlife species diversity has been reported throughout the Salt Creek watershed in both Ventura County and Los Angeles County, especially in habitat areas with brush and tree cover. Mule deer, coyote, and bobcat are important indications of large mammal movement. Wildlife movement by large mammals in the Salt Creek watershed in Ventura County has been directly observed (*i.e.*, actual observations of animals moving), and indirectly observed through tracks on wildlife trails. However, the ability to discern wildlife trails made by native species, often easily identified in the field, is problematic in some areas of the watershed in both counties because of the number of cattle grazing paths in these areas.

Recent observations of wildlife movement by mammals in the Salt Creek watershed in Ventura County show abundant tracks and scat of mule deer, coyote, gray fox, and raccoon along the edges of the agricultural fields adjacent to the lower end of Salt Creek as it exits the canyon and flows through the excised channel into the Santa Clara River. These species are expected to move between the shelter of the nearby coastal sage scrub and live oak woodland habitats to the cover, forage, and water resources of the riparian areas of the Santa Clara River both on a local and watershed level. These movements could be on a daily basis within a season, or on a seasonal basis.

Seasonal differences in the availability of food and water within the Salt Creek watershed in Ventura County determine where and how far the large mammals move to find these resources. For example, when water is abundant in the watershed during the seasonal rains, large mammal movement is less, and likely spread out over the watershed. Animals move shorter distances because many opportunities exist within the Salt Creek watershed in both counties to gain access to water (*i.e.*, the smaller drainage courses have flows). As these smaller tributary drainage courses dry later in the spring and summer months, large mammal movement within the watershed in Ventura County shifts toward animals moving greater distances to reach resources in the lower watershed such as the Santa Clara River Valley.

Movement of avian species within the Salt Creek watershed in both Ventura County and Los Angeles County is also seasonal. Some bird species migrate with the changing seasons into and out of the watershed, while resident bird species have more local movements between habitat patches within the watershed. Overall, bird movements are not related to watershed boundaries, but are more dependent on the over all pattern of resources (*e.g.*, distribution and abundance of food and nesting sites).

Movement of small mammals (*e.g.*, rodents, skunks, raccoons, *etc.*) and reptiles (*e.g.*, lizards, snakes) in the Salt Creek watershed in Ventura County and Los Angeles County are dependent upon a more limited range of vegetation communities which tends to restrict their movements, except for dispersal, to these

habitats. Small mammals and reptiles typically will range over an area of less than one acre to several acres at most.

There are very few restrictions to wildlife movement in the Salt Creek watershed. Some fences are used to divide grazing activities of cattle, but these do not prove effective barriers to native wildlife because animals can move through the fences, or over the fences in the case of birds. Fences appear to be more abundant in the portion of the watershed in Los Angeles County than in Ventura County. Steep topography and thick brush may also restrict wildlife movement. These two factors tend to affect the direction and location of movement within the watershed. In general, wildlife movement of large mammals is less restricted where the topography is less steep and the vegetation cover is more open. Birds are less affected by cover and topography. Small mammals and reptiles may be affected locally by topography and vegetation cover, however, these factors are more significant barriers to dispersal of these smaller organisms.

(2) Potrero Creek Watershed

Wildlife species diversity in the Potrero Creek watershed also has been well documented because it is located within the Specific Plan area and has been subject to numerous surveys. Based on extensive surveys conducted within the Specific Plan site, which includes Potrero Creek watershed, from 1993 to 1996, to the most recent surveys in March and April, 2001, the same species of large mammals observed using the Salt Creek watershed have also been observed using the Potrero Creek watershed. ~~The same types of large mammals that use the Salt Creek watershed are expected to use the Potrero Creek watershed.~~ Extensive grasslands on the Potrero Canyon valley bottom allow for easy movement by large mammals (*i.e.*, flat, open areas). Movement of large mammals to these grasslands within this watershed for forage and prey items occurs frequently. Steep brush covered slopes that define the watershed limits restrict movement of large mammals and determine, to some extent, the direction and location of access to adjacent watersheds.

While the number of wildlife species within the Potrero Creek watershed is expected to be less than occurs within the Salt Creek watershed, overall movement patterns of the bird, small mammal, and reptile species within Potrero are likely similar to that described above for the Salt Creek watershed. ~~Bird, small mammal, and reptile movements are similar as described above for the Salt Creek watershed. The abundant grassland and agricultural fields in Potrero Canyon support a larger small mammal population, but less diverse than adjacent scrub and woodland habitat areas (Impact Sciences and RECON 1996). Movement of small mammals within the Potrero Creek watershed appears greater, but is the result of the presence of more animals (*e.g.*, rodents).~~

As in the Salt Creek watershed, wildlife movement patterns in the Potrero Creek watershed are subject to change due to seasonal differences in the abundance of resources such as food and water. Movement of wildlife, particularly large mammals, to and from the Santa Clara River Valley is likely to be more common when food and water resources are low during the dry part of the year. This movement is effected to some extent by the presence of more water troughs for cattle in the Potrero Creek watershed. Although there are several fences in the Potrero Creek watershed, based on observations, the fences do not effect movement of the native wildlife.

2.2.5 SIGNIFICANCE THRESHOLD CRITERIA

The CEQA *Guidelines* Appendix G provides the following threshold of significance with respect to animal movement. The project would have a significant impact if it would "interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites."

2.2.6 PROJECT IMPACTS

This impact analysis focuses on the direct and potential indirect and cumulative impacts to the Salt Creek watershed in Ventura County and Los Angeles County from implementation of the proposed Newhall Ranch Specific Plan. Direct impacts represent the actual loss of area within the watershed, typically assessed by losses of particular habitat types. Potential indirect impacts represent primarily edge effects between the limits of development in the Salt Creek watershed in Los Angeles County and the portion of the Salt Creek watershed in Ventura County as well as increased human presence and activity. Cumulative impacts represent the potential impacts to the Salt Creek watershed in Ventura County from proposed activities in the vicinity of the Specific Plan area in both Los Angeles County and Ventura County.

The impact analysis described above is discussed in terms of not only the area of habitat loss within the Salt Creek watershed in Los Angeles County, but also how these losses and impacts may affect wildlife movement within that portion of the Salt Creek watershed located one half of a mile away in Ventura County. Wildlife movement is assessed on both a local watershed level and a regional wildlife corridor connection level (*i.e.*, in relation to the Santa Clara River Valley, Santa Susana Mountains, and Los Padres/Angeles National Forest).

2.2.6.1 Direct Impacts of the Newhall Ranch Specific Plan

The direct impacts of the development of the Newhall Ranch Specific Plan on the Salt Creek watershed in Ventura County and Los Angeles County were assessed on the basis of the changes in acreage of existing vegetation communities within the Potrero and Salt Creek watersheds. This assessment focuses on the changing relationship between habitat and the wildlife supported by it in Potrero Creek and Salt Creek watersheds, because the smaller watersheds to the east currently have little or no connection to the Salt Creek watershed or to the uplands of the Santa Susana Mountains (*See,* **Figure 2.2-2, Newhall Ranch Watersheds**). These smaller watersheds are isolated due to existing development projects to the east and, therefore, will have little or no effect on the relationship between the Potrero Creek watershed and the Salt Creek watershed. The following ecological principles and criteria were used in assessing the direct impacts of the proposed Specific Plan on wildlife movement in the Salt Creek watershed in Ventura County and Los Angeles County:

(1) Animal species are associated with a certain vegetation community or set of communities;

(2) On a landscape scale and in the long term, the loss of habitat in an area will decrease the population of animals dependent upon that habitat; and

(3) Animals in a specific area (*e.g.*, a watershed) where habitat is removed, in the short term, may become functionally part of the most contiguous adjacent area (*e.g.*, an adjacent watershed), especially from the perspective of wildlife movement patterns.

These criteria are important because they are major factors defining the interrelationship between the distribution of habitat types to the distribution and potential movement of wildlife within the Salt Creek watershed. Habitat type and wildlife use are correlated to the extent that wildlife species tend to prefer certain habitat types over others, and populations of wildlife are distributed in relation to the distribution of the available habitats, unless habitat values are diminished by disturbance or fragmentation. Loss of habitat may result in a decrease in wildlife populations at a local scale (*i.e.*, less habitat supports less wildlife) and may cause the movement of wildlife to adjacent undisturbed habitat areas (*i.e.*, dispersal of wildlife to areas with habitats available).

(a) Habitat Loss in the Potrero Creek Watershed and the Salt Creek Watershed

Direct impacts to habitats in the Potrero Creek watershed in Los Angeles County from the proposed Newhall Ranch Specific Plan are important to the Salt Creek watershed in both Los Angeles County and Ventura County because of their interface within Los Angeles County. Habitat loss in the Potrero Creek watershed would potentially cause a shift in some wildlife populations to undisturbed habitats in the Salt Creek watershed in both Los Angeles and Ventura County. Habitat losses in the Potrero Creek

watershed would also potentially affect the long-term movement of wildlife within this watershed and within the Salt Creek watershed in both Ventura County and Los Angeles County. Habitat losses would limit the future use of the Potrero Creek watershed for wildlife movement due to development and potentially increase the amount of wildlife movement to the Salt Creek watershed in Ventura and Los Angeles Counties. The magnitude of such impacts are addressed below.

Direct impacts to habitat types (measured in acres) in the Potrero Creek watershed and the Los Angeles and Ventura County portions of the Salt Creek watershed are given in **Table 2.2-3, Habitat Impacts in the Potrero and Salt Creek Watersheds**. Direct loss of habitat from the proposed Newhall Ranch Specific Plan occurs almost exclusively within the Potrero Creek watershed in Los Angeles County. The only direct impacts to habitat in the Salt Creek watershed occur in the portion of the watershed in Los Angeles County where a visitor center and access road would be built, and to accommodate estate residential uses on the ridge between Potrero and Salt Canyons. No direct impacts to habitat in the portion of the Salt Creek watershed in Ventura County would occur in association with the Specific Plan. Because the Los Angeles County Board of Supervisors established a one-half mile wide buffer [south of the river] between the development proposed as part of the Specific Plan and the Los Angeles County/Ventura County boundary line, the Specific Plan development cannot occur any closer than one-half mile from the Salt Creek corridor situated in Ventura County.

Table 2.2-3
Habitat Impacts in the Potrero and Salt Creek Watersheds

	Potrero Creek Watershed, Los Angeles County			Salt Creek Watershed		
Land Cover	Existing Acres	Impacted Acres	Acres Remaining Post-project	Existing Acres	Impacted Acres	Acres Remaining Post-project
Agriculture	323	298	25 (8%)	146	4	142 (97%)
Alluvial Scrub	4	2	2 (50%)	16	1	15 (99%)
Coastal Sage Scrub	1,385	853	532 (38%)	2,854	193	2,661 (93%)
Coastal Sage Scrub/Grassland	98	-	98 (100%)	120	-	120 (100%)
Elderberry Scrub	2	2	0 (0%)	-	-	-
Grassland	816	713	103 (13%)	420	10	410 (98%)
Great Basin Scrub	15	9	6 (40%)	33	6	27 (82%)
Live Oak Woodland	96	20	76 (79%)	612	-	612 (100%)
Mixed Chaparral	160	13	147 (92%)	1,087	0.1	1,086.9 (99%)
Mule Fat Scrub	19.5	16	3.5 (18%)	26	-	26 (100%)
Mesic Meadow	15.4	6	9.4 (60%)	-	-	-
Cattle Stock Ponds	6	6	0 (0%)	0.2	-	0.2 (100%)
Valley Oak Savannah	33	9	24 (72%)	453	-	453 (100%)
Valley Oak Woodland	22	7	15 (64%)	38	-	38 (100%)
Willow Scrub	3	2	1 (33%)	2	-	2 (100%)
Olive orchard	-	-	-	3	0	3 (100%)
Disturbed	31	-	31 (100%)	6	0	6 (100%)
Total	**3,028.9**	**1,956**	**1,072.9 (35%)**	**5,816.2**	**214.1**	**5,602.1 (96%)**

(b) *Effects of Habitat Loss on Wildlife Movement within the Salt Creek Watershed*

It is important to realize that the portion of the Specific Plan area proposed for development will not develop all at once. The impression created by Ventura County in response to the recent NOP is that development of Newhall Ranch will result in a mass dispersal of animals into the Ventura County portion of Salt Canyon. This is not correct. In fact, development of the Newhall Ranch Specific Plan will occur gradually as each individual subdivision is constructed in the Specific Plan area. This development area would develop in many stages (*i.e.*, in individual subdivisions) over two to three decades. The schedule for and order of development is driven by market conditions. However, for purposes of this analysis only, it has been estimated that an annual average of approximately 860 dwelling units would be constructed on the Specific Plan site beginning in 2005. Generally, development is expected to occur from east to west, beginning at locations adjacent to existing infrastructure and services. It is also important to remember that the Los Angeles County Board of Supervisors established a one-half mile wide buffer south of the river and a one-eighth of a mile buffer north of the river between all development proposed as part of the Specific Plan and the Ventura County line.

Development in the Potrero Creek watershed would likely not occur until approximately 2025 to 2030, approximately two to three decades after development on the Specific Plan site is predicted to commence. Over the approximately 20 to 25 years required to develop the areas further removed from Ventura County, miles of open area would separate the Salt Creek corridor in Ventura County from development on Newhall Ranch. This intervening area in Los Angeles County would be available to those animals able to relocate. As areas transition to development over time, the direct loss of habitat in the proposed development areas east and north of the Potrero Creek watershed (nearly all which are located miles from Ventura County) would affect the movement of wildlife both within the development areas and in areas adjacent to them. These effects would be most noticeable for small mammals and reptiles rather than large mammals because the former have limited movement and dispersal due to their physical constraints and, hence, smaller home range sizes (a "home range" is the area utilized by an animal during its lifetime). Large mammals and birds can cover greater distances and obstacles because of their type of mobility (*i.e.*, flight for birds, strong legs and size for larger mammals) and have larger home range sizes (*e.g.*, deer = 1,280 acres, coyote = 6,400 acres). Small mammals and reptiles are much more restricted in their movement because of their small size and lesser physical strength and, hence, have smaller home range sizes (*e.g.*, rabbit and deer mouse = 1 acre, ground squirrel = 4 acres). Given the distances between the development proposed north and east of the Potrero Creek watershed and the Salt Creek corridor in Ventura County, it is likely that all but the larger mammals and birds would never reach the Ventura County portion of Salt Canyon.

Not until many years later (*e.g.*, approximately 2025) would the direct loss of habitat in the Potrero Creek watershed and other areas within the Newhall Ranch Specific Plan area potentially affect the movement of wildlife both within that watershed and between areas adjacent to that watershed. As described above for the areas more removed from Ventura County, these effects would be most noticeable for small mammals and reptiles rather than large mammals.

Wildlife movement within the Potrero Creek watershed would eventually be affected by the loss of available habitat, and thus resources, resulting in a decrease in the amount of wildlife the watershed can support. Fewer available resources within the Potrero Creek watershed would cause some level of wildlife movement to available resource pools in adjacent areas (by those animals able to move into adjacent areas). *Some* wildlife use and movement (primarily by larger mammals and birds) would ultimately be shifted to the undisturbed areas of the Potrero Creek watershed and Salt Creek watershed in Los Angeles County. Only those more mobile animals would be expected to move the half-mile or more necessary to ever reach the Salt Creek corridor situated in Ventura County. (Although some effects of potential wildlife displacement could propagate westward into the Tapo Canyon watershed [which is the watershed in Ventura County immediately west of the Salt Creek watershed], this is unlikely for smaller and medium sized animals because they would have to travel farther than their normal dispersal distances. The steep slopes on either side of the ridgeline between Salt and Tapo Canyons also poses somewhat of a barrier for movement, except at the top [Santa Susana Mountains crest]. Larger mammals likely have home ranges that encompass more than just these drainages, and the habitat loss from the Specific Plan would affect only a portion of their normal use areas.)

Because of the large area involved (*i.e.*, the Potrero and Salt Creek watersheds), as well as the area's role as part of the much larger region of existing habitat in the Santa Susana Mountains (*i.e.*, the entire Santa Susana Mountain range in Los Angeles and Ventura Counties of which the Potrero and Salt Creek watersheds are only a small part), the wildlife populations within the Salt Creek watershed in both Los Angeles County and Ventura County are considered relatively stable (*i.e.*, the watershed supports the maximum number of animals based on the available resources or is near "carrying capacity"). When populations are stable, three effects may be realized as habitat is removed by long-term, staged development in the Potrero Creek watershed.

First, the wildlife physically able to move into the Salt Creek watershed from the developed portions of the Newhall Ranch Specific Plan area would find little or no available resources to support them and would consequently perish (the displacement of wildlife species would primarily effect only large mammals; the smaller wildlife species will more likely suffer from direct mortality as a result of land development). Second, displaced wildlife in the Los Angeles County portion of the Salt Creek watershed,

finding no available resources, may move to the Ventura County portion of the watershed or areas outside of the watershed that contain available resources. (By this point, the number of animals dispersing to other areas is becoming very small.) Third, wildlife moving into the Salt Creek watershed may displace some animals with established home ranges in the Salt Creek watershed. These animals displaced from the Salt Creek watershed (predominantly the Los Angeles County portion which is nearest the proposed development) would then, in smaller numbers yet, disperse elsewhere, either perishing or displacing other individuals in adjacent watersheds. Because of the increased risk of mortality to dispersers, this effect would not likely extend beyond the normal dispersal distance of the wildlife species involved. Ultimately, the population would "stabilize" to the number of individuals supported by the available habitat. Again, larger mammals (*e.g.*, mountain lions, coyotes, deer, *etc.*) likely have home ranges that encompass more than just the Salt Creek watershed, and the habitat loss from the Specific Plan would affect only a portion of their normal use areas.

Based on collected field data, current land uses within the Salt Creek watershed in Ventura County (*i.e.*, crop cultivation and cattle grazing) do not appear to inhibit wildlife movement between the Santa Clara River Valley and the Santa Susana Mountains. Abundant signs of wildlife use of the watershed in Ventura County, especially around the agricultural areas at the confluence of Salt Creek and the Santa Clara River in Ventura County, show that wildlife use of the watershed in Ventura County is not affected by existing agricultural uses or practices. Cattle grazing within the Salt Creek watershed in Ventura County may have an existing effect on the population size of native wildlife through competition for some resources as it does on the Los Angeles County portion of the watershed. However, cattle themselves do not represent a barrier to native wildlife movements in the watershed.

As discussed above, the displacement of wildlife species, primarily larger mammals, would occur incrementally over a very extended period of time. These larger wildlife species (*e.g.*, mountain lion, deer, bobcat, coyote) generally have home ranges that are not confined only to one watershed, and would be expected to be displaced in relatively small numbers. In contrast, the smaller wildlife species will more likely suffer from direct mortality as a result of land development, and not be displaced into adjacent watersheds. This time factor allows for a very gradual shift (*i.e.*, over a period of decades) of wildlife use/movement for those animals able to move a distance of more than one-half mile from the Specific Plan area in Los Angeles County to adjacent undeveloped areas, including the Salt Creek watershed in Ventura County. These very gradual increases in wildlife use/movement in the Salt Creek watershed in both Los Angeles County and Ventura County would be easier to absorb with wildlife movement over many, many years (*i.e.*, the animals would have more time to adapt to the available resources or would have time to move out of the Salt Creek watershed to adjacent watersheds). Therefore, the direct impacts of habitat loss in the Specific Plan area on wildlife movement within the Salt

Creek watershed, and particularly the Ventura County portion given its distance away from proposed development, would not be significant because: (a) the habitat losses within the Salt Creek watershed in Los Angeles County would be relatively small (*i.e.*, no significant loss of available resources at this location); and (b) wildlife movement would not be restricted by existing land uses, and wildlife use/movement shifts from the Specific Plan area to adjacent watersheds, including some movement to the Salt Creek watershed in Ventura County, would occur over a relatively long time period (*i.e.*, at least 25 to 30 years), thereby allowing time for some species to move to the adjacent watersheds.

As concluded in the Final EIR:

> "[d]ue to the conversion of approximately 5,132 acres of habitat that are in a largely natural condition to a suburban and urban condition, implementation of the Newhall Ranch Specific Plan would substantially diminish habitat for wildlife and plants. Implementation of the Specific Plan would also significantly impact sensitive wildlife species, *significantly impact the ability of animals to move across portions of the site*, and significantly impact several sensitive upland habitat types. All of these are considered unavoidable significant impacts that cannot be fully mitigated." [*Emphasis Added.*]

The above analysis supports the conclusion reached in the Final EIR, that the Specific Plan would cause unavoidably significant animal movement impacts on the Specific Plan site. However, recent field evidence collected on the site and in Ventura County, a review of relevant literature in association with this analysis (*See*, references in **Section 6.0**), and the substantial amount of related field experience maintained by the EIR biologists indicates that such significant impacts would not occur in the Ventura County portion of Salt Canyon.

2.2.6.2 Indirect Impacts of the Newhall Ranch Specific Plan

Indirect impacts (*e.g.*, noise, lighting, human and domestic pet encroachment) from the proposed Specific Plan on the Salt Creek watershed in Ventura County would be little or none because the edge of development in Los Angeles County nearest to the portion of the watershed in Ventura County is setback from the Los Angeles County/Ventura County boundary by a minimum distance of one-half mile.

Potential indirect impacts are possible to the portion of the Salt Creek watershed in Los Angeles County nearest the edge of development. However, these edge effects are somewhat tempered by the topographic relief between the edge of development and the canyon floor of Salt Creek Canyon. Placement of the proposed Visitor Serving uses in lower Salt Creek Canyon (*See*, **Figure 1.0-3** in **Section 1.0** for the location of the Visitor Serving use) would focus human encroachment into the watershed in Los Angeles County rather than Ventura County. The potential indirect impacts to the portion of the Salt

Creek watershed in Los Angeles County would have localized effects on wildlife use/movement near the Visitor Serving[2] uses, but these effects would not change wildlife use/movement patterns in the Ventura County portion of the watershed. Potential shifts in movement of larger mammals away from Salt Creek Canyon in the vicinity of the Visitor Serving uses in Los Angeles County to lower Salt Creek Canyon in Ventura County would not be significant because the visitor center does not represent a barrier to wildlife movement.

The NOP response letter from California Department of Fish and Game, dated December 11, 2000, requested that this analysis examine potential impacts associated with the increased exposure to wildlife of pesticides applied on cultivated fields in Ventura County. The letter also described how existing agricultural uses in Ventura County diminish the quality of this corridor for wildlife movement through the presence of fencing, vegetation disturbance, and the lack of vegetative cover.

As described earlier in this section, the Salt Creek watershed is presently used by a variety of mammals for movement even though the approximately 146 acres of that watershed is in active agricultural production. In fact, tracks and/or scat of mule deer, coyote, gray fox, mountain lion and raccoon were observed along the edges of the agricultural fields adjacent to the lower end of Salt Creek in Ventura County just before the confluence with the Santa Clara River. The recent presence of tracks and scat at this location and others in the vicinity indicates that the existing operation of agricultural fields, including the use of pesticides and herbicides, are not a deterrent to the use of this area for wildlife movement.

Given that development associated with the Specific Plan would occur no closer than one-half mile from Ventura County and that no component of the proposed Specific Plan would alter habitat or any open area in Ventura County, it is expected that wildlife will continue to utilize the Salt Creek drainage in Ventura County as a movement corridor as Specific Plan implementation occurs a half a mile or more away. Evidence supporting this conclusion exists locally in the Santa Clarita Valley. While studying habitat in and adjacent to the Santa Clara River corridor upstream of Newhall Ranch in the City of Santa Clarita, biologists for Impact Sciences have noted the use of the river corridor by various mammals and bird species (Impact Sciences, Inc. 1997). In many cases, these areas of animal use were located immediately adjacent to existing developed urban areas, far closer than Specific Plan development will ever approach Ventura County. Also, many large mammals (*e.g.*, mountain lion, coyote, bobcat, bear, *etc.*) are known to commonly travel immediately adjacent to and within urbanized areas. The Specific Plan will build out over a period of 25-30 years, so the frequency of wildlife use would be maintained at a

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2 As defined by the Specific Plan, Visitor Serving Uses are those commercial and recreational uses that do not significantly impair natural resources of the area. Examples include agriculture, campgrounds, arboretums, athletic fields, bicycle rentals community centers, guest ranches.

stable rate, since animals would be displaced incrementally over that time period. This will allow sufficient time for populations to stabilize once the carrying capacity of the land is reached as described above under direct impacts. Consequently, the number of animals using the Salt Creek corridor at a given time will not be substantially greater than that experienced under current conditions. Also, the Specific Plan will not result in an increase in the use of pesticides and herbicides in Ventura County. Consequently, animal exposure to agricultural activity, including the continued use of pesticides and herbicides, along the Corridor would not substantially increase from present conditions, and no significant indirect effects on wildlife movement in the Salt Creek watershed are expected.

2.2.6.3 Potential Cumulative Impacts to the Salt Creek Watershed in Ventura County due to Development

The Specific Plan Final EIR describes the cumulative impacts to biological resources in the vicinity of the Specific Plan area. Thirteen projects were identified that would affect the overall biological character of the region (*See,* **Figure 2.2-1, Wildlife Movement**). Since the certification of the Final EIR by Los Angeles County, some of the development projects are nearly completed (*e.g.*, Stevenson Ranch Phase II, Valencia Marketplace); others remain in various stages of the planning and approval processes; and some are no longer proposed (*e.g.*, the Hidden Canyon project in Moorpark). The conclusion drawn from this cumulative analysis was that the loss of biological resources from all of these relatively large development projects in the region was considered unavoidably significant. As stated in the Final EIR:

> "...several large development projects are proposed for the Los Angeles/Ventura County region, including the Newhall Ranch Specific Plan. All of these proposed developments would remove natural habitat. The Newhall Ranch Specific Plan will convert approximately 5,132 acres of land from a largely natural, albeit partially disturbed, habitat condition, to that of a suburban/urban environment. That conversion, when added to all the other such conversions of open area that are proposed, will permanently decrease the amount of land available for natural habitats and the flora and fauna that inhabit them. Neither implementation of the Newhall Ranch Specific Plan nor any other similar large scale project proposed on the edge of the existing urban environment can mitigate from a biological perspective the permanent conversion of large blocks of open area. It is for this reason that the cumulative impact is considered unavoidably significant."

The unavoidably significant cumulative impacts described in the Final EIR and reproduced above pertain to a general loss or conversion of open area. The majority of the projects identified in the cumulative impact analysis have occurred or would occur in Los Angeles County near Interstate 5. These projects would have no significant effect on the wildlife movement associated with the Salt Creek watershed because of the distance and isolation (*i.e.*, lack of connection) of these projects in relation to the watershed. The potential impacts from the proposed Specific Plan are described above. In comments submitted by Ventura County, Ventura County stated that the conclusions reached in this analysis are not consistent

with the conclusions reached in the Final EIR. Ventura County contended that the Final EIR found significant regional impacts affecting Ventura County, while this analysis found no significant impacts in Ventura County. It should be noted that the Final EIR found unavoidably significant animal movement impacts *on the Specific Plan site*, and, therefore, did not find significant animal movement impacts in Ventura County. The regional impacts referred to by Ventura County in recent comments are related to the cumulative loss/conversion of habitat and open area caused by the combination of many development projects, nearly all of which occur in Los Angeles County. The EIR did not identify significant project-specific or cumulative animal movement impacts in Ventura County as a result of either the Specific Plan, or the Specific Plan in conjunction with other related development.

Currently, proposed future projects in Ventura County would have no significant animal movement effects on the Salt Creek watershed in either Ventura County or Los Angeles County because of their distance and lack of connection to the watershed. The Salt Creek corridor has been, and continues to be, an existing, functioning primary wildlife corridor between the river and the Santa Susana Mountains despite a substantial amount of development in Los Angeles County. Because the Specific Plan proposes to preserve the portion of the Salt Creek corridor on the Specific Plan site as an integral design feature of the Specific Plan, no aspect of the Specific Plan would impair Salt Creek's usefulness as a wildlife corridor. Because no development is proposed in the Salt Creek corridor in Ventura County, there is no reason to believe that the Salt Creek corridor will not remain in its present condition—a functioning primary wildlife corridor. No changes in current land use are being considered in the Ventura County portion of the Salt Creek watershed. When the potential cumulative effects of the above mentioned projects are viewed from a regional wildlife movement perspective, the major movement corridors between the Santa Clara River Valley and the Santa Susana Mountains and Los Padres/Angeles National Forest lands would still be preserved. Outside of the Newhall Ranch Specific Plan, the proposed Temescal Ranch-Texaco development project is the only project evaluated with the potential to affect north/south movement from the Santa Clara River Valley to surrounding open space. Combined, both projects would cumulatively affect a relatively small length of the total regional corridor (compare **Figure 2.2-6, Post-Project Habitat – Potrero and Salt Creek Canyons Watershed Exhibit** with **Figure 2.2-1, Wildlife Movement**). This effect would not prevent or significantly restrict the regional movement of wildlife into or from the Santa Clara River Valley to Los Padres/Angeles National Forest lands to the north or the Santa Susana Mountains to the south.

2.2.6.4 Project Impacts Conclusion

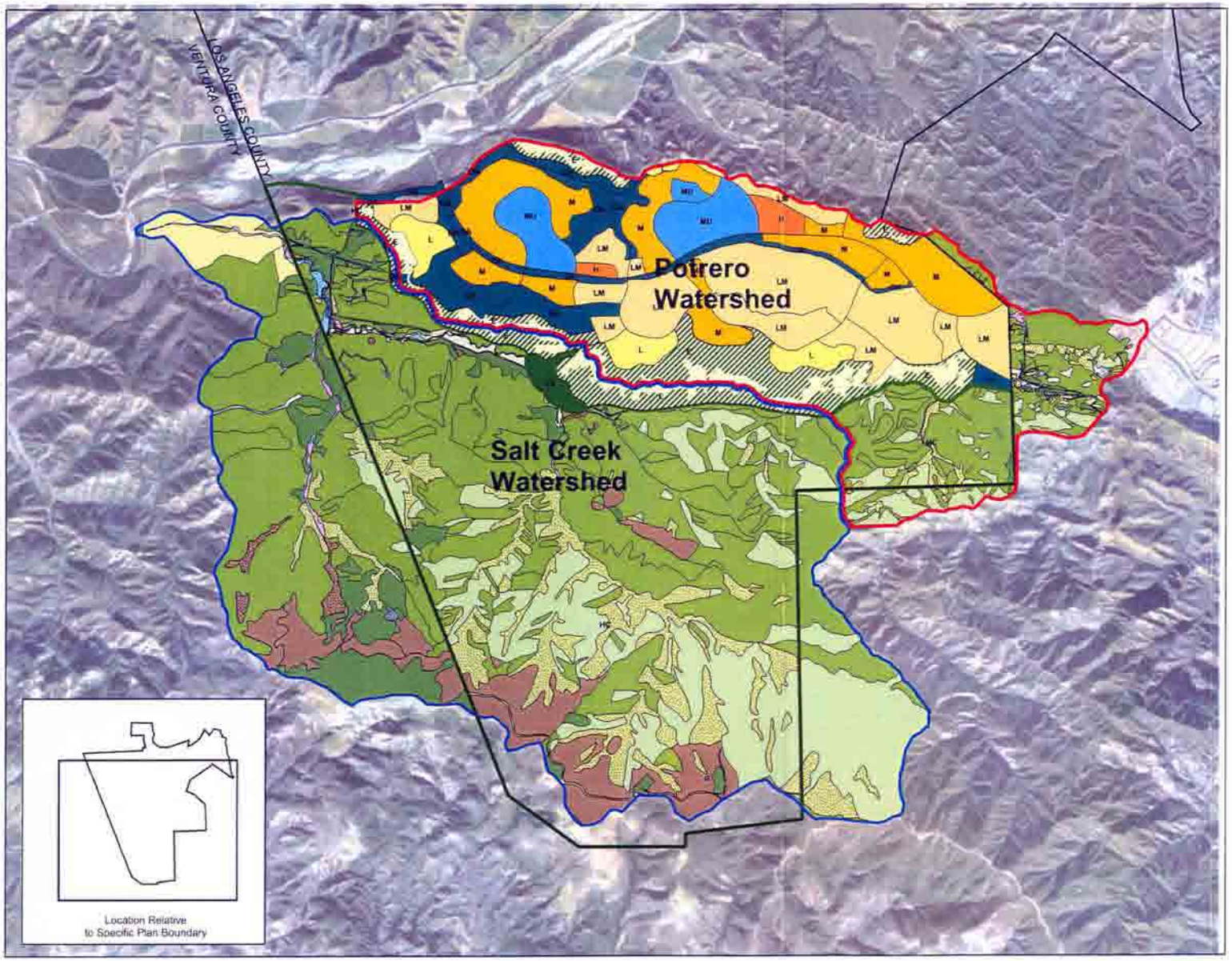
Direct loss of habitat due to the Newhall Ranch Specific Plan occurs within the Potrero Creek and smaller watersheds, but only limited portions of the Salt Creek watershed in Los Angeles County. In addition,

existing land uses in the Salt Creek corridor in Ventura County (*e.g.*, agricultural and grazing uses) do not currently restrict wildlife movement. Finally, impacts to the Salt Creek corridor in Ventura County caused by the likely temporary and relatively small degree of increased wildlife use (*i.e.*, due to movement of larger animals from Los Angeles County) would occur gradually over a relatively long period of time. Such an impact would also be tempered by the one-half mile buffer between development on Newhall Ranch and the Ventura County portion of Salt Canyon. Therefore, the Specific Plan's direct impacts to wildlife movement in the Ventura County portion of the Salt Creek corridor would not be significant.

Because the edge of Specific Plan development in Los Angeles County nearest to the Salt Creek corridor in Ventura County would be set back from the Ventura County line by one-half mile, the Specific Plan's indirect impacts to the corridor in Ventura County (*e.g.*, noise, lighting, *etc.*) would be minimal and not significant. Because the Specific Plan does not propose any development in the Ventura County portion of the Salt Creek corridor, and because no other development is currently proposed for the area, there is no reason to believe that the Salt Creek corridor in Ventura County will not remain a functioning primary wildlife corridor to the Santa Clara River. Therefore, the Specific Plan's cumulative animal movement impacts on the Ventura County portion of the Salt Creek corridor are not considered significant.

2.2.7 MITIGATION MEASURES

No further mitigation above and beyond that proposed in the Newhall Ranch Specific Plan EIR is proposed within the Specific Plan area because the identified direct, indirect, and cumulative impacts associated with the proposed Specific Plan would not significantly affect the Salt Creek watershed in Ventura County. South of the Santa Clara River, the Newhall Ranch Specific Plan includes a one-half mile buffer between any development and the Los Angeles County/Ventura County boundary line. Moreover, buildout of uses within the Specific Plan would occur incrementally over a period of 25 to 30 years, so the displacement of wildlife species would occur over a time period that would allow populations to stabilize at carrying capacity. There are minor direct and indirect impacts associated with the proposed Estate residential and Visitor Serving uses in a portion of the Salt Creek watershed in Los Angeles County. However, due to the limited amount of development in those areas, the identified impacts would not significantly alter the function of the wildlife movement corridor of the Salt Creek watershed in Ventura County. As indicated above, field surveys have indicated that current land use



NEWHALL RANCH
Newhall Ranch Company

L E G E N D

- SALT CREEK WATERSHED
- POTRERO WATERSHED
- NEWHALL RANCH SPECIFIC PLAN BOUNDARY

LAND USE

- BP BUSINESS PARK
- C COMMERCIAL
- E ESTATES
- H HIGH DENSITY
- HC HIGH COUNTRY
- L LOW DENSITY
- LM LOW-MEDIUM DENSITY
- M MEDIUM DENSITY
- MU MIXED USE
- OA OPEN AREA
- VS VISITOR SERVING

VEGETATION

- AGRICULTURAL AND OTHER DEVELOPED USES
- ALLUVIAL SCRUB
- ALLUVIAL SCRUB ADJACENT
- ALLUVIAL SCRUB/MULE FAT SCRUB
- COAST LIVE OAK WOODLAND
- COASTAL SAGE SCRUB
- COASTAL SAGE/GRASSLAND
- ELDERBERRY SCRUB
- GRASSLAND
- GREAT BASIN SCRUB
- GREAT BASIN SCRUB RIPARIAN ADJACENT
- MESIC MEADOW
- MIXED CHAPARRAL
- MULE FAT SCRUB
- MULE FAT SCRUB ADJACENT
- MULE FAT SCRUB/VALLEY FRESHWATER MARSH
- CATTLE STOCK POND
- SOUTHERN WILLOW SCRUB
- SOUTHERN WILLOW SCRUB ADJACENT
- VALLEY OAK SAVANNA
- VALLEY OAK WOODLAND

FIGURE 2.2-6
POST-PROJECT HABITAT
POTRERO AND SALT CREEK
CANYONS WATERSHED EXHIBIT

within the Salt Creek watershed in Ventura County does not restrict the movement of native wildlife. Some uses permitted in the A-E Zone in Ventura County could affect wildlife use of the lower Salt Creek watershed. However, there are no proposed changes in land use in that area. Therefore, in the absence of any proposed change in land use, it is speculative to presume that: (a) the land uses in the Ventura County portion of Salt Canyon will change in the future; and (b) the land uses, if changed, would adversely affect wildlife use or movement in the Ventura County portion of Salt Canyon.

Maintaining the long-term value of the Salt Creek watershed may require implementation of measures to ensure that land use activities in the Salt Creek watershed in Ventura County are limited to a continuation of existing agricultural activities or less intense future plans to develop any portion of the Salt Creek watershed in Ventura County or nearby areas. However, given that no change in land use is proposed in the Ventura County portion of the watershed, such measures are not necessary or required at this time. Ventura County has adopted a Greenbelt Ordinance that restricts land uses within Salt Creek in Ventura County. The Ordinance includes restrictions on land use in order to retain the land generally between the County line and the City of Fillmore, 15 miles to the west, in agricultural production and preclude urban and suburban development. This is an example of the steps Ventura County can take within its jurisdictional boundaries to preserve the existing value of Salt Creek.

Despite the lack of significant impacts in Ventura County, the Ventura County Board of Supervisors nevertheless suggested several mitigation measures during Los Angeles County's processing of the Newhall Ranch Specific Plan. Ventura County's suggested mitigation involved a proposal to, among other things, remove irrigated agriculture from the Salt Creek watershed located in Ventura County, cattle grazing and any other activities deemed to be detrimental to wildlife or non-agricultural biological communities. These requirements would remain in effect until Ventura County approved a discretionary action that included all or part of the Salt Creek watershed in Ventura County. Ventura County suggested a qualified consultant or monitoring organization be appointed by Ventura County to make recommendations to the County of Ventura regarding management of the Salt Creek watershed.

Ventura County also suggested that management of the Salt Creek watershed within Ventura County be turned over to the same open space organization that would manage the High Country portion of Newhall Ranch. Ventura County further suggested that the management of the Salt Creek watershed include funds to be provided by the developer to develop and implement a "habitat enhancement plan" to increase the "biological carrying capacity" of the watershed, and to establish a "trust fund" adequate to maintain the watershed and the habitat enhancement plan into perpetuity. Finally, Ventura County requested that "development and monitoring" of the habitat plan be under the direction and approval of Ventura County.

In response to the mitigation measures suggested by Ventura County and other suggested mitigation measures and comments, the Specific Plan was revised at the direction of both the Los Angeles County Board of Supervisors and the Regional Planning Commission to reduce its impacts to biological/animal movement resources. Pursuant to these revisions, the Specific Plan's development footprint was reduced by approximately 210 acres, which, in turn, reduced the amount of habitat area that would be directly impacted by the Specific Plan.

The most noteworthy revisions from a biological perspective included: (1) creation of a one-half mile-wide set back along the Los Angeles County/Ventura County line, thereby increasing the width of the Salt Creek Corridor adjacent to Ventura County; (2) removal of development adjacent to Ventura County north of SR-126 by creating a 1/8-mile-wide Open Area and reducing the number of planned units in the nearest Low Medium and Estate residential areas; (3) replacement of all Low and Low-Medium Residential housing with Estate Residential housing on average lot sizes of 2.5 acres in all areas adjacent to the High Country Special Management Area (SMA)/SEA 20; and (4) removal of the 15 Estate Residential housing units from the High Country SMA/SEA 20 (required by the Regional Planning Commission).

The setback of development from the Los Angeles County/Ventura County line and the increased width of the Salt Creek Corridor creates a continuous one-half mile-wide connection between the River Corridor SMA (Santa Clara River/SEA 23) and the High Country SMA/SEA 20. While wildlife would have continued the use of the Salt Creek Corridor in both Los Angeles County and Ventura County under the originally proposed Land Use Plan, the revised Specific Plan provides a substantially wider corridor connection between the River Corridor and the High Country in Los Angeles County.

The replacement of all Low and Low-Medium Residential housing with Estate Residential housing on average lot sizes of 2.5 acres in all areas adjacent to the High Country SMA/SEA 20, and the removal of the 15 Estate Residential housing units from the High Country SMA/SEA 20, creates a transition from higher density development proposed in Oak Valley and Potrero Valley to the High Country SMA/SEA 20. These revisions also reduce the magnitude of potential indirect impacts caused by the presence of humans and domestic animals, lighting and the potential planting of exotic, invasive plant species.

In addition to the specified revision, additional existing (secondary) open space connections were incorporated into the design of the Specific Plan. The Long Canyon corridor and the Sawtooth Ridge and Lion Canyon corridors occur in Long Canyon Village and The Mesas, respectively.

After implementation of the Specific Plan revisions and design features discussed above, the mitigation measures suggested by Ventura County are unnecessary to protect the Salt Creek corridor in Ventura County. Development of the Ventura County portion of the corridor (if one were to speculate that it were to occur in the future) would likely degrade the creek's ability to function as a movement corridor. However, because the Newhall Ranch Specific Plan does not propose development in the Ventura County portion of the corridor and no other development activity has been proposed there, and because the Specific Plan incorporates a one-half-mile-wide setback from the County line, which will allow for animal movement between the River and the High Country in Los Angeles County, and because many other connections similar to Salt Creek occur along the 35-mile wide interface area, no significant impact would occur due to implementation of the Newhall Ranch Specific Plan. Therefore, no mitigation is required in the Salt Creek corridor in Ventura County.

Mitigation measures designed to enhance the Salt Creek corridor and the High Country SMA are proposed in Los Angeles County on the Specific Plan site because that is where development is proposed. Nothing about the Newhall Ranch Specific Plan proposal would change the limits of the existing, active movement corridor in Ventura County or cause it to function differently.

Even if implementation of the Newhall Ranch Specific Plan were anticipated to result in significant impacts to the Ventura County portion of the Salt Creek corridor (and it is not), Los Angeles County would not be required to incorporate the mitigation measures suggested by Ventura County because the suggested mitigation is not feasible. A finding that a proposed mitigation measure is not feasible can be based on *legal* infeasibility. *See, Concerned Citizens of South Central Los Angeles v. Los Angeles Unified School District* (1994) 24 Cal.App.4th 826, 842; *Kenneth Mebane Ranches v. Superior Court* (1992) 10 Cal.App.4th 276, 291-292. The mitigation measures proposed by Ventura County are legally infeasible because Los Angeles County does not have the authority to impose such measures on property outside of its jurisdictional boundaries.

In mitigating significant environmental effects, public agencies may exercise only those express or implied powers provided by law other than CEQA. *See,* Pub.Res.Code Sections 21002, 21004; CEQA *Guidelines* Section 15040(b); *Concerned Citizens, supra,* at 842; and *Kenneth Mebane Ranches, supra,* at 291. CEQA, by itself, does not confer independent authority on public agencies, nor does it expand the authority granted by other laws to those agencies. When public agencies adopt measures to mitigate significant environmental effects, agencies may exercise only those express or implied powers provided by law other than CEQA, and the actions of those agencies must be consistent with express or implied limitations on the agencies' authority found in other laws.

Because Los Angeles County has no authority which permits it to impose conditions on the Salt Creek corridor in Ventura County, the mitigation measures proposed by Ventura County are not feasible. Consequently, even if implementation of the Newhall Ranch Specific Plan would result in significant impacts to the Salt Creek corridor in Ventura County (and it will not), Los Angeles County's decision not to impose the extra-jurisdictional mitigation measures suggested by Ventura County would not constitute a CEQA violation.

In conclusion, the analysis presented above indicates that no significant impacts would occur in Ventura County as a result of Specific Plan implementation, and there is no indication that the portion of the Salt Creek corridor in Ventura County would be significantly impacted by an increase in animal movement. Consequently, the corridor would continue to function largely as it does today. It is for these reasons that the suggested mitigation measures are not necessary. Even if the suggested mitigation measures were necessary, however, they are not legally feasible; therefore, under CEQA, Los Angeles County would not be required to incorporate the measures as part of its approval of the Newhall Ranch Specific Plan.

In response to the trial court requirement in the Newhall Ranch litigation that Los Angeles County further evaluate impacts of the Specific Plan to the Salt Creek wildlife corridor in Ventura County, the Board of Supervisors directed that further action be taken to ensure that implementation of the Newhall Ranch Specific Plan does not lessen the value of resources found in the Salt Canyon corridor. Specifically, the Board has required, and the applicant has agreed, that the following off-site condition of approval be imposed with respect to the Salt Creek watershed, adjacent to the Newhall Ranch Specific Plan:

> **Salt Creek Condition.** Upon approval of the first tract map adjacent to Ventura County in the Oak Valley Village of the Newhall Ranch Specific Plan, the applicant has agreed to grant to the public in perpetuity the approximately 1,517 acres of land encompassing the Salt Creek watershed in Ventura County. The applicant, or its designee, shall satisfy this condition by dedicating said land in fee and/or by conservation easement, as determined by the County in its sole discretion, to the joint powers authority, which is responsible for overall recreation and conservation of the Newhall Ranch High County Special Management Area (SMA). Said land shall be managed in conjunction with and in the same manner as the High Country SMA.

From an environmental impact perspective, this additional condition and the resulting 1,517-acre dedication, would be considered beneficial because it places a large amount of land immediately adjacent to the Specific Plan site under the control of the Joint Powers Authority, effectively precluding land use changes in this area and adding to the resource value of the Specific Plan's adjacent High Country and River Corridor SMAs. The Board of Supervisors finds that although not part of the Specific Plan, this off-site condition of approval further ensures that animal movement within and through the Salt Creek watershed would not be significantly impacted with implementation of the Specific Plan.

2.2.8 UNAVOIDABLE SIGNIFICANT IMPACTS

With respect to animal movement, implementation of the Newhall Ranch Specific Plan would not create any unavoidably significant biological impacts within the Ventura County portion of the Salt Creek watershed.

2.3 Floodplain Modifications

2.3.1 INTRODUCTION

The trial court found that the Newhall Ranch Final EIR did not adequately address impacts on biological resources relating to the Specific Plan's proposed floodplain modifications. The trial court also found that the EIR did not adequately address the adverse biological impacts on the Santa Clara River corridor based upon channelization, increased flow velocities and hardening of the banks. In addition, the trial court found that the lack of significant sedimentation or scouring impacts did not justify the conclusion that there would be no adverse biological impacts on the Santa Clara River corridor based upon channelization and bank hardening.

Accordingly, on page 4 of the trial court's Writ (Appendix 1.0(a)), the court directed Los Angeles County to address the biological impacts on the Santa Clara River corridor due to channelization, increased flow velocities and bank hardening. The trial court also directed the County to consider the analysis and adopt such mitigation measures, alternatives, and/or additional or revised findings as may be necessary to comply with CEQA and the trial court's Writ.

The following analysis is intended to respond to the direction in the trial court's Writ by undertaking an additional assessment of hydraulic impacts on biological resources in the Santa Clara River corridor due to floodplain modifications associated with the Newhall Ranch Specific Plan. The objective of this analysis is to determine whether the predicted change would cause significant impacts to the nature, amount, and location of the aquatic/riparian habitats in the Santa Clara River corridor, the Specific Plan site, and in downstream reaches in Ventura County. Floodplain modifications include three bridge crossings over the river, bank stabilization along portions of the banks in the Specific Plan area, and removal of 141 acres of mostly agricultural land from the floodplain by raising these areas or placing elevated bank protection.

The focus of the assessment is on impacts to habitat and sensitive species in the River corridor on the Specific Plan site or downstream. Three distinct habitat types are found in the River Corridor including: (1) aquatic habitats, consisting of flowing or ponded water; (2) wetland habitats, consisting of emergent herbs rooted in ponded water or saturated soils along the margins of the flowing water; and (3) riparian habitat, consisting of woody vegetation along the margins of the active channel and on the floodplain. Wildlife species associated with these habitat include: (1) the endangered unarmored three-spine stickleback (known to be present), least Bell's vireo (known to be present), southwestern arroyo toad (not

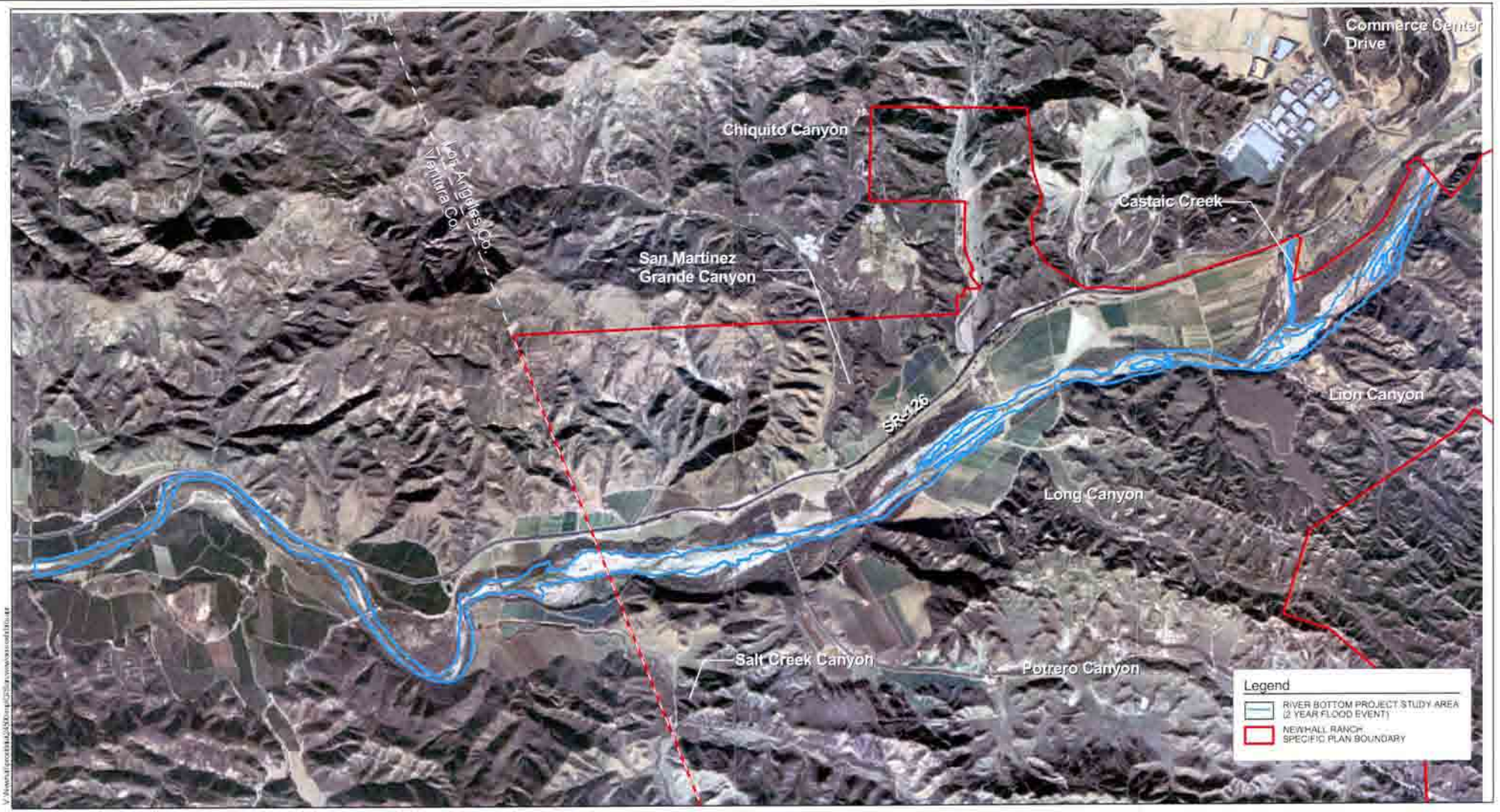
known to be present), southwestern willow flycatcher (known to be present), and California red-legged frog (not known to be present); and (2) other sensitive, but not endangered species known to be present such as the arroyo chub, Santa Ana sucker, two-striped garter snake, southwestern spadefoot toad, and southwestern pond turtle.

The impact assessment is based on the relationship between hydraulic conditions and aquatic/riparian habitats in the Santa Clara River on the Specific Plan site, and the determination of whether the predicted changes in hydraulic conditions would significantly affect those habitats. The assessment is focused on habitats of sensitive species rather than individuals or populations, which are highly variable over time and space along the River corridor.

2.3.2 DATA SOURCES AND STUDY METHODS

The study area includes the river within the boundaries of the Specific Plan site and an approximately 3-mile-long reach downstream of the Specific Plan site within Ventura County (*See,* **Figure 2.3-1**). The description of the occurrence of sensitive species habitats was based on biological studies for the Newhall Ranch Specific Plan Final EIR and recent information developed by Aquatic Consulting Services, Inc. and RECON.

Sikand Engineering characterized the hydrology and hydraulics of the river in two technical reports (Sikand, 2000a, 2000b). Hydraulic and sediment calculations within the Santa Clara River were prepared using U.S. Army Corps of Engineers HEC-RAS and HEC-6 programs. These programs were used to determine flow velocities, floodplain limits, and scour/deposition for a range of flow frequencies within the river (2-year through 100-year flows). The flow discharges used in the analysis are based on stream gauge data and were taken from the L.A. County/Ventura County "Adopted Discharge Frequency Table". The proposed condition discharges were increased based on the values calculated in the Specific Plan EIR and accounted for cumulative development located upstream. The Manning's roughness 'n' values used for the HEC-RAS analysis are based on actual field data and were taken from aerial photos and topographic planimetrics in the Los Angeles County and Ventura County portions of the study, respectively. The HEC-6 sediment study uses a single low 'n' value of 0.025. The cross sectional data was taken from the "Newhall Ranch Specific Plan Master Drainage Concept" as well as 1993 digital topo for the Ventura County portion of the study. The sediment data for use in HEC-6 was taken from a previous Sikand Engineering study entitled "HEC-6 Sediment Transport Analysis for ACOE General Permit on Santa Clara River (from Castaic Creek to Cottonwood Avenue) and San Francisquito Creek (from Santa Clara River to 15000' northerly)," dated June 4, 1998.



NEWHALL RANCH

FIGURE 2.3-1
PROJECT STUDY AREA

0 600 1200 2400 Feet

RBF PSOMAS
October 16, 2000

2.3.3 EXISTING CONDITIONS

2.3.3.1 Existing Hydrology and Hydraulic Conditions Along the River

(a) Flows

The reach of the Santa Clara River at the Specific Plan site has year-round low surface flows created by tertiary treated effluent discharges from two upstream water reclamation plants operated by the County Sanitation Districts of Los Angeles County and storm water runoff. Completely natural flows in the river only occur in the winter due to storm runoff. The flows vary significantly from year-to-year. In addition, there are short-term releases from Castaic Lake during summer months that reach the river via Castaic Creek, which joins the river upstream of the Specific Plan site.

The width of the active river channel (*i.e.*, area of river bottom inundated during 2-year event) in the Specific Plan site varies from 200 to 800 feet (Sikand Engineering, 2000a). The maximum width of the river channel and floodplain inundated during the 100-year event is 2,200 feet (Sikand Engineering, 2000a). An aerial photograph of the river channel at and below the Specific Plan site is provided in **Figure 2.3-1.**

The average width of the low flow channel during the summer months is about 50 to 100 feet, with a typical depth of one-foot (Louis Cortois, Ph.D., Aquatic Consulting, Services Inc. pers. comm.). The low flow channel through the Specific Plan site has a low to moderate sinuosity. It consists of a single channel for about half of its length, while the remainder consists of braided channels and broad shallow flows.

The average discharges, or flows (*i.e.*, volume of water), for floods of different return events (2-year, 5-year, 10-year, 20-year, 50-year[1], 100-year) at the upstream and downstream ends of the Specific Plan site under existing conditions are shown in **Table 2.3-1** (Sikand, 2000b). A 2-year event has a probability of occurring once every two years, while a 50-year flood event has a probability of occurring once every 50 years. The 2-year flood event would have very modest flows, while the latter event would have much higher flows.

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1 Note this is not the 50-year Capital Flood (Q-Cap), which is based on a theoretical four-day storm event occurring right after the watershed has been burned with the resulting flow rate being increased again by a bulking factor. For purposes of comparison, the predicted flow during the 100 year FEMA flood event at the Los Angeles County/Ventura County line is 60,000 cfs, while the County Q-cap at this same location is 163,000 cfs.

The data in **Table 2.3-1** indicate that there are significant flows during the 50 to 100 year events (over 40,000 cubic feet per second, or cfs). These data also show that flows do not increase substantially as the river traverses the Specific Plan site because flows from tributaries on the site (*e.g.*, San Martinez Grande, Chiquito Canyon, Potrero Canyon) are very minor compared to the flows in the river. Flows from Castaic Creek, a side tributary that enters from the northeast end of the Specific Plan site, provide a significant contribution to the flows that traverse the Specific Plan site.

Table 2.3-1
Existing Discharges, Santa Clara River at the Specific Plan Site

Location	Discharge for Different Return Events (cfs)					
	2-yr	5-yr	10-yr	20-yr	50-yr	100-yr
Upper end of the Specific Plan site, but downstream of Castaic Creek	2,527	8,232	14,942	24,157	41,141	58,207
Downstream end of the Specific Plan site at the County line	2,600	8,480	15,400	24,900	42,400	60,000

Source: Sikand Engineering (2000b).

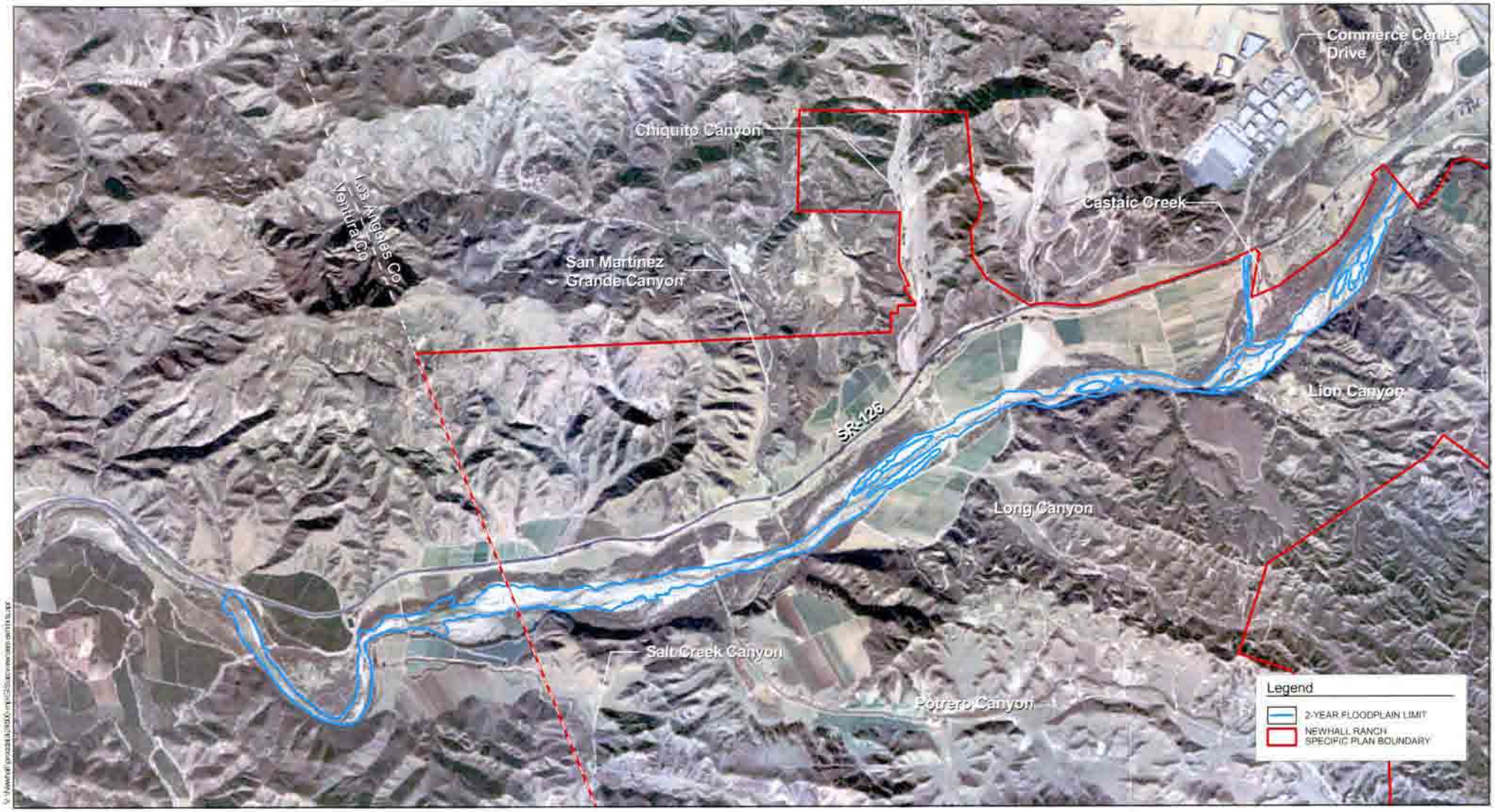
(b) Floodplain Area

The boundaries of the floodplain (the ground surface covered by water) at the Specific Plan site from the Commerce Center Drive bridge location to a point 4 miles downstream of the County line for different return events are shown on **Figures 2.3-2a** through **2.3-2f**. The floodplain area increases as the discharge and associated water level increase moving east to west. A summary of the floodplain area for different return events is provided in **Table 2.3-2**.

Table 2.3-2
Floodplain Area for Different Discharges – Existing Conditions*

Flood Event (years)	Acreage of Floodplain that is Flooded	
	From Commerce Center Drive to Los Angeles County Line	From County Line to a Point Four Miles Downstream in Ventura County
2	246	86
5	309	131
10	361	160
20	482	198.5
50	664	257
100	766	298

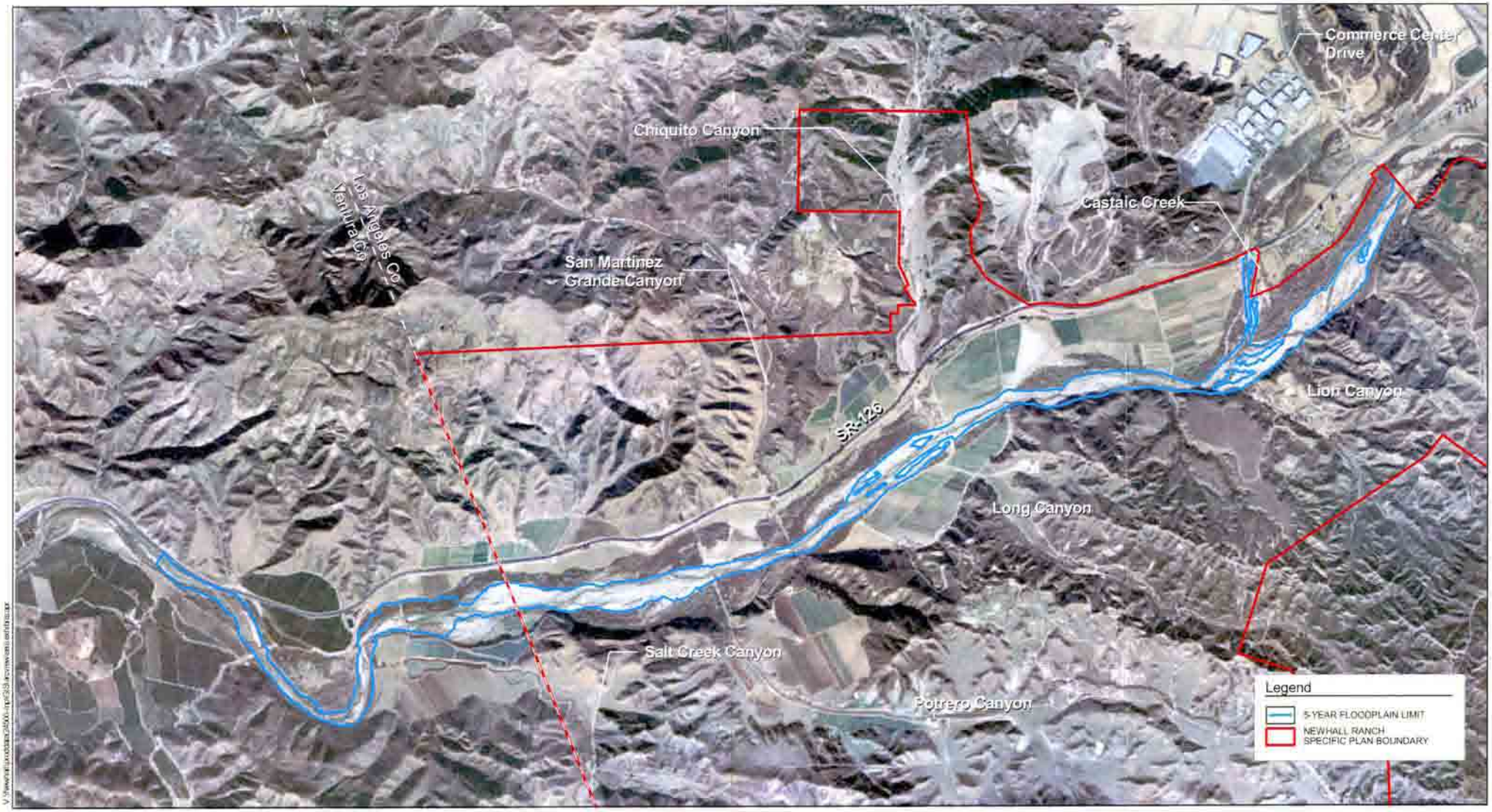
Source: Psomas & Associates.



NEWHALL RANCH

FIGURE 2.3-2a
SANTA CLARA RIVER
EXISTING CONDITIONS 2 YEAR FLOOD EVENT

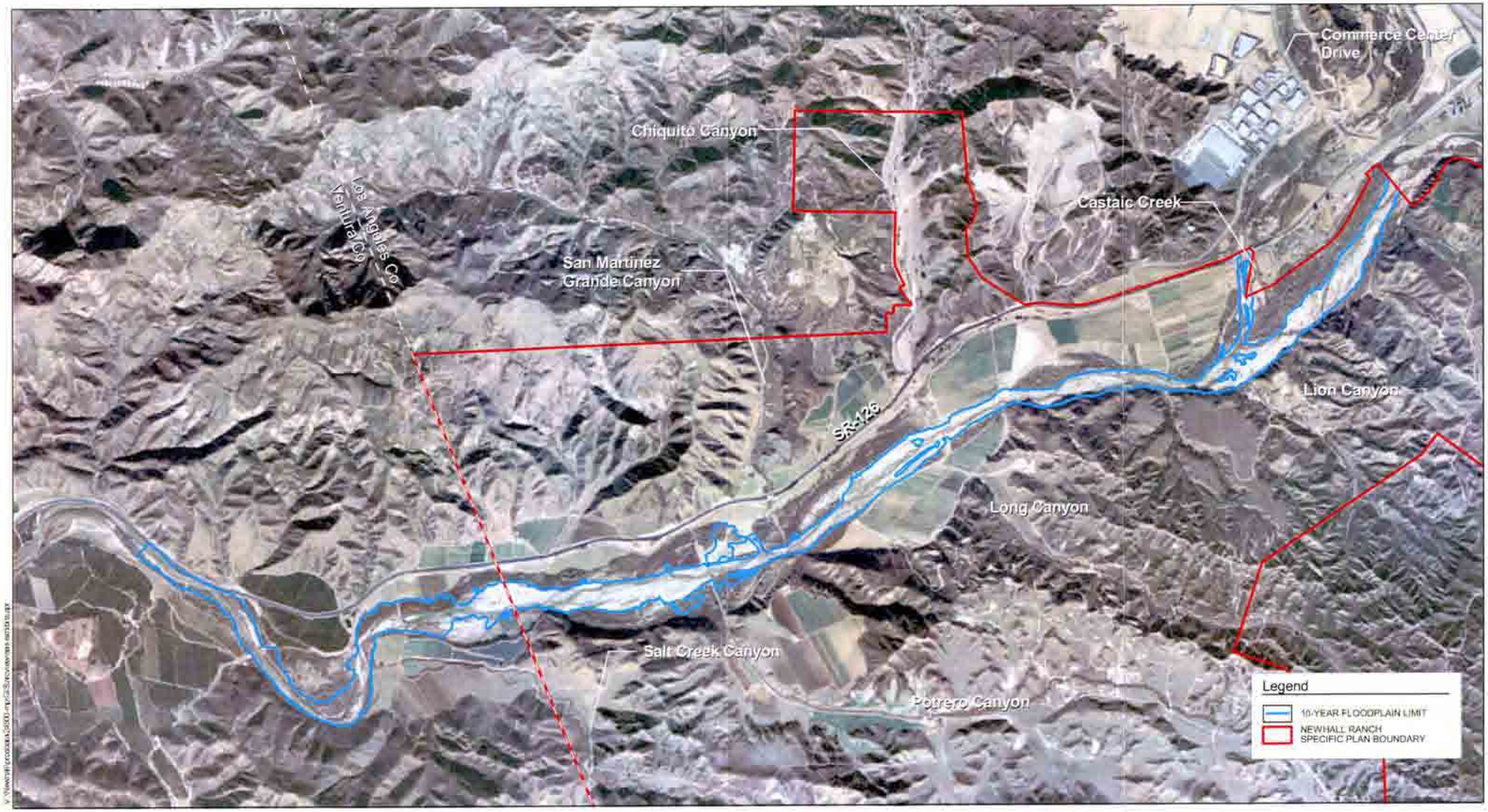
PSOMAS



NEWHALL RANCH

FIGURE 2.3-2b
SANTA CLARA RIVER
EXISTING CONDITIONS 5 YEAR FLOOD EVENT

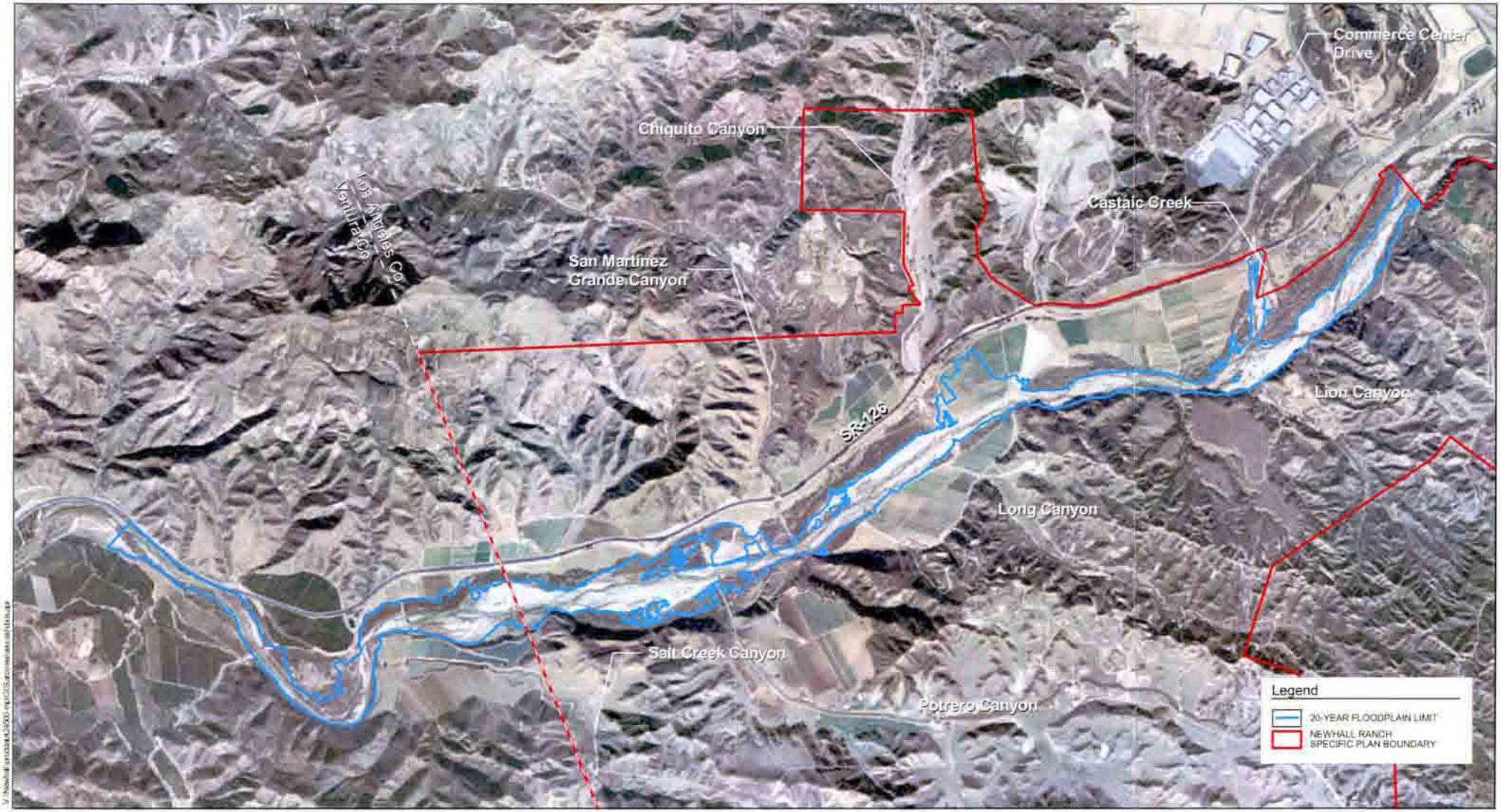
PSOMAS
October 16, 2000



NEWHALL RANCH

FIGURE 2.3-2c
SANTA CLARA RIVER
EXISTING CONDITIONS 10 YEAR FLOOD EVENT

FORMA PSOMAS
October 18, 2000

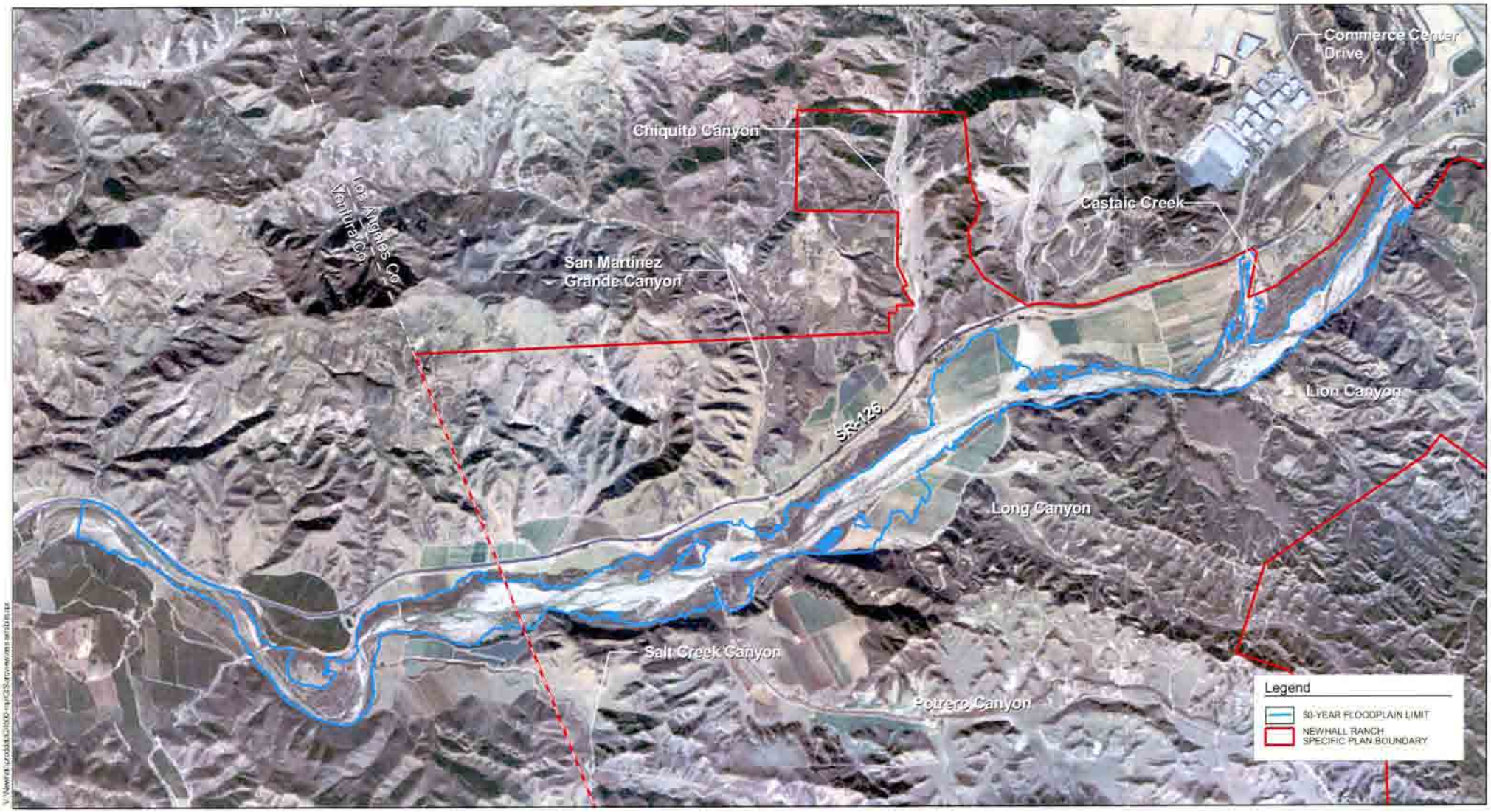


NEWHALL RANCH

FIGURE 2.3-2d
SANTA CLARA RIVER
EXISTING CONDITIONS 20 YEAR FLOOD EVENT

Feet

PSOMAS
October 16, 2008
swrr_gis.apr

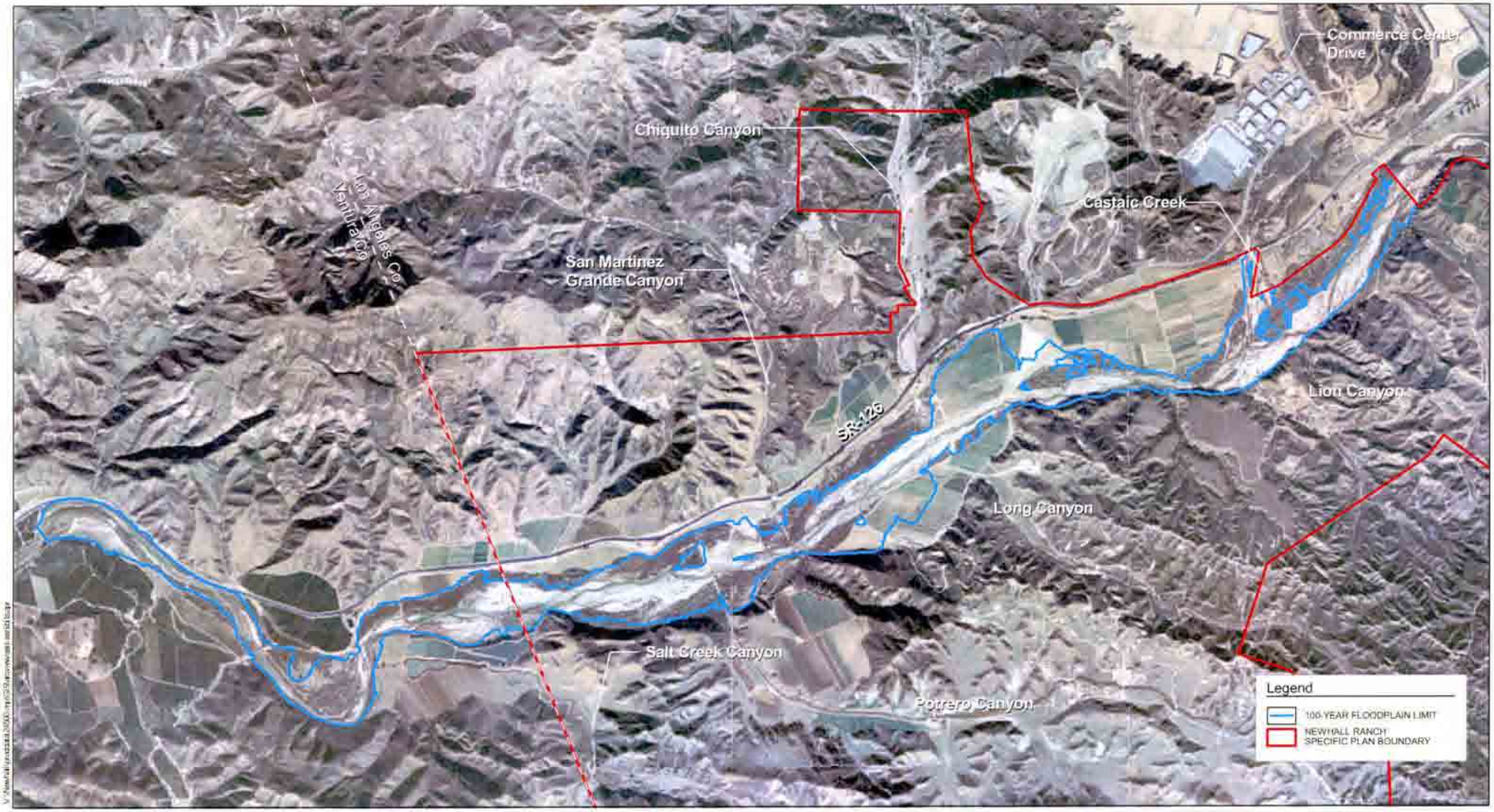


NEWHALL RANCH

FIGURE 2.3-2e
SANTA CLARA RIVER
EXISTING CONDITIONS 50 YEAR FLOOD EVENT

0 600 1200 2400 Feet

LSA PSOMAS
October 16, 2000
sets_gis.apr



NEWHALL RANCH

FIGURE 2.3-21
SANTA CLARA RIVER
EXISTING CONDITIONS 100 YEAR FLOOD EVENT

PCR/MA PSOMAS
October 16, 2008

(c) Water Velocity and Depth

Water velocity and depth along the river also increase with higher discharges (*i.e.*, flows). An example of this relationship is provided in **Table 2.3-3** for a location along the river in the Specific Plan site. These data indicate that velocities, measured in feet per second (fps), more than double from the 2-year to the 100-year event, while water depth increases three-fold. In contrast, discharge increases thirty-fold from the 2-year to the 100-year event. Velocity and water depth increases do not correspond to the discharge increases because the wide river channel allows flood flows to spread out with increasing discharge volumes.

Table 2.3-3
Example of Increasing Depth and Velocity with Discharge – Existing Conditions at the County Line

Return Event (years)	Discharge (cfs)	Average Water Depth (ft)	Average Water Velocity (fps)
2	2,000	2.34	5.32
5	8,480	3.38	7.09
10	15,400	4.13	8.97
20	24,900	5.08	10.40
50	42,400	6.47	11.71
100	60,000	7.45	12.53

Source: Sikand Engineering.

(d) Channel and Floodplain Conditions

The difference in elevation between the channel bottom and the 100-year floodplain along the margins of the river varies greatly at the Specific Plan site. This difference ranges from 9 to 20 feet. It is dependent upon the width of the river channel. For example, in wider portions of the river channel where flows spread out with low velocities, there is only a small elevation difference between the channel bottom and the adjacent floodplain boundary. In contrast, the channel is often deep where it is narrower, creating a large elevation difference between the channel bottom and the floodplain boundary.

The existing river channel contains a variety of vegetation types. The active river channel is mostly barren due to annual scouring. However, vegetation types on the adjacent terraces vary based on elevation relative to the active channel bottom and the frequency of flooding. The following series of vegetation types occur along a vertical gradient from the channel bottom to the highest river terrace on the floodplain: emergent herbaceous, woody shrubs, and trees.

The substrate of the river channel (*i.e.*, top layer of the river bottom) is primarily sand, which is actively eroded and deposited in flood events. Previous studies by the Los Angeles County Flood Control District have demonstrated that sediment deposition and scouring along the upper Santa Clara River are generally in equilibrium, and that there are no major trends of channel degradation or aggradation.[2] However, some localized areas may experience either greater scouring or sand deposition.

2.3.3.2 Existing Aquatic, Wetland, and Riparian Habitats Along the River

The Santa Clara River corridor at the Specific Plan site supports three general categories of habitat: (1) aquatic habitats, consisting of flowing or ponded water; (2) wetland habitats, consisting of emergent herbs rooted in ponded water or saturated soils along the margins of the flowing water; and (3) riparian habitat, consisting of woody vegetation along the margins of the active channel and on the floodplain. The key characteristics of the dominant aquatic, wetland, and riparian habitats in the river corridor at the Specific Plan site (Commerce Center Drive bridge site to the County line) are summarized in **Table 2.3-4**. This table does not include upland habitats, or disturbed or cultivated habitats in the river corridor.

Table 2.3-4
Summary of Dominant Wetland and Riparian Habitat Types in the River at the Specific Plan Site

Habitat	Dominant Species	Structure	Location in the Floodplain	Height Above Channel Bottom (ft)
Alluvial scrub	Sagebrush and scalebroom	Open, sparse mixture of shrubs	Upper dry terraces; old braided channels	8
Arrow weed scrub	Arrow weed	Dense monoculture	Upper terraces	8
Cottonwood willow forest	Fremont cottonwood and red willow	Mature woodland with large overstory trees and dense understory	Upper terraces, near or at upland boundary	9.5
Mulefat scrub; contains some wetland areas	Mulefat, giant reed, narrow-leaf willow	Moderately dense shrubs, 6 to 10 feet in height; patches of emergent wetlands	Terrace adjacent to active channel	5.5
Successional mule fat scrub (includes aquatic and wetland habitats	Mulefat, giant reed, narrow-leaf willow	Mostly barren with scattered small shrubs; flowing water; pools; emergent wetlands	Active channel that is continually disturbed by flows	1.5
Willow woodland	Red and arroyo willow, Fremont cottonwood	Mature woodland with large overstory trees and dense understory	Upper terraces, near or at upland boundary	9
Willow scrub	Arroyo willow	Dense willow plants, 10 to 12 feet in height	Mid-level terraces	6.5

2 Simons, Li & Associates. 1990. *Fluvial Study of Santa Clara River and the Tributaries Summary Report.* Prepared for Los Angeles County Department of Public Works.

Figure 2.3-3, Habitats in the Santa Clara River, illustrates the location of different types of vegetation found in and adjacent to the river. The density, biomass, and location of the vegetation in relation to the channel bottom are directly dependent upon the frequency of disturbance by flood flows. A summary of the frequency of disturbance is provided in **Table 2.3-5**. Successional mulefat scrub (SMFS) occupies the active channel and is disturbed annually by flows. This habitat also includes all aquatic features such as pools and flowing water, as well as most of the emergent wetlands in the river corridor because of the presence of water. In contrast, willow woodland and cottonwood-willow woodland is located above the active river channel and is only flooded during infrequent events, which allows large trees to become established between disturbance events.

Table 2.3-5
Summary of Flood Disturbance Frequencies for
Dominant Wetland and Riparian Habitat Types in the River

Habitat	Frequency of Inundation and Disturbance by Flood Flows (years)
Alluvial scrub	20-50
Arrow weed scrub	15-20
Cottonwood willow forest	15-20
Mulefat scrub	10-15
Successional mule fat scrub	Annually
Willow woodland	20-30
Willow scrub	10-15

The occurrence of riparian and wetland vegetation types in the river at Newhall Ranch is provided on **Figure 2.3-3**. This figure shows the general pattern of successional mule fat scrub in the center of the river corridor, with drier habitats on the adjacent floodplain, such as cottonwood willow woodland and willows woodland. In addition, there are several upland habitat types in the corridor, including Great Basin sage scrub and annual grassland.

The Santa Clara River provides year-round and seasonal aquatic habitats that are described in **Table 2.3-6**. All aquatic habitats are subject to periodic disturbances from winter flood flows. These flows inundate areas that are dry most of the year. They also carry and deposit sediments, seeds, and organic debris (*e.g.*, stems, downed trees). New sandbars are formed and old ones are destroyed. Stands of vegetation are eroded by high flows, and new areas are created where vegetation becomes established by seeds or buried stems. Flows can change the alignment of the low flow channel, the number and location of pools, and the depth of pools. In years with low winter flows, there may be very little change in the aquatic habitats of the river. In such years, wetland vegetation along the margins of the low flow channel and pools would increase. In high flow years, this vegetation would be removed, but would become re-

established during the spring and summer due to natural colonization processes. As can be seen, the aquatic habitats of the river are in a constant state of creation, development, disturbance, and destruction. The diversity of habitat conditions in the river at any one time supports a variety of aquatic invertebrates, aquatic plants, and fish.

Table 2.3-6
Summary of Aquatic Habitats in the Santa Clara River at the Specific Plan Site

Habitat Type	Description	Source of Water	Frequency of Disturbance
Low-flow channel	Highly variable depth, dimensions, and locations. Emergent wetlands form along edges each spring and summer. Mostly sandy substrate with unstable banks. Mostly exposed runs and scattered riffles. Shallow depth (<1 ft).	Year-round treated effluent and winter runoff.	Annual disturbance from flood-related flows. Daily changes in water depth and flow due to variable effluent flows.
On-channel pools	Small scattered pools (less than 20 ft long) that form in the main channel in response to debris dams or sandbars. Emergent wetlands and young woody willows along margins. Shallow depths (<1 ft).	Year-round treated effluent and winter runoff.	Annual disturbance from flood-related flows. Daily changes in water depth and flow due to variable effluent flows.
Off-channel pools	Highly variable size. Generally < 2 ft depth. Vegetation along the margin may be dense emergent or riparian shrubs, or in some areas, absent.	Groundwater seepage.	Inundation by flood flows every 1-2 years.
Road crossing ponds and plunge pools	Six at-grade river crossings create upstream ponds and downstream plunge pools with depths of 3 feet. Aquatic vegetation along the margins.	Year-round treated effluent and winter runoff.	Annual disturbance from flood-related flows. Crossings are re-built every year.
Winter secondary channels and overflow areas	Highly variable areas where winter flood flows occur when the low-flow channel is full. Ranging from discrete channels to sheet flow areas. Usually containing young mulefat scrub.	Winter flood related flows. Ephemeral aquatic features. May only persist for several days to weeks after a flood.	Inundation and scouring every 1-2 years.
Tributary channels	Highly variable channels that convey water from tributaries to the river channel. Usually small channels with slow moving water, except during the winter. Often densely vegetated with wetlands.	Winter flows, and occasional seepage flow from side canyons. Ephemeral flows.	Disturbance each year from flood flows in the tributaries.

The year-round effluent-dominated flows in the river have enhanced the aquatic habitats and species in the river. Under natural conditions, there would be very little, if any, open water in the river during the summer. The presence of a year-round source of water provides more habitat for aquatic species and fish, and thereby supports greater populations than would occur under natural conditions. Larger

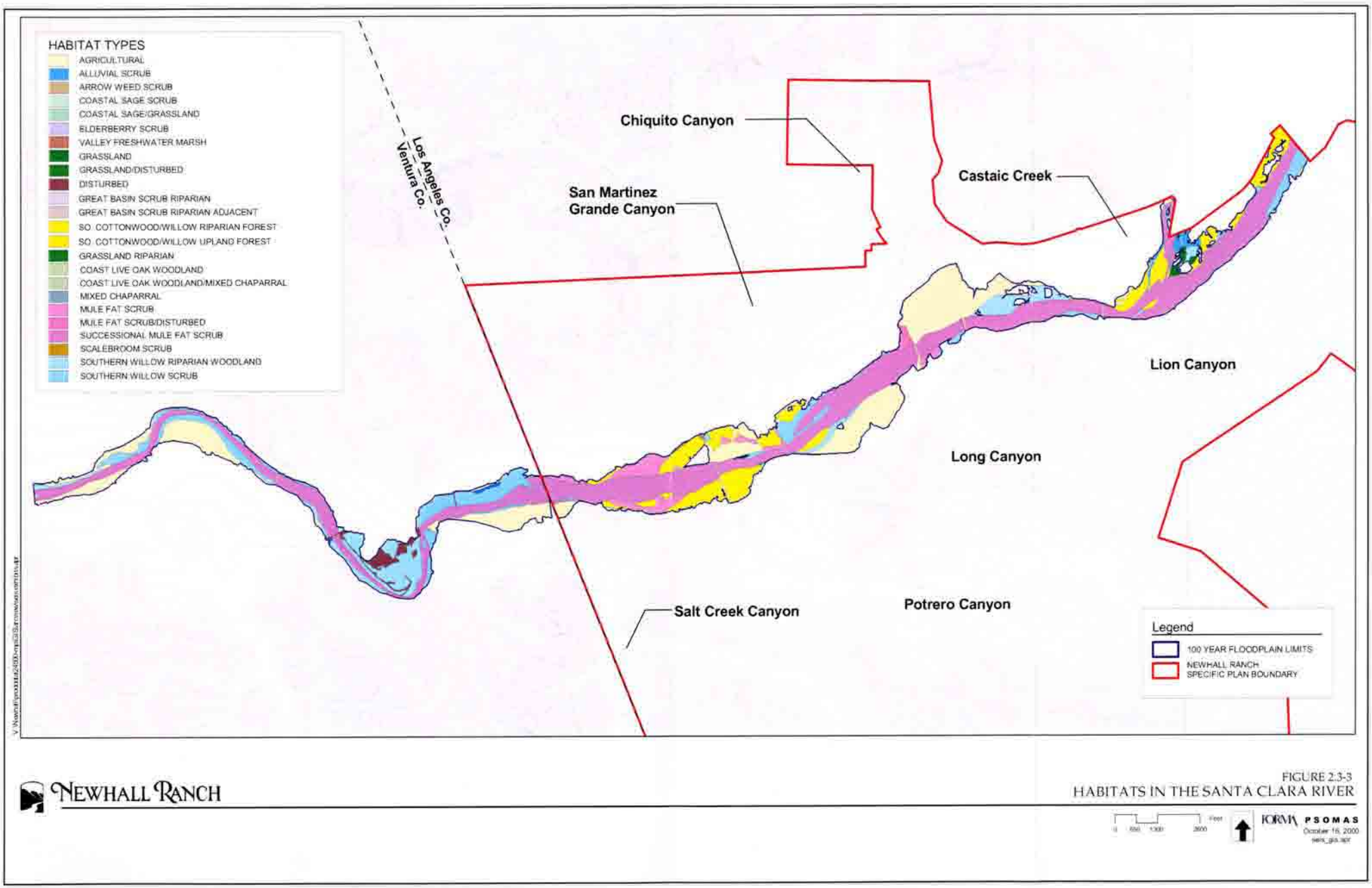


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FIGURE 2.3-3
HABITATS IN THE SANTA CLARA RIVER

PSOMAS
October 16, 2000

populations in the project area enhance the probability of these species persisting during or after adverse events, such as significant droughts or catastrophic flooding.

2.3.3.3 Sensitive Species Habitats

Sensitive aquatic species known to occur at the Specific Plan site include unarmored three-spine stickleback (*Gasterosteus aculeatus williamsoni*), arroyo chub (*Gila orcutti*), Santa Ana sucker (*Catostomus santannae*), southwestern pond turtle (*Clemmys marmorata pallida*) and two-striped garter snake (*Thamnophis hammondii*). The stickleback occurs in quiet water areas along the low flow channel, on- and off-channel ponds, and in the Castaic Creek tributary channel. They prefer herbaceous and backwater areas with cool and clear water conditions. Sticklebacks are weak swimmers and many are washed away in winter floods. The arroyo chub and Santa Ana sucker occur in all aquatic habitats of the river. Chubs prefer slow moving water with muddy bottoms, while suckers occur in narrow channels with a range of flow conditions. The southwestern pond turtle is primarily associated with riparian and freshwater marsh vegetation. The two-striped garter snake occurs in various riparian and marsh vegetation.

The least Bell's vireo (*Vireo bellii pusillus*) nests in willow woodlands on lower to middle stream terraces, and forages throughout the riparian corridor for insects. Nesting pairs have been sighted regularly upstream and downstream of the Specific Plan site, and during 1999 bird surveys of the Specific Plan (Guthrie, 1998a, b; 1999a,b). The southwestern willow flycatcher (*Empidonax traillii extimus*) has been sighted upstream of the Specific Plan site. These sightings have been of migrant individuals, not breeding birds (Guthrie, 1998a, b; 1999a,b).

There are other sensitive aquatic species that are not known to occur at the Specific Plan site, but could potentially colonize the river habitats in the future, including the southwestern arroyo toad (*Bufo microscaphus californicus*) and California red-legged frog (*Rana aurora draytonii*). These species were identified as potentially occurring on the Newhall Ranch Specific Plan site in Table 4.6-5 found on page 4.6-21 of the Draft EIR. Draft EIR Mitigation Measure 4.6-53 requires a site specific focused survey for rare, threatened, and endangered species on land within the Specific Plan area at the time individual subdivisions are processed if the Initial Study prepared for the subdivision in question finds the potential for such species to occur at that location. The U.S. Fish and Wildlife Service recently issued a final ruling designating the northernmost portion of the Santa Clara River traversing the Newhall Ranch Specific Plan site as critical habitat for the arroyo toad. However, focused surveys conducted by RECON consultants in the spring of 1994, 1995, and 1999 failed to detect the presence of the arroyo toad on the Specific Plan site. The Service also proposed upstream portions of Castaic Creek and San Francisquito Creek as critical

habitat for the red-legged frog. However, no portions of the Santa Clara River were designated and the frog's critical habitat does not extend onto the Newhall Ranch Specific Plan site.

The potential aquatic species found on lands owned by The Newhall Land and Farming Company along the Santa Clara River within Ventura County consist of several species of fish, amphibians, and reptiles. Typical fishes include the unarmored threespine stickleback, the Santa Ana Sucker, and the arroyo chub. Non-native species include the large-mouth bass (*Micropterus salmoides*) and mosquitofish (*Gambusia affinis*). Common amphibians include the California treefrog (*Hyla cadaverina*), Pacific treefrog (*Hyla regilla*), African clawed frog (*Xenopis laevis*), and western toad (*Bufo boreas*). Less common amphibians include the Western spadefoot toad (*Scaphiopus hammondi*). Reptiles occurring within the Ventura County reach of the Santa Clara River include the Western pond turtle (*Clemmys marmorata*) and two-striped garter snake (*Thamnophis couchi hammondi*).

The abundance and variety of riparian and wetland habitats in the river corridor that support the foregoing sensitive species are due largely to the natural dynamic riverine processes that occur unimpeded in the project area. The continual creation and destruction of habitats due to flooding and drought periods provides a mosaic of different types and ages of habitats. This mosaic is a key element in sustaining the habitat of the sensitive species.

For example, without flooding events, in-stream ponds would eventually become filled with wetland plants, displacing fish and turtles. Flood-related disturbance ensures suitable habitat is always present. During winter flood flows, fish find refuge from destructive flows that remove vegetation and cover, fill pools, and redirect channels. After such events, fish seek suitable habitat conditions; the most important of which is cover or shelter from predators. The river may change course during flood events and deposit debris that creates new pools, which are then colonized by fish. The wide floodplain of the river in the Specific Plan site facilitates the deposition of debris and meandering of the channel.

2.3.4 PROPOSED FLOODPLAIN MODIFICATIONS

The Newhall Ranch Specific Plan utilizes innovative techniques to meet the requirements of flood control while maintaining the natural resources within the Santa Clara River. Traditional flood control techniques in use within Los Angeles County rely upon reinforced concrete or grouted rock rip-rap to minimize erosion while maximizing the volume of flood flows carried by the drainage. While exceedingly efficient as a flood control technique, this approach retains none of the natural resource value.

In contrast, the Conceptual Backbone Drainage Plan of the Newhall Ranch Specific Plan provides drainage and flood control protection to developed uses while preserving the Santa Clara River as a natural resource. The Drainage Plan utilizes several generalized criteria that are to be implemented by projects that develop within the Specific Plan Area. The primary criteria are as follows:

- Flood corridor must allow for the passage of Los Angeles County Capital Flood Flow without the permanent removal of natural river vegetation (except at bridge crossings);
- The banks of the River will generally be established outside of the "waters of the United States" as defined by federal laws and regulations and as determined by the delineation completed by the United States Army Corps of Engineers in August 1993;
- Where the ACOE delineation width is insufficient to contain the Capital Flood flow, the flood corridor will be widened by an amount sufficient to carry the Capital Flood flow without the necessity of permanently removing vegetation or significantly increasing velocity;
- Bank stabilization will occur only where necessary to protect against erosion.

The Drainage Concept plans the use of buried bank stabilization where necessary to protect against erosion except at specific locations discussed later. Buried bank stabilization is a modern flood control technique used to protect against erosion while maintaining natural vegetation and soft banks. **Figure 2.3-4** depicts a typical cross-section for buried bank stabilization. As shown, this approach uses soil cement or rip-rap which is buried beneath the existing banks of the river. Disturbed areas are then revegetated with native plant species maintaining the natural habitat presently found along the river.

The proposed project would involve the installation of bank stabilization at five primary locations, as shown on **Figure 2.3-5**. Locations where grouted rip rap or reinforced concrete will be used are limited to outlet structures, access ramps, or bridge abutments. Approximately 55 percent of the riverbanks at the Specific Plan site would have bank stabilization, of which 75 percent would be buried.

The proposed bank stabilization would encroach into the existing river channel in some areas. A total of 43 acres of existing river channel will be disturbed by bank stabilization. In other areas, the bank stabilization would be placed outside the existing river channel, creating additional new river channel. For example, bank stabilization proposed on the north side of the Santa Clara river near the confluence with Castaic creek will be constructed on agricultural land, back behind the existing channel. This former agricultural land will be excavated to allow passage of flows generated during the County Capital Storm event (Qcap). Overall, more additional new river channel is created by the proposed Specific Plan (43 acres of river channel are impacted/removed by stabilization while 59 acres of new river channel are created by stabilization, for a net increase in river channel of 16 acres).

The Specific Plan acknowledges that natural riverine dynamics could erode fill placed on top the hardened bank during certain flood events. Specific maintenance activity would be subject to the Federal and State permits needed to construct and maintain the necessary channel improvements. It is anticipated that these permits would allow for placement of fill on the buried bank stabilization when the soil is eroded during periods of high flows. However, Los Angeles County Flood Control is not obligated to take any measures to restore the fill or the vegetation.

Three bridges are proposed to be constructed across the river, upstream of Castaic Creek at Commerce Center Drive, at Long Canyon, and at Potrero Canyon (**Figure 2.3-5**). These bridges would include abutments and approaches that would reduce the width of the 100-year floodplain at these locations. However, as summarized in **Table 2.3-7**, the existing active river channel width which carries the ordinary 2-, 5-, and 10-year flood events would be completely spanned by the bridges and remain unaffected.

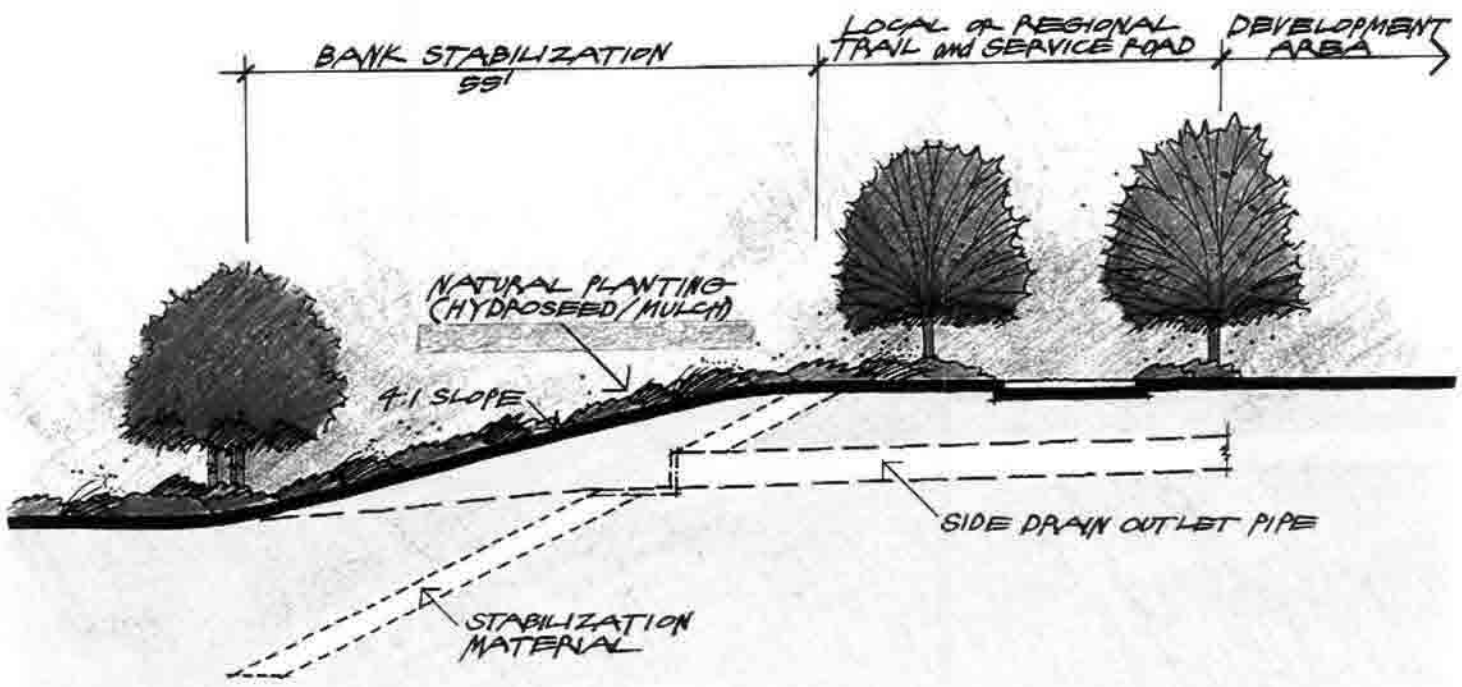
Table 2.3-7
Summary of New Bridge Impacts on River Channel Width

	Width Across the River Channel (Feet)	
Bridge	Existing River Channel Width	Proposed Bridge Width
Commerce Center Drive Bridge	600	1,206
Long Canyon Bridge	500	980
Potrero Canyon Bridge	400	1,305

Source: Sikand Engineering.

2.3.5 THRESHOLDS OF SIGNIFICANCE

Modification of the floodplain would cause a significant impact to biological resources if the change in hydraulic conditions in the Santa Clara River caused: (1) widespread and chronic scouring of the channel bed that removes a significant amount of aquatic, wetland, and riparian habitats from the river channel; (2) substantial modification of the relative amounts of these different habitats in the river, essentially altering the nature and quality of the riverine environment; (3) direct removal of sensitive habitat by channelization; and/or (4) substantial effects to rare, endangered, or sensitive species.



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DECEMBER 2009
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FIGURE 2.3-4
CROSS SECTION OF
BURIED BANK STABILIZATION

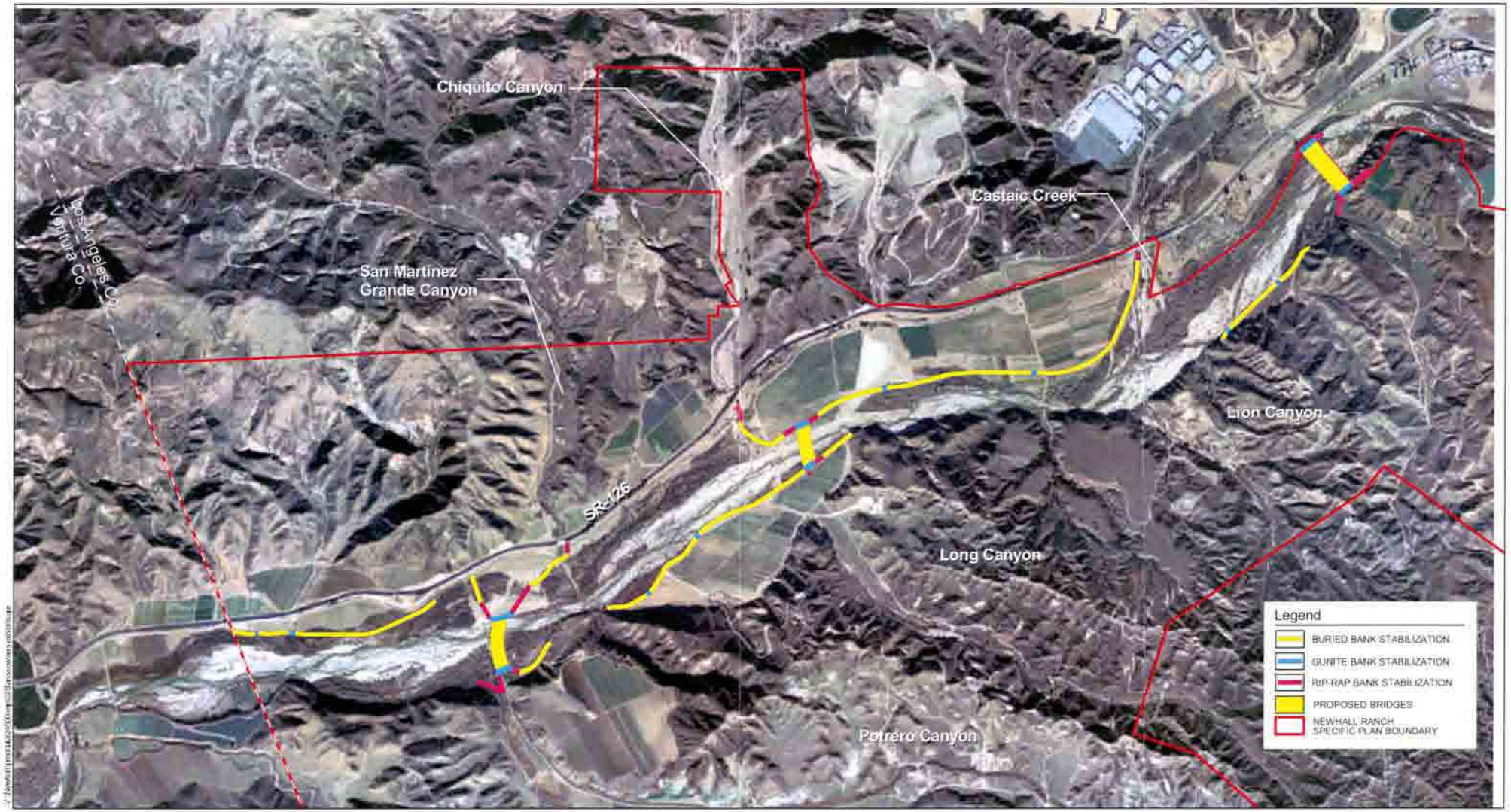

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FIGURE 2.3-5
LOCATIONS OF PROPOSED
BANK STABILIZATION AND BRIDGES

FORMA PSOMAS

2.3.6 IMPACT ANALYSIS

The focus of the impact analysis is on the biological consequences of the project-related changes in hydraulic conditions along the river. Key hydraulic impacts that may occur include effects on floodplain boundary and areas, discharge (*i.e.*, flow amount), flow velocities, and sediment transport and deposition patterns. Changes in these conditions can affect the nature, location, and amount of aquatic, wetland, and riparian habitats along the river, and the sensitive species that use these habitats.

2.3.6.1 Predicted Hydraulic Conditions

(a) Impact on Flows

Development of the Specific Plan would increase runoff from upland areas due to increased impervious surface areas (*e.g.*, pavement, roads, and buildings). The increase in discharges for different return events (2-year, 5-year, 10-year, 20-year, 50-year, 100-year) at a point about four miles downstream of the Specific Plan site in Ventura County is shown in **Table 2.3-8**. Beyond this point the Specific Plan has no impacts to flows. The increase in runoff ranges from 3 percent for high flows to 7 percent for the 2-year event. These data indicate that the proposed project would slightly increase the average flows in the river downstream of the Specific Plan site. *See,* **Subsection 2.3.6.2** of this chapter for the biological impacts associated with this increase.

Table 2.3-8
Project-Related Changes in Discharge Below the Specific Plan Site

Location – 4 Miles Downstream of the Specific Plan Site (Section 1030-1000)	Discharge for Different Return Events (cfs)					
	2-year	5-year	10-year	20-year	50-year	100-year
Existing conditions	2,600	8,800	15,975	25,815	43,950	62,190
Proposed conditions	2,860	9,290	16,690	26,815	45,340	64,190
Net Change (%)	7	5	4	4	3	3

Source: Sikand Engineering (2000b). The above noted changes are considered to be conservative in that the predicted discharges under proposed conditions do not include the effect of the timing of flows from the Specific Plan site, which would reduce the net change percentages for all flows.

(b) Impact on Floodplain and Habitat Area

The proposed bank stabilization and bridges associated with the Specific Plan would alter the existing boundary of the river floodplain at the Specific Plan site and downstream in Ventura County, and affect its area from that shown on **Figures 2.3-2a** through **2.3-2f**. A summary of the changes in the floodplain area due to the full development of the Specific Plan is shown in **Table 2.3-9** below.

Table 2.3-9
Floodplain Area for Different Discharges – Existing and Proposed Conditions*

Return Event (years)	Acreage of Floodplain that is Inundated During a Flood Event (acres) at the Specific Plan Site, from the Commerce Center Drive to County Line		Acreage of Floodplain that is Inundated During a Flood Event (acres) from the County Line to a Point Four Miles Downstream in Ventura County	
	Existing Conditions	Proposed Conditions	Existing Conditions	Proposed Conditions
2	246	257	86	88
5	309	324	131	131
10	361	365	160	160
20	482	438*	198.5	200
50	664	546*	257	258
100	766	625*	298	298.5

Source: Psomas & Associates.
**Less land area is flooded in the proposed condition during the 20, 50, and 100-year floods because of bank protection.*

For high frequency floods (2-year, 5-year, and 10-year), the proposed floodplain modifications would not hinder flows or reduce the floodplain area. Instead, these flows would spread across the river channel, unaffected by the bank protection because the river would have sufficient width to allow these flows to meander and spread out further than they would under pre-project conditions.

However, during more infrequent floods (20-year, 50-year and 100-year events), flows would spread out to the buried bank stabilization (but no further). This would limit the area of the floodplain during these infrequent flood events, causing inundation over a smaller area because the bank protection will prevent flooding of formerly adjacent floodplain areas. These formerly adjacent areas would be developed under the Specific Plan for various land uses, including residential, commercial, industrial, and parks. Most of the areas being developed consist of agricultural fields and, to a lesser extent, disturbed and upland habitat areas with limited riparian habitat. **Table 2.3-10** shows the different habitat types affected by proposed development.

Table 2.3-10
Acreage Inundated by Habitat Type During Different Return Events

Habitat Type	Flood Events											
	2-year		5-year		10-year		20-year		50-year		100-year	
	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed
AG	5.4	15.8	10.3	24.6	20.8	29.8	86.3	56.9	193.6	94.3	238.2	118.8
AS	0.1	0.2	0.3	0.6	0.8	1.3	2.1	2.5	3.8	5.5	8.6	10.1
CRW1	9.1	8.9	14.1	14.1	40.0	36.8	70.6	65.5	124.6	117.4	163.3	154.4
AWS	0	0	0	0	0	0	0.1	0.1	0.3	0.3	0.6	0.1
CSS	0	0	0	0	0	0	0.3	0.3	1.5	2.1	2.5	3.2
ES	0	0	0	0	0	0	0	0	0.1	0.1	0.1	0.1
FM	0	0	0	0	0	0	0.1	0	0.7	0.4	0.9	0.9
GBSR	0	0	0	0	0	0	0	0	0	0	0.3	0.3
GBSR-ADJ	0	0	0	0	0	0	0.1	0.4	0.5	0.5	0.5	0.5
LOW	0	0	0	0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2
MC	0	0	0	0	0	0	0		0.1	0.1	0.1	0.1
DIST.	1.4	1.4	2.4	2.4	4.3	4.4	5.9	6.2	7.9	8.4	13.9	14.0
G	0	0	0.1	0.1	0.1	0.1	0.2		0.3	0.3	0.3	0.3
GR	0	0	0	0	0	0	0		0.2	0.2	3.2	3.2
MFS	58.8	60.3	78.3	80.1	87.1	85.4	108.1	101.7	133.2	123.7	145.1	135.2
SMFS	242.6	243.3	297.4	296	318.3	315.7	335.6	332	342.3	338.5	343.3	340
WRW	5.1	5.4	7.4	7.4	8.4	8.4	9.8	10.5	24.6	24.7	39.2	38.7
WS	2.6	3.4	9.3	9.8	18.1	19.4	32.2	31.7	55.2	55.4	70.3	69.9
WS1	6.4	6.3	19.7	19.7	22.2	23.3	28.5	29.5	32.3	32.4	34	33.7
TOTAL (Acres)	**332**	**345**	**439**	**455**	**520**	**525**	**680**	**637**	**921**	**804**	**1,065**	**923.5**

Source: Psomas & Associates.

AG-Agriculture
AS-Alluvial Scrub
CRW-Cottonwood Riparian Woodland
AWS-Arrow Weed Scrub
CSS—Coastal Sage Scrub
GR-Grazing Land
MFS—Mule Fat Scrub
SMFS-Successional Mule Fat Scrub
WRW-Willow Riparian Woodland
WS-Willow Scrub
ES-Elderberry Scrub
FM-Freshwater Marsh
GBSR-Great Basin Scrub
MC-Mixed Chaparral
G-Grassland

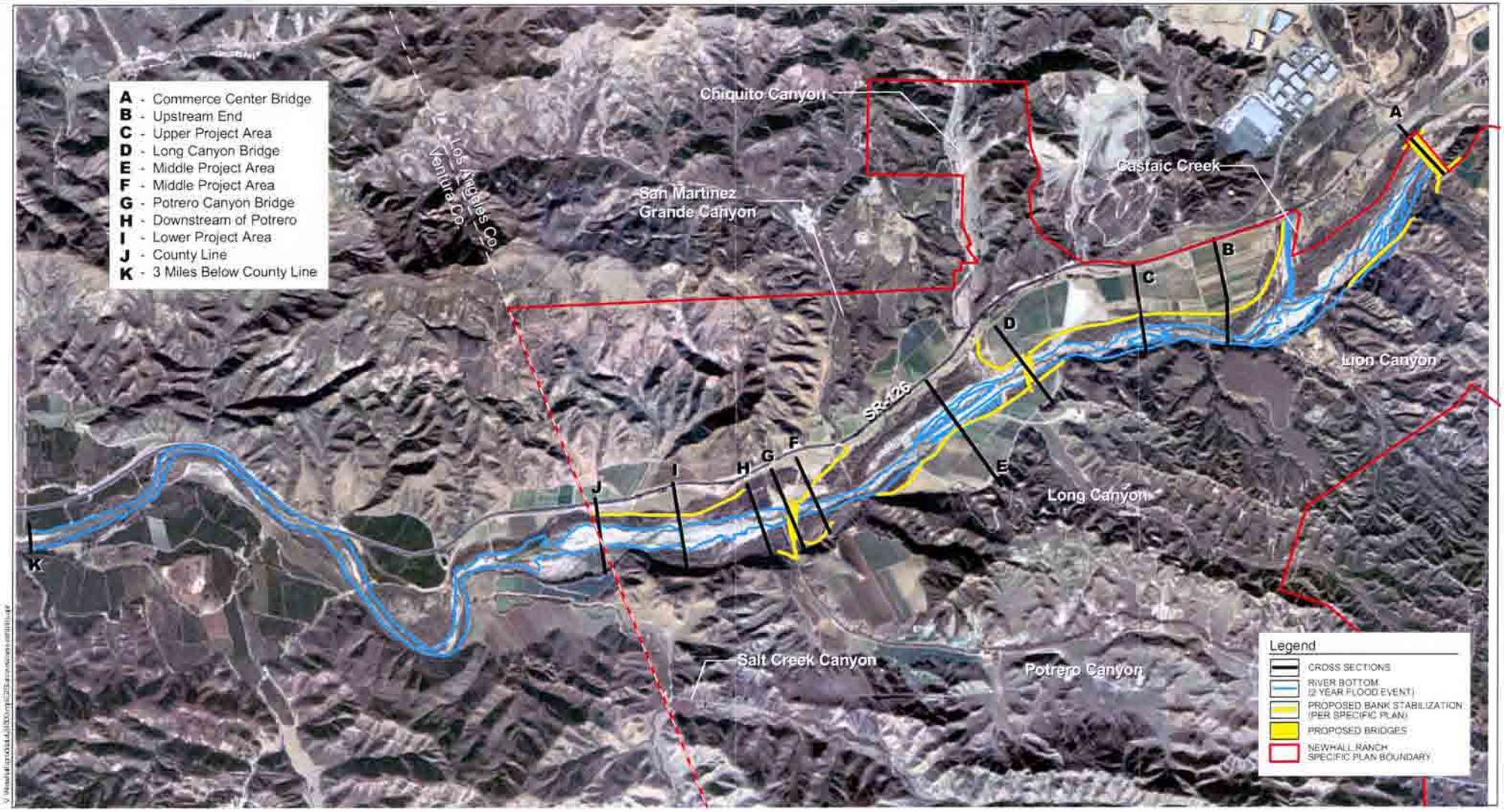
A similar analysis was conducted to estimate impacts to aquatic, wetland, and riparian habitats from floodplain boundary changes caused by the proposed development. This analysis provides a direct assessment of the potential change in total acreage and configuration of habitats along the river in the Specific Plan site. The results are shown in **Charts 2.3-1a** and **2.3-1b**. The charts show that there are negligible differences in the total habitat area inundated under existing and proposed conditions in both Los Angeles County and Ventura County. In all cases, the predicted change is not considered significant (less than 5 percent).

(c) Impact on Velocities

The increased flows and presence of bank protection would also affect water velocities. During infrequent floods (20-year, 50-year and 100-year events), flows would spread out to the buried bank stabilization (but no further). Water velocities under existing and proposed conditions at key locations (*See*, **Figure 2.3-6**) along the river are shown on **Charts 2.3-2a** through **2.3-2f**.

The changes in velocities throughout the Specific Plan site and downstream of the site are shown with a map of water velocities for existing conditions and proposed conditions on **Figures 2.3-7a** through **2.3-7l**. This visual display demonstrates that the reduction in floodplain area caused by bank protection does not create a significant increase in overall velocities because the volume of flow carried in these shallow, slow-moving areas along the margins of the river is small. This effect is demonstrated by comparing **Figures 2.3-7i** and **2.3-7k** with **Figures 2.3-7j** and **2.3-7l**. As shown, water velocities are slow in the floodplain areas proposed for development.

Variations in velocities are localized and limited in scope, especially when viewed in the entirety of the river corridor within the Specific Plan site and downstream. The locations represent a wide range of conditions along the river, including narrow areas and wide areas with large terraces adjacent to the river. The velocities for all return events are not significantly different between existing and proposed conditions, with the exception of a significant decrease in velocities at Station B. This area is a narrow portion of the river channel located directly downstream of the confluence of the river and Castaic Creek at the upstream (east) end of the Specific Plan. Under the Specific Plan, this area would be widened from 300 to 900 feet. Existing agricultural land on the north side of the river would be lowered and potentially used for habitat restoration. As such, the existing constriction to the river channel due to the agricultural field would be removed, allowing flows to spread out over a wider area. This change would reduce river velocities at that specific location.

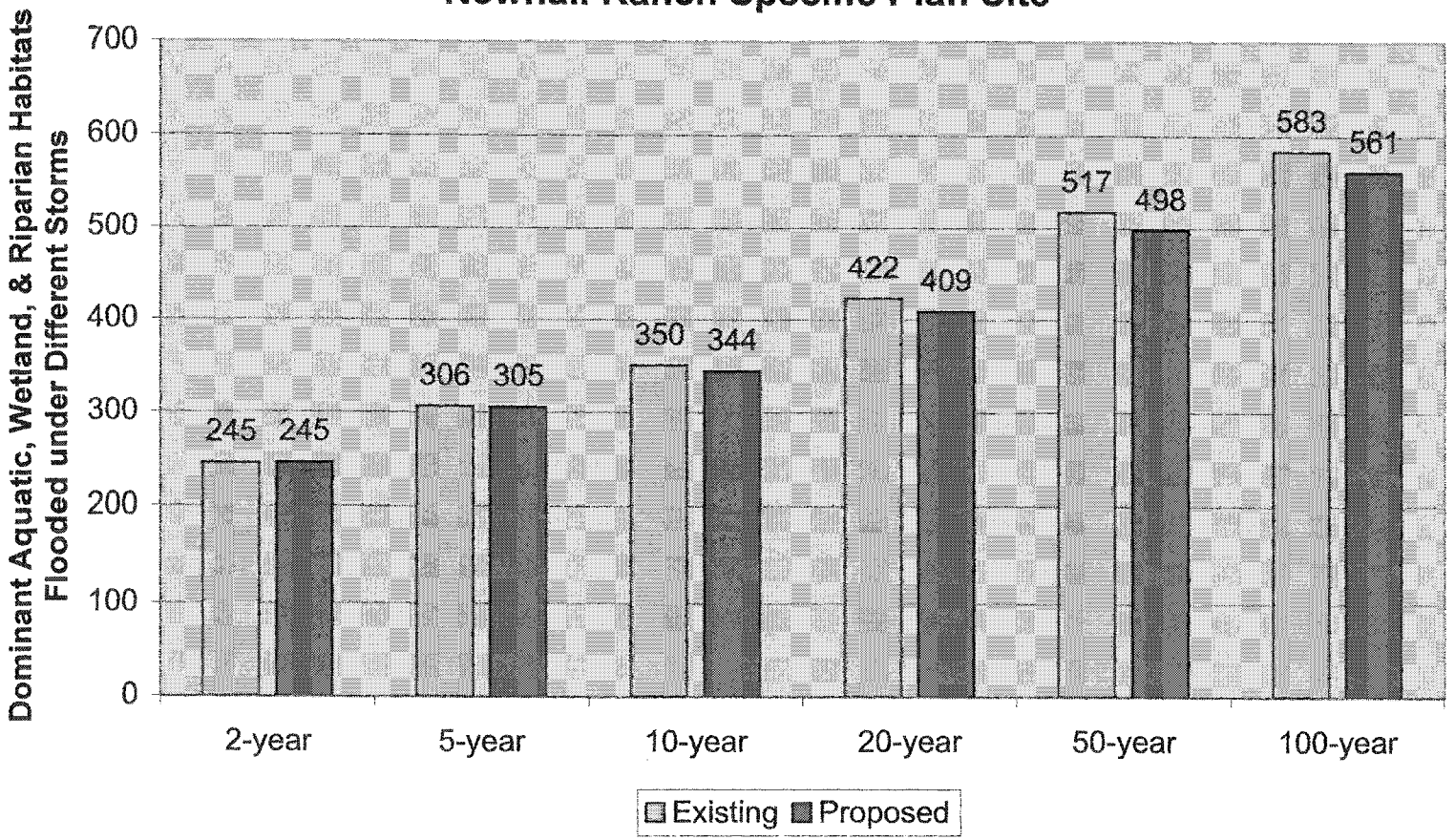


NEWHALL RANCH

FIGURE 2.3-6
CROSS SECTIONS ALONG THE RIVER FOR HYDRAULIC MODELING

FORMA PSOMAS
October 16, 2000

Chart 2.3-1a
Key Riverine Habitats Inundated under Existing and Proposed Conditions Newhall Ranch Specific Plan Site



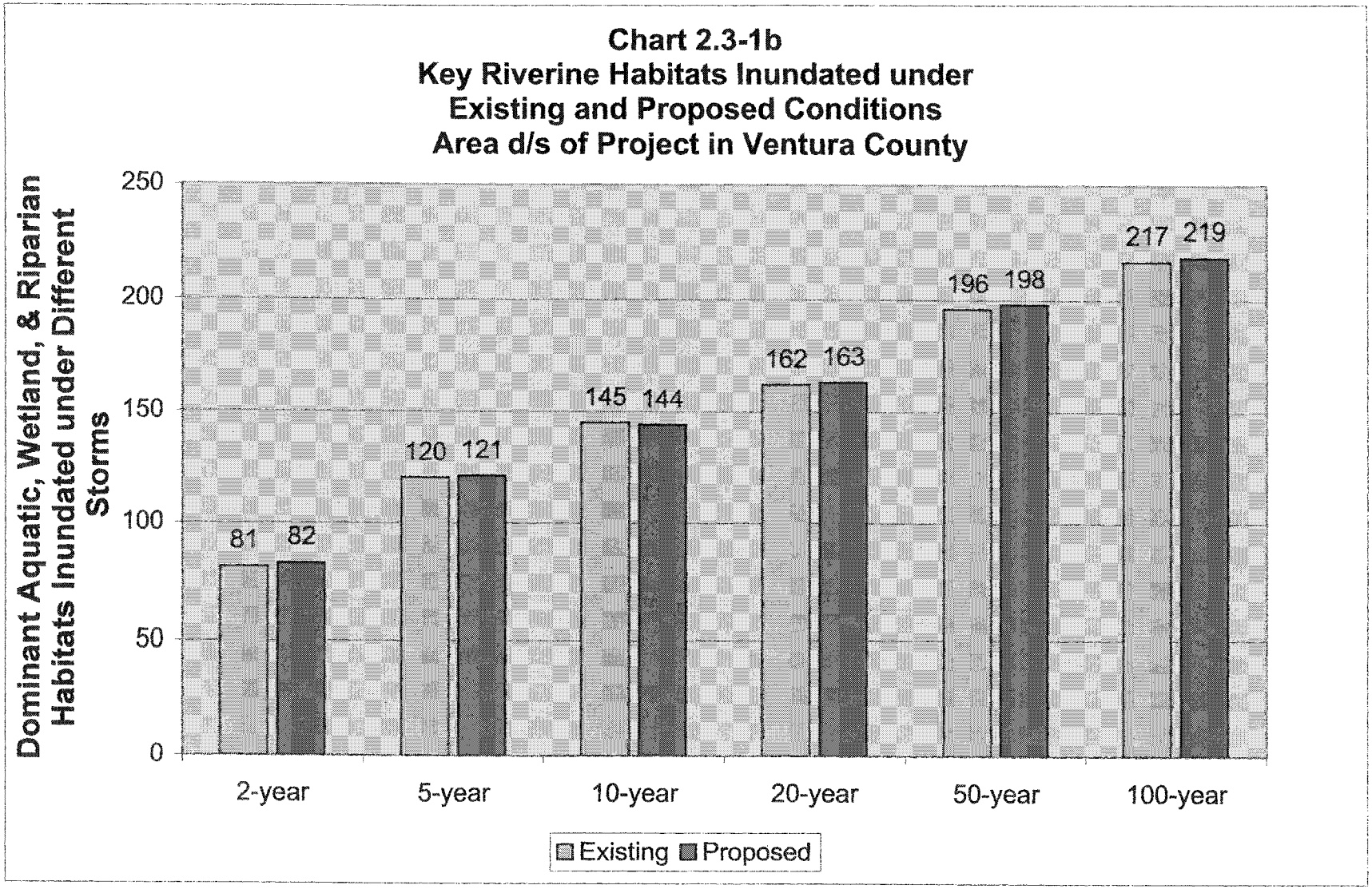
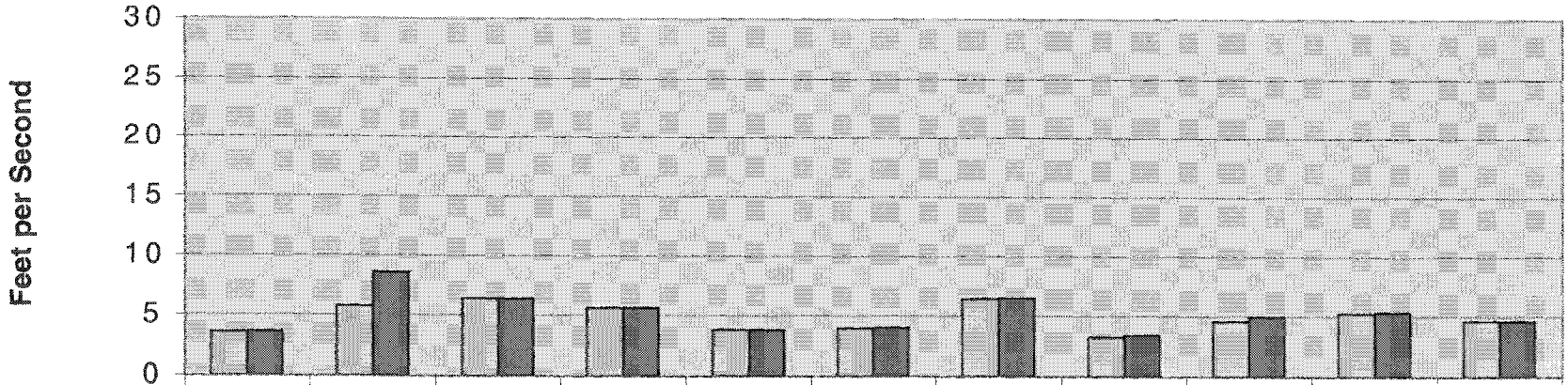


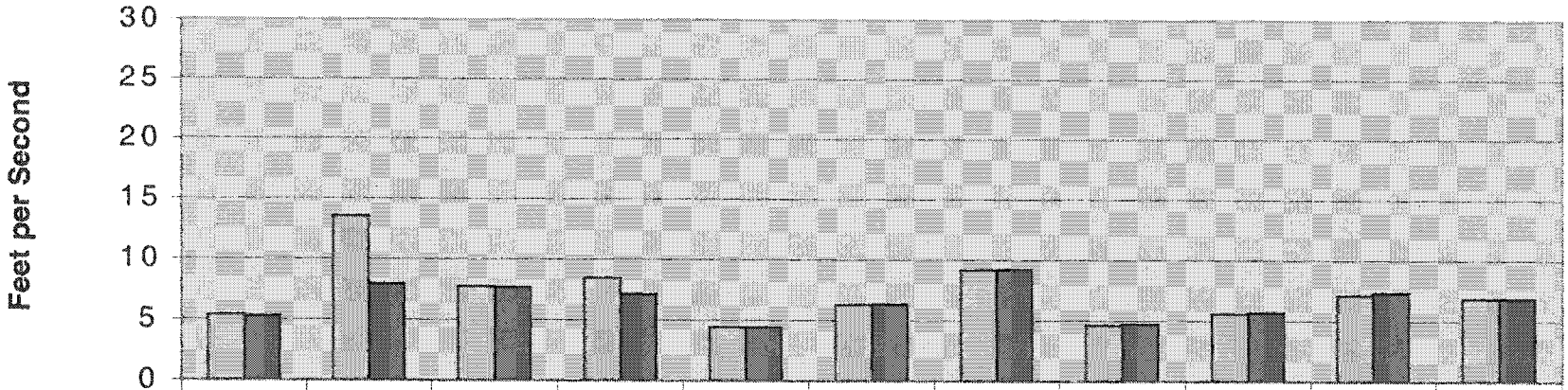
Chart 2.3-1b
Key Riverine Habitats Inundated under
Existing and Proposed Conditions
Area d/s of Project in Ventura County
Dominant Aquatic, Wetland, & Riparian Habitats Inundated under Different Storms
250
200
150
100
50
0
81
82
120
121
145
144
162
163
196
198
217
219
2-year
5-year
10-year
20-year
50-year
100-year
Existing
Proposed

Chart 2.3-2a
Comparision of Velocities at Key Locations (Includes Both LA and Ventura Counties) 2 Year Storm



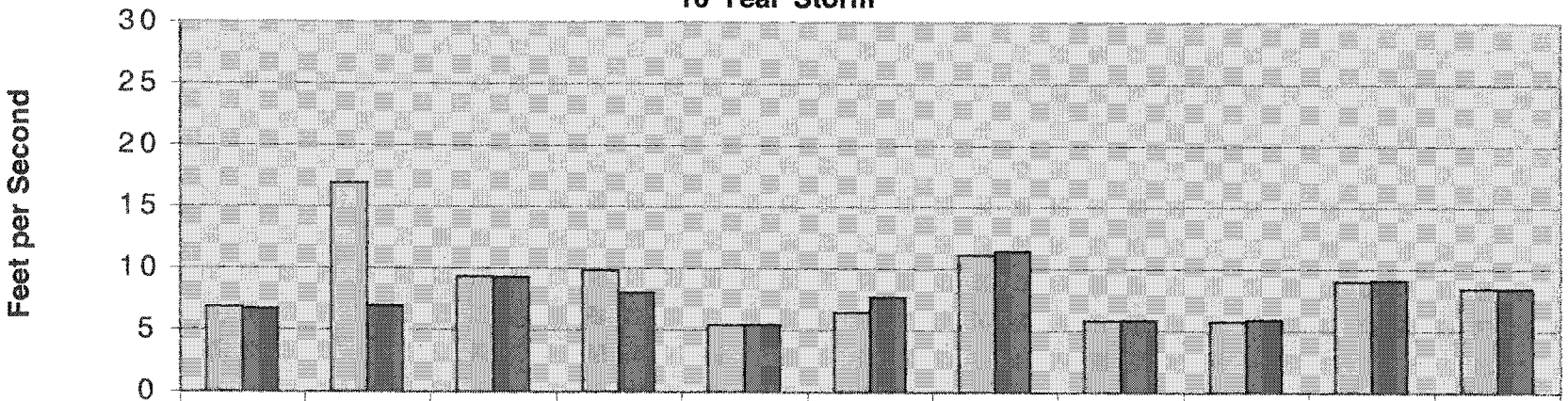
	A - Commerce Center Bridge	B - d/s of Castaic Creek	C - Upper Project Area	D - Long Canyon Bridge	E - Middle Project Area	F - Middle Project Area	G - Potrero Canyon Bridge	H - d/s of Potrero	I - Lower Project Area	J - County Line	K - 3 miles below Count line
Existing	3.52	5.72	6.37	5.58	3.75	3.94	6.41	3.22	4.51	5.18	4.59
Proposed	3.55	8.55	6.39	5.61	3.76	3.96	6.49	3.35	4.96	5.32	4.59

Chart 2.3-2b
Comparision of Velocities at Key Locations (Includes Both LA and Ventura Counties) 5 Year Storm



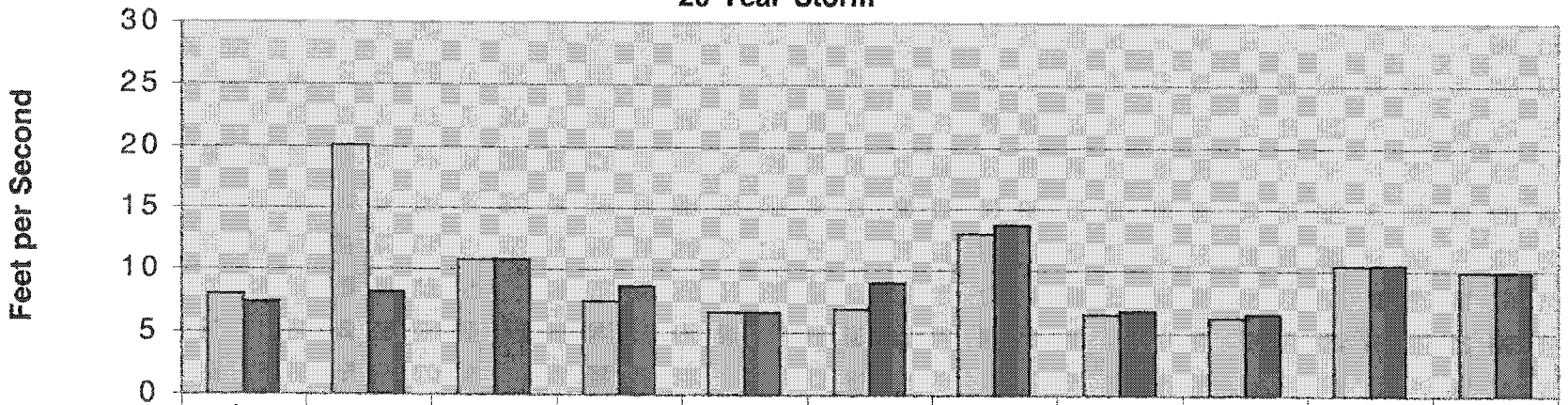
	A - Commerce Center Bridge	B - d/s of Castaic Creek	C - Upper Project Area	D - Long Canyon Bridge	E - Middle Project Area	F - Middle Project Area	G - Potrero Canyon Bridge	H - d/s of Potrero	I - Lower Project Area	J - County Line	K - 3 miles below Count line
Existing	5.37	13.45	7.67	8.38	4.38	6.29	9.14	4.59	5.56	7.09	6.84
Proposed	5.26	7.92	7.65	7.1	4.4	6.32	9.17	4.7	5.65	7.3	6.84

Chart 2.3-2c
Comparision of Velocities at Key Locations (Includes Both LA and Ventura Counties) 10 Year Storm



	A - Commerce Center Bridge	B - d/s of Castaic Creek	C - Upper Project Area	D - Long Canyon Bridge	E - Middle Project Area	F - Middle Project Area	G - Potrero Canyon Bridge	H - d/s of Potrero	I - Lower Project Area	J - County Line	K - 3 miles below Count line
Existing	6.81	16.86	9.33	9.78	5.41	6.46	11.08	5.78	5.76	8.97	8.41
Proposed	6.67	6.92	9.27	8	5.45	7.65	11.41	5.86	5.91	9.04	8.41

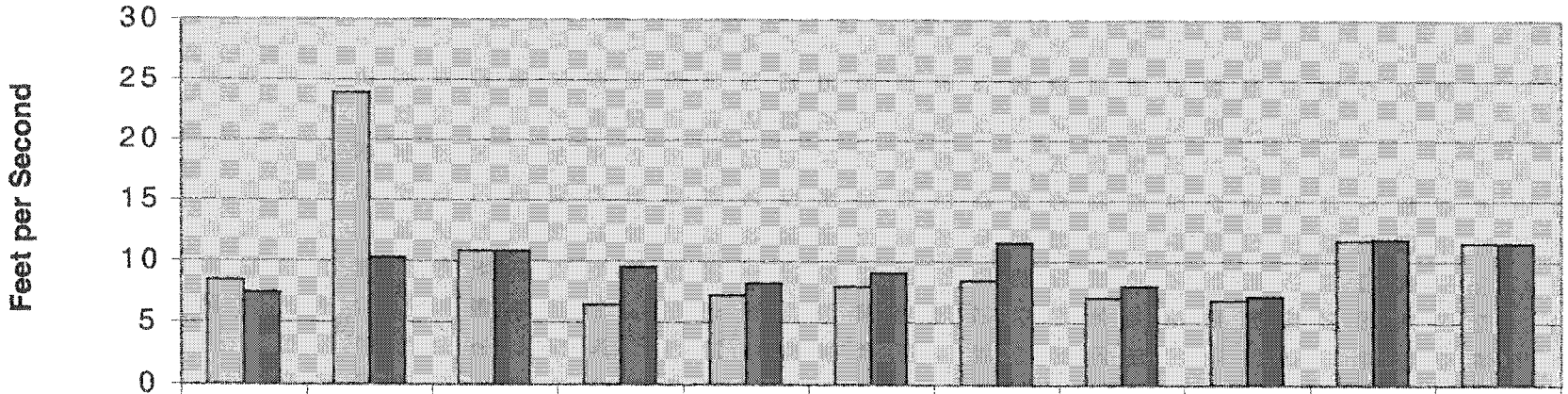
Chart 2.3-2d
Comparision of Velocities at Key Locations (Includes Both LA and Ventura Counties) 20 Year Storm



	A - Commerce Center Bridge	B - d/s of Castaic Creek	C - Upper Project Area	D - Long Canyon Bridge	E - Middle Project Area	F - Middle Project Area	G - Potrero Canyon Bridge	H - d/s of Potrero	I - Lower Project Area	J - County Line	K - 3 miles below Count line
Existing	7.95	20.08	10.77	7.42	6.59	6.82	12.96	6.44	6.2	10.4	9.94
Proposed	7.34	8.17	10.81	8.64	6.61	9.01	13.7	6.76	6.52	10.44	9.94

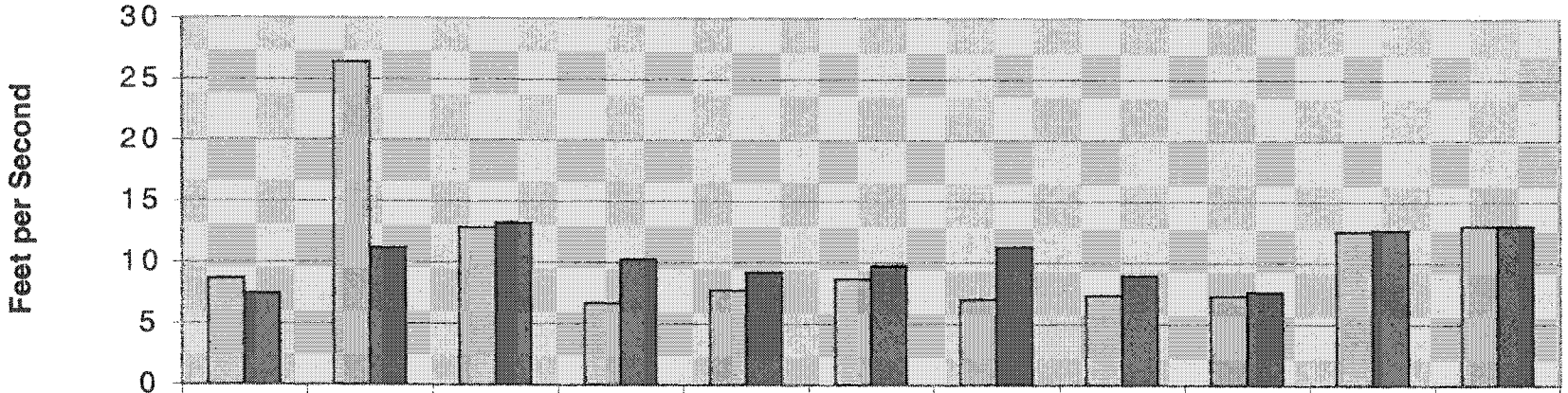
Existing Proposed

Chart 2.3-2e
Comparision of Velocities at Key Locations (Includes Both LA and Ventura Counties) 50 Year Storm



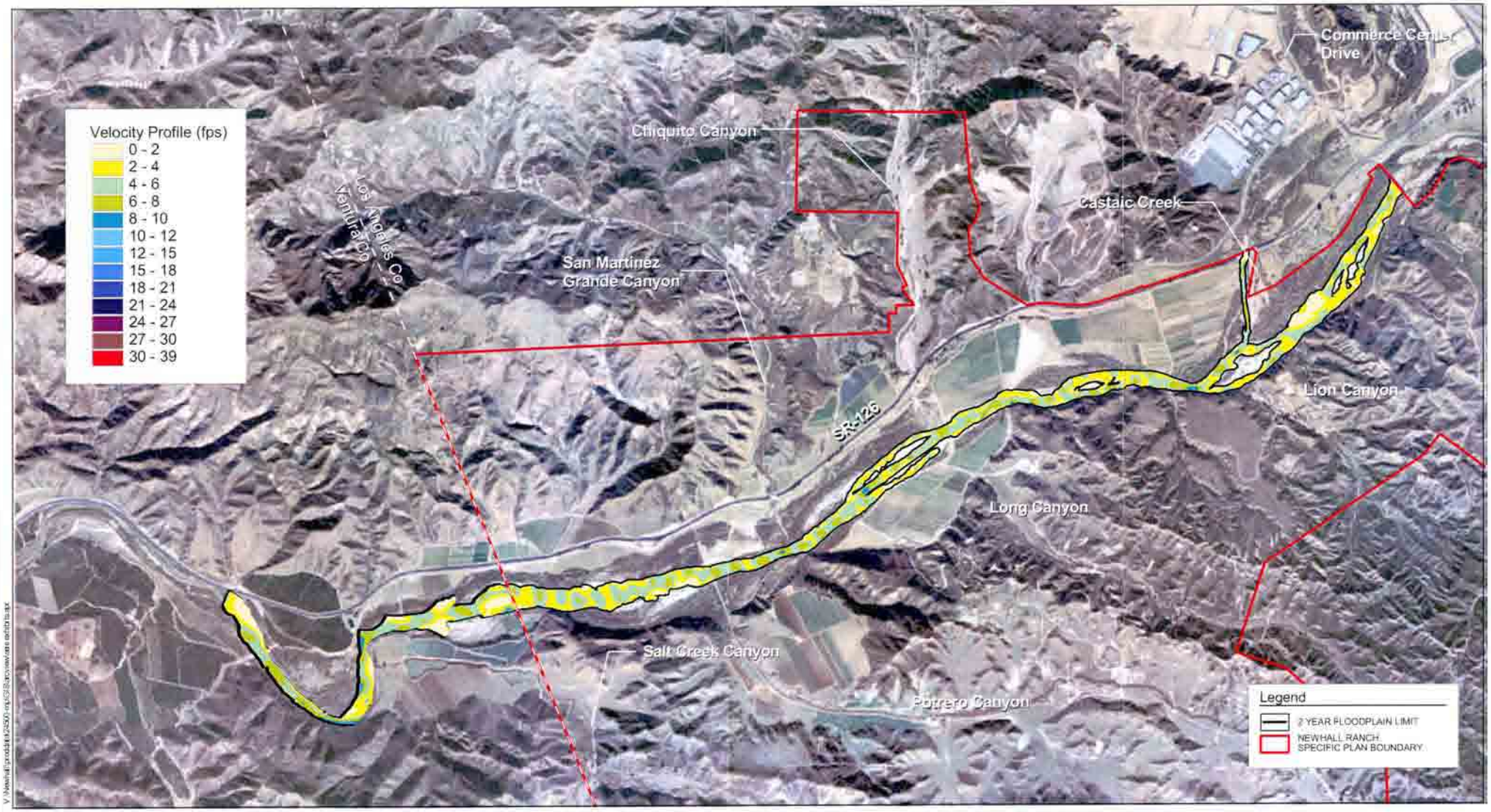
	A - Commerce Center Bridge	B - d/s of Castaic Creek	C - Upper Project Area	D - Long Canyon Bridge	E - Middle Project Area	F - Middle Project Area	G - Potrero Canyon Bridge	H - d/s of Potrero	I - Lower Project Area	J - County Line	K - 3 miles below Count line
Existing	8.39	23.88	10.77	6.4	7.19	7.93	8.42	7.04	6.84	11.71	11.47
Proposed	7.35	10.24	10.81	9.49	8.16	9.03	11.5	8	7.12	11.8	11.47

Chart 2.3-2f
Comparision of Velocities at Key Locations (Includes Both LA and Ventura Counties) 100 Year Storm



	A - Commerce Center Bridge	B - d/s of Castaic Creek	C - Upper Project Area	D - Long Canyon Bridge	E - Middle Project Area	F - Middle Project Area	G - Potrero Canyon Bridge	H - d/s of Potrero	I - Lower Project Area	J - County Line	K - 3 miles below Count line
Existing	8.65	26.35	12.8	6.65	7.74	8.64	6.99	7.32	7.26	12.53	13
Proposed	7.42	11.15	13.21	10.23	9.18	9.67	11.23	8.92	7.65	12.62	13

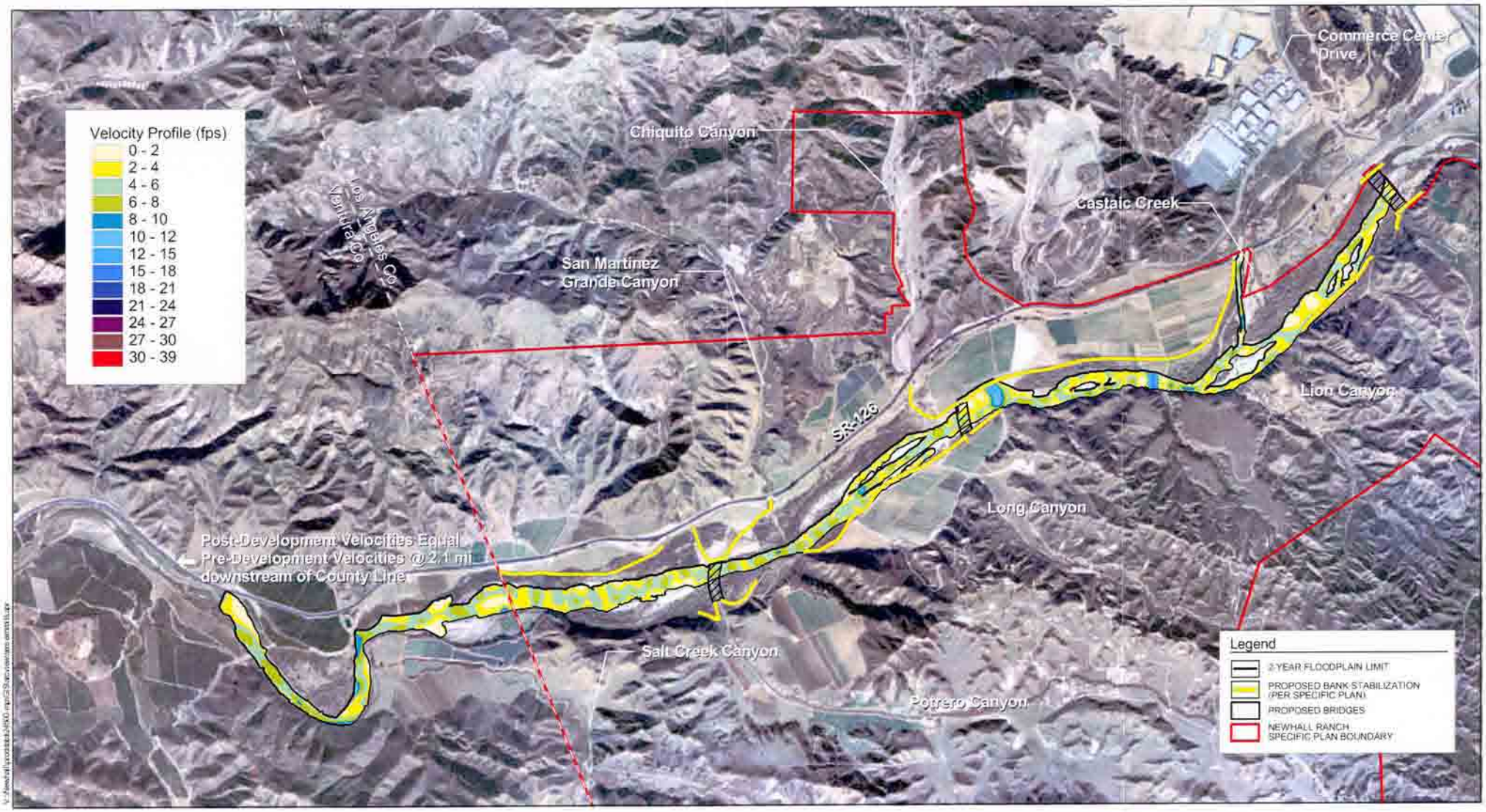
Existing Proposed



NEWHALL RANCH

FIGURE 2.3-7a
SANTA CLARA RIVER
EXISTING VELOCITIES 2 YEAR FLOOD EVENT

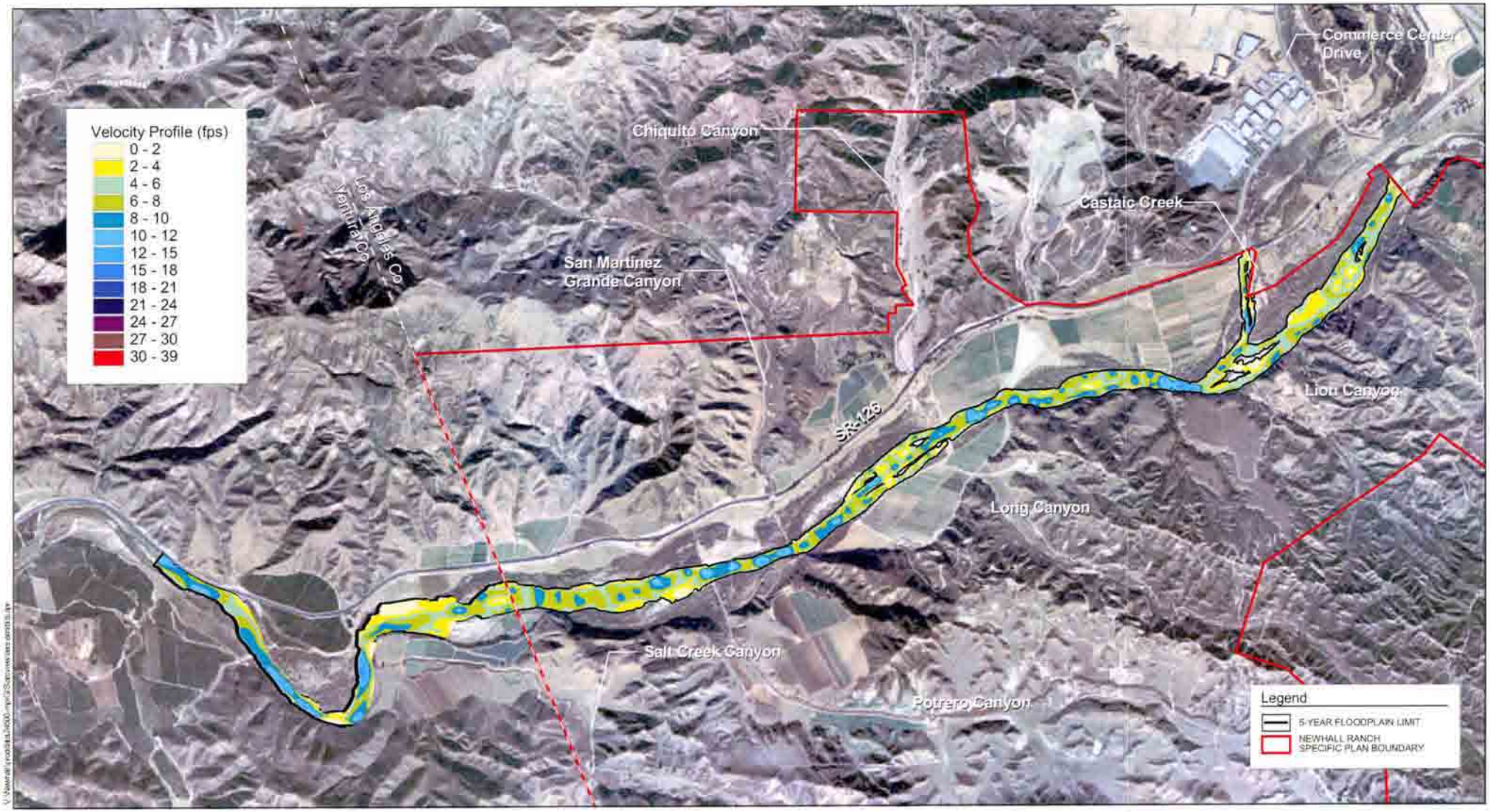
FORMA PSOMAS



NEWHALL RANCH

FIGURE 2.3-7b
SANTA CLARA RIVER
PROPOSED VELOCITIES 2 YEAR FLOOD EVENT

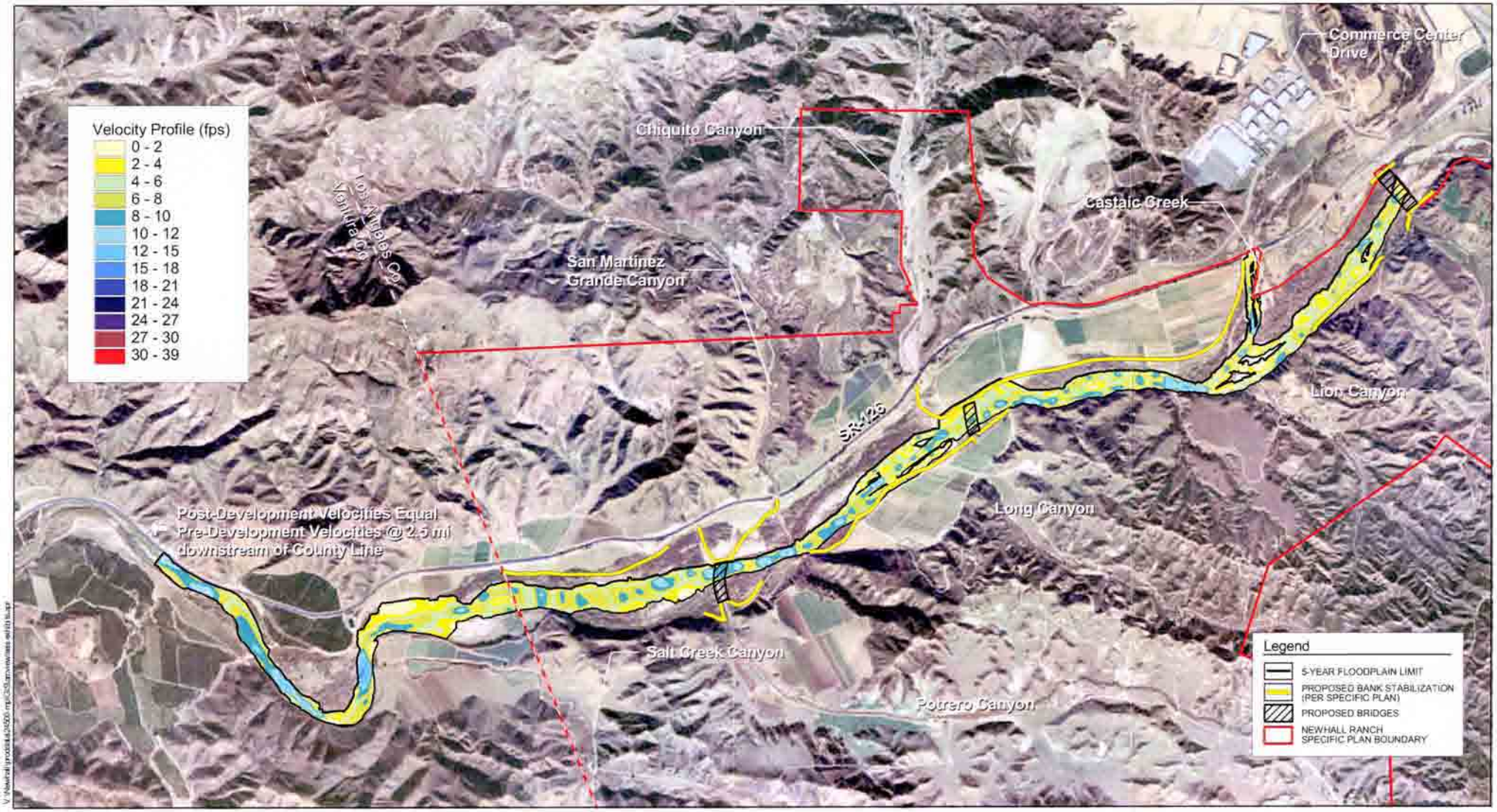
PSOMAS
October 16, 2000



NEWHALL RANCH

FIGURE 2.3-7c
SANTA CLARA RIVER
EXISTING VELOCITIES 5 YEAR FLOOD EVENT

PSOMAS
October 16, 2000

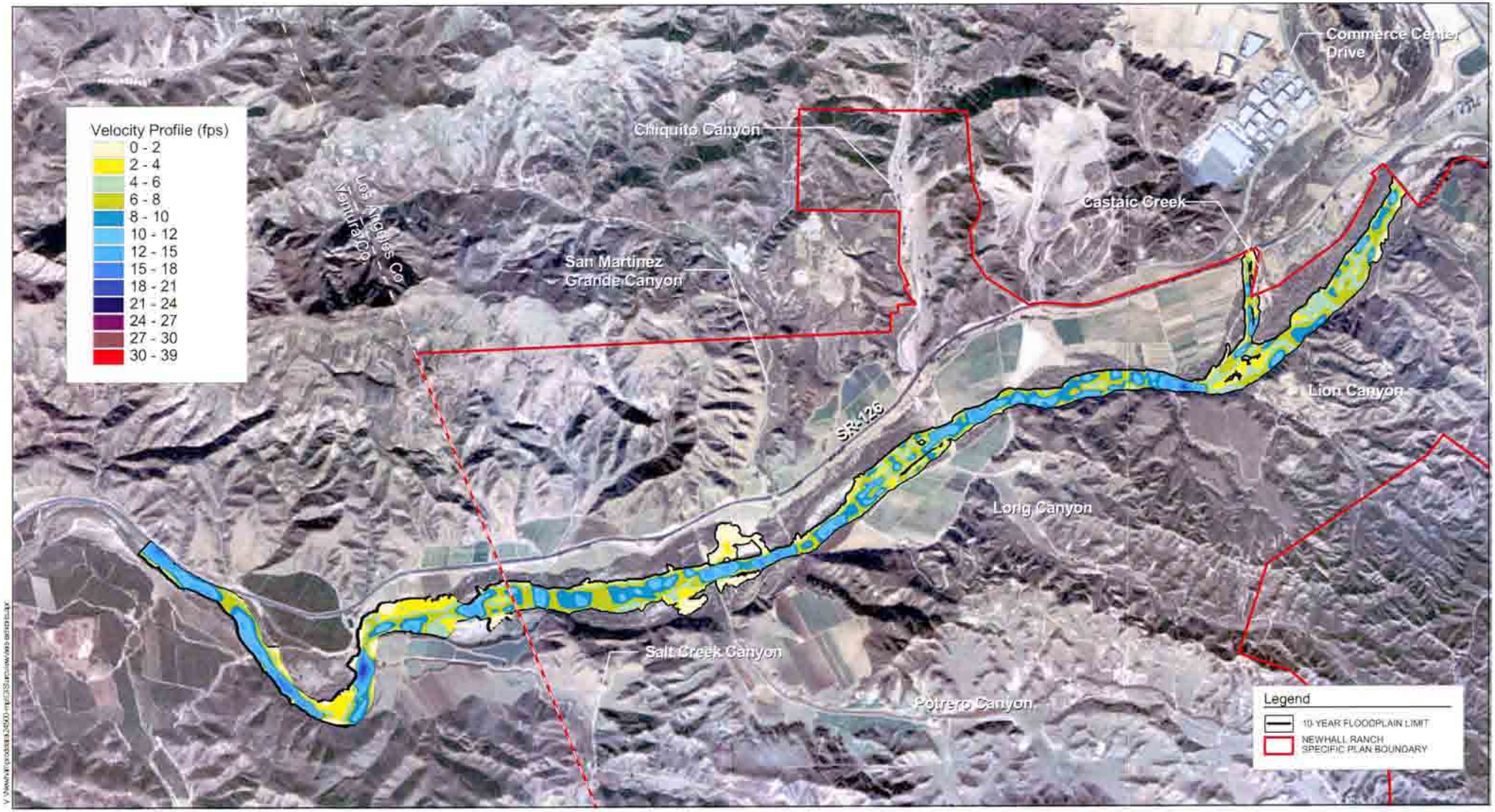


NEWHALL RANCH

FIGURE 2.3-7d
SANTA CLARA RIVER
PROPOSED VELOCITIES 5 YEAR FLOOD EVENT

0 600 1200 2400 Feet

KORVA PSOMAS
October 18, 2000
sels_gis.apr

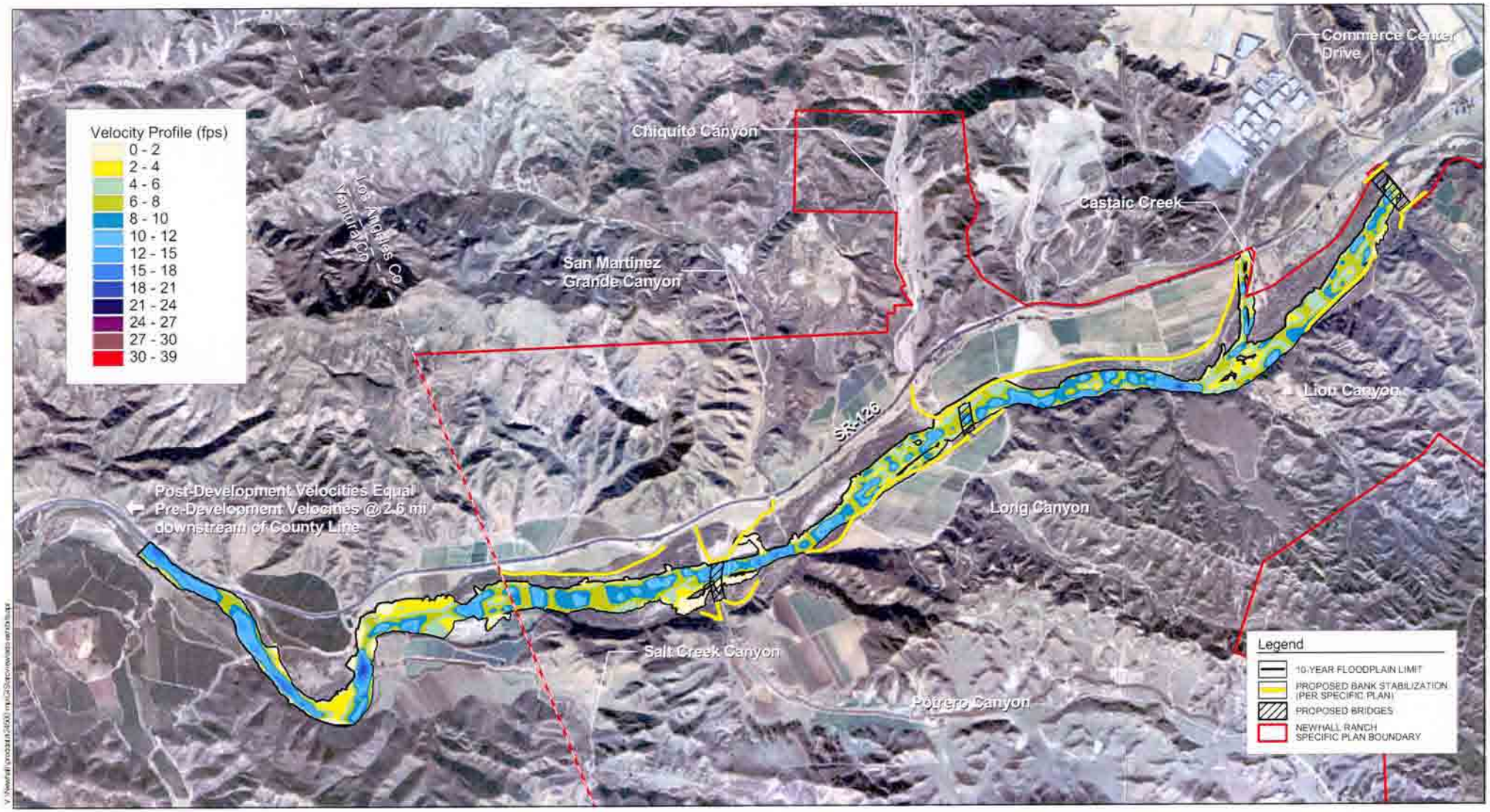


NEWHALL RANCH

FIGURE 2.3-7e
SANTA CLARA RIVER
EXISTING VELOCITIES 10 YEAR FLOOD EVENT

0 600 1200 2400 Feet

JONES & STOKES PSOMAS
October 19, 2000
vels_gis.apr

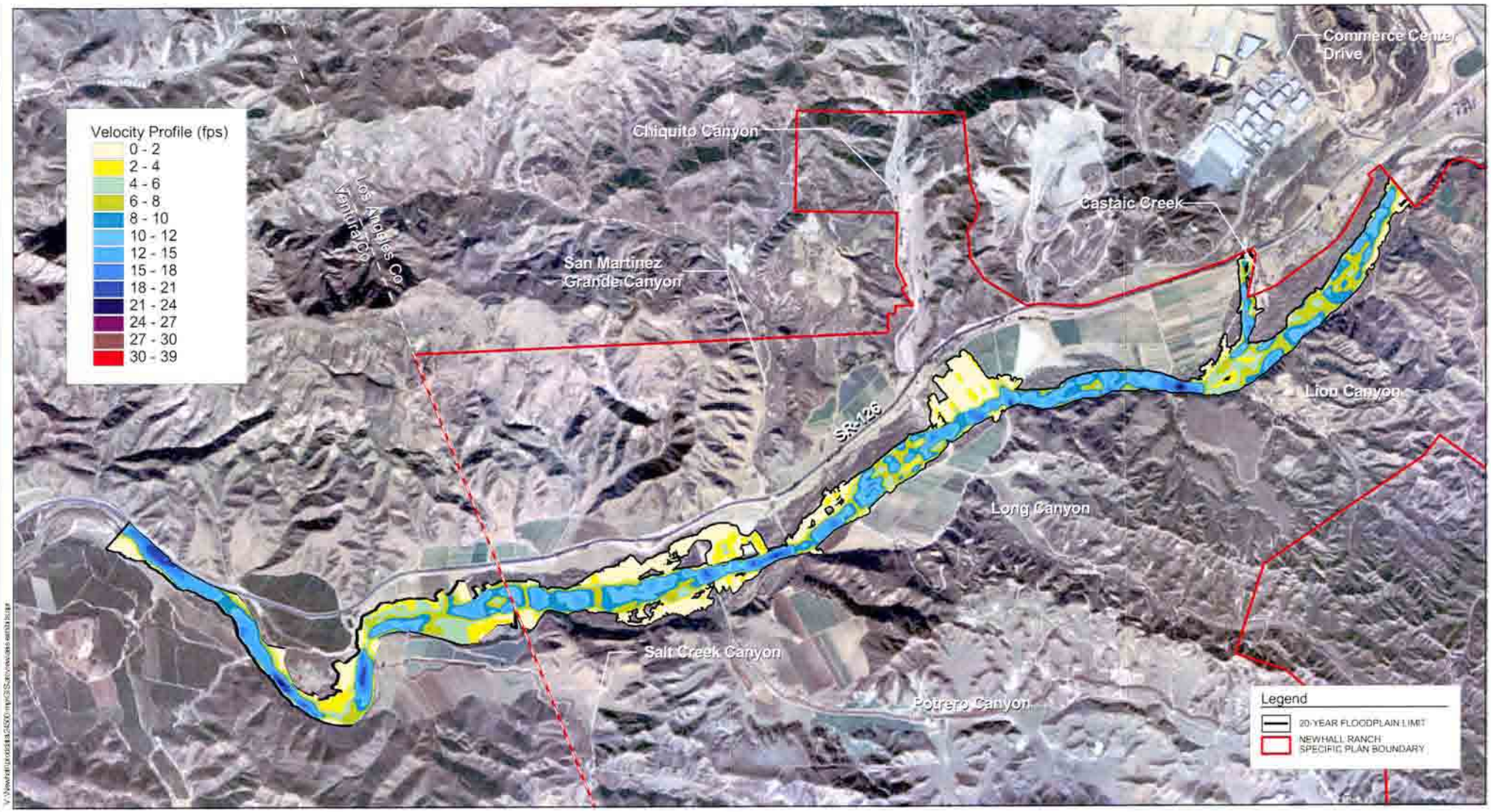


NEWHALL RANCH

FIGURE 2.3-7f
SANTA CLARA RIVER
PROPOSED VELOCITIES 10 YEAR FLOOD EVENT

0 600 1200 2400 Feet

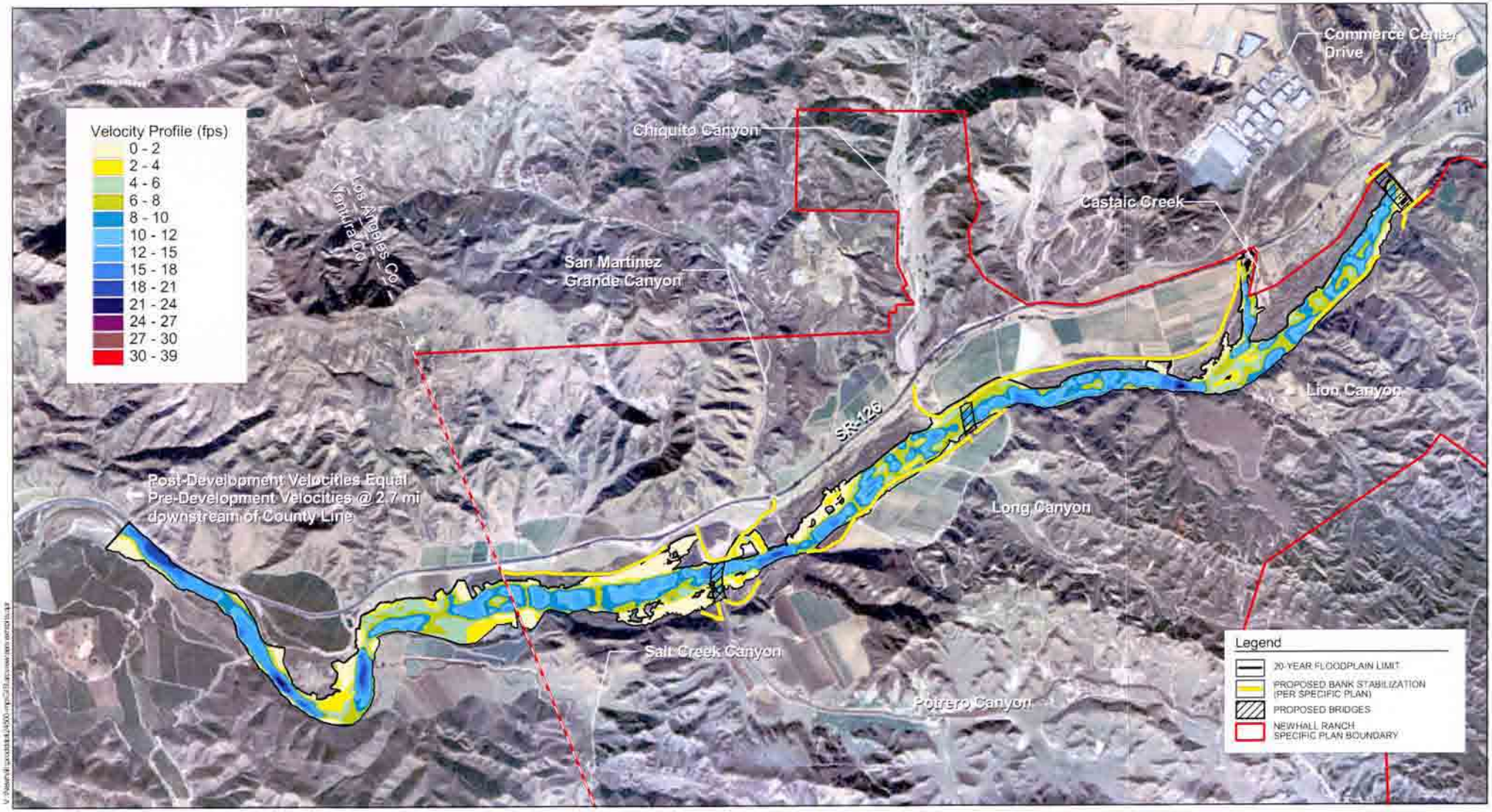
FORMA PSOMAS
October 16, 2000



NEWHALL RANCH

FIGURE 2.3-7g
SANTA CLARA RIVER
EXISTING VELOCITIES 20 YEAR FLOOD EVENT

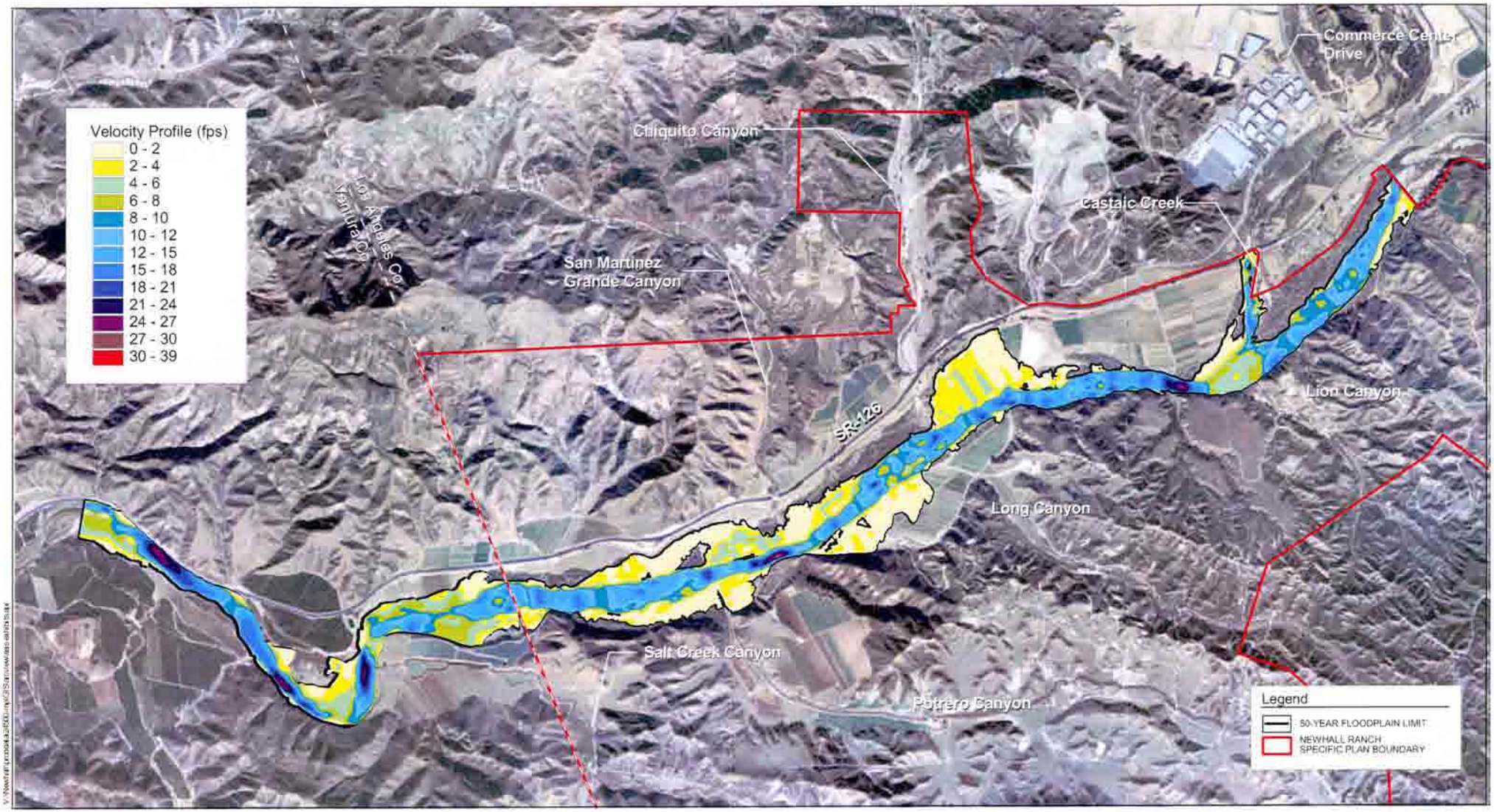
PBS&J PSOMAS
October 16, 2000



NEWHALL RANCH

FIGURE 2.3-7b
SANTA CLARA RIVER
PROPOSED VELOCITIES 20 YEAR FLOOD EVENT

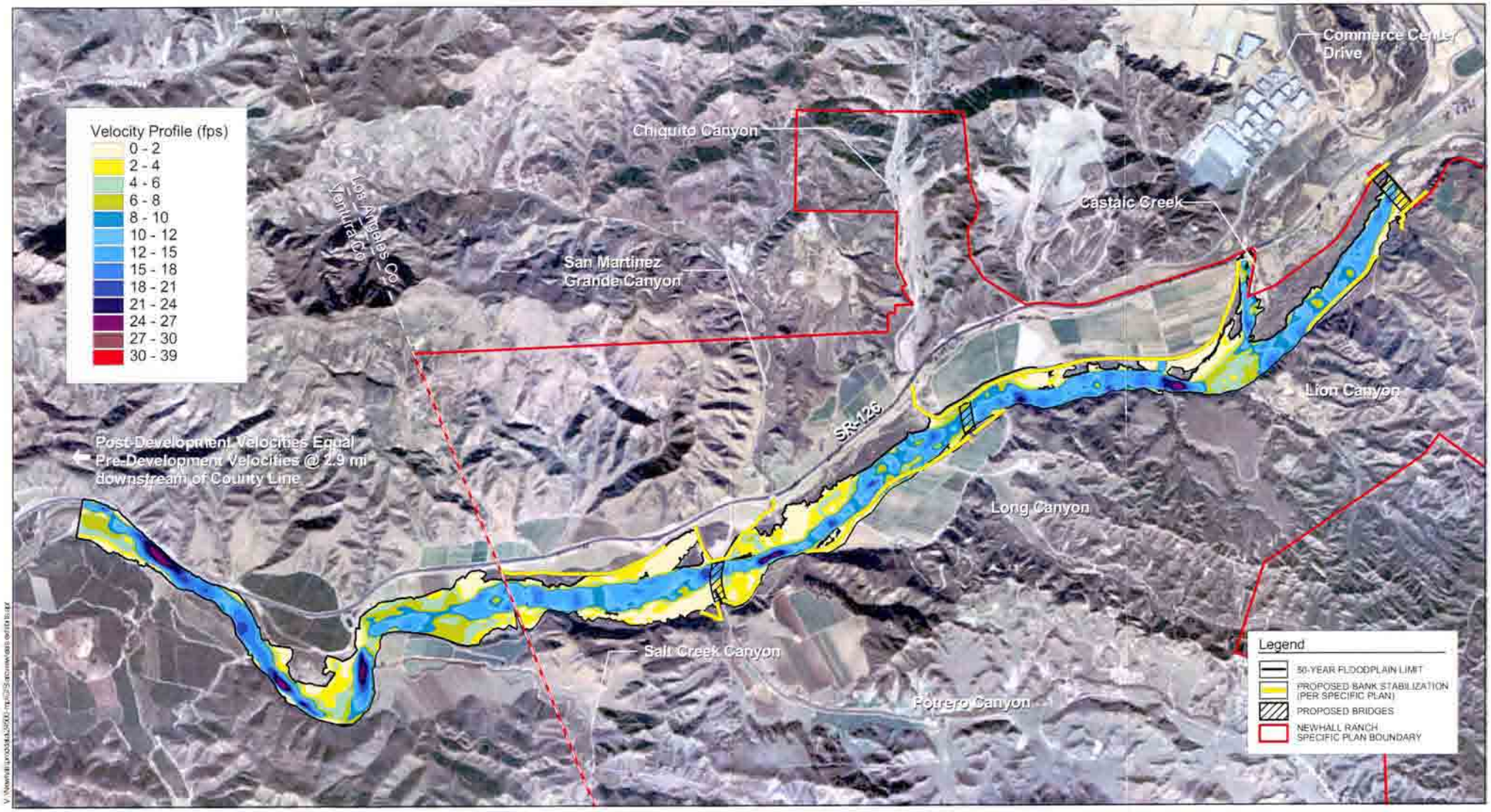
PSOMAS
October 16, 2000



NEWHALL RANCH

FIGURE 2.3-7i
SANTA CLARA RIVER
EXISTING VELOCITIES 50 YEAR FLOOD EVENT

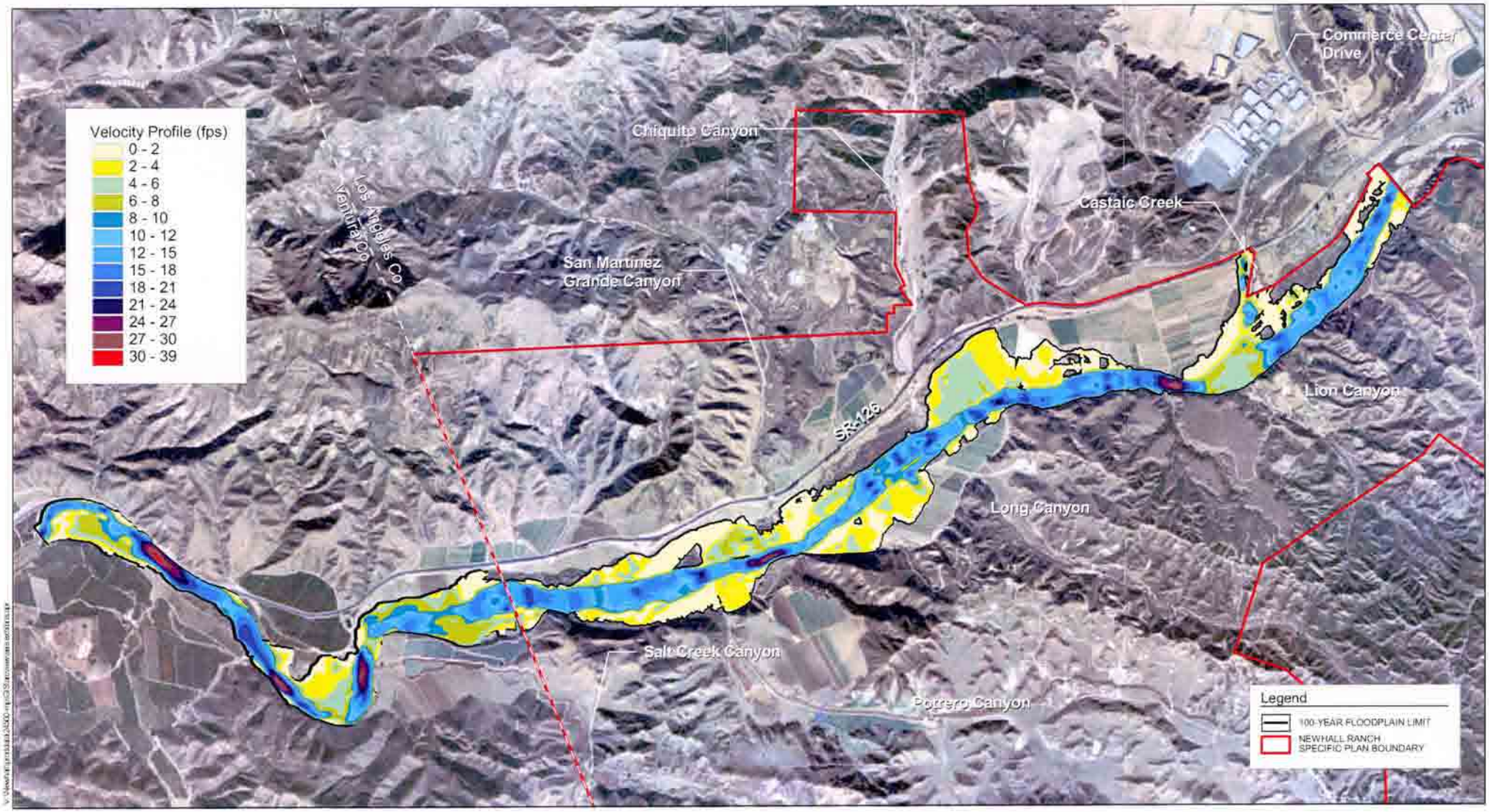
PSOMAS
October 18, 2000



NEWHALL RANCH

FIGURE 2.3-7
SANTA CLARA RIVER
PROPOSED VELOCITIES 50 YEAR FLOOD EVENT

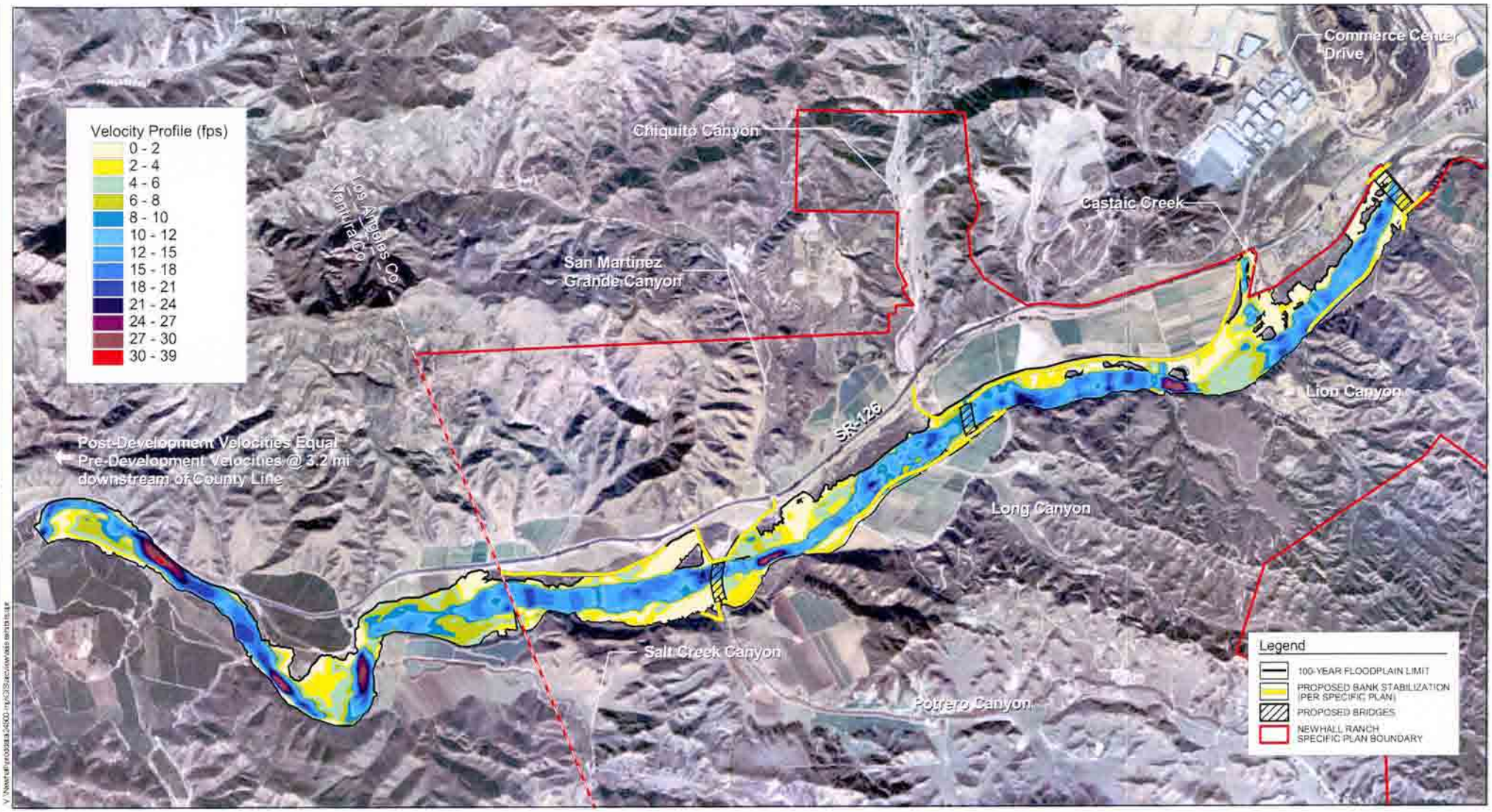
FORMA PSOMAS
October 16, 2000



NEWHALL RANCH

FIGURE 2.3-7k
SANTA CLARA RIVER
EXISTING VELOCITIES 100 YEAR FLOOD EVENT

FORMA PSOMAS
October 16, 2000



NEWHALL RANCH

FIGURE 2.3-71
SANTA CLARA RIVER
PROPOSED VELOCITIES 100 YEAR FLOOD EVENT

FORMA PSOMAS
October 18, 2000

Increases in velocities greater than 10 percent would occur at the Potrero and Long Canyon bridge locations (Stations D and G) for events equal to or greater than the 20-year event. Under existing conditions, velocities at these locations range from 7.4 feet per second at Station D to approximately 12.9 feet per second at Station G at and immediately downstream of the bridges during a 20-year flood event. In the post-development condition, water velocity at Station D would increase to approximately 8.6 feet per second while water velocity at Station G is predicted at approximately 13.7 feet per second. The predicted increased velocities at the bridges would be very localized and represent a very small segment of the many miles of river located within the Specific Plan. For Potrero Canyon bridge, the 10 percent velocity increase would occur up to 1000 feet downstream and 800 feet upstream. For Long Canyon bridge, these distances would be 200 feet downstream and 600 feet upstream. Water velocities return to existing rates beyond this point. In both existing and post-development cases, water velocities at and downstream of the bridge abutments are, and would continue to be erosive, since they exceed 4 feet per second. The biological significance of localized velocity increases is evaluated in **Subsection 2.3.6.2** of this Chapter.

(d) Impacts on Water Depth

Increased flows due to the Specific Plan would also affect water depths. Water depths under existing and proposed conditions at key locations (*See*, **Figure 2.3-6** above) along the river are shown on **Charts 2.3-3a** through **2.3-3f**. These data indicate that there would be no significant increase in water depth for all return intervals at all locations, including bridge locations and portions of the river in Ventura County. As with predicted velocities, there are localized changes in depth, most notably at the bridge crossings, due to the constriction of flow created by bridge abutments. These effects dissipate quickly as shown on **Charts 2.3-3a** through **2.3-3f**, which compares existing and predicted water depths throughout the Specific Plan and downstream in Ventura County. As discussed above, the reduction in floodplain area caused by bank protection does not create a significant increase in flow depth. This is because the volume of flow carried in the shallow, slow-moving areas along the margins of the river removed from the floodplain by proposed development is so small.

(e) Impacts on Sediment Scouring and Deposition Patterns

Scouring and sedimentation are directly related to flow velocity. The estimated amount of sediment deposition and scouring at key locations along the river are shown for existing and proposed conditions in **Charts 2.3-4a** through **2.3-4f**. As shown, the proposed project would result in a pattern of localized variations in scour and sedimentation that reflect changes in flow velocity previously described. The precise location and extent of material removal and deposition would shift with project development, much as it does in the existing condition over time. The overall pattern would remain substantially unchanged. The modeling results indicate that there would be no significant changes in local patterns of

sediment deposition and scouring at the Specific Plan site. No impact would be expected in Ventura County.[3]

2.3.6.2 Biological Impacts of Hydraulic Changes

An increase in velocities in the river could result in significant biological impacts if the increase caused: (1) widespread and chronic scouring of the channel bed that removes a significant amount of aquatic, wetland, and riparian habitats from the river channel; and/or (2) substantial modification of the relative amounts of these different habitats in the river, essentially altering the nature and quality of the riverine environment.

(a) Impact on Flows

The hydraulic analysis above indicates that implementation of the Specific Plan would slightly increase flows in the river in both Los Angeles County and Ventura County (*See*, **Table 2.3-8**). These hydraulic effects would be minor in magnitude and extent, and would not be sufficient to alter the amount, location, and nature of aquatic and riparian habitats in the Specific Plan area and downstream in Ventura County.

(b) Impact on Floodplain and Habitat Area

The hydraulic analysis also shows that the Specific Plan would affect the amount of habitat flooded during certain flow events. The proposed bank stabilization and bridges associated with the Specific Plan would alter the boundary of the river floodplain at the Specific Plan site and downstream in Ventura County. However, the modeling results (*See*, **Charts 2.3-1a** and **2.3-1b**) shows that there are minimal differences (*i.e.*, less than 5 percent) in the total habitat area inundated under existing and proposed conditions at the Specific Plan site (**Chart 2.3-1a**) and for the areas downstream in Ventura County (**Chart 2.3-1b**). The "pattern" of flow also would not change significantly due to the Specific Plan. The pattern of flows in different habitats would not change due to the Specific Plan (*See*, **Charts 2.3-5a** through **2.3-5f** for the Specific Plan site, and **Charts 2.3-7a** through **2.3-7f** for the area downstream in Ventura County). Therefore, the overall mosaic of habitats in the river would be maintained because the key hydraulic characteristics (*i.e.*, flooded area and velocity) would not be significantly different under the Specific Plan. This conclusion is visually demonstrated by the boundary of inundation and the "pattern of velocities" shown for existing and proposed conditions on **Figures 2.3-7a** through **2.3-7l**. The pattern of velocities is the locations of certain flow speeds measured in feet per second. In addition, the distribution of velocities in the river corridor for different return intervals is almost identical for the existing and proposed conditions (*See*, **Charts 2.3-6a** through **2.3-6f** for Los Angeles County and **Charts 2.3-8a** through **2.3-8f** for Ventura County).

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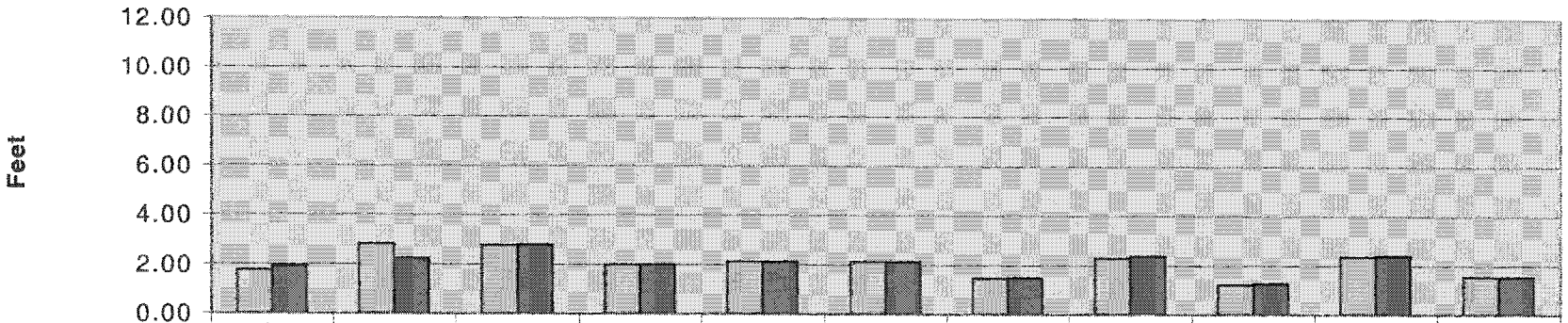
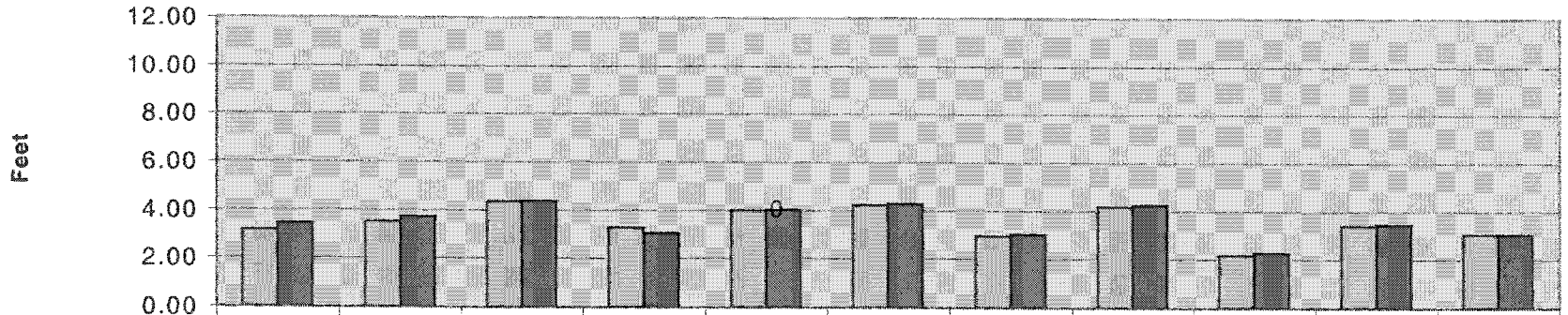
[3] These predictions were derived from a sediment transport model that is most accurate in predicting patterns rather than absolute values.

Chart 2.3-3a
Comparision of Water Depths at Key Locations (Includes Both LA and Ventura Counties) 2 Year Storm



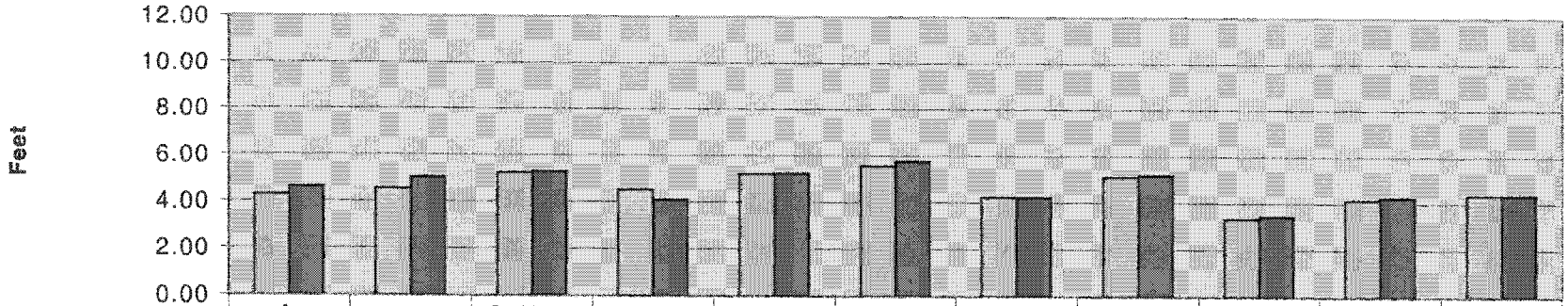
	A- Commerce Center Br	B - d/s of Castaic Ck	C - Upper Project Area	D - Long Cyn Br	E - Middle Project Area	F - Middle Project Area	G - Potrero Cyn Br	H - d/s of Potrero	I - Lower Project Area	J - County Line	K- 3 miles below County Line
Existing 2 yr.	1.74	2.81	2.77	1.96	2.10	2.10	1.44	2.26	1.20	2.34	1.51
Proposed 2 yr.	1.91	2.24	2.78	1.99	2.12	2.12	1.47	2.36	1.25	2.39	1.51

Chart 2.3-3b
Comparision of Water Depths at Key Locations (Includes Both LA and Ventura Counties) 5 Year Storm



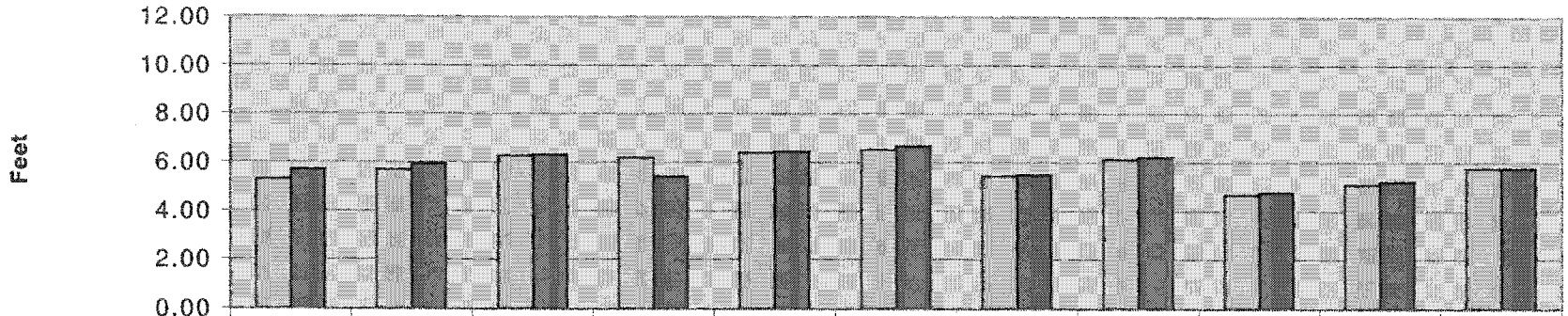
	A- Commerce Center Br	B - d/s of Castaic Ck	C - Upper Project Area	D - Long Cyn Br	E - Middle Project Area	F - Middle Project Area	G - Potrero Cyn Br	H - d/s of Potrero	I - Lower Project Area	J - County Line	K- 3 miles below County Line
Existing 5 yr.	3.15	3.48	4.35	3.27	4.00	4.22	2.93	4.16	2.17	3.38	3.04
Proposed 5 yr.	3.42	3.72	4.38	3.04	4.02	4.26	3.01	4.24	2.25	3.43	3.04

Chart 2.3-3c
Comparision of Water Depths at Key Locations
(Includes Both LA and Ventura Counties)
10 Year Storm



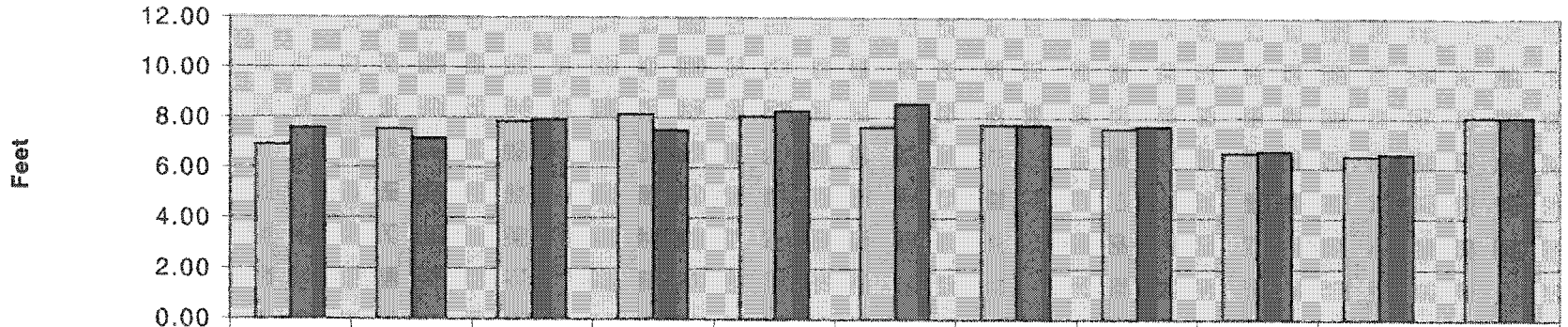
	A- Commerce Center Br	B - d/s of Castaic Ck	C - Upper Project Area	D - Long Cyn Br	E - Middle Project Area	F - Middle Project Area	G - Potrero Cyn Br	H - d/s of Potrero	I - Lower Project Area	J - County Line	K- 3 miles below County Line
Existing 10 yr.	4.25	4.51	5.22	4.49	5.18	5.54	4.19	5.08	3.32	4.13	4.33
Proposed 10 yr.	4.58	5.02	5.27	4.07	5.21	5.73	4.21	5.16	3.42	4.23	4.33

Chart 2.3-3d
Comparision of Water Depths at Key Locations (Includes Both LA and Ventura Counties) 20 Year Storm



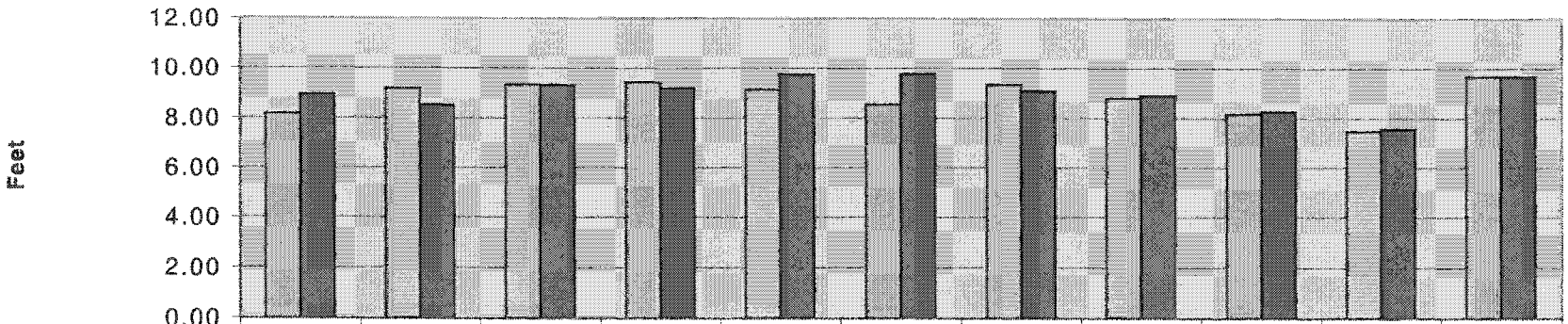
	A- Commerce Center Br	B - d/s of Castaic Ck	C - Upper Project Area	D - Long Cyn Br	E - Middle Project Area	F - Middle Project Area	G - Potrero Cyn Br	H - d/s of Potrero	I - Lower Project Area	J - County Line	K- 3 miles below County Line
Existing 20 yr.	5.28	5.67	6.26	6.17	6.38	6.51	5.42	6.09	4.64	5.08	5.74
Proposed 20 yr.	5.67	5.93	6.29	5.39	6.43	6.66	5.47	6.19	4.74	5.20	5.74

Chart 2.3-3e
Comparision of Water Depths at Key Locations
(Includes Both LA and Ventura Counties)
50 Year Storm



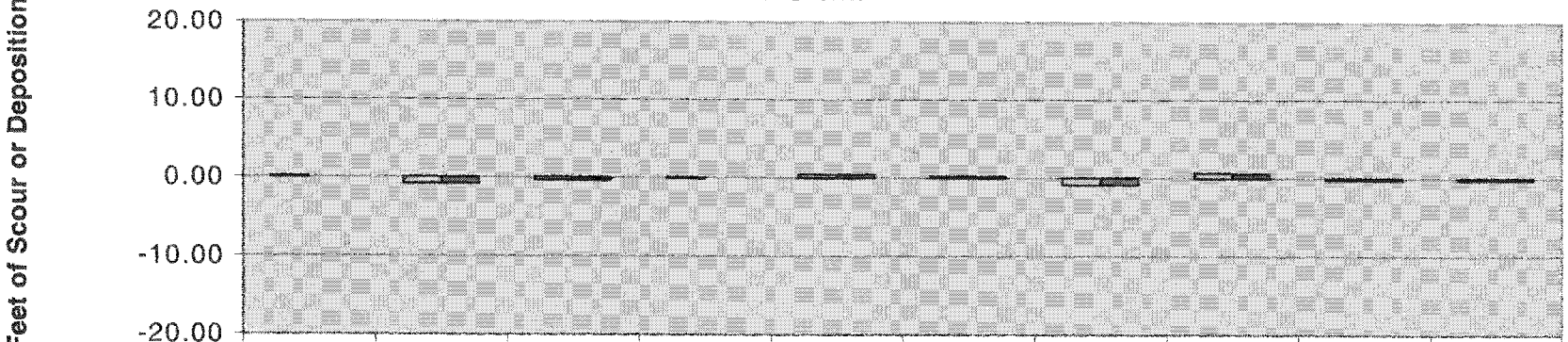
	A- Commerce Center Br	B - d/s of Castaic Ck	C - Upper Project Area	D - Long Cyn Br	E - Middle Project Area	F - Middle Project Area	G - Potrero Cyn Br	H - d/s of Potrero	I - Lower Project Area	J - County Line	K- 3 miles below County Line
Existing 50 yr.	6.87	7.50	7.81	8.11	8.05	7.60	7.69	7.55	6.58	6.47	8.05
Proposed 50 yr.	7.55	7.14	7.89	7.49	8.26	8.54	7.69	7.65	6.66	6.55	8.05

Chart 2.3-3f
Comparision of Water Depths at Key Locations
(Includes Both LA and Ventura Counties)
100 Year Storm



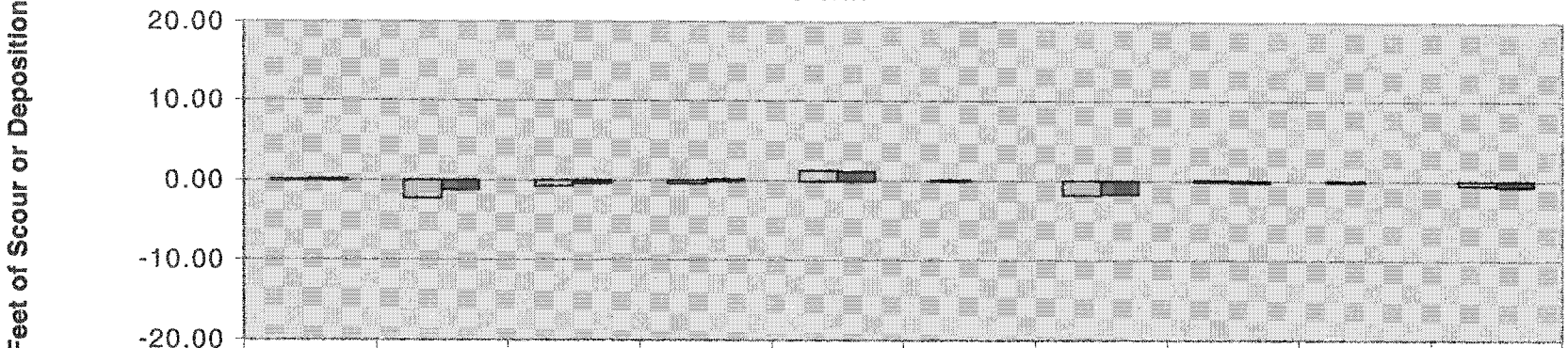
	A- Commerce Center Br	B - d/s of Castaic Ck	C - Upper Project Area	D - Long Cyn Br	E - Middle Project Area	F - Middle Project Area	G - Potrero Cyn Br	H - d/s of Potrero	I - Lower Project Area	J - County Line	K- 3 miles below County
Existing 100 yr.	8.13	9.16	9.33	9.42	9.13	8.52	9.33	8.79	8.17	7.45	9.66
Proposed 100 yr.	8.91	8.49	9.31	9.18	9.75	9.77	9.09	8.89	8.26	7.55	9.66

Chart 2.3-4a
Comparison of Sediment Deposition/Scouring
Newhall Ranch Specific Plan Site
2 Year Storm



	A- Commerce Center Br	B - d/s of Castaic Ck	C - Upper Project Area	D - Long Cyn Br	E - Middle Project Area	F - Middle Project Area	G - Potrero Cyn Br	H - d/s of Potrero	I - Lower Project Area	J - County Line
Existing 2 yr.	0.05	-0.80	-0.35	-0.11	0.38	0.09	-0.90	0.60	-0.18	-0.21
Proposed 2 yr.	-0.05	-0.78	-0.33	-0.04	0.35	0.13	-0.91	0.47	-0.22	-0.23

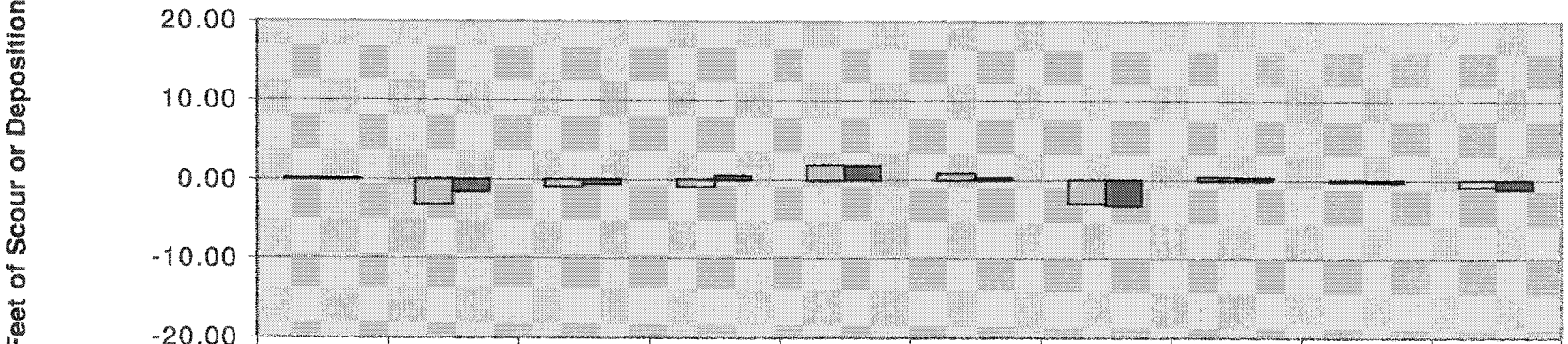
Chart 2.3-4b
Comparison of Sediment Deposition/Scouring
Newhall Ranch Specific Plan Site
5 Year Storm



	A- Commerce Center Br	B - d/s of Castaic Ck	C - Upper Project Area	D - Long Cyn Br	E - Middle Project Area	F - Middle Project Area	G - Potrero Cyn Br	H - d/s of Potrero	I - Lower Project Area	J - County Line
Existing 5 yr.	0.05	-2.23	-0.71	-0.36	1.19	0.03	-1.77	0.03	-0.15	-0.49
Proposed 5 yr.	0.08	-1.18	-0.36	0.12	1.11	-0.05	-1.68	-0.20	-0.07	-0.63

Existing 5 yr. Proposed 5 yr.

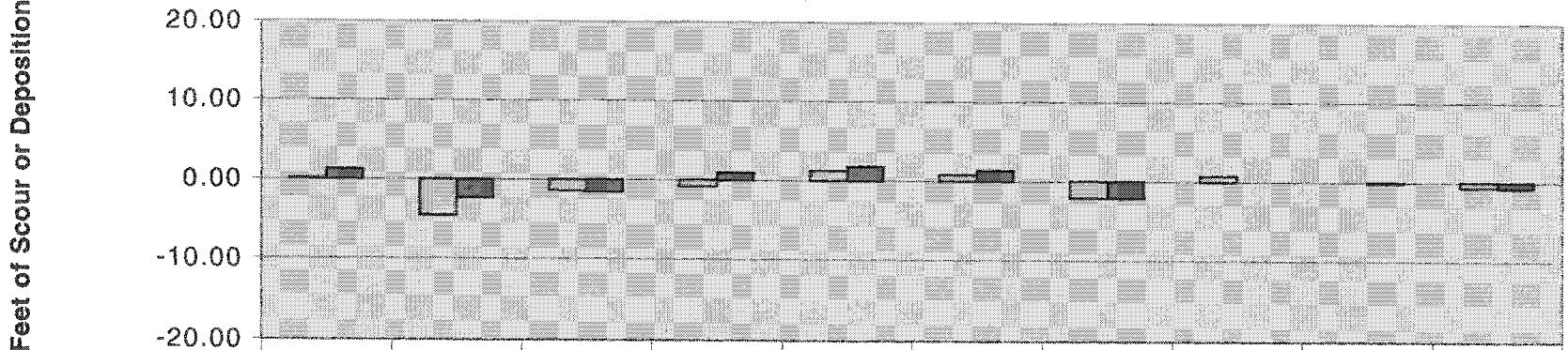
Chart 2.3-4c
Comparison of Sediment Deposition/Scouring
Newhall Ranch Specific Plan Site
10 Year Storm



	A- Commerce Center Br	B - d/s of Castaic Ck	C - Upper Project Area	D - Long Cyn Br	E - Middle Project Area	F - Middle Project Area	G - Potrero Cyn Br	H - d/s of Potrero	I - Lower Project Area	J - County Line
Existing 10 yr.	0.02	-3.17	-0.89	-0.86	1.82	0.73	-2.99	0.32	-0.09	-0.79
Proposed 10 yr.	0.01	-1.61	-0.54	0.43	1.71	0.22	-3.24	0.25	-0.23	-1.11

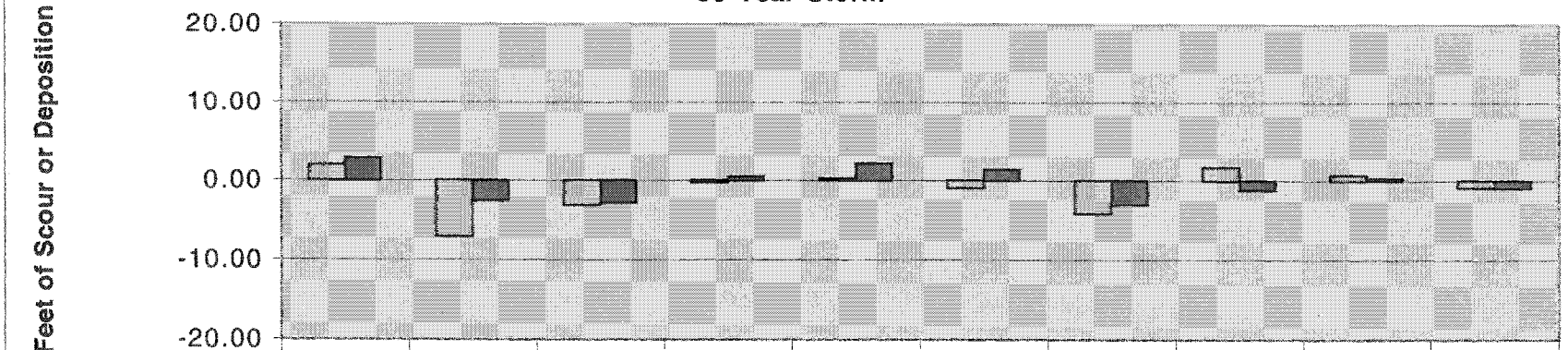
Existing 10 yr. Proposed 10 yr.

Chart 2.3-4d
Comparison of Sediment Deposition/Scouring
Newhall Ranch Specific Plan Site
20 Year Storm



	A- Commerce Center Br	B - d/s of Castaic Ck	C - Upper Project Area	D - Long Cyn Br	E - Middle Project Area	F - Middle Project Area	G - Potrero Cyn Br	H - d/s of Potrero	I - Lower Project Area	J - County Line
Existing 20 yr.	0.06	-4.51	-1.43	-0.77	1.21	0.71	-2.09	0.65	-0.01	-0.64
Proposed 20 yr.	1.18	-2.32	-1.54	0.84	1.74	1.28	-2.09	-0.05	-0.15	-0.69

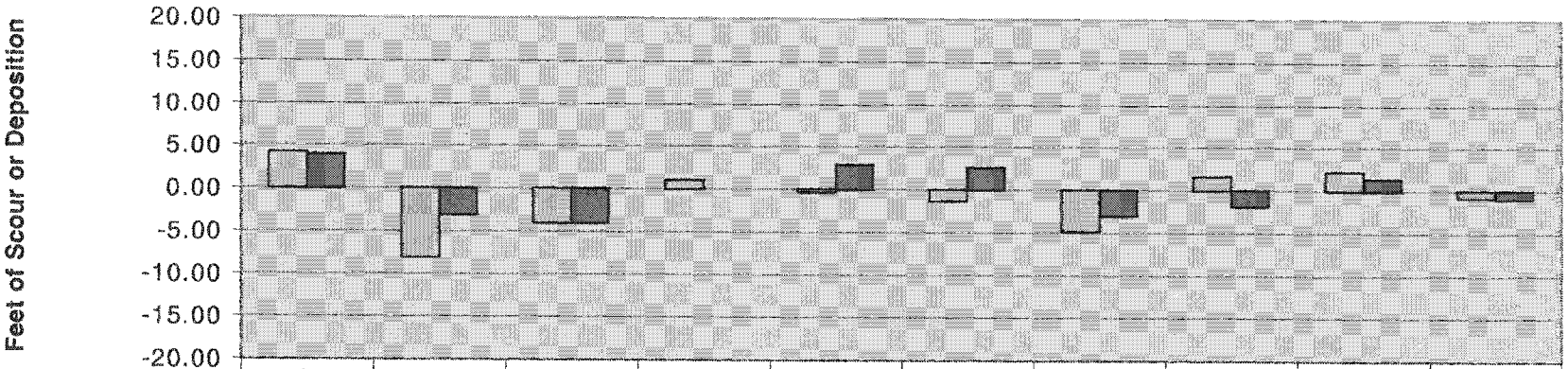
Chart 2.3-4e
Comparison of Sediment Deposition/Scouring
Newhall Ranch Specific Plan Site
50 Year Storm



	A- Commerce Center Br	B - d/s of Castaic Ck	C - Upper Project Area	D - Long Cyn Br	E - Middle Project Area	F - Middle Project Area	G - Potrero Cyn Br	H - d/s of Potrero	I - Lower Project Area	J - County Line
Existing 50 yr.	1.88	-7.07	-3.12	-0.21	0.25	-0.90	-4.18	1.68	0.65	-0.86
Proposed 50 yr.	2.71	-2.53	-2.79	0.48	2.12	1.37	-3.03	-1.12	0.34	-0.88

Existing 50 yr. Proposed 50 yr.

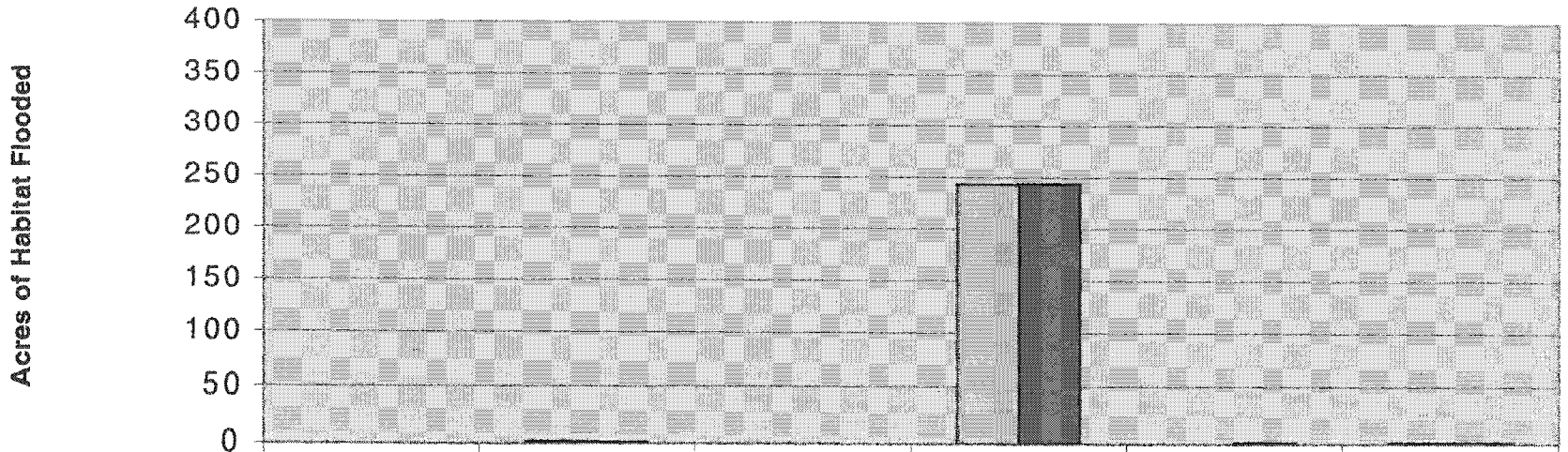
Chart 2.3-4f
Comparison of Sediment Deposition/Scouring
Newhall Ranch Specific Plan Site
100 Year Storm



	A- Commerce Center Br	B - d/s of Castaic Ck	C - Upper Project Area	D - Long Cyn Br	E - Middle Project Area	F - Middle Project Area	G - Potrero Cyn Br	H - d/s of Potrero	I - Lower Project Area	J - County Line
Existing 100 yr.	4.16	-8.08	-4.04	0.98	-0.31	-1.29	-4.78	1.60	2.14	-0.76
Proposed 100 yr.	3.87	-3.11	-4.01	0.01	2.87	2.56	-3.04	-1.86	1.33	-0.93

Existing 100 yr. Proposed 100 yr.

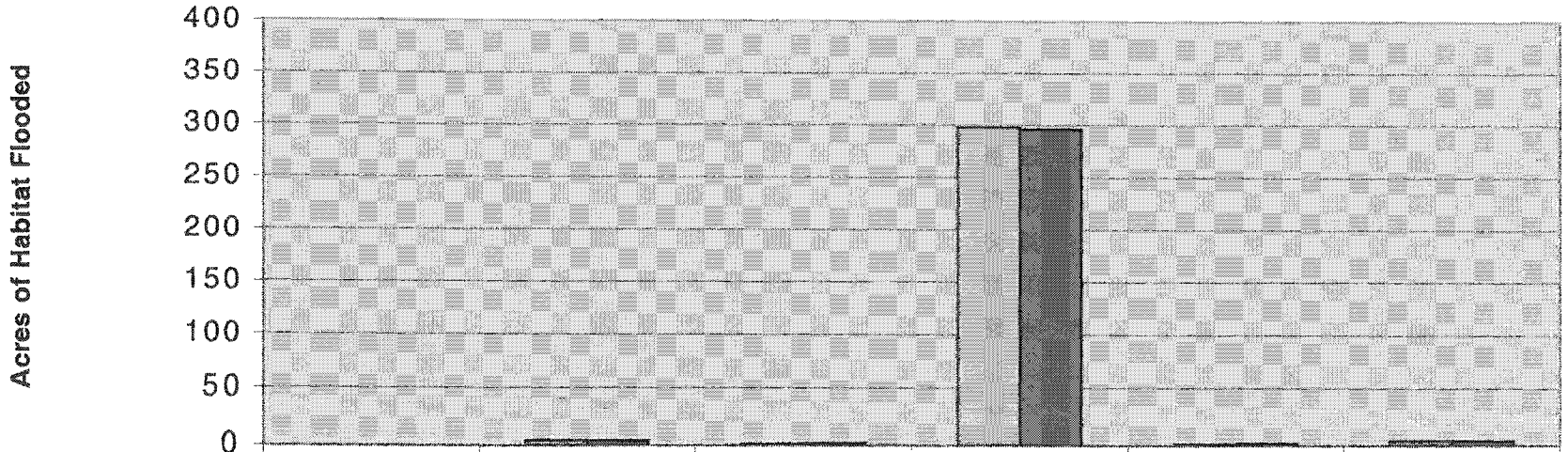
Chart 2.3-5a
Distribution of Flows in Different Habitats
Newhall Ranch Specific Plan Site
2 Year Storm



	Alluvial Scrub	Cottonwood Woodland	Mulefat Scrub	Successional Mule Fat Scrub	Willow Woodland	Willow Scrub
Existing 2 yr.	0.08	1.19	0.11	242.6	0.13	0.66
Proposed 2 yr.	0.08	0.87	0.09	243.28	0.36	0.8

Chart 2.3-5b

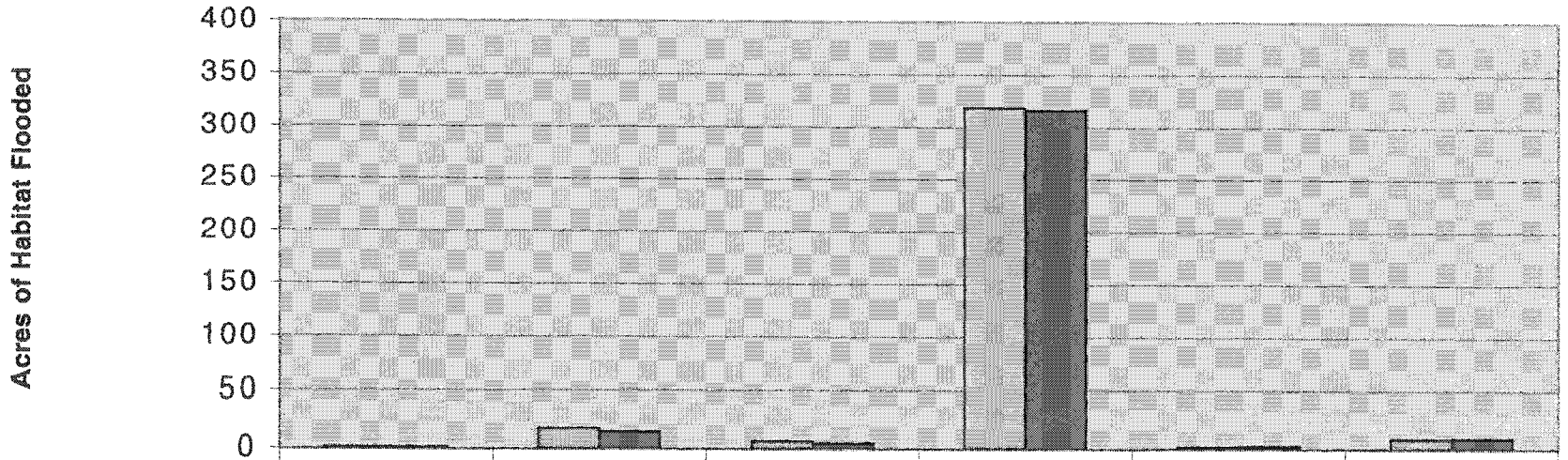
Distribution of Flows in Different Habitats
Newhall Ranch Specific Plan Site
5 Year Storm



	Alluvial Scrub	Cottonwood Woodland	Mulefat Scrub	Successional Mule Fat Scrub	Willow Woodland	Willow Scrub
Existing 5 yr.	0.19	3.65	0.87	297.43	0.78	3.23
Proposed 5 yr.	0.19	3.71	1.14	296	0.88	3.49

Chart 2.3-5c

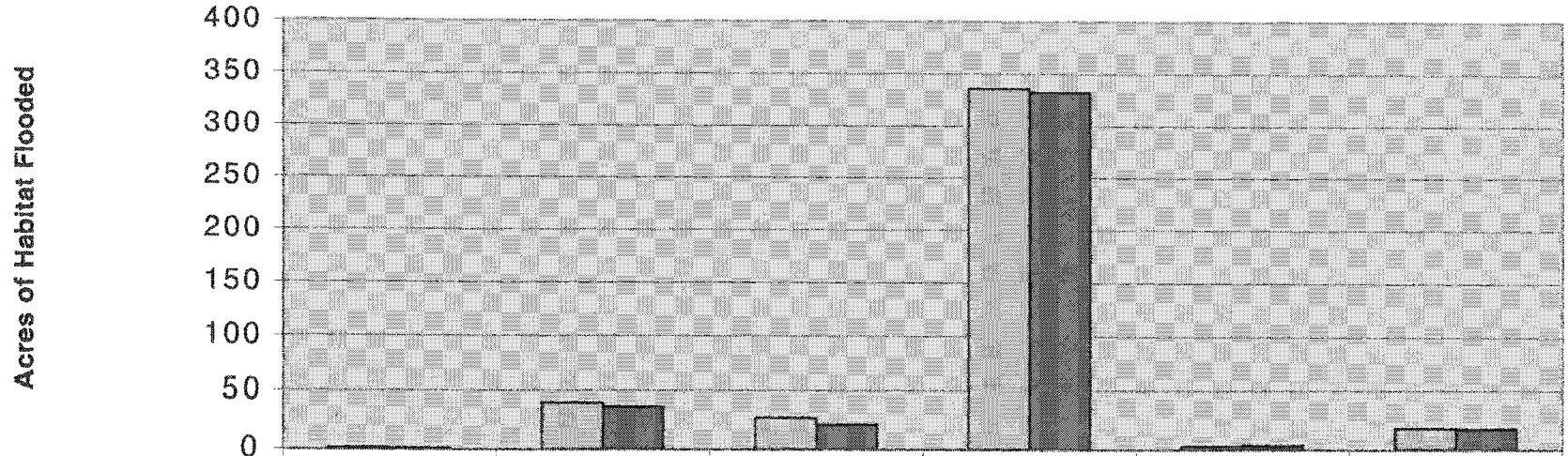
Distribution of Flows in Different Habitats
Newhall Ranch Specific Plan Site
10 Year Storm



	Alluvial Scrub	Cottonwood Woodland	Mulefat Scrub	Successional Mule Fat Scrub	Willow Woodland	Willow Scrub
Existing 10 yr.	0.59	16.5	5.48	318.31	1.19	7.96
Proposed 10 yr.	0.53	13.8	4.15	315.65	1.71	8.54

Chart 2.3-5d

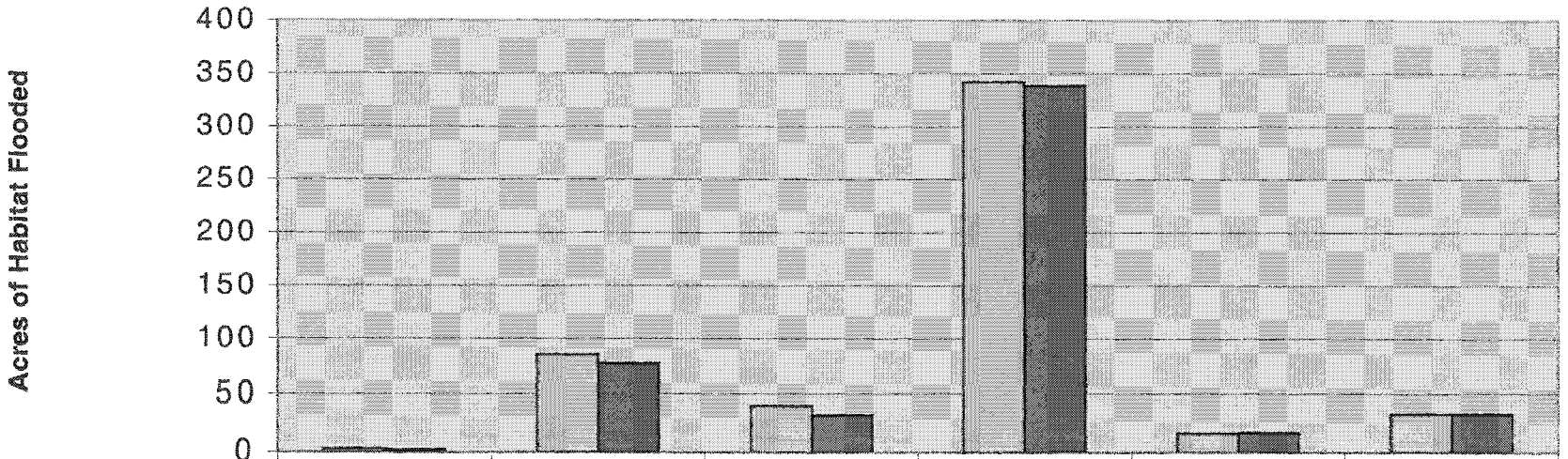
Distribution of Flows in Different Habitats
Newhall Ranch Specific Plan Site
20 Year Storm



	Alluvial Scrub	Cottonwood Woodland	Mulefat Scrub	Successional Mule Fat Scrub	Willow Woodland	Willow Scrub
Existing 20 yr.	1.3	39.45	26.22	335.63	2.34	17.53
Proposed 20 yr.	0.84	35.7	20.38	331.98	3.08	16.67

Chart 2.3-5e

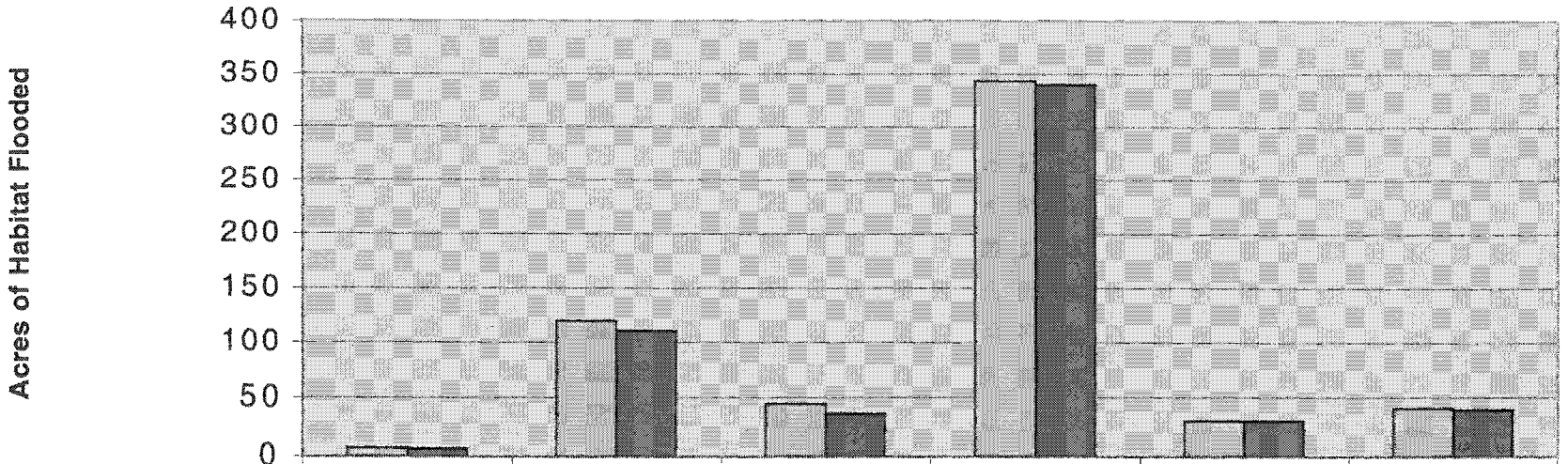
Distribution of Flows in Different Habitats
Newhall Ranch Specific Plan Site
50 Year Storm



	Alluvial Scrub	Cottonwood Woodland	Mulefat Scrub	Successional Mule Fat Scrub	Willow Woodland	Willow Scrub
Existing 50 yr.	2.03	84.74	39.55	342.3	15.67	32.84
Proposed 50 yr.	1.98	76.86	31.65	338.52	16.06	32.76

Chart 2.3-5f

Distribution of Flows in Different Habitats
Newhall Ranch Specific Plan Site
100 Year Storm

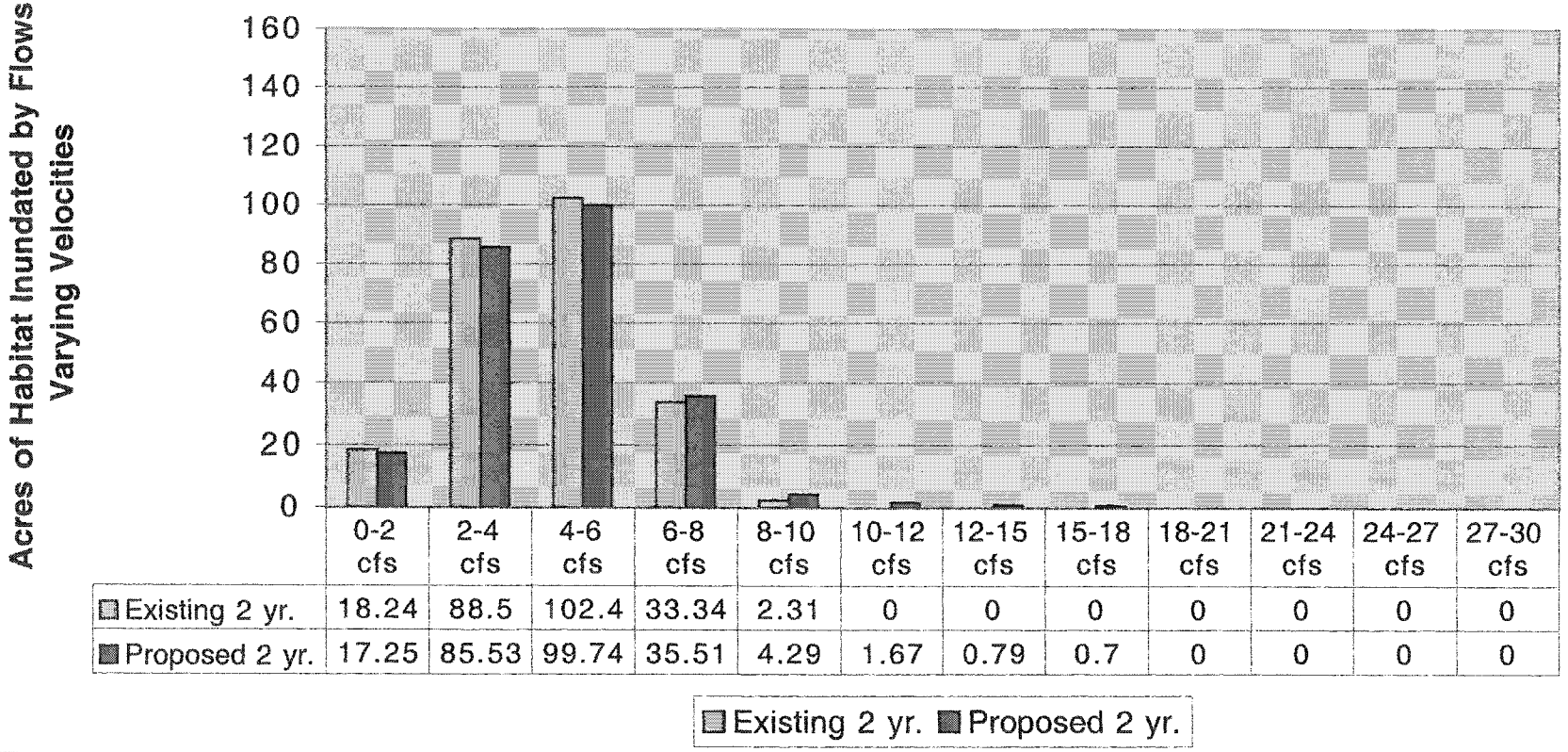


	Alluvial Scrub	Cottonwood Woodland	Mulefat Scrub	Successional Mule Fat Scrub	Willow Woodland	Willow Scrub
Existing 100 yr.	6.69	119.3	44.35	343.33	29.54	40.13
Proposed 100 yr.	6.3	110	36	340	29.3	39.4

Existing 100 yr. Proposed 100 yr.

Chart 2.3-6a

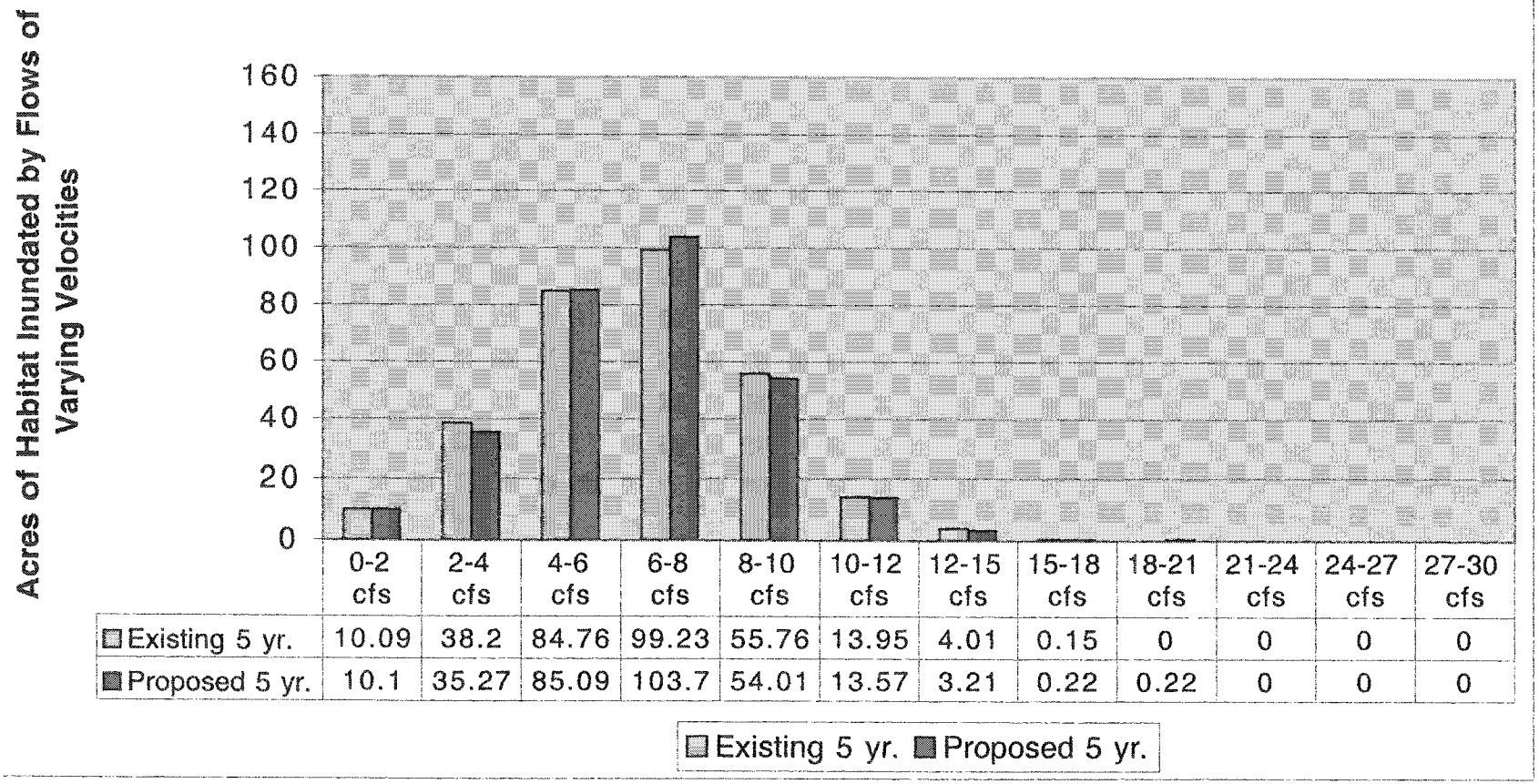
Comparison of Velocity Distribution
Newhall Ranch Specific Plan Site
2 Year Storm



	0-2 cfs	2-4 cfs	4-6 cfs	6-8 cfs	8-10 cfs	10-12 cfs	12-15 cfs	15-18 cfs	18-21 cfs	21-24 cfs	24-27 cfs	27-30 cfs
Existing 2 yr.	18.24	88.5	102.4	33.34	2.31	0	0	0	0	0	0	0
Proposed 2 yr.	17.25	85.53	99.74	35.51	4.29	1.67	0.79	0.7	0	0	0	0

Chart 2.3-6b

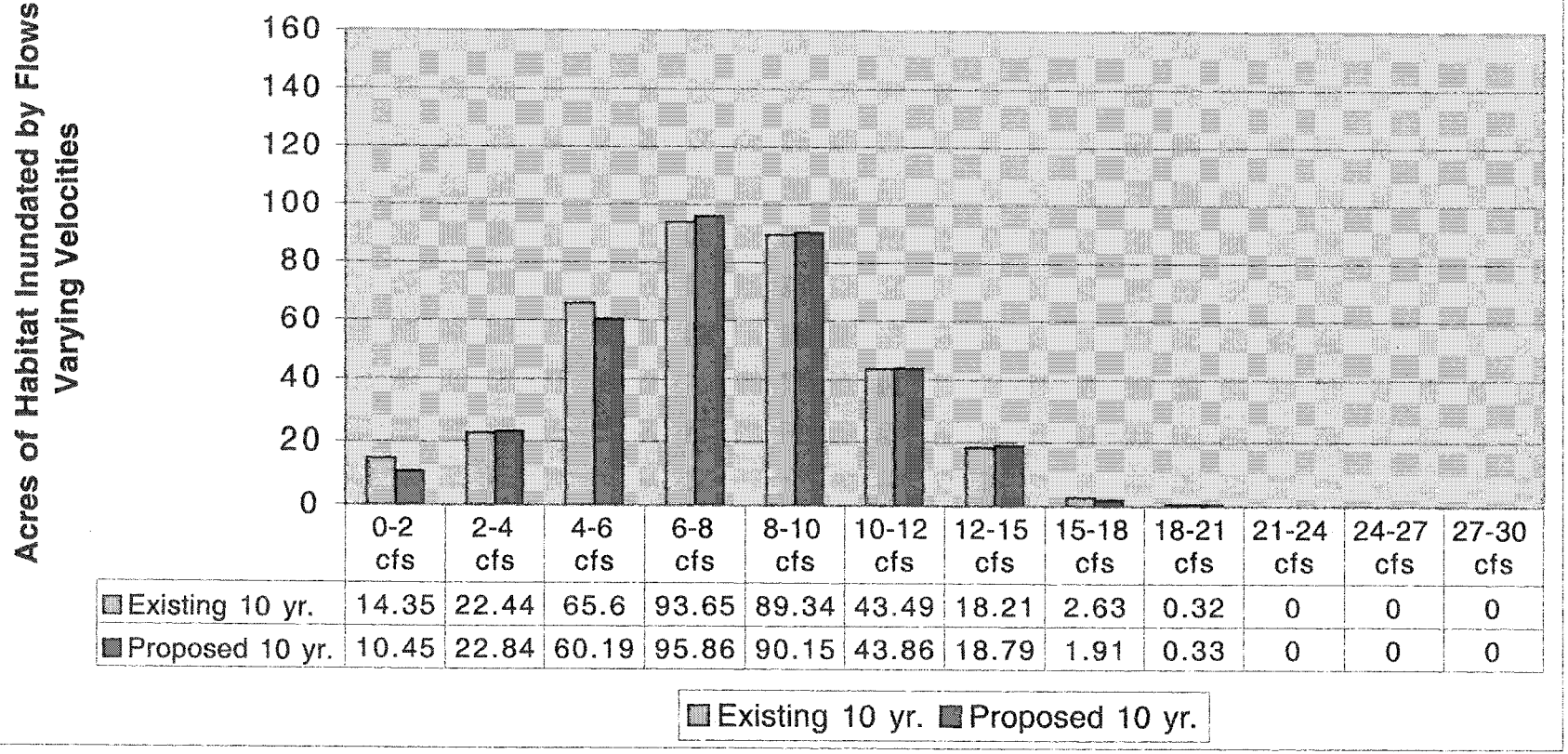
Comparison of Velocity Distribution
Newhall Ranch Specific Plan Site
5 Year Storm



	0-2 cfs	2-4 cfs	4-6 cfs	6-8 cfs	8-10 cfs	10-12 cfs	12-15 cfs	15-18 cfs	18-21 cfs	21-24 cfs	24-27 cfs	27-30 cfs
Existing 5 yr.	10.09	38.2	84.76	99.23	55.76	13.95	4.01	0.15	0	0	0	0
Proposed 5 yr.	10.1	35.27	85.09	103.7	54.01	13.57	3.21	0.22	0.22	0	0	0

Chart 2.3-6c

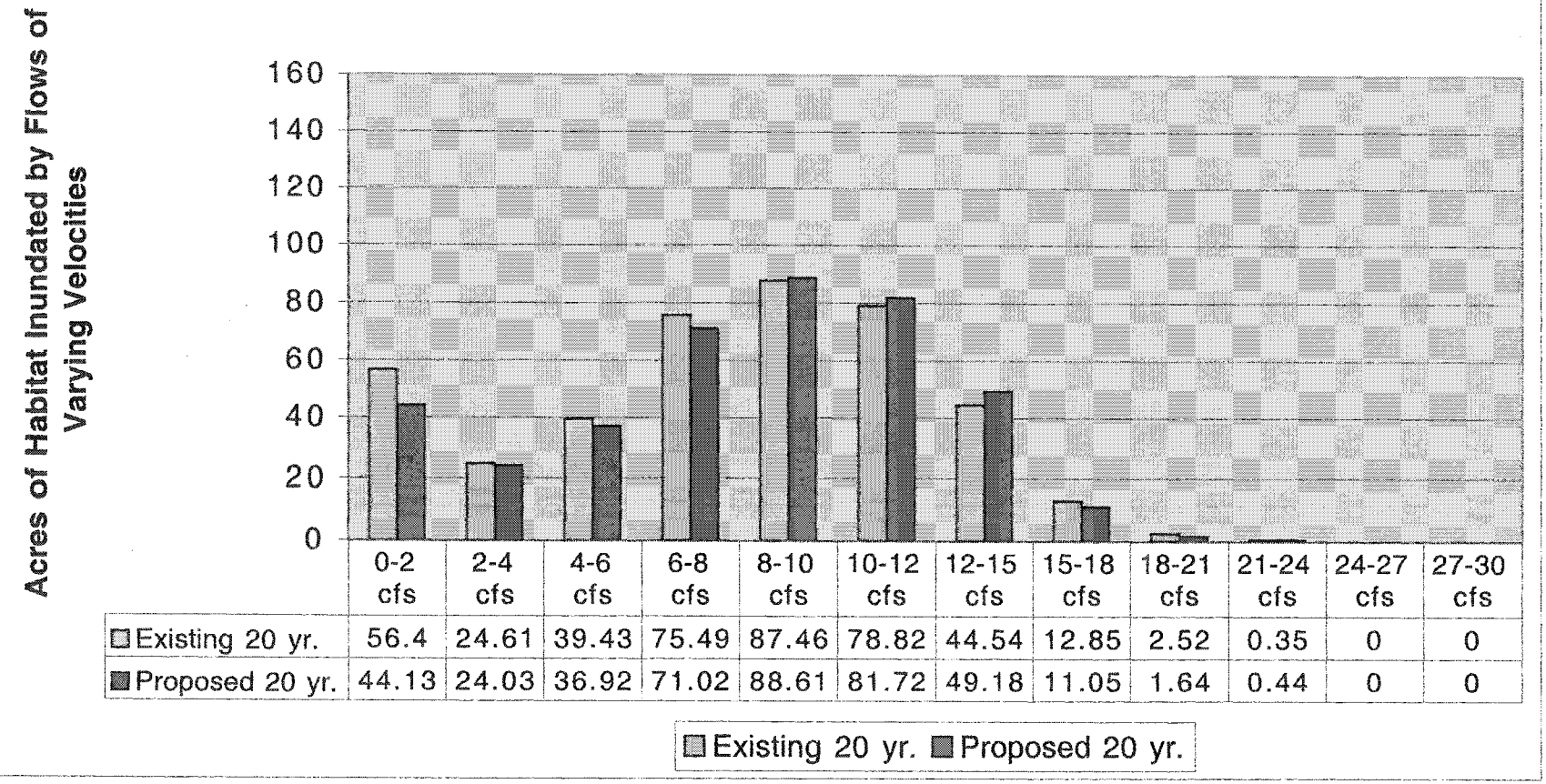
Comparison of Velocity Distribution
Newhall Ranch Specific Plan Site
10 Year Storm



	0-2 cfs	2-4 cfs	4-6 cfs	6-8 cfs	8-10 cfs	10-12 cfs	12-15 cfs	15-18 cfs	18-21 cfs	21-24 cfs	24-27 cfs	27-30 cfs
Existing 10 yr.	14.35	22.44	65.6	93.65	89.34	43.49	18.21	2.63	0.32	0	0	0
Proposed 10 yr.	10.45	22.84	60.19	95.86	90.15	43.86	18.79	1.91	0.33	0	0	0

Chart 2.3-6d

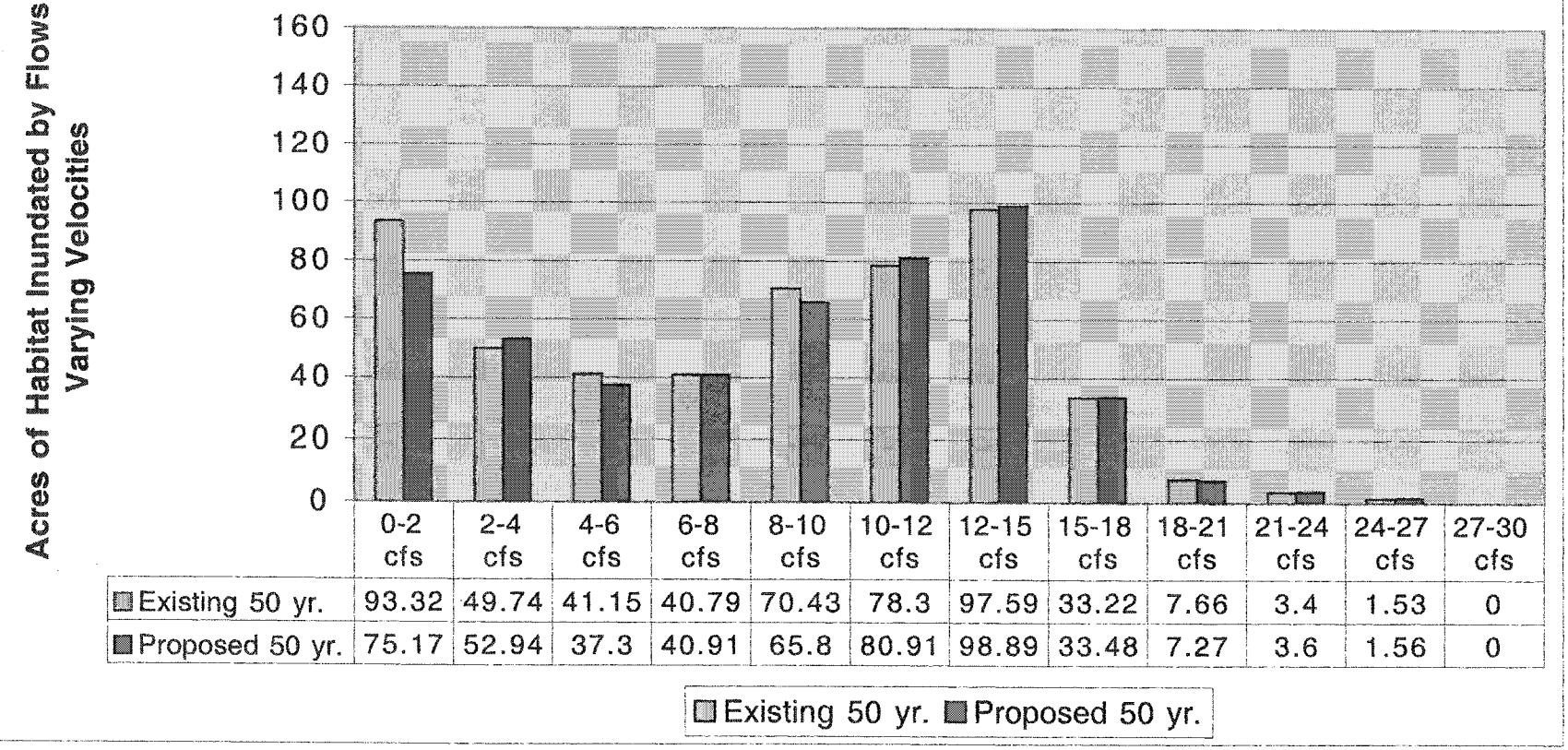
Comparison of Velocity Distribution
Newhall Ranch Specific Plan Site
20 Year Storm



	0-2 cfs	2-4 cfs	4-6 cfs	6-8 cfs	8-10 cfs	10-12 cfs	12-15 cfs	15-18 cfs	18-21 cfs	21-24 cfs	24-27 cfs	27-30 cfs
Existing 20 yr.	56.4	24.61	39.43	75.49	87.46	78.82	44.54	12.85	2.52	0.35	0	0
Proposed 20 yr.	44.13	24.03	36.92	71.02	88.61	81.72	49.18	11.05	1.64	0.44	0	0

Chart 2.3-6e

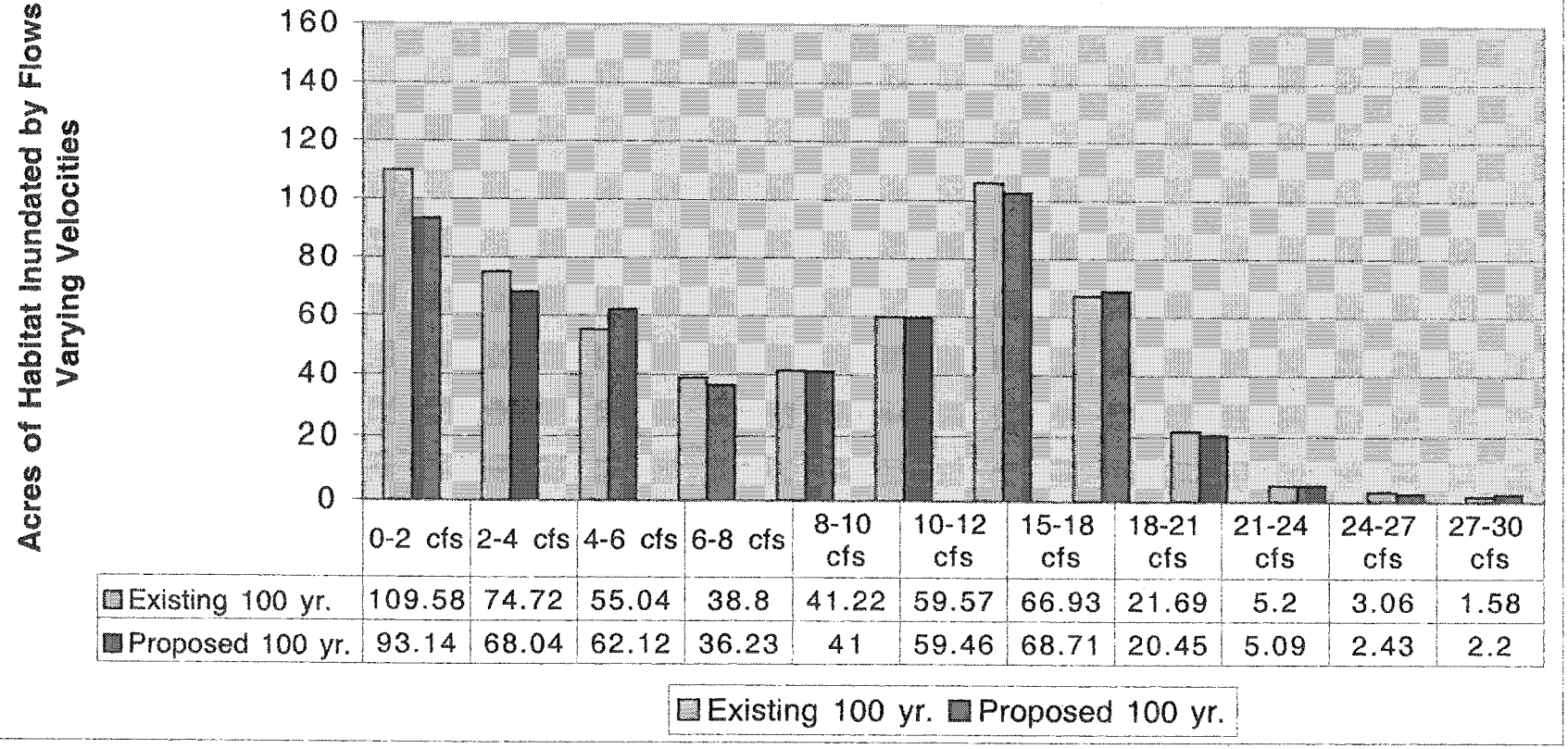
Comparison of Velocity Distribution
Newhall Ranch Specific Plan Site
50 Year Storm



	0-2 cfs	2-4 cfs	4-6 cfs	6-8 cfs	8-10 cfs	10-12 cfs	12-15 cfs	15-18 cfs	18-21 cfs	21-24 cfs	24-27 cfs	27-30 cfs
Existing 50 yr.	93.32	49.74	41.15	40.79	70.43	78.3	97.59	33.22	7.66	3.4	1.53	0
Proposed 50 yr.	75.17	52.94	37.3	40.91	65.8	80.91	98.89	33.48	7.27	3.6	1.56	0

Chart 2.3-6f

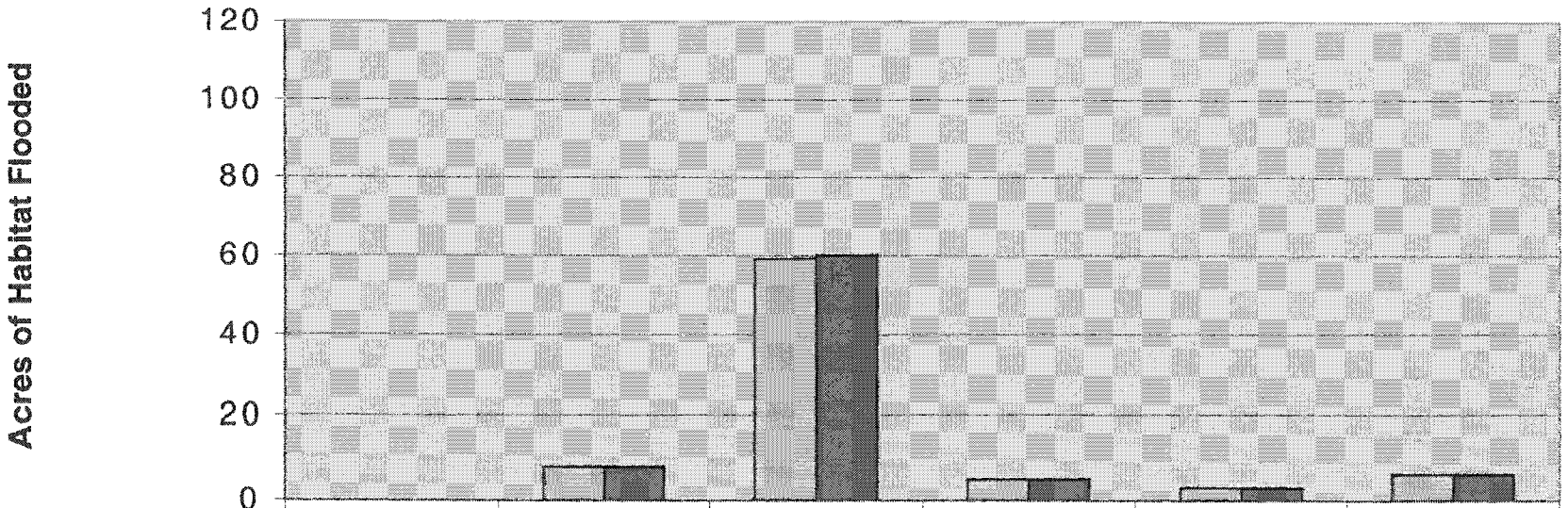
Comparison of Velocity Distribution
Newhall Ranch Specific Plan Site
100 Year Storm



	0-2 cfs	2-4 cfs	4-6 cfs	6-8 cfs	8-10 cfs	10-12 cfs	15-18 cfs	18-21 cfs	21-24 cfs	24-27 cfs	27-30 cfs
Existing 100 yr.	109.58	74.72	55.04	38.8	41.22	59.57	66.93	21.69	5.2	3.06	1.58
Proposed 100 yr.	93.14	68.04	62.12	36.23	41	59.46	68.71	20.45	5.09	2.43	2.2

Chart 2.3-7a

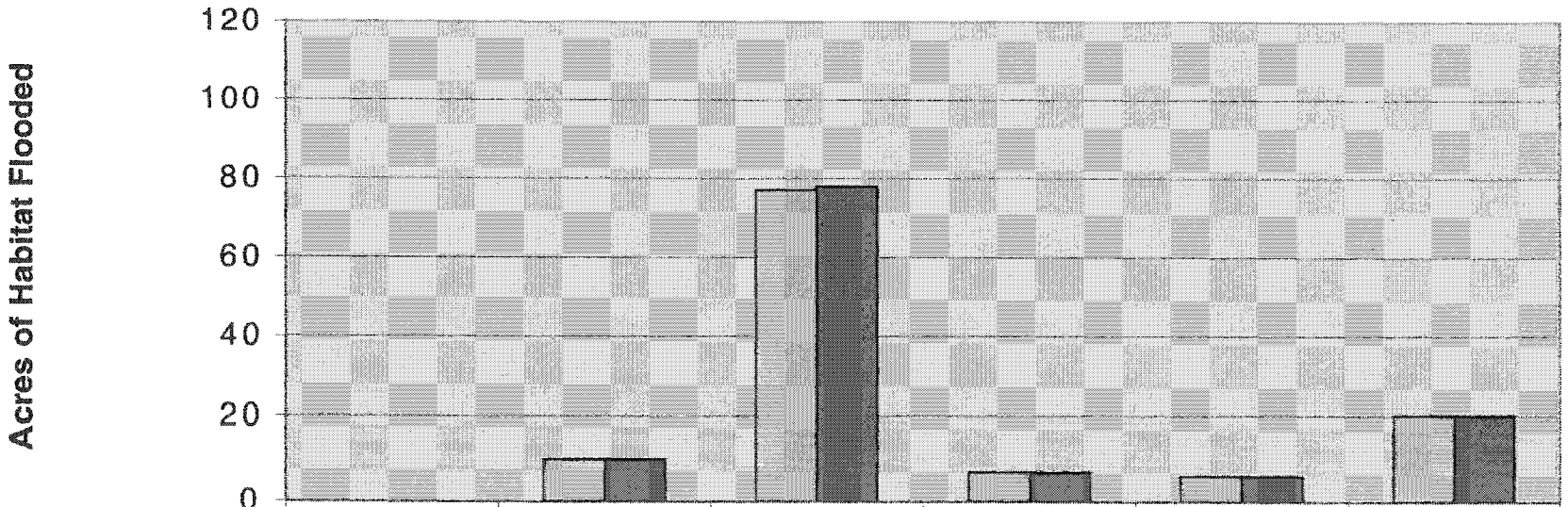
Distribution of Flows in Different Habitats Downstream in Ventura Co. 2 Year Storm



	Alluvial Scrub	Cottonwood Woodland	Mulefat Scrub	Willow Woodland	Willow Scrub	Low Willow Scrub
Existing 2 yr.	0	8	59	5	3	6
Proposed 2 yr.	0	8	60	5	3	6

Chart 2.3-7b

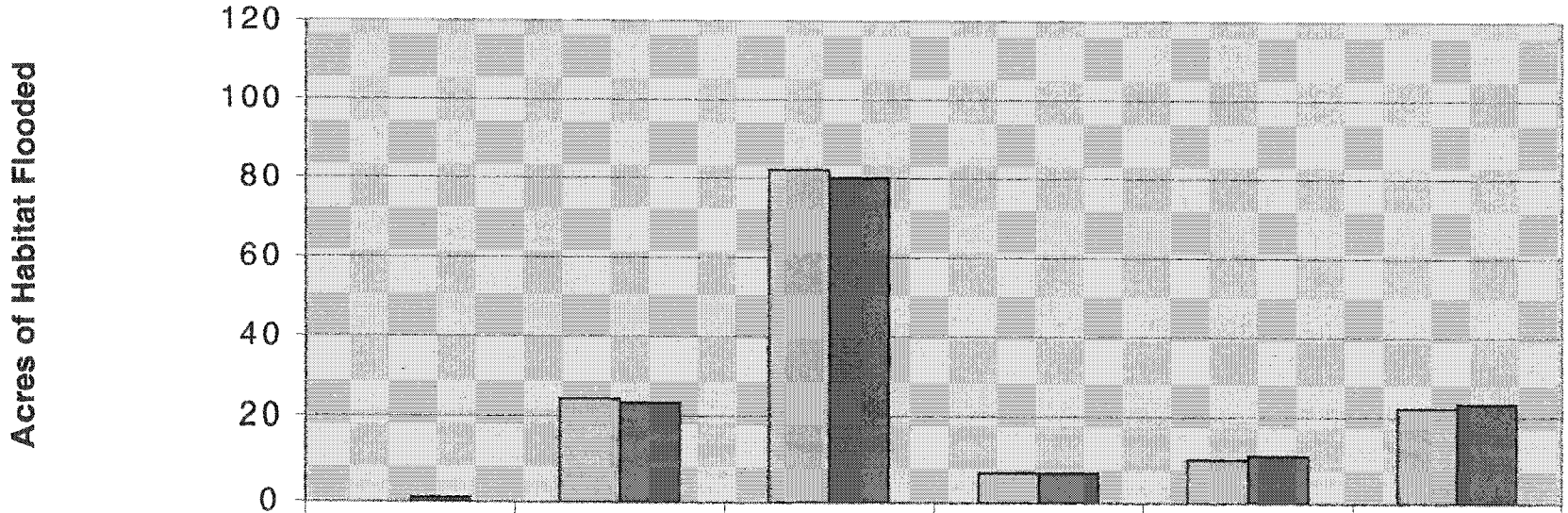
Distribution of Flows in Different Habitats Downstream in Ventura Co. 5 Year Storm



	Alluvial Scrub	Cottonwood Woodland	Mulefat Scrub	Willow Woodland	Willow Scrub	Low Willow Scrub
Existing 5 yr.	0	10	77	7	6	20
Proposed 5 yr.	0	10	78	7	6	20

Chart 2.3-7c

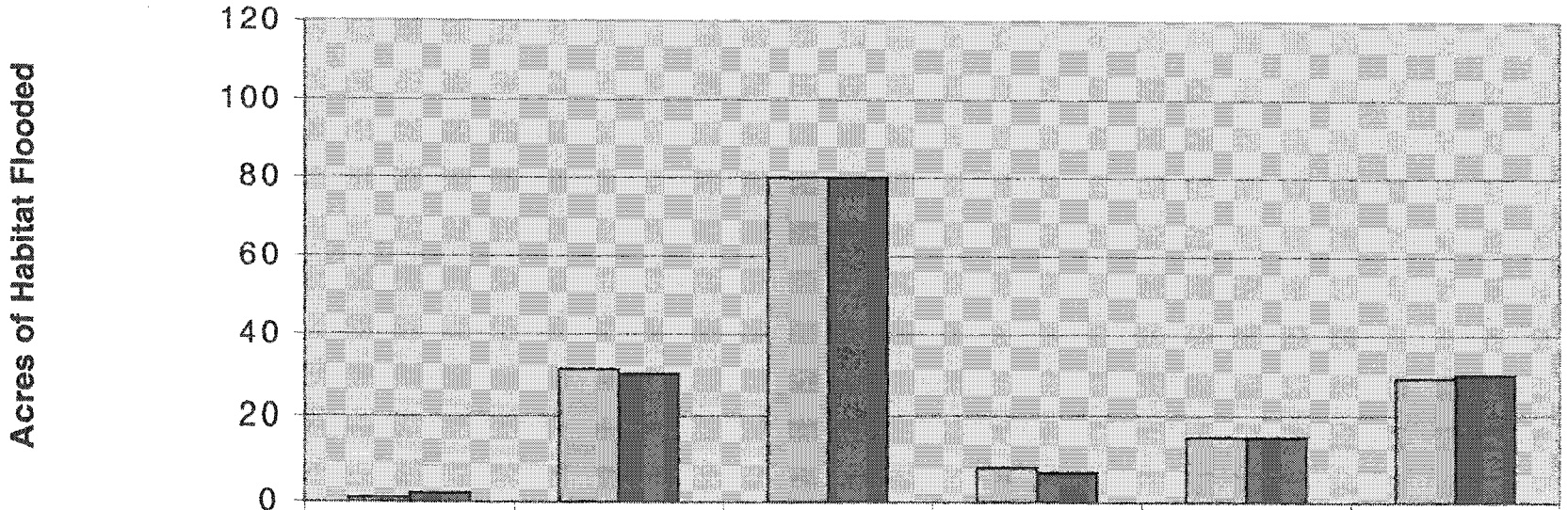
Distribution of Flows in Different Habitats Downstream in Ventura Co. 10 Year Storm



	Alluvial Scrub	Cottonwood Woodland	Mulefat Scrub	Willow Woodland	Willow Scrub	Low Willow Scrub
Existing 10 yr.	0	24	82	7	10	22
Proposed 10 yr.	1	23	80	7	11	23

Chart 2.3-7d

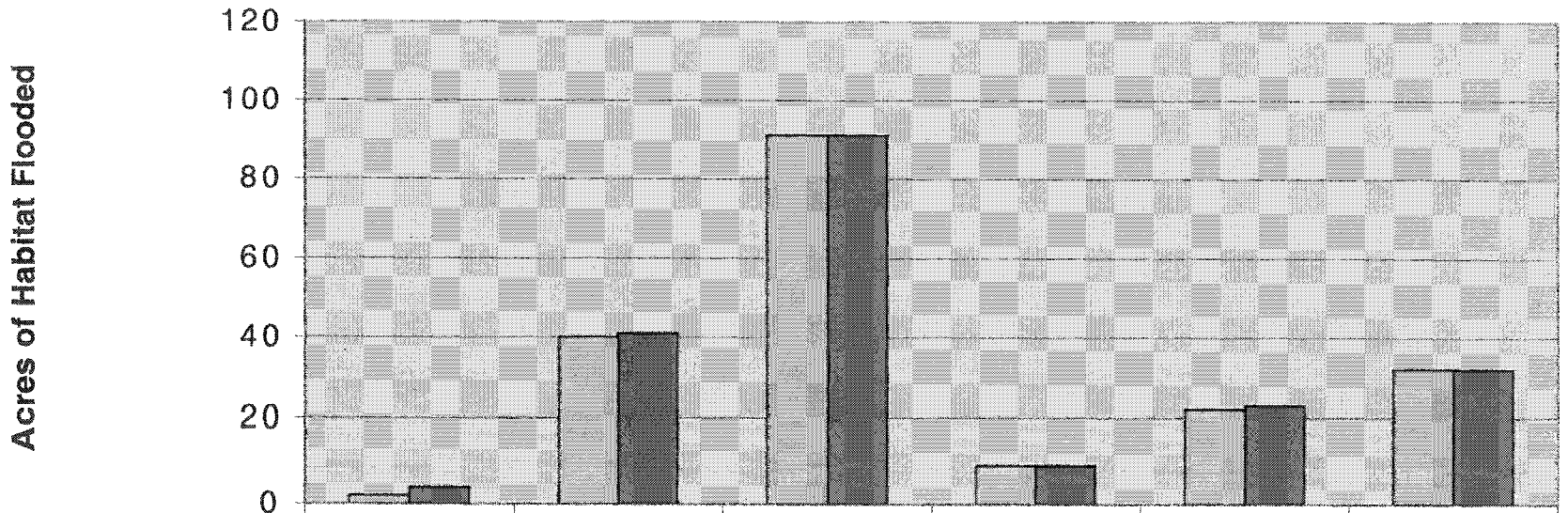
Distribution of Flows in Different Habitats Downstream in Ventura Co. 20 Year Storm



	Alluvial Scrub	Cottonwood Woodland	Mulefat Scrub	Willow Woodland	Willow Scrub	Low Willow Scrub
Existing 20 yr.	1	31	80	8	15	29
Proposed 20 yr.	2	30	80	7	15	30

Chart 2.3-7e

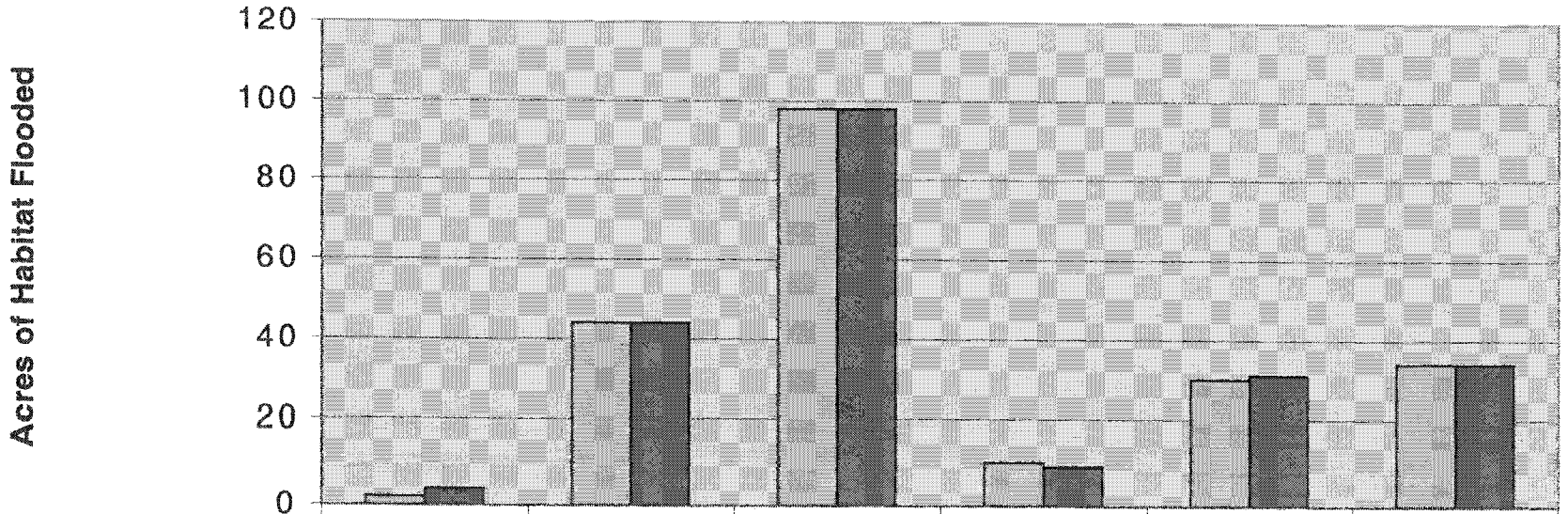
Distribution of Flows in Different Habitats Downstream in Ventura Co. 50 Year Storm



	Alluvial Scrub	Cottonwood Woodland	Mulefat Scrub	Willow Woodland	Willow Scrub	Low Willow Scrub
Existing 50 yr.	2	40	91	9	22	32
Proposed 50 yr.	4	41	91	9	23	32

Chart 2.3-7f

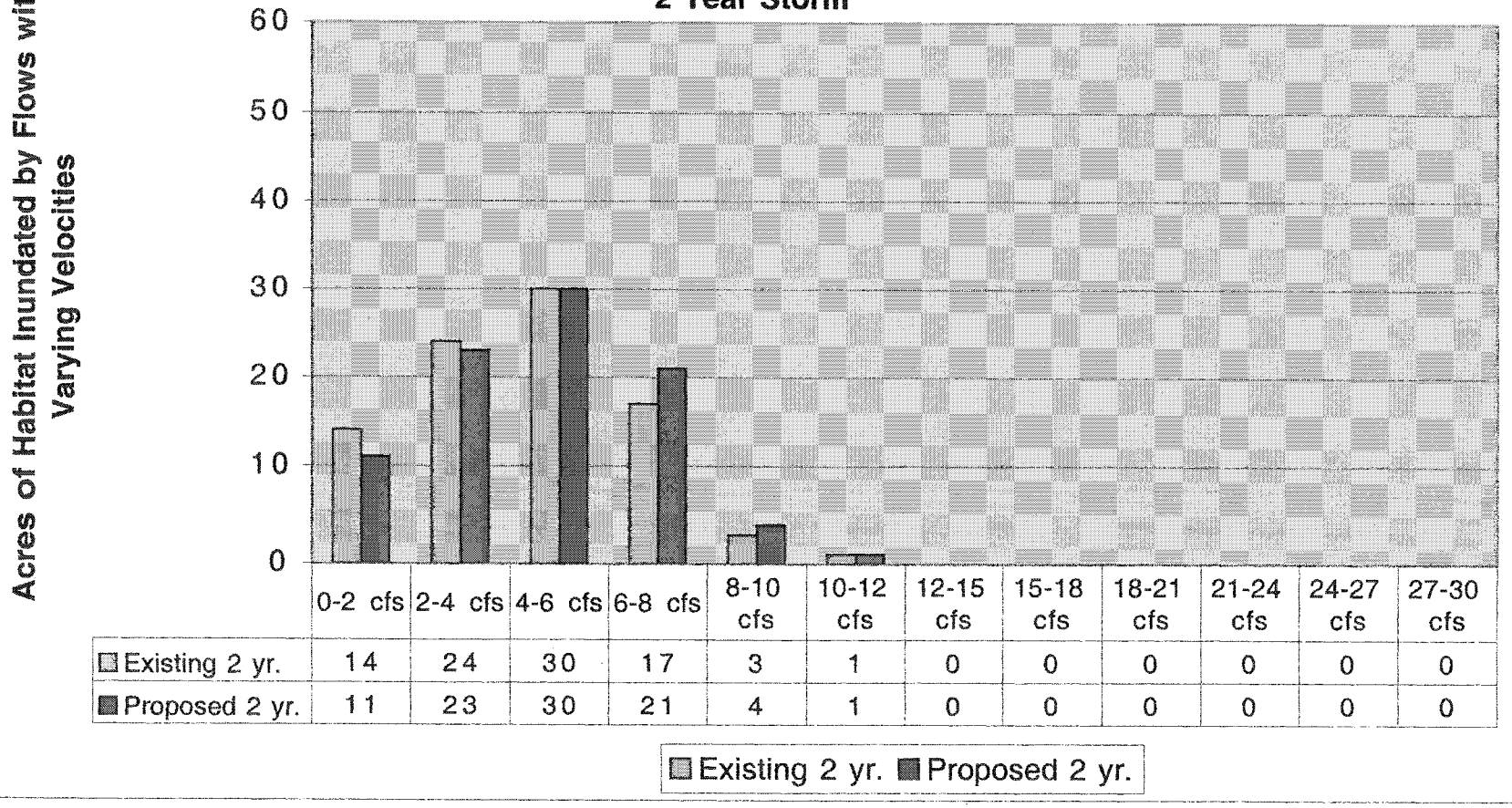
Distribution of Flows in Different Habitats Downstream in Ventura Co. 100 Year Storm



	Alluvial Scrub	Cottonwood Woodland	Mulefat Scrub	Willow Woodland	Willow Scrub	Low Willow Scrub
Existing 100 yr.	2	44	98	10	30	34
Proposed 100 yr.	4	44	98	9	31	34

Chart 2.3-8a

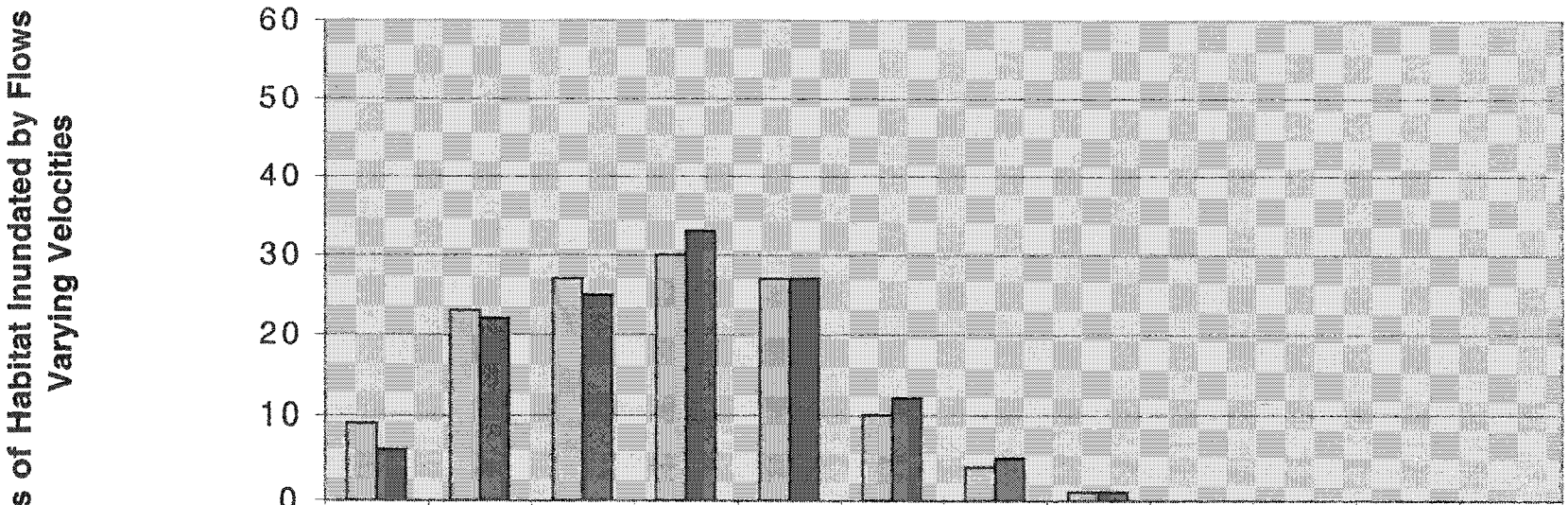
Comparison of Velocity Distribution Downstream in Ventura Co. 2 Year Storm



	0-2 cfs	2-4 cfs	4-6 cfs	6-8 cfs	8-10 cfs	10-12 cfs	12-15 cfs	15-18 cfs	18-21 cfs	21-24 cfs	24-27 cfs	27-30 cfs
Existing 2 yr.	14	24	30	17	3	1	0	0	0	0	0	0
Proposed 2 yr.	11	23	30	21	4	1	0	0	0	0	0	0

Chart 2.3-8b

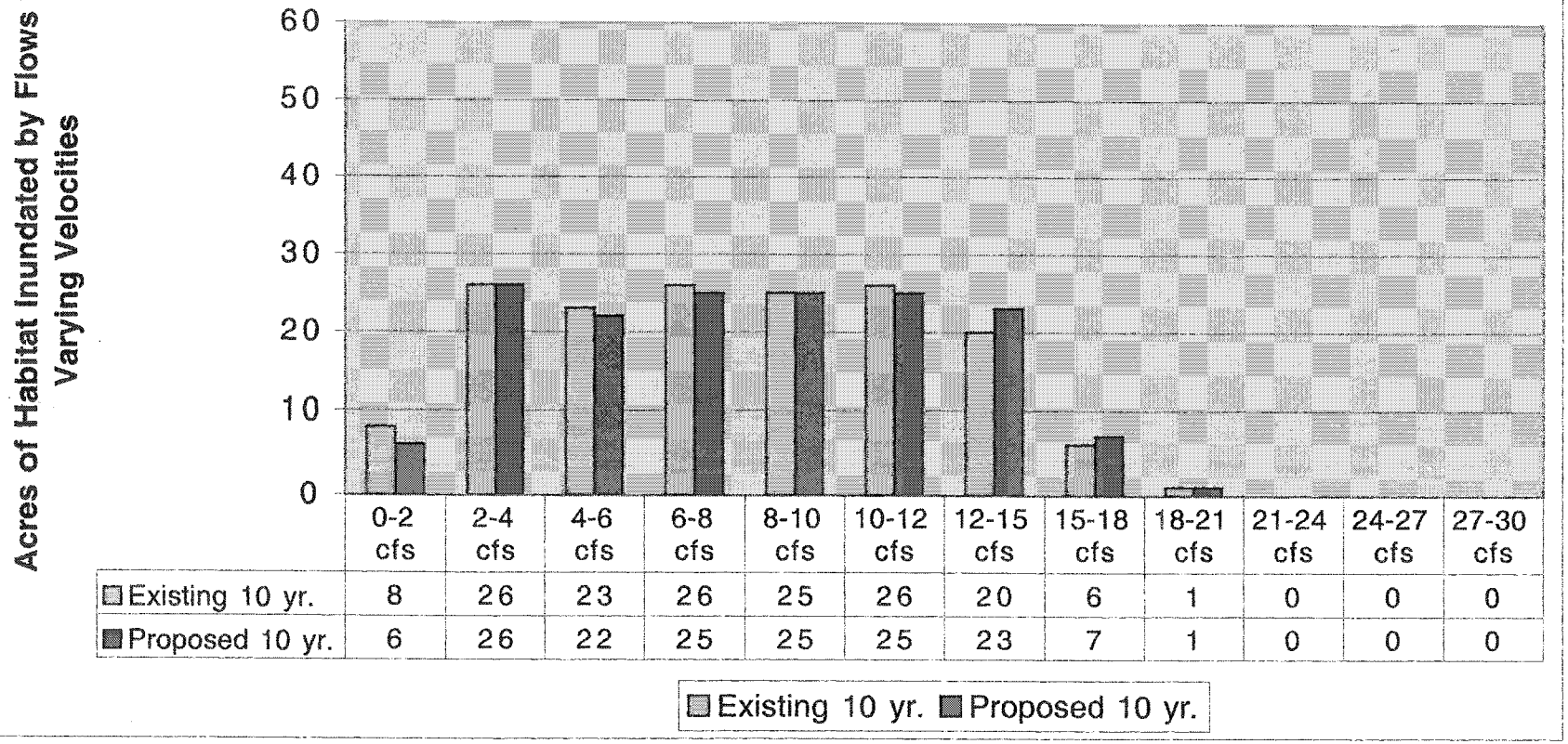
Comparison of Velocity Distribution Downstream in Ventura Co. 5 Year Storm



	0-2 cfs	2-4 cfs	4-6 cfs	6-8 cfs	8-10 cfs	10-12 cfs	12-15 cfs	15-18 cfs	18-21 cfs	21-24 cfs	24-27 cfs	27-30 cfs
Existing 5 yr.	9	23	27	30	27	10	4	1	0	0	0	0
Proposed 5 yr.	6	22	25	33	27	12	5	1	0	0	0	0

Chart 2.3-8c

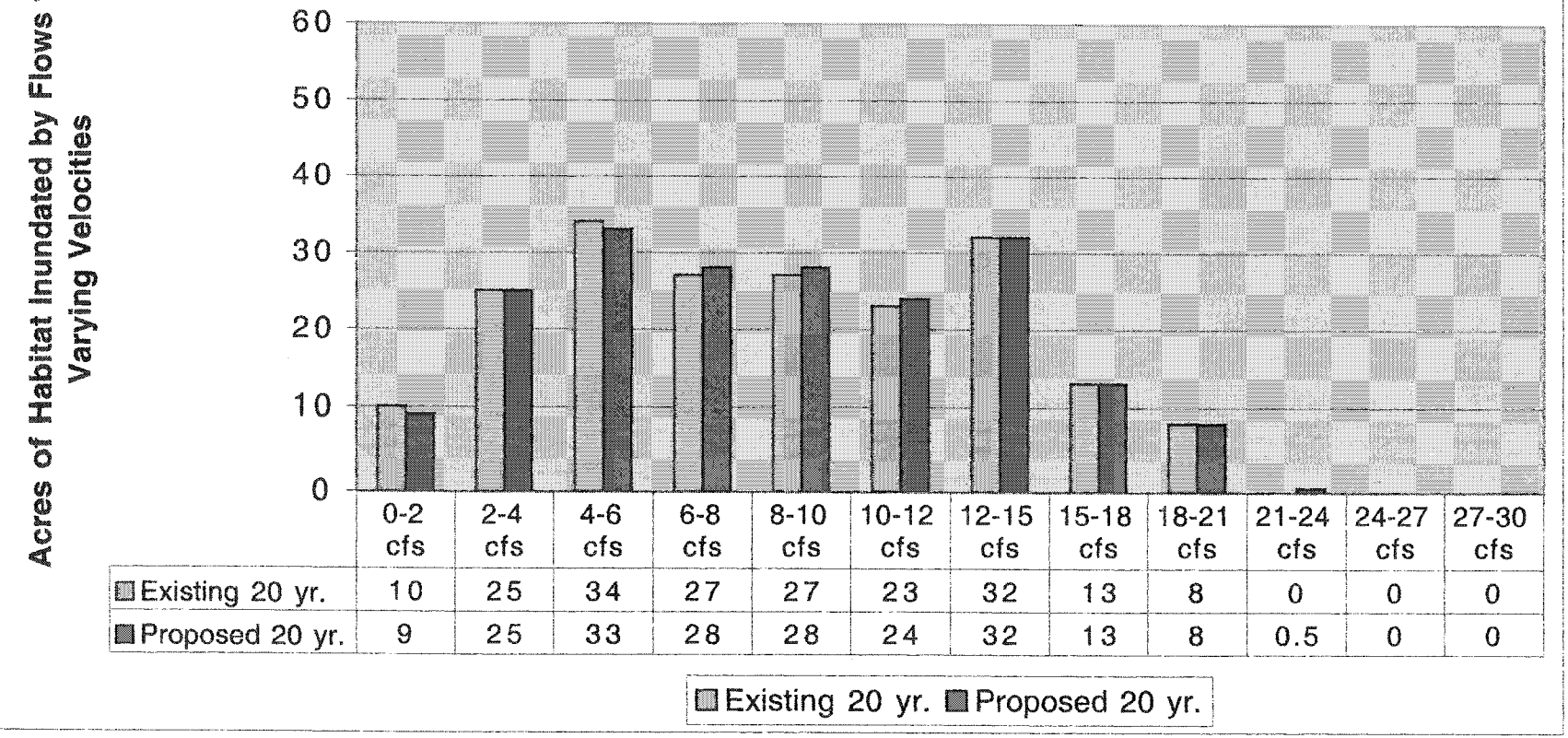
Comparison of Velocity Distribution Downstream in Ventura Co. 10 Year Storm



	0-2 cfs	2-4 cfs	4-6 cfs	6-8 cfs	8-10 cfs	10-12 cfs	12-15 cfs	15-18 cfs	18-21 cfs	21-24 cfs	24-27 cfs	27-30 cfs
Existing 10 yr.	8	26	23	26	25	26	20	6	1	0	0	0
Proposed 10 yr.	6	26	22	25	25	25	23	7	1	0	0	0

Chart 2.3-8d

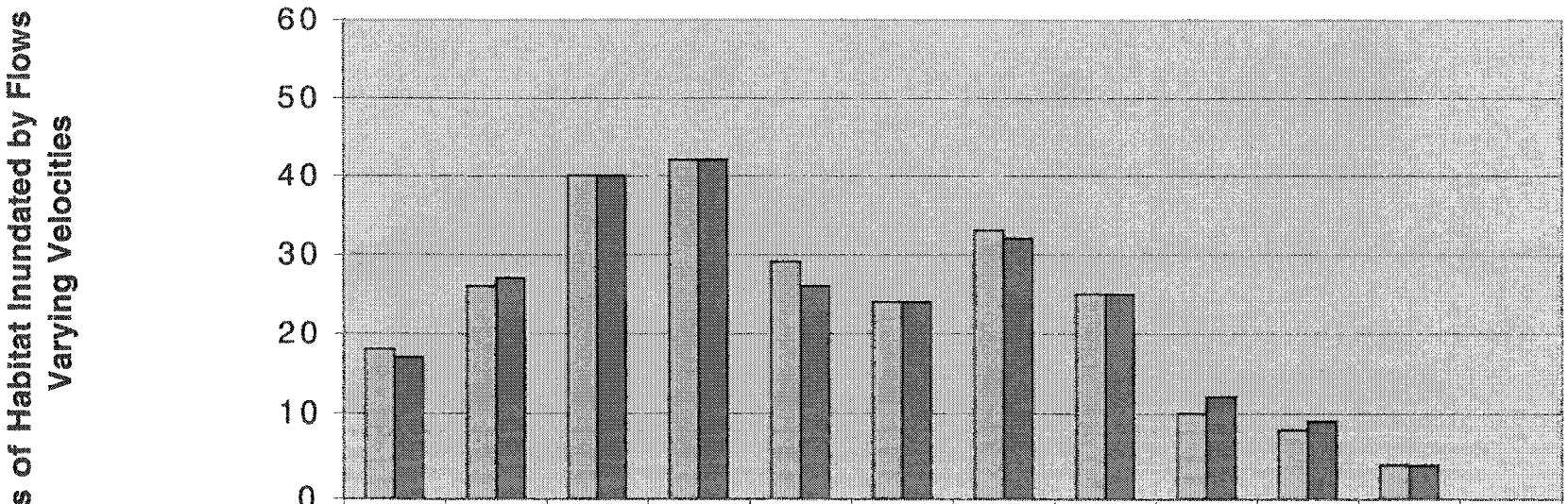
Comparison of Velocity Distribution Downstream in Ventura Co. 20 Year Storm



	0-2 cfs	2-4 cfs	4-6 cfs	6-8 cfs	8-10 cfs	10-12 cfs	12-15 cfs	15-18 cfs	18-21 cfs	21-24 cfs	24-27 cfs	27-30 cfs
Existing 20 yr.	10	25	34	27	27	23	32	13	8	0	0	0
Proposed 20 yr.	9	25	33	28	28	24	32	13	8	0.5	0	0

Chart 2.3-8e

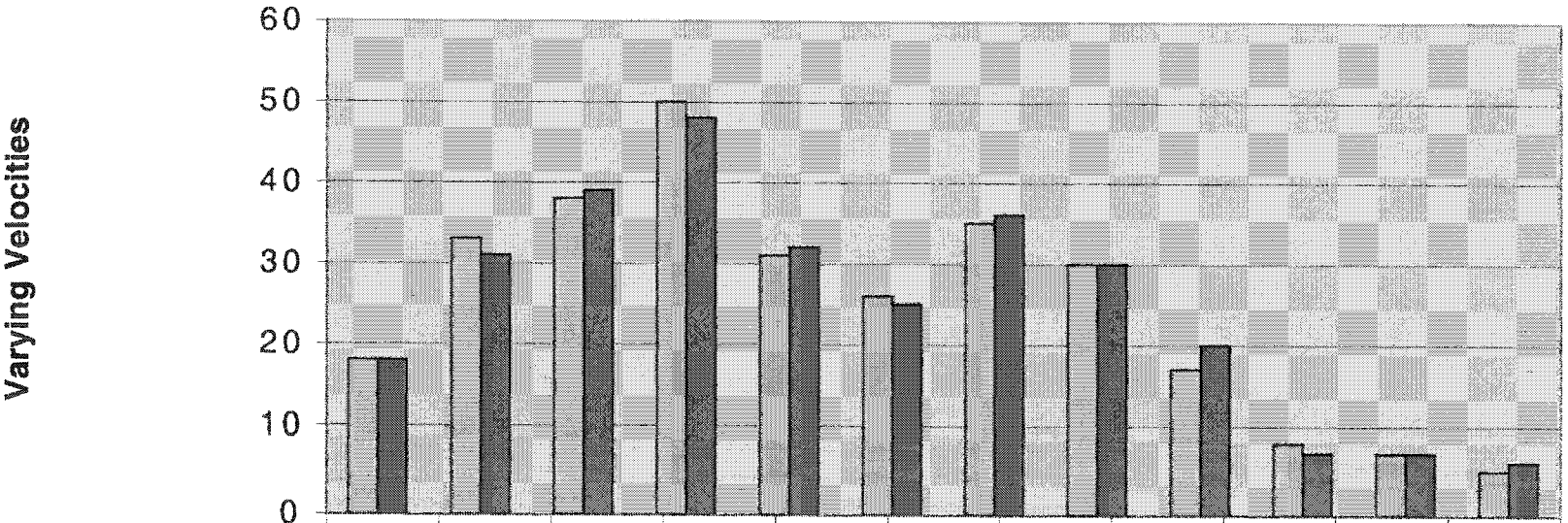
Comparison of Velocity Distribution Downstream in Ventura Co. 50 Year Storm



	0-2 cfs	2-4 cfs	4-6 cfs	6-8 cfs	8-10 cfs	10-12 cfs	12-15 cfs	15-18 cfs	18-21 cfs	21-24 cfs	24-27 cfs	27-30 cfs
Existing 50 yr.	18	26	40	42	29	24	33	25	10	8	4	0
Proposed 50 yr.	17	27	40	42	26	24	32	25	12	9	4	0

Chart 2.3-8f

Comparison of Velocity Distribution Downstream in Ventura Co. 100 Year Storm



	0-2 cfs	2-4 cfs	4-6 cfs	6-8 cfs	8-10 cfs	10-12 cfs	15-18 cfs	18-21 cfs	21-24 cfs	24-27 cfs	27-30 cfs
Existing 100 yr.	18	33	38	50	31	26	30	17	8	7	5
Proposed 100 yr.	18	31	39	48	32	25	30	20	7	7	6

(c) Impact on Velocities

An increase in velocities in the river could result in significant biological impacts if the increase caused: (1) widespread and chronic scouring of the channel bed that removes a significant amount of aquatic, wetland, and riparian habitats from the river channel; and/or (2) substantial modification of the relative amounts of these different habitats in the river, essentially altering the nature and quality of the riverine environment.

The results of the hydraulic analysis indicates that the overall velocities in the river would not increase significantly due to the floodplain modifications associated with the Specific Plan. Overall, velocities for all return events are not significantly different between existing and proposed conditions (**Charts 2.3-2a** through **2.3-2f**) at and downstream of the project site in Ventura County. Localized increases in velocity would occur downstream of the three proposed bridges during infrequent major floods, but these impacts would be restricted to a few hundred feet from the bridge and would not cause scouring effects at other locations in the river.

Based on these results, the floodplain modifications associated with the Specific Plan (*i.e.*, bank protection and bridges, described in **Subsection 2.3.4**) would not cause significant scouring, and therefore, would not alter the amount and "pattern" of aquatic, wetland, and riparian habitats in the river at the Specific Plan site and downstream in Ventura County. The current "pattern of scouring" due to high velocities would remain intact, as shown on **Figures 2.3-7a** through **2.3-7l**.

(d) Impacts on Water Depths

An increase in water depth in the river could result in significant biological impacts if the additional water depth causes greater "shear forces" (*i.e.*, friction caused by the weight of water) on the river bottom, and thereby increasing scouring of the channel bed and removal of vegetation. This effect could reduce the extent of aquatic, wetland, and riparian habitats in the river.

The results of the hydraulic analysis indicates that the overall water depths in the river would not increase significantly due to the floodplain modifications associated with the Specific Plan. Overall, water depths for all return events would not be significantly different between existing and proposed conditions (**Charts 2.3-3a** through **2.3-3f**) at and downstream of the project site in Ventura County. Hence, the floodplain modifications associated with the Specific Plan would not cause significant scouring and therefore, would not alter the amount and pattern of aquatic, wetland, and riparian habitats in the river at the Specific Plan site and downstream in Ventura County.

(e) Impacts on Sediment Scouring and Deposition Patterns

Changes in discharge, water velocities, and water depth can alter the sediment transport characteristics of the river. In addition, runoff from urbanized areas convey less sediments than from an undeveloped watershed; hence, runoff from the tributaries at the Specific Plan site could alter sediment dynamics in the river to the extent these flows reach the river and can pick up and carry sediment. Changes in sediment dynamics in the river could adversely affect aquatic and riparian habitats by filling pools, scouring sandbars with riparian vegetation, and lowering channel depths, which may prevent riparian growth. The sediment modeling analysis indicates that the overall "pattern of sediment deposition" (*i.e.*, areas where sediment is deposited) and scouring (*i.e.*, areas where sediment is removed) along the studied river corridor segment would not change due to the proposed project at the Specific Plan site. By extension, no impact is anticipated in Ventura County (*See*, **Charts 2.3-4a** through **2.3-4f**).

2.3.6.3 Conclusion

The proposed Specific Plan would modify the floodplain by placing bank stabilization along selected portions of the river, developing the floodplain areas behind the bank stabilization, and installing three bridges across the river. These actions would alter flows in the river; however, the effects would only be observed during infrequent flood events that reach the buried banks (*e.g.*, 50-year and 100-year flood events). The proposed Specific Plan would cause an increase in flows, water velocities, water depth; changes in sediment transport; and changes in the flooded areas. However, these hydraulic effects would be minor in magnitude and extent. These effects would be insufficient to alter the amount, location, and nature of aquatic and riparian habitats in the Specific Plan area and downstream in Ventura County. Under the Specific Plan, the river would still retain sufficient width to allow natural fluvial processes to continue. Hence, the mosaic of habitats in the river that support various sensitive species would be maintained, and the populations of the species within and adjacent to the river corridor would not be significantly affected.

2.3.7 MITIGATION MEASURES

No additional mitigation beyond that contained in the EIR is required because no significant impacts to biological resources are anticipated due to the bank stabilization, bridges, or changes in the floodplain.

2.3.8 UNAVOIDABLE SIGNIFICANT IMPACTS

No unavoidable significant impacts are anticipated.

2.4 SEA General Plan Consistency

In response to comments received on the Additional Analysis, County staff has recommended to the Board of Supervisors that refinements be made to the Specific Plan Land Use Plan, as it pertains to the existing Significant Ecological Area (SEA), SEA 23 (also described in the Specific Plan as the "River Corridor Special Management Area (SMA)"). These refinements were recommended to further reduce impacts within the existing SEA 23 boundary, and to enhance the compatibility of the Specific Plan with existing SEA 23 resources. This section has been revised to reflect the refinements to SEA 23, since completion of the Newhall Ranch Draft Additional Analysis in April 2001.

In summary, the Draft Additional Analysis (April 2001) indicated that 28 acres of sensitive riparian habitat in SEA 23 would be redesignated from SEA 23 to residential and non-residential land uses. In response to comments, refinements have been made to the existing SEA 23 boundary to minimize impacts and enhance the Specific Plan's compatibility with existing SEA 23 resources. The refinements are shown below in underline/strikeout text.

The most noteworthy of the recommendations results in the elimination of proposed residential and non-residential land uses from 27 of the 28 acres of sensitive riparian habitat in SEA 23, leaving just one acre of sensitive riparian habitat redesignated to non-residential and infrastructure-related land uses. The 14 acres of sensitive riparian habitat that was not in the original, existing SEA 23 would still be added to SEA 23, as previously proposed in the Draft Additional Analysis (April 2001).

Other recommendations result in the following changes to the proposal for SEA 23: (1) 70 acres of sensitive riparian habitat that was to be redesignated from SEA 23 to Open Area would be changed so that 66 acres would remain in SEA 23; the other four acres would still be redesignated to Open Area; and (2) 19 acres that was to be redesignated from SEA 23 to SEA 20 would remain in SEA 23. As a result of these changes, the total amount of sensitive riparian habitat found within the existing boundary of SEA 23 would increase by five acres, from 380 acres to 385 acres. In addition, the proposed size of SEA 23 on the Specific Plan site would increase by 156 acres, from 819 acres to 975 acres.

2.4.1 INTRODUCTION

On page 5 of the Writ (Appendix 1.0(a)), the trial court found that the Newhall Ranch Final EIR did not adequately address the Specific Plan's impacts on sensitive habitat in ~~Significant Ecological Area (~~SEA~~)~~ 23 ~~(also described in the Newhall Ranch Specific Plan as the "~~(River Corridor SMA). The trial court also

found that the County's findings regarding the deletion of 103 acres of highly sensitive habitat from SEA 23 were not supported by substantial evidence. Finally, the trial court found that there was no substantial evidence to justify the County's findings that development within SEA 23, including bridge crossings and utilities, was located and designed so as not to conflict with critical resources, habitat areas or migratory paths within SEA 23.

In the Writ, the trial court directed Los Angeles County to take action to ensure that the Newhall Ranch Specific Plan is consistent with the Los Angeles County General Plan policies requiring protection of natural resources in SEAs as those standards apply to SEA 23.

In response to the trial court's direction, the information presented below provides an overview of the County's designated SEAs, a description of SEA 23, and a description of the changes proposed to SEA-23 as part of the Newhall Ranch Specific Plan. It is important to note that the original Final EIR concluded that approximately 103 acres of sensitive habitat would be removed from SEA 23 and no longer available for use by various sensitive species. The Final EIR presented a conservative estimate based on information available at the time the document was prepared. After more detailed analysis completed as part of this Additional Analysis and as discussed below, a much smaller amount of sensitive habitat (*i.e.*, ~~28~~ just one acres, or 0.08~~2~~ percent of the existing SEA, rather than the previously reported 103 acres) is being ~~removed~~redesignated and actually impacted due to development. In fact, the existing amount of sensitive riparian habitat that would occur in SEA 23 would actually increase under the Specific Plan by five acres, instead of the 103-acre decrease, which was proposed in the original Final EIR. ~~The balance of the sensitive habitat removed from the SEA (89 acres) is being transferred to other permanently preserved open area designations as identified in the Specific Plan.~~[1] Open ~~a~~Areas include the High Country SMA that is designed to protect the natural resources within the higher elevations of the Specific Plan area, including those within SEA 20. ~~It~~ Open Areas also include~~s~~ other areas that are planned for active recreation such as community parks or passive recreation such as bird watching. Specific restrictions on allowed uses within the ~~preserved o~~Open ~~a~~Areas are identified in Section 2.6 (Resources Management Plan) of the Newhall Ranch Specific Plan.

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1 ~~Another 14~~Fourteen acres of sensitive habitat not presently in SEA 23 ~~is~~ are still being added ~~into~~ ~~the~~ SEA 23 under both the prior Additional Analysis and the proposed ~~revisions~~refinements, while one acre is being redesignated from the SEA due to development and 8 acres are being redesignated from the SEA into the Open Area designation for a net increase of five acres.

2.4.2 OVERVIEW OF SIGNIFICANT ECOLOGICAL AREAS

This section provides information regarding the general background of the County's designated SEAs and the constraints imposed by the County on development within SEAs. The "Significant Ecological Area" designation is one of several land use classifications set forth in the Land Use Element of the Los Angeles County General Plan.[2] The SEA classification generally identifies lands having important biological resources. The classification includes habitats of rare and endangered species, sites with critical fish and wildlife values, relatively undisturbed areas of typical natural habitat and regionally scarce biotic resources. The intent of the General Plan is to preserve and enhance SEAs, to the extent possible, for the benefit of present and future County residents.[3]

2.4.2.1 SEA Purpose and Policies

As acknowledged in the General Plan, the purpose underlying the SEA land use classification is to preserve SEA resources in an ecologically viable state.[4] Several General Plan policies reflect that intent. For example, Policy 15, in the "Environmental Protection" section entitled, "General Goals and Policies," requires protection of "areas that have significant natural resources and scenic values, including significant ecological areas."[5]

While not making specific reference to SEAs, there are other General Plan policies that relate to the purpose for the SEA classification. These other policies also merit consideration when proposing development that may impact SEA resources. For example, Policy 13 of the Conservation, Open Space and Recreation Element calls for "protection" of watersheds, streams and riparian vegetation to minimize water pollution, soil erosion and sedimentation, maintain natural habitats, and aid in ground water recharge."[6]

Other factors governing implementation of the General Plan's SEA goals and objectives include the County's ability to accurately identify areas of SEA resource value, the availability of financial and other resources necessary to support preservation, restoration and enhancement efforts, and the competing

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2 Examples of other Land Use Element classifications include "Low Density Residential," "Medium Density Residential," "Major Commercial" and "Open Space." *See,* General Plan Background Report, p. LU-i.

3 *See,* General Plan Background Report, p. LU-18.

4 *See,* General Plan Background Report, p. OS-28. *See also,* General Plan, p. LU-A12.

5 *See,* General Plan, p. G-5.

6 *See,* General Plan, p. OS-10.

priorities between resource preservation and other critical public needs.[7] Because the original SEA selection process was based on limited field verification of SEA resources, the General Plan acknowledges that future additions or deletions to identified SEAs may be appropriate, based on more detailed and updated biological surveys.[8] The County's Zoning Code further acknowledges that it is not the purpose of the SEA designation to preclude development within SEAs, but rather to ensure, to the extent possible, that such development maintains and, where possible, enhances the SEA biotic resources while allowing limited controlled development within SEAs.[9]

2.4.2.2 SEA Development Process

Recognizing the value of sensitive resources and the constraints imposed by competing public needs, the General Plan seeks to provide a guideline for reconciling specific conflicts between proposed land uses and the preservation of identified SEAs to the extent possible. The General Plan does not suggest, however, that this can be accomplished by applying a single set of regulatory standards to all SEAs. Instead, the General Plan recognizes that measures necessary to preserve and enhance SEAs will vary depending upon the nature of the resource values present and the degree of threat implied by potential incompatible development.[10]

In outlining the procedure for evaluating development proposed within an SEA, the General Plan first sets forth land uses and activities which are considered compatible with SEAs by definition. Those uses include regulated scientific study, passive recreation, such as wildlife observation and photography, limited picnicking, riding and hiking, and overnight camping.[11] The General Plan also describes several more intensive land use types that may be compatible with the SEA classification, "as determined by a detailed biotic survey and such conditions as may be necessary to ensure protection of identified ecological resources."[12] Such uses include: (i) Residential uses at compatible densities; (ii) Minor commercial uses; (iii) Public uses essential to the maintenance or public health, safety and welfare, where no alternative sites are feasible; (iv) Compatible agricultural uses; and (v) Compatible extractive uses, including oil and gas recovery, and rock, sand and gravel quarrying.[13]

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7 *See*, General Plan, p. LU-A12; *See also*, General Plan Background Report, p. LU-30.

8 *See*, General Plan Background Report, p. OS-28. *See also*, England and Nelson, Los Angeles County Significant Ecological Area Study, 1976, pp. 33-34.

9 *See*, Los Angeles County Zoning Code, Chapter 22.56, Section 215(B)(1).

10 *See*, General Plan, p. LU-A-12. *See also*, General Plan Program Map Notes; Background Report, p. LU-30, p. OS-28.

11 *See*, General Plan, p. LU-A12. *See also*, General Plan Background Report, p. LU-30.

12 *See*, General Plan Background Report, p. LU-30.

13 *See*, General Plan, p. LU-13.

The General Plan notes that it "has not attempted to identify, in other than the most general terms, appropriate use types and intensities within significant ecological areas."[14] Therefore, in order to determine whether a development proposal, in fact, is compatible with a particular SEA, the General Plan requires that the proposal be reviewed for compliance with certain "design compatibility criteria." The design criteria are as follows:

(a) The development is designed to be highly compatible with biotic resources present;

(b) The development is designed to maintain waterbodies, watercourses, and their tributaries in a natural state;

(c) The development is designed so that wildlife movement corridors (migratory paths) are left in a natural and undisturbed state;

(d) The development retains sufficient natural vegetative cover and/or open spaces to buffer critical resource areas from the proposed use;

(e) Where necessary, fences or walls are provided to buffer important habitat areas from development; and

(f) Roads and utilities serving the proposed development are located and designed so as not to conflict with critical resources, habitat areas or migratory paths.[15]

The General Plan requirement that development proposed within an SEA comply with the foregoing design compatibility criteria is implemented by provisions of the Los Angeles County Zoning Code. Pursuant to the Zoning Code, an applicant must obtain a conditional use permit "prior to the issuance of any building or grading permits, approval of a minor land division or subdivision, or the commencement of any construction or enlargement of any building or structure on a lot or parcel which is in or partly in an area designated in the County General Plan and related maps as a significant ecological area."[16] An application for a SEA conditional use permit must adequately substantiate that the proposed development is designed to comply with the compatibility criteria set forth above.[17]

The General Plan also requires that an application for a SEA conditional use permit undergo an "SEA Performance Review."[18] This process involves review of the application by an appointed Significant Ecological Area Technical Advisory Committee ("SEATAC"). The SEATAC reviews the application and accompanying biological resources report for its adequacy, and recommends conditions and guidelines

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14 *See,* General Plan Background Report, p. LU-18.

15 *See,* General Plan, p. LU-A13. *See also,* General Plan Background Report, p. LU-31.

16 *See,* Los Angeles County Zoning Code, Chapter 22.56, Section 215(A)(1).

17 *See,* Los Angeles County Zoning Code, Chapter 22.56, Section 215(F)(2).

18 *See,* General Plan, p. LU-A13-A14.

for final project design.[19] Considering the recommendations of the SEATAC, the Los Angeles County Regional Planning Commission then takes action upon the proposed development plan.[20]

Pursuant to the General Plan, the Regional Planning Commission recommendation for approval of proposed development within an SEA must be accompanied by a finding that the proposed development is sensitive to, and compatible with, the biotic resources identified in the permit application materials.[21] If the Commission cannot make such a finding, it may deny the project, request a revised development plan, or approve and forward the proposal, together with a statement of overriding considerations, to the Board of Supervisors for further review and action.[22]

2.4.3 DESCRIPTION OF SEA 23

SEA 23 was created in consideration of the resource values present in the Santa Clara River corridor.[23] The value of SEA 23 is derived from the riparian habitats and associated species located within its boundaries, and the function of SEA 23 as a regional wildlife corridor. The Newhall Ranch Specific Plan has proposed limited land development within the boundaries of SEA 23.

The Santa Clara River site was selected for SEA classification primarily because of the presence of habitat for the unarmored threespine stickleback, a state and federally listed endangered species. This species is restricted to the Santa Clara River and San Francisquito Canyon. In the Santa Clara River, the species is limited to permanent streams and pools from the mouth of San Francisquito Canyon to the Ventura/Los Angeles County line and Lang to Arrastre Canyon.[24]

The unarmored threespine stickleback has been able to survive in the Santa Clara River primarily because its habitat has not been disturbed. The Santa Clara River is unique in being the only major river draining the San Gabriel Mountains that has not been converted into a concrete flood control channel. The vegetation consists of fresh water marsh, coastal sage scrub, oak woodland and riparian woodland communities. This broad wash association is unlike that found in steeper mountain canyons, and is not commonly found in the Los Angeles basin.[25]

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19 *See*, General Plan, p. LU-A14.
20 *See*, General Plan, p. LU-A14.
21 *See*, General Plan, p. LU-A14.
22 *See*, General Plan, p. LU-A14.
23 *See*, General Plan Background Report, p. OS-A-30-A31.
24 *See*, General Plan Background Report, p. OS-A30.
25 *See*, General Plan Background Report, p. OS-A31.

Figure 2.4-1, Existing SEA Boundary within Newhall Ranch Specific Plan, shows the current boundaries of the Santa Clara River SEA 23 within the proposed Newhall Ranch Specific Plan area. A total of approximately 1,290 acres of the 11,963-acre Newhall Ranch are located within SEA 23.[26] Of the 1,290 acres within the portion of the existing SEA 23 area that lies within the Specific Plan site, 380 acres are comprised of sensitive habitats and 444 acres are comprised of other non-sensitive habitats.

However, as described in greater detail below, portions of the existing SEA 23 located on Newhall Ranch contain areas not characteristic of the habitats or resources for which the SEA 23 was established. Disturbed lands and non-riparian grasslands represent over one third of the acreage (466 of 1,290 acres) in the Newhall Ranch portion of SEA 23. Conversely, portions of Newhall Ranch adjacent to, but left outside of, SEA 23 comprise areas containing sensitive biological resources that represents habitats and resources for which the SEA was established. **Figure 2.4-2, Existing Santa Clara River SEA 23 Habitats,** illustrates the location of sensitive, disturbed, and other habitat present in SEA 23.

2.4.3.1 Description of Habitats in SEA 23

A variety of habitats are present in SEA 23, including land heavily disturbed by historic use as well as land designated as sensitive by the State on the California Department of Fish and Game's Natural Diversity Data Base. Habitat types and extent of coverage within SEA 23 are provided below in **Table 2.4-1, Habitat Types within SEA 23.**

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26 The SEAs located in the Newhall Ranch Specific Plan area are discussed in greater detail in the *Biota Report* (*See*, Final EIR Appendix 4.6).

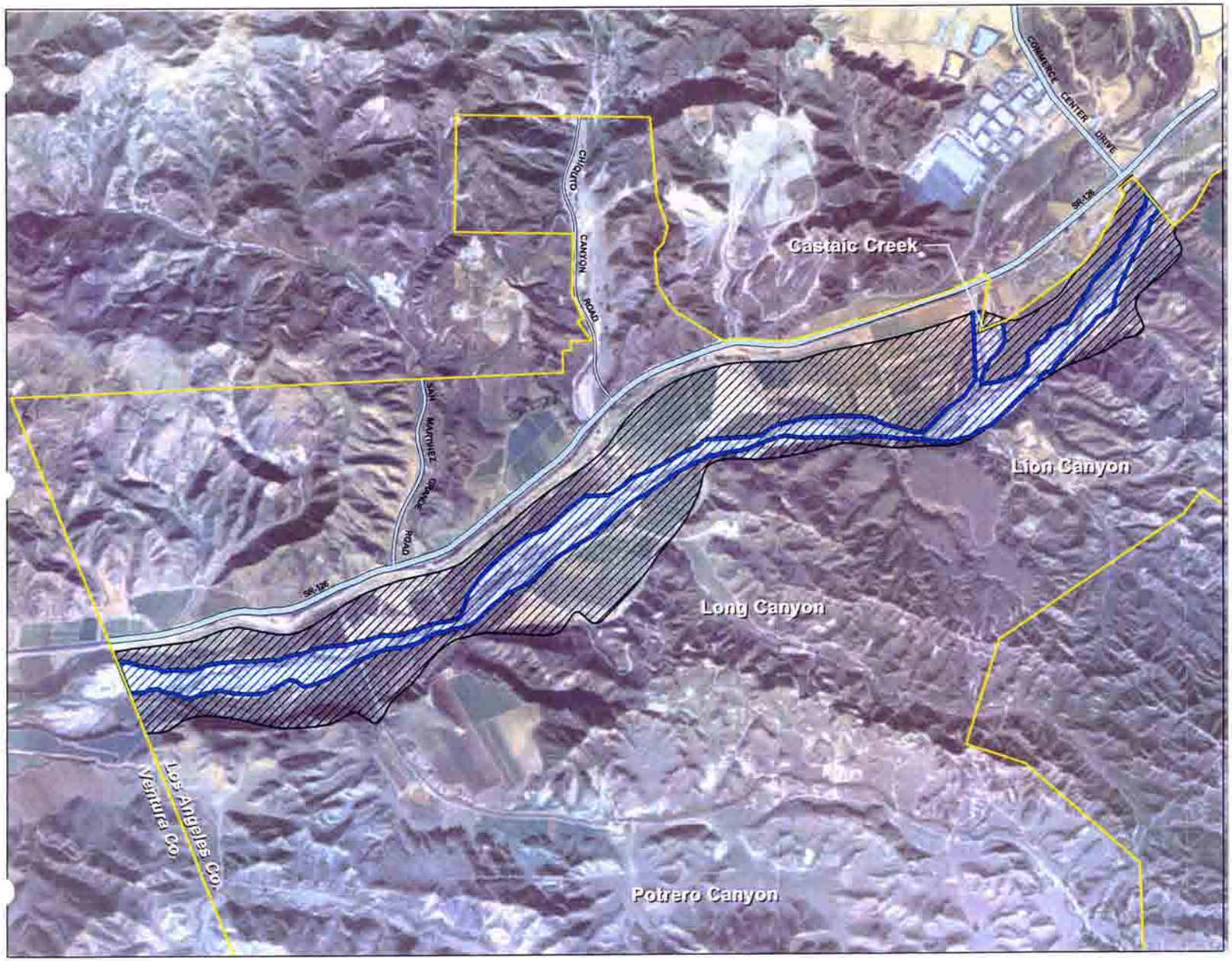
Table 2.4-1
Habitat Types within SEA 23

Habitat Type	Acres
Alluvial Scrub	0.12
Arrow Weed Scrub	6.18
Coastal Sage/Grassland	5.38
Coastal Sage Scrub*	64.01
Coast Live Oak Woodland*	7.19
Cottonwood/Oak Woodland*	10.08
Disturbed	458.50
Elderberry Scrub*	3.85
Grassland	7.79
Mesic Meadow*	1.05
Mixed Chaparral	3.75
Mule Fat Scrub	156.60
Southern Cottonwood/Willow Riparian Forest*	85.97
Southern Willow Riparian Woodland*	123.70
Southern Willow Scrub*	81.18
Successional Mule Fat Scrub	271.09
Valley Freshwater Marsh*	3.27
TOTAL	1,289.71

Source: Forma October 2000.
** Sensitive Habitat*

As shown in **Table 2.4-1**, the existing SEA 23 contains approximately 380 acres of land that is considered sensitive habitats. Several sensitive riparian habitat types are included in this total, which represents the habitat types that support species for which the SEA 23 was created. They include southern cottonwood-willow riparian forest (85.97 acres), southern willow riparian woodland (123.7 acres), southern willow scrub (81.18 acres), as well as freshwater marsh areas (3.27 acres), which form along the River in side channels and back water areas where water either ponds or is slow moving. These are discussed briefly below.

Southern Willow Scrub – Like many willow dominated riparian habitats in California, southern willow scrub has been greatly reduced throughout its range although it provides valuable habitat for many sensitive wildlife species, particularly songbirds. In response to this condition, the CDFG has assigned this vegetation type a status of S2.1 (*i.e.*, very threatened status in habitats that are not common). Currently, 81.18 acres (6 percent) of this habitat occur within SEA 23 on the Newhall Ranch site.

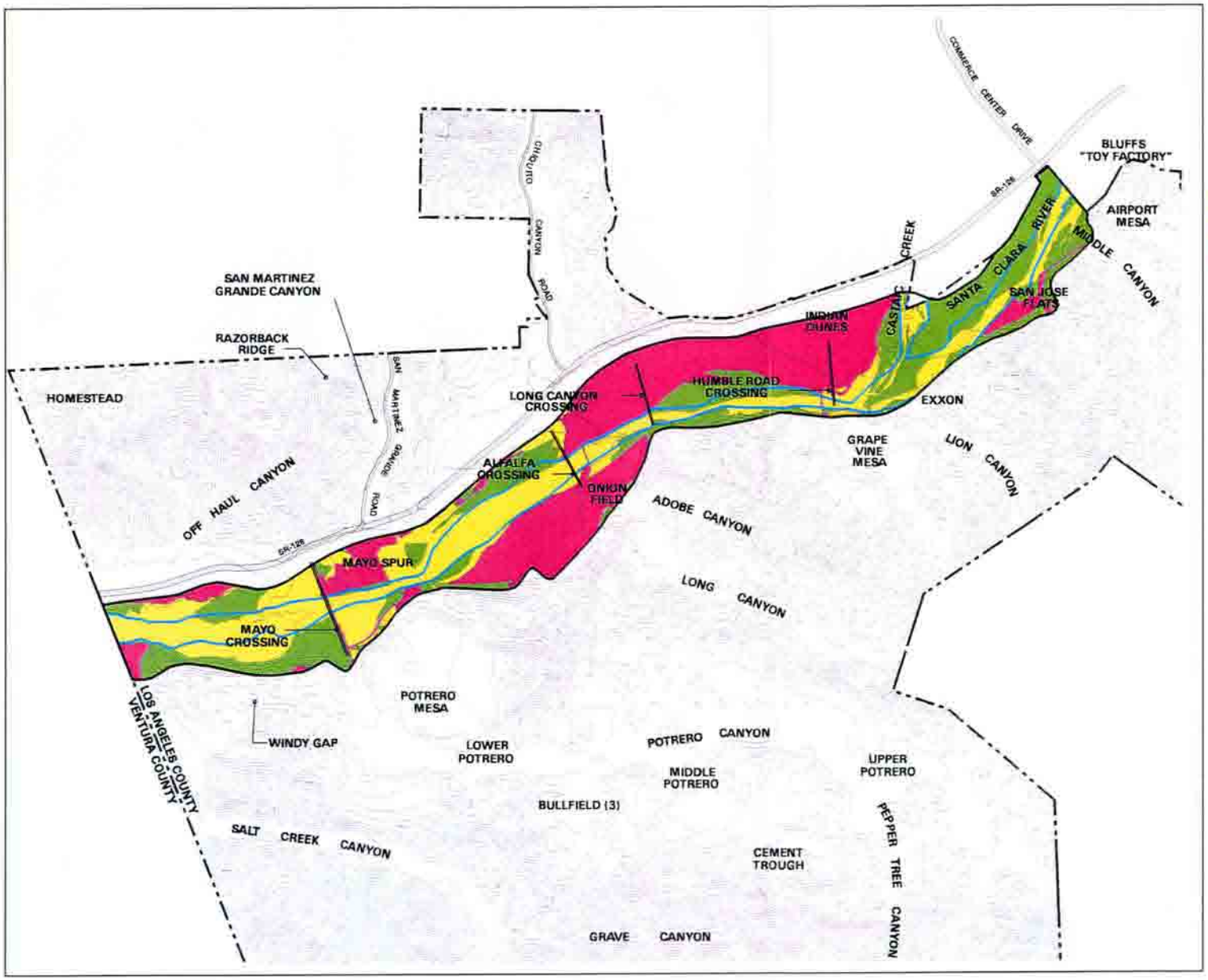


NEWHALL RANCH
Newhall Ranch Company

L E G E N D

- Newhall Ranch Specific Plan Boundary
- Existing SEA 23 = 1290 Acres
- Water Course - 330 Acres - 26%

FIGURE 2.4-1
EXISTING SEA BOUNDARY WITHIN NEWHALL RANCH SPECIFIC PLAN



NEWHALL RANCH
Newhall Ranch Company

L E G E N D

- Water Course
- Existing SEA 23= 1290 Acres
- Newhall Ranch Specific Plan Boundary
- Sensitive Riparian Habitat: 380 Acres - 29%
- Other Riparian Habitat: 444 Acres - 35%
- Agricultural and Other Disturbed Habitat: 466 Acres - 36%

FORMA

FIGURE 2.4-2
EXISITNG SANTA CLARA RIVER
SEA 23 HABITATS

Southern Cottonwood – Willow Riparian Forest/Southern Willow Riparian Woodland – Like most riparian habitats in California, southern cottonwood-willow riparian forest/southern willow riparian woodland have been greatly reduced throughout their range and provide valuable habitat for many sensitive wildlife species. In response to this condition, the CDFG has assigned this vegetation type a status of S3.2 (*i.e.*, threatened status in habitats that are relatively common). Currently, 85.97 acres (approximately 7 percent) of this habitat occur within SEA 23 on the Newhall Ranch site.

Valley Freshwater Marsh and Ponds – Like many wetland habitats in southern California and elsewhere, valley freshwater marsh and ponds habitat has been significantly reduced throughout its range. This habitat provides a water source in arid areas and, as such, is valuable habitat for many sensitive wildlife species. In response to this condition, the CDFG has assigned this vegetation type a status of S2.1. Currently, 3.27 acres (less than 1 percent) of this habitat occurs within SEA 23 on the Newhall Ranch site.

2.4.3.2 Description of Non-Sensitive Riparian Habitats

While noted for its sensitive riparian biological resources, the existing SEA 23 also includes land that is not considered as having sensitive, unique or exemplary biological characteristics. This condition is either due to: (i) the disturbed condition of the land (*i.e.*, over the past several decades these land areas have been used for oil and natural gas operations, cattle grazing and intensive agricultural operations and much of the area is dominated by ruderal or weedy vegetation communities); or (ii) the existing habitats are not critical to the survival of sensitive animal species that occur within SEA 23. As shown in **Table 2.4-2, Non-sensitive Habitat Types within SEA 23**, and also illustrated on **Figure 2.4-2**, the existing SEA 23 contains a total of approximately 910 acres of non-sensitive habitats, including 444 acres of other riparian habitat and 466 acres of agricultural and other disturbed habitat. While the value of SEA 23 is largely defined by the wetland habitat and associated species, the disturbed habitat in SEA 23 serves as foraging habitat and plays a role in allowing the Santa Clara River to serve as a wildlife corridor.

Table 2.4-2
Non-Sensitive Habitat Types within SEA 23

Habitat Type	Acres
Alluvial Scrub	0.12
Arrow Weed Scrub	6.18
Coastal Sage/Grassland	5.38
Disturbed	458.50
Grassland	7.79
Mixed Chaparral	3.75
Mule Fat Scrub	156.60
Successional Mule Fat Scrub	271.09
TOTAL	**909.68**

Source: Forma October 2000.

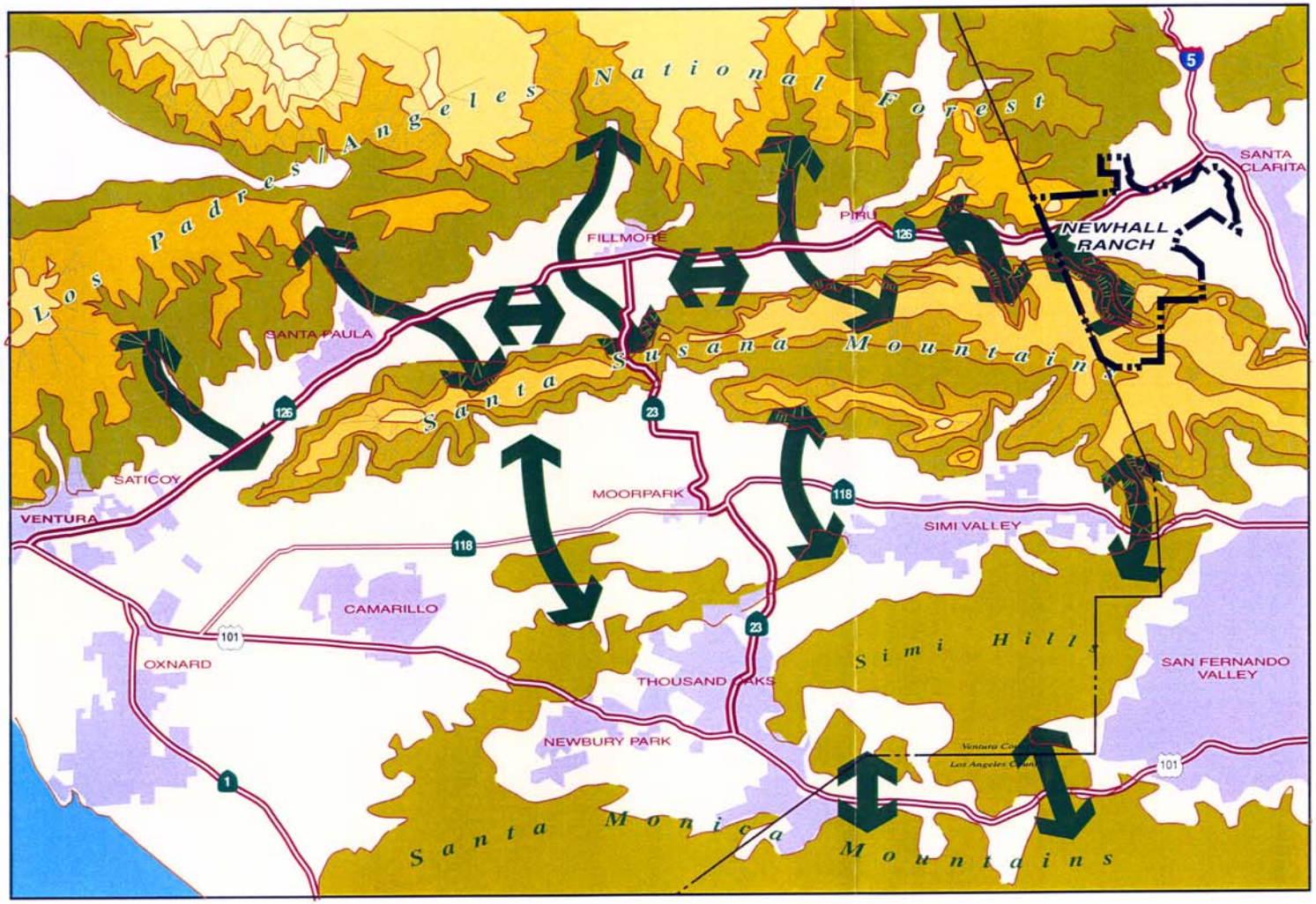
2.4.3.3 Description of Sensitive Habitats Adjacent to SEA 23

Portions of the Newhall Ranch site adjacent to, but outside of, SEA 23 also contain biologically sensitive or valuable habitats. However, at the time the County designated SEAs, these areas were not included within the existing boundaries of SEA 23. Habitat types found in these non-SEA areas include coastal sage scrub, cottonwood/oak woodland, southern cottonwood/willow riparian forest, southern willow riparian woodland, southern willow scrub, and valley freshwater marsh. A total of 14 acres of sensitive land occurs adjacent to, but outside of the existing SEA 23 boundaries.

2.4.3.4 Wildlife Movement and SEA 23

The primary connectivity of the Newhall Ranch is to large undeveloped areas of open area to the south and west in the Santa Susana Mountains, including the recently dedicated Santa Clarita Woodlands Park. The eastern end of the Santa Susana Mountains is potentially connected to several other surrounding undeveloped areas, including the Simi Hills and the Santa Monica Mountains to the south. However, these connections are limited by intervening urban development in Simi Valley, the San Fernando Valley, other communities in Ventura and Los Angeles counties, and the existing State Route 118 (SR-118) and the U.S. 101 freeway. Connections between the Santa Susana Mountains and the Angeles National Forest to the north and east are also problematic because of the presence of Interstate 5 (I-5) and State Route 14 (SR-14), and because of urban development in the City of Santa Clarita and unincorporated portions of Los Angeles County and the San Fernando Valley. Such barriers act to limit connectivity and the potential movement of species between these large blocks of open area.

In addition, wildlife moves between large blocks of open area that occur in a north/south orientation west of I-5. **Figure 2.4-3, Wildlife Movement**, illustrates the estimated corridor linkages between regionally important large ecological units. As shown, important wildlife movement corridors exist between the Newhall Ranch Specific Plan area and the Santa Clara River. The Santa Clara River is an important riparian corridor that connects the Specific Plan area with habitat to the east and west. The river area serves as a connection between the upland habitats to the north and south of the River, as well as upstream and downstream. Large expanses of undeveloped land in the Santa Susana Mountains to the south allow for the movement of wildlife down to the River and back primarily through a series of ridges and canyons (*e.g.*, Salt Creek Canyon, Rawhide Canyon, and to a lesser extent Potrero Canyon). North of the River, wildlife movement from the surrounding hills to the River is somewhat facilitated by existing canyon connections (*e.g.*, San Martinez Grande Canyon and to a lesser degree Chiquito Canyon), although SR-126 acts to limit wildlife movement.



NEWHALL RANCH
Newhall Ranch Company

L E G E N D

SPECIFIC PLAN BOUNDARY

POTENTIAL WILDLIFE MOVEMENT

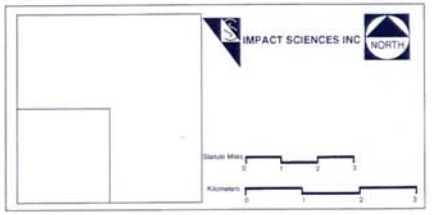


FIGURE 2.4-3
WILDLIFE MOVEMENT

However, recent Caltrans improvements to SR-126 in Ventura County include three agricultural undercrossings that function as wildlife undercrossings. The undercrossings are concrete culvert structures approximately 20 feet high, 25 feet wide, and 50 feet in length. The crossings are used to move agricultural equipment between plots of cultivated fields found on both sides of SR-126 and are sufficiently large to serve as wildlife crossings.

Connection to the west along the Santa Susana Mountains and rugged terrain of the lower foothills above the River is also still viable. The I-5 freeway, Stevenson Ranch, the Magic Mountain Theme Park, and the continued development of the Santa Clarita Valley restrict viable upland connections to the east. Generally, the pattern of wildlife movement and gene flow in the area, including Newhall Ranch, can be characterized as occurring within and between three important local ecological units. They are: the uplands of the Santa Susana Mountains, the Santa Clara River riparian system, and the uplands to the north into the Angeles and Los Padres National Forests.

2.4.4 DESCRIPTION OF CHANGES PROPOSED IN SEA 23

Presently, approximately 1,290 acres of land is located within the existing SEA 23 boundaries on the Newhall Ranch Specific Plan site. The Newhall Ranch Specific Plan proposes changes to SEA 23 resulting in a reduction of land area of ~~471~~315 acres within SEA 23. The revised SEA 23 would contain approximately ~~819~~975 acres. Approximately ~~117~~23 acres of the total redesignated area ~~transferred~~involves sensitive habitat (14 acres added, 8 acres redesignated to Open Area, and one acre redesignated for development). However, the proposed changes to the SEA area must be understood in context.

In this case, only a ~~relatively~~very small amount of sensitive habitat area (*i.e.*, ~~28~~one acre, or ~~2~~0.08 percent of the existing SEA) is being removed from the existing boundaries of SEA 23 due to proposed development. In fact, the existing amount of sensitive riparian habitat that would occur in SEA 23 would actually increase under the Specific Plan by a net of five acres (instead of the 103-acre decrease, which was proposed to be redesignated in the original Final EIR); 14 acres of sensitive riparian habitat would be added to the SEA, one acre would be redesignated for development of non-residential land uses, and 8 acres would be redesignated ~~The balance of the land transferred~~ redesignated from SEA 23 ~~(443 acres) will be either~~ and ~~placed in other~~permanently preserved in the ~~o~~Open ~~a~~Area designations ~~(i.e., SEA 20, Open Area)~~ because it is not riparian in nature, ~~or is proposed for development on land that is~~for the most part, ~~already disturbed or not considered sensitive~~ or represents relatively small fragments of sensitive habitat isolated from the riparian resources of the river.

~~In addition to land removed, a total of 59 acres of land is proposed to be added to SEA 23 (530 total acres proposed for removal from the SEA, while 59 acres are proposed for addition for a net reduction in SEA acreage of 471 acres)~~ The 315-acre reduction of land area in existing SEA 23 indicated above was calculated as follows: 355 acres were removed for development, *plus* 22 acres removed and preserved elsewhere in the Specific Plan, for a total of 377 acres, *less* 62 acres of land that is added to SEA 23, for a net reduction in SEA 23 of 315 acres. The ~~transfer~~redesignations were made with consideration to the type and quality of the habitat and the purpose of the SEA 23 (preservation of riparian habitats and associated species). A detailed description of the disposition of land removed from the existing SEA 23 is provided below for each habitat category. **Table 2.4-3, Proposed Changes to Existing SEA 23**, provides a summary of the proposed changes to existing SEA 23.

Table 2.4-3
Proposed Changes to Existing SEA 23

Existing SEA 23		Removed and Preserved Elsewhere in Specific Plan	Added to SEA 23	Removed for Development	Percent of Total Existing SEA 23 Removed	Revised SEA 23
Habitat	Acreage					
Sensitive[a]	380	~~-89~~	+14	~~-128~~	~~0.082~~.2	~~385~~277
Non-Sensitive[b]	444	~~-627~~	~~+1413~~	-19	1.5	~~433~~411
Ag/Disturbed[c]	466	~~-830~~	~~+3432~~	~~-335~~337	26.1	~~157~~131
Total[d]	1,290	~~-22146~~	~~+6259~~	~~-355384~~	~~28~~29	~~975~~819

[a]Note: As shown above, the sensitive habitat within the existing SEA 23 totals 380 acres. After refinements to the existing SEA, the sensitive habitat in the SEA was increased by a net of 5 acres (380 + 5 = 385 acres).
[b]Note: As shown above, the non-sensitive habitat within the existing SEA 23 totals 444 acres. The reduction in non-sensitive habitat was calculated as follows: 444 acres *minus* 6 acres, *plus* 14 acres, *minus* 19 acres, *equals* 433 acres. This results in the removal of a net of 11 acres of non-sensitive habitat from existing SEA 23 (444 acres - 433 acres = 11 acres).
[c]Note: As shown above, the agricultural/disturbed land within the existing SEA 23 totals 466 acres. The reduction in agricultural/disturbed land from the SEA was calculated as follows: 466 acres, *minus* 8 acres removed/preserved elsewhere in the Specific Plan, *plus* 34 acres added to the SEA, *minus* 335 acres removed for development, *equals* 309 net acres of agricultural/disturbed land removed from the SEA.
[d]Note: The 315-acre reduction of land area in existing SEA 23 was calculated as follows: 355 acres removed for development, 22 acres removed and preserved elsewhere in the Specific Plan (for a total of 377 acres removed from SEA 23), and 62 acres added to the SEA. This results in a net amount of land to be removed from existing SEA 23 of 315 acres (377 acres – 62 acres = 315 net acres to be removed).

2.4.4.1 Land to be Developed in SEA 23

A total of 355~~384~~ acres presently in SEA 23 are proposed for development as part of the Newhall Ranch Specific Plan. However, only a very small amount of that land is considered sensitive (*i.e.*, one acre). As shown in **Figure 2.4-4, ~~Sensitive and Disturbed or Non-sensitive Habitat Present in SEA 23~~Habitat Redesignated for Residential and Non Residential Land Uses in Existing SEA 23**, the vast majority of the land either is already in a disturbed condition, in agricultural production or dominated by ruderal or weedy plant species. **Figure 2.4-5, Habitat ~~Removed~~Redesignated from ~~Original~~Existing SEA 23 and Habitats Proposed to be Added to SEA 23**, indicates that 335~~337~~ acres (or 89~~64~~ percent of the 377~~530~~

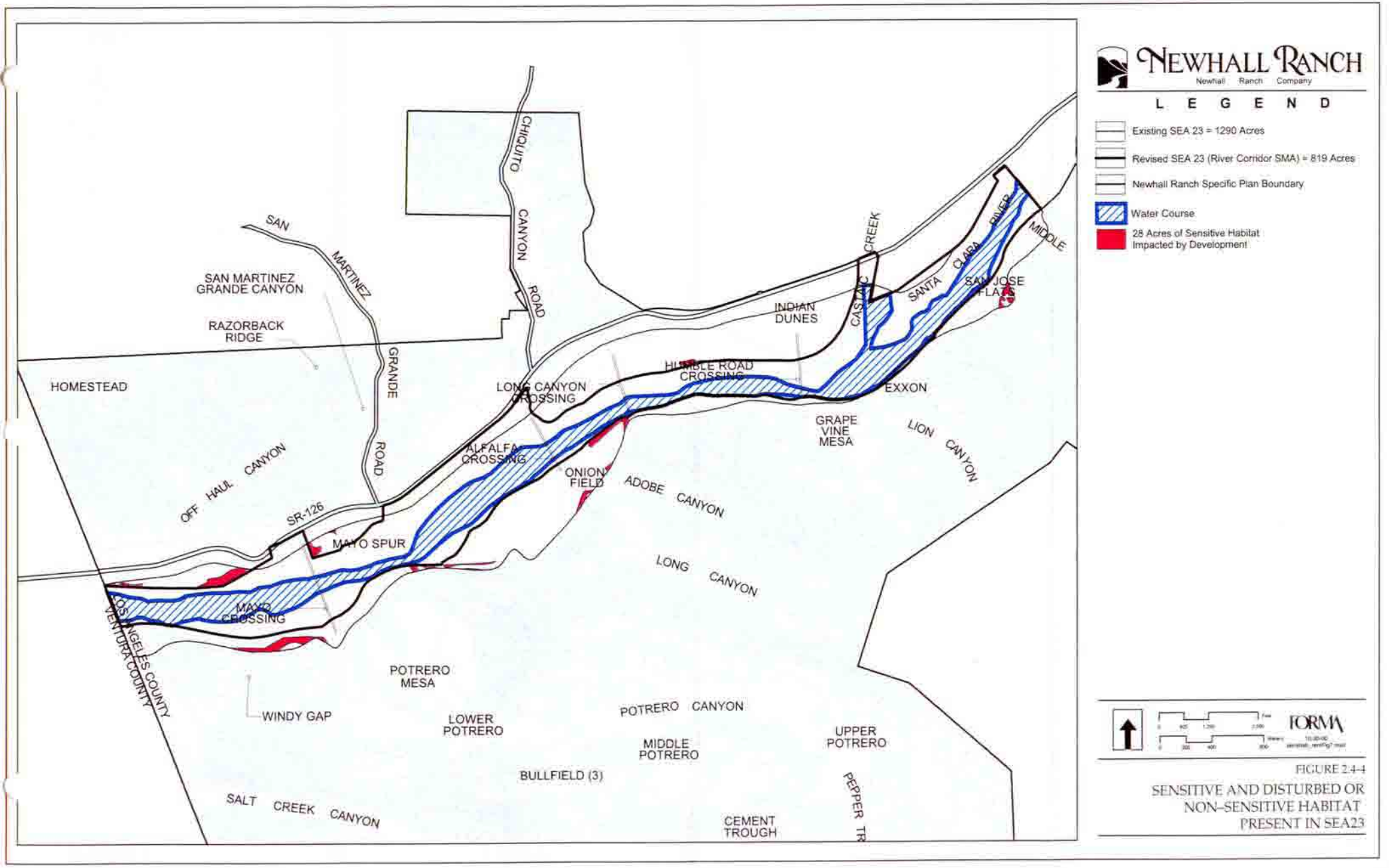
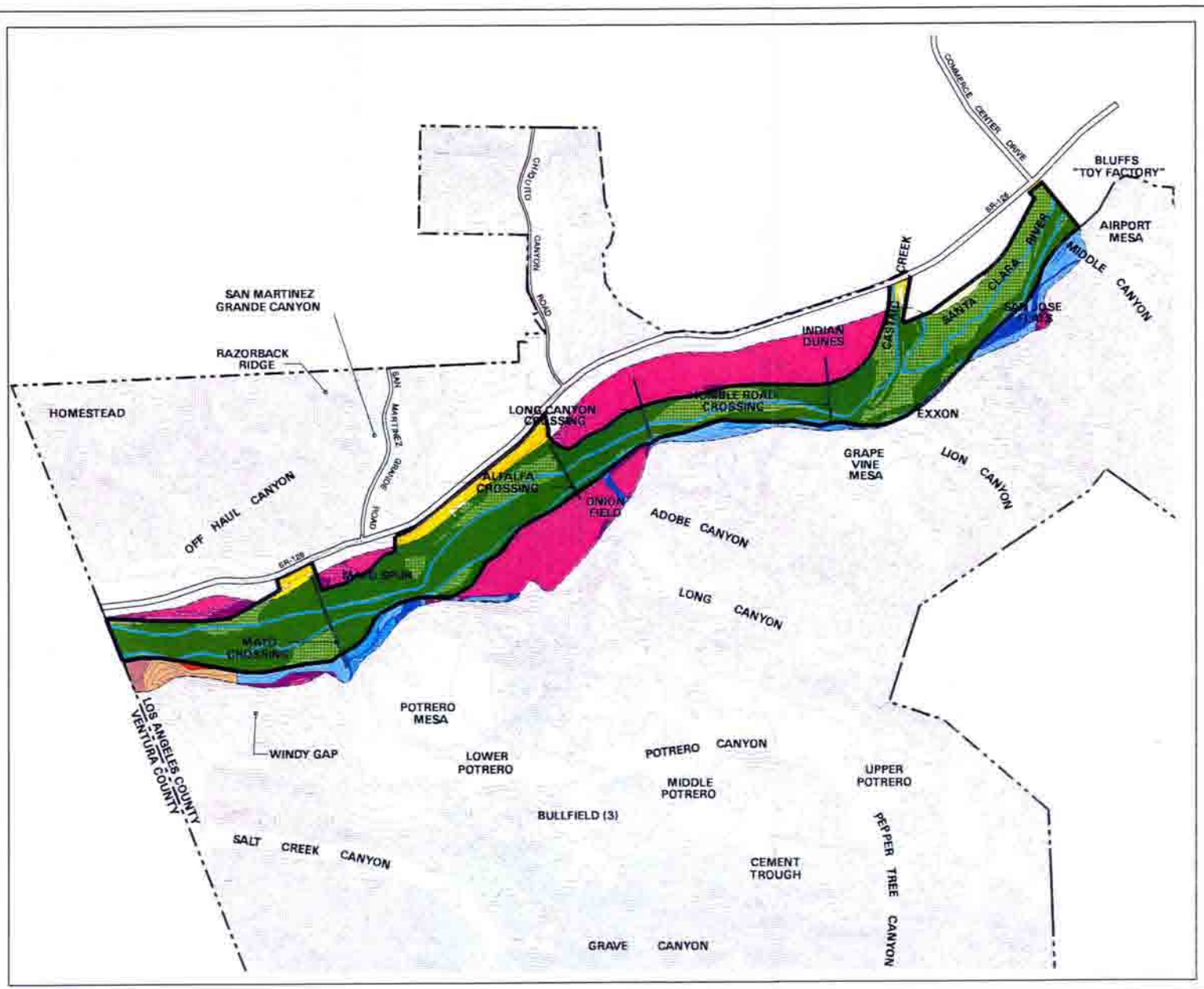


FIGURE 2.4-4

SENSITIVE AND DISTURBED OR NON-SENSITIVE HABITAT PRESENT IN SEA23



NEWHALL RANCH

Newhall Ranch Company

L E G E N D

- Existing SEA 23 = 1290 Acres
- Revised SEA 23 (River Corridor SMA) = 819 Acres
- Newhall Ranch Specific Plan Boundary
- 19 Acres Sensitive Habitat Transferred from SEA 23 and Preserved in SEA 20 (High Country SMA)
- 70 Acres Sensitive Habitat Transferred from SEA 23 and Preserved in Open Area
- 263 Acres Sensitive Habitat Remaining in Revised SEA 23 (River Corridor SMA)
- 3 Acres Other Riparian Habitat Transferred from SEA 23 and Preserved in SEA 20 (High Country SMA)
- 24 Acres Other Riparian Habitat Transferred from SEA 23 and Preserved in Open Area
- 397 Acres Other Riparian Habitat Remaining in Revised SEA 23 (River Corridor SMA)
- 7 Acres Agricultural and Other Disturbed Habitat Transferred from SEA 23 and Preserved in SEA 20 (High Country SMA)
- 23 Acres Agricultural and Other Disturbed Habitat Transferred from SEA 23 and Preserved in Open Area
- 99 Acres Agricultural and Other Disturbed Habitat Remaining in Revised SEA 23 (River Corridor SMA)
- 32 Acres Agricultural and Other Disturbed Habitat Added to Revised SEA 23 (River Corridor SMA)
- 14 Acres Sensitive Habitat Added to Revised SEA 23 (River Corridor SMA)
- 13 Acres Other Riparian Habitat Added to Revised SEA 23 (River Corridor SMA)
- 28 Acres Sensitive Habitat Removed from SEA 23 by Development
- 32 Acres Other Riparian Habitat Removed from SEA 23 by Development
- 337 Acres Agricultural and Other Disturbed Habitat Removed from SEA 23 by Development

FORMA

FIGURE 2.4-5

HABITATS REMOVED FROM ORIGINAL SEA 23 AND HABITATS PROPOSED TO BE ADDED TO SEA 23

acres being ~~removed~~redesignated for residential, non-residential and Open Area land use ~~removed from SEA 23~~) are in a disturbed condition, 19 acres (or 45 percent of the 377~~530~~ acres being redesignated for residential, non-residential and Open Area land use~~removed from SEA 23~~) are dominated non-sensitive habitat types, and one~~28~~ acres (or 0.35 percent of the 377~~530~~ acres being redesignated for residential, non-residential and Open Area land use~~removed from SEA 23~~) are dominated by sensitive habitat types. The types of land uses that would be constructed on the one~~28~~ acres of sensitive habitat types includes: ~~Estate (2.21 acres), Low-Medium (12.18 acres), Medium (3.85 acres), including schools and community parks~~, Mixed-Use ~~(1.77 acres), Business Park (7.58 acres), including the proposed Water Reclamation Plant~~and three Major Highways with bridge crossings over the Santa Clara River (.41) acres. In addition, buildout of the Specific Plan would require the placement of two utility crossings across the River as well as the placement of buried bank stabilization and grouted and ungrouted rip-rap where required to protect property from flooding. However, impacts associated with utility crossings and buried bank stabilization (43 acres) would be temporary in that areas impacted during construction would be revegetated with native species upon completion of construction activities consistent with the Specific Plan and Federal and State resource permit requirements. Dependent upon the permitting process, revegetation will be completed within three to five years from the time of impact. As a result, potential impacts would be minimized and movement paths of animals would be unimpeded. Areas proposed for development within SEA 23 are illustrated in **Figure 2.4-6, ~~Development Areas within~~Existing SEA 23 (River Corridor Special Management Area) Redesignated for Residential and Non Residential Land Use**.

2.4.4.2 Description of Land to be Added to SEA 23

Implementation of the Specific Plan would result in 62~~59~~ acres of land added to the existing SEA 23 boundaries. As illustrated on **Figure 2.4-5**, of the 62~~59~~ acres, 14 acres are sensitive habitat types, 14~~13~~ are non-sensitive riparian habitat types, and 34~~32~~ are in a disturbed condition. The disturbed land has been added since it represents land contiguous to sensitive riparian habitat in SEA 23 that is suitable as a candidate for revegetation and enhancement efforts undertaken as part of the Newhall Ranch Resource Management Plan.

2.4.4.3 Summary of Proposed Changes to SEA 23

In summary, of the 377~~530~~ acres that are proposed for removal from SEA 23, one~~28~~ acres of sensitive habitat types (0.08~~2~~ percent of the existing SEA 23) would be developed. In fact, the existing amount of sensitive riparian habitat that would occur in SEA 23 would actually increase under the Specific Plan by five acres. Instead of the 103-acre decrease originally proposed to be redesignated; 14 acres of sensitive riparian habitat would be added to SEA 23, while one acre would be redesignated for non-residential land uses and then developed, and eight acres would be redesignated from SEA 23 to Open Area designation, because that land is either not riparian in nature, or represents relatively small fragments of

sensitive habitat isolated from the riparian resources of the river. The balance of the land would be redesignated~~transferred~~ from SEA 23 to ~~other permanent open areas (146 acres would be transferred to SEA 20 and~~ the Open Area designation (22 acres), or ~~would be~~developed (355 acres of non-sensitive habitat/already disturbed land). In addition, 62~~59~~ acres of land not in the existing SEA 23 would be added to the SEA; of that amount, 14 acres ~~of which~~ are sensitive habitat types. **Figure 2.4-7, Proposed SEA 23 (River Corridor Special Management Area)**, illustrates the configuration of the proposed SEA 23 (~~also described in the Specific Plan as the "~~River Corridor SMA)~~Special Management Area").~~ **Figure 2.4-8, Sensitive Habitat Redesignated~~Transferred~~ from Existing~~Original~~ SEA 23 to Non Residential Land Uses and Open Area and Sensitive Habitats ~~Proposed~~to be Added or Redesignated to Proposed SEA 23**, illustrates the location of the one~~28~~ acres of sensitive habitat areas proposed for redesignation~~development~~ as well as the disposition of all other sensitive habitat areas proposed to be redesignated~~transferred~~ from ~~the~~existing SEA 23 ~~and preserved into other~~Specific Plan Open Area~~open space~~ classifications. (Sensitive habitat redesignated~~transferred~~ from existing SEA 23 to Open Area is predominately coastal sage scrub, which is not riparian habitat, the predominant habitat type to be included in SEA 23 ~~was established for~~.)

2.4.5 MANAGEMENT OF RIVER CORRIDOR – SEA 23

The framework for the long-term management of resources found within SEA 23 as well as for riparian and wetland mitigation is provided in the Resource Management Plan component of the Newhall Ranch Specific Plan and Final EIR. *See*, Newhall Ranch Specific Plan, Chapter 2.6, Resource Management Plan.

The mitigation program specifically provides that, prior to development or disturbance within wetlands or other sensitive habitats, federal and state permits shall be obtained from the appropriate agencies (including ACOE), and that the Specific Plan shall conform to the specific provisions of those permits. This "conformity" requirement is an important feature of the mitigation program for the Newhall Ranch Specific Plan. The requirement ensures that as the Specific Plan is implemented over time, it must "conform" with the permit conditions imposed by federal and state agencies. In addition, the Final EIR provides a mitigation program to address the direct and indirect impacts associated with implementation of the Specific Plan. Many of these measures will result in the restoration and enhancement of sensitive and non-sensitive habitat areas (*See*, Mitigation Measures 4.6-1 to 4.6-26, 4.6-53, 4.6-56 and 4.6-59). For the one~~28~~ acres of sensitive habitat types that are proposed for development in SEA 23, *at least* one~~28~~ acres of land within the River Corridor would be restored with similar sensitive habitat type species (the ultimate amount of mitigation will be determined through consultation with the County Biologist and other state and federal resource agencies). The specific areas for the proposed mitigation are also specified in **Figure 2.4-8**, which illustrates the proposed location of the candidate restoration and enhancement areas. As shown, a total of 87 acres of land within SEA 23 exists that would benefit from proposed restoration and enhancement activities that are required under the Specific Plan to mitigate project impacts.

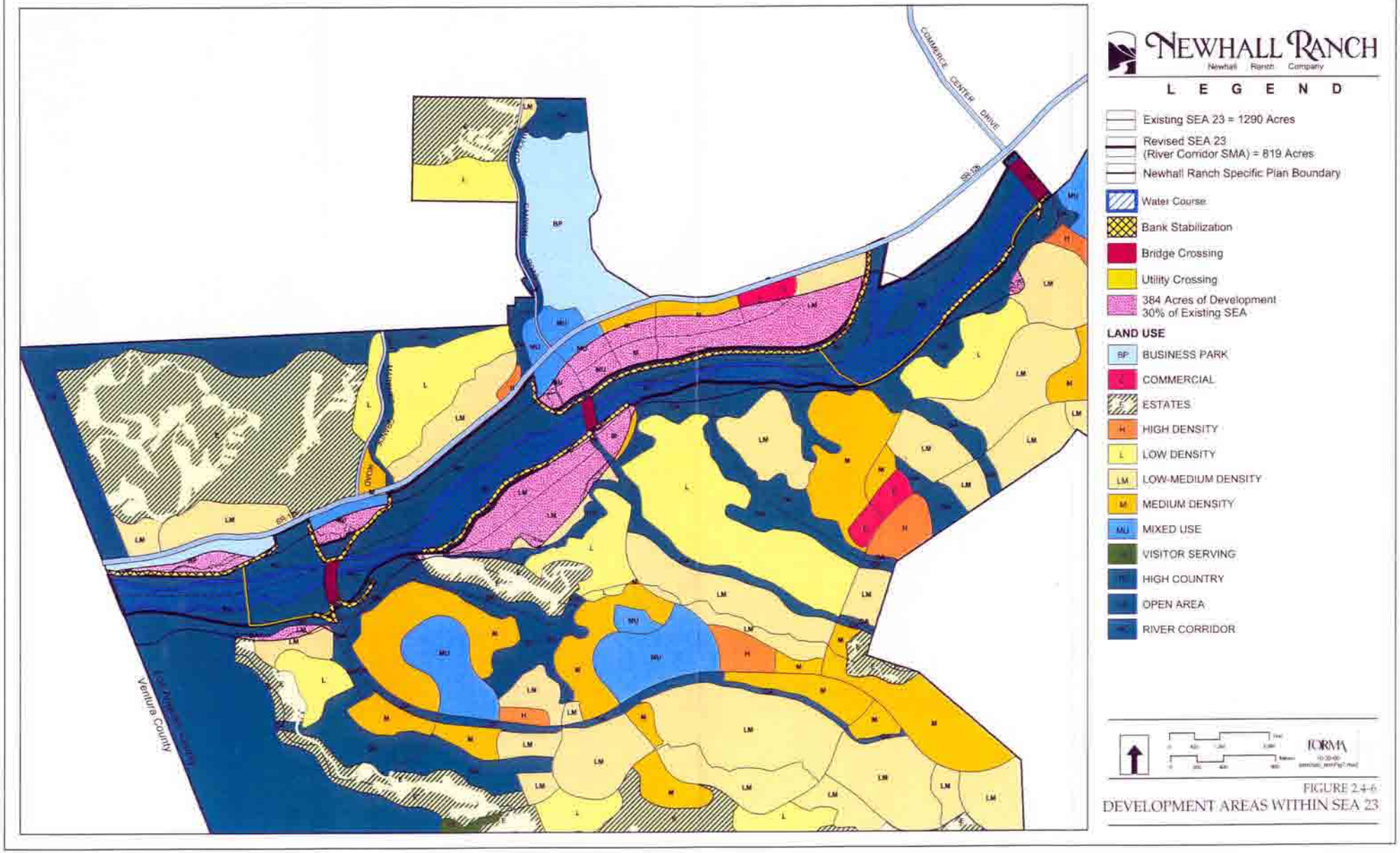
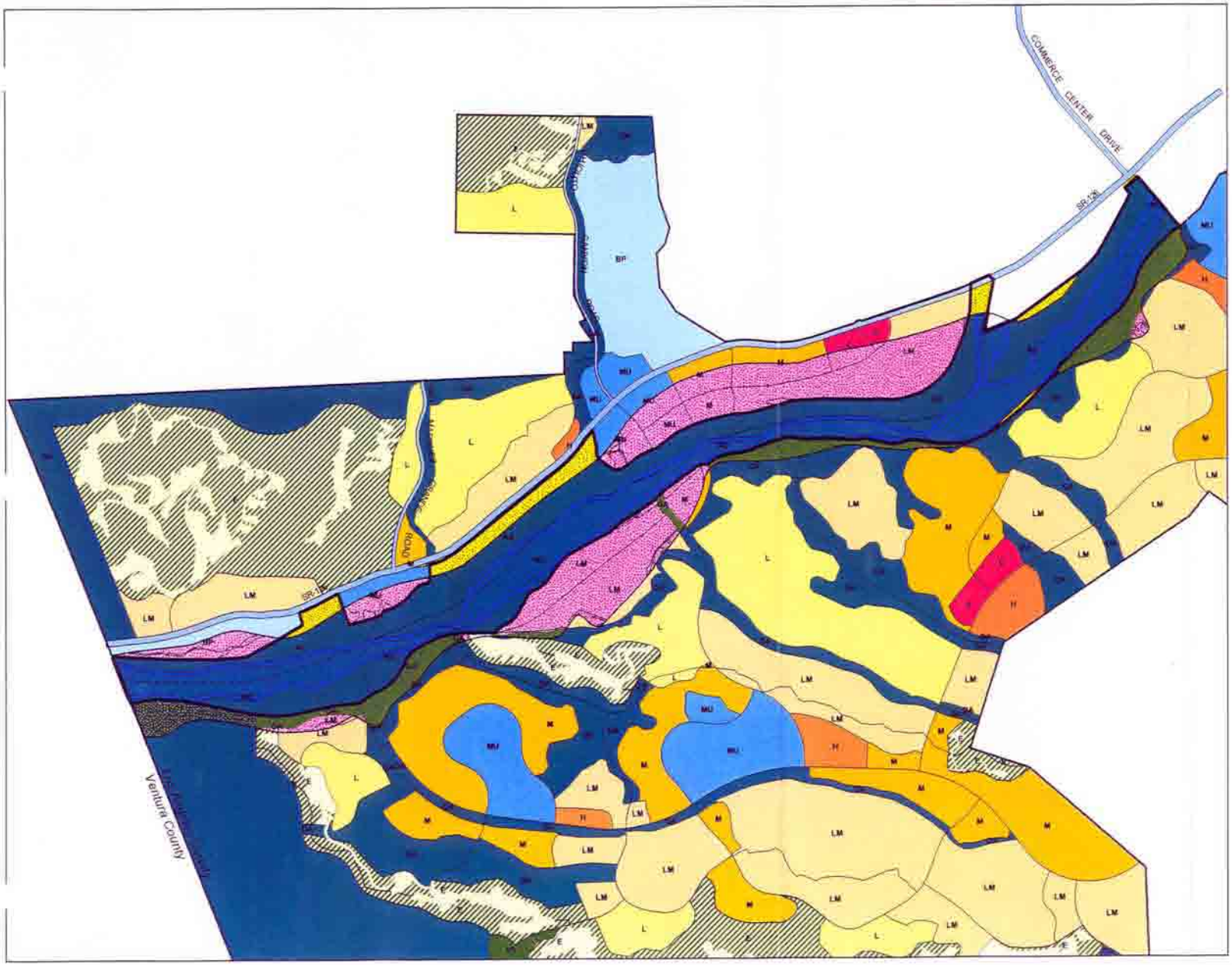


FIGURE 2.4-6
DEVELOPMENT AREAS WITHIN SEA 23



NEWHALL RANCH
Newhall Ranch Company

L E G E N D

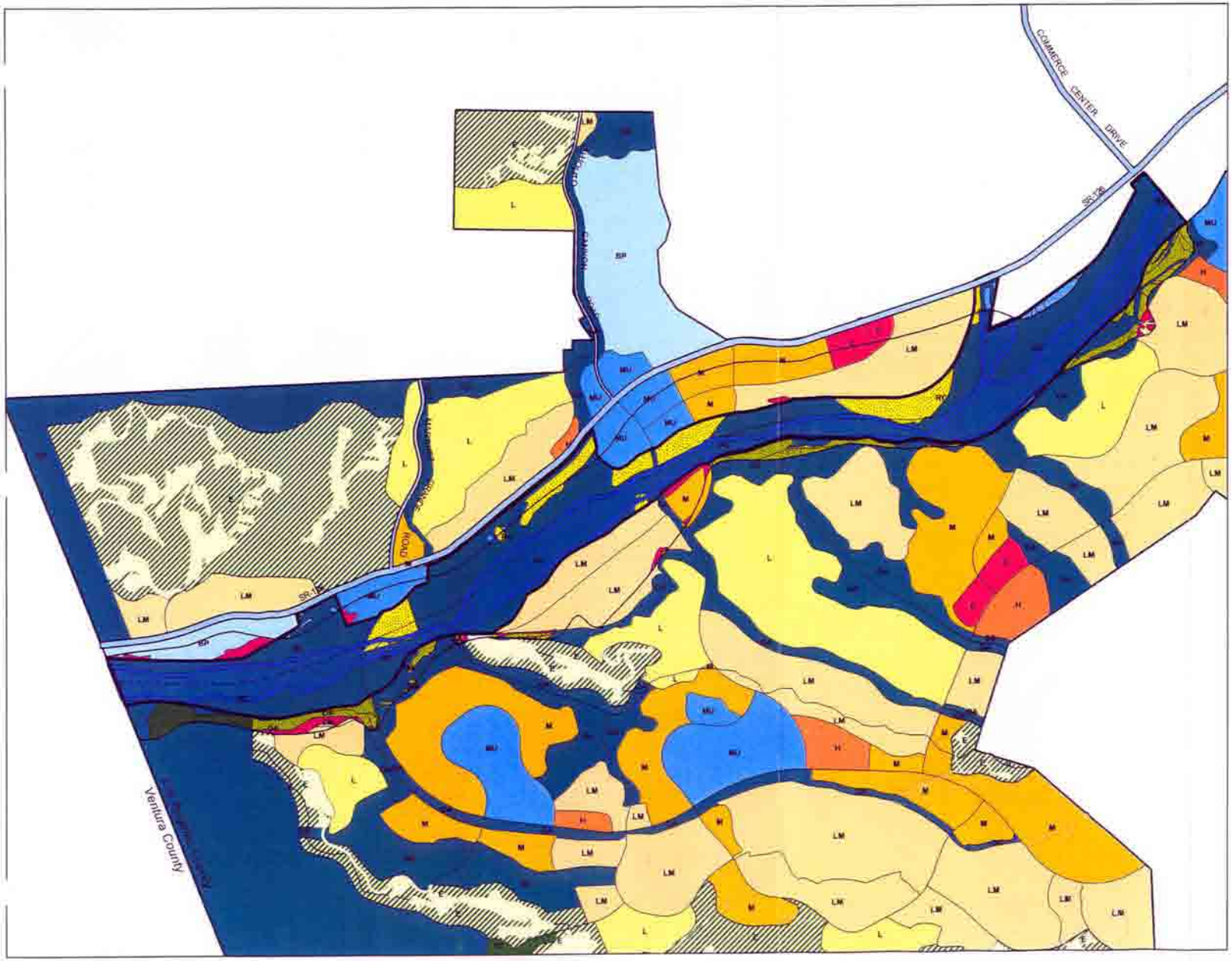
- Existing SEA 23 = 1290 Acres
- Revised SEA 23 (River Corridor SMA) = 819 Acres
- Newhall Ranch Specific Plan Boundary
- Water Course
- 59 Acres added to Revised SEA 23
- 384 Acres Removed from SEA 23 by Development
- 29 Acres Preserved & Transferred to SEA 20 (High Country SEA)
- 117 Acres Preserved & Redesignated as Open Area

LAND USE

- BP BUSINESS PARK
- C COMMERCIAL
- E ESTATES
- H HIGH DENSITY
- L LOW DENSITY
- LM LOW-MEDIUM DENSITY
- M MEDIUM DENSITY
- MU MIXED USE
- VS VISITOR SERVING
- HC HIGH COUNTRY
- OA OPEN AREA
- RC RIVER CORRIDOR

FORMA

FIGURE 2.4-7
PROPOSED SEA 23 (RIVER CORRIDOR SPECIAL MANAGEMENT AREA)



NEWHALL RANCH
Newhall Ranch Company

L E G E N D

- Existing SEA 23 = 1290 Acres
- Revised SEA 23 (River Corridor SMA) = 819 Acres
- Newhall Ranch Specific Plan Boundary
- Water Course
- 14 Acres of Sensitive Habitat Added & Preserved in Revised SEA 23
- 19 Acres of Sensitive Habitat Preserved in SEA 20 (High Country SMA)
- 70 Acres of Sensitive Habitat Preserved in Open Area
- 28 Acres of Sensitive Habitat Impacted by Development
- 87 Acres of Candidate Riparian Restoration/ Enhancement Areas

LAND USE

- BP BUSINESS PARK
- C COMMERCIAL
- E ESTATES
- H HIGH DENSITY
- L LOW DENSITY
- LM LOW-MEDIUM DENSITY
- M MEDIUM DENSITY
- MU MIXED USE
- VS VISITOR SERVING
- HC HIGH COUNTRY
- OA OPEN AREA
- RC RIVER CORRIDOR

FORMA

FIGURE 2.4-8
SENSITIVE HABITAT TRANSFERRED FROM ORIGINAL SEA 23 AND SENSITIVE HABITATS PROPOSED TO BE ADDED TO SEA 23

2.4.6 COMPATIBILITY OF DEVELOPMENT WITH THE SEA

2.4.6.1 SEA 23 Boundary Adjustments

The proposed adjustments to the existing boundaries of SEA 23 are consistent with General Plan policies requiring the protection of natural resources within SEAs. The Specific Plan has been designed to avoid sensitive resources within the existing SEA 23 boundaries to the greatest extent possible. The existing SEA 23 boundary on the Specific Plan site is approximately 1,290 acres in size. Under the Specific Plan, the size of SEA 23 would be reduced to 975 acres, or a net reduction of 315 acres. As shown below, the 315-acre net reduction in SEA 23 acreage consists of the following:

- 11 acres	Non-Sensitive Habitat Removed
-309 acres	Agricultural/Other Disturbed Land Removed
+ 5 acres	Sensitive Habitat Added to the Existing SEA 23
-315 net acres	Total Land Removed from Existing SEA 23 Boundary

As shown, the vast majority of land redesignated from SEA 23 to other Specific Plan land use designations consists of existing agricultural or other types of disturbed lands.

Regarding the sensitive riparian habitat, the amount removed for development from the existing SEA 23 boundary under the Specific Plan would be approximately one acre. In addition, 8 acres of sensitive riparian habitat would be redesignated from the existing SEA 23 to the Specific Plan's Open Area designation. Finally, 14 acres of sensitive habitat, which is not within existing SEA 23 boundaries, would be added to the existing SEA 23 boundary under the Specific Plan. Accordingly, implementation of the Specific Plan would result in a net *increase* of 5 acres in the amount of sensitive riparian habitat contained in the existing SEA 23 boundary. This net increase in sensitive riparian habitat acreage is calculated as follows:

1 acre	Redesignated from SEA 23 to non-residential/infrastructure-related land use designations
8 acres	Redesignated to Open Area
14 acres	Sensitive habitat added to the existing SEA 23
5 net acres	Sensitive habitat added to the existing SEA 23 boundary

For the reasons discussed below, the proposed boundary adjustments to existing SEA 23 (one acre for development and 8 acres redesignated to Open Area) are considered to be consistent with the General Plan's policies as they relate to resources within existing SEAs. First, as to the 8 acres redesignated from SEA 23 to the Open Area designation, the Open Area designation provides resource protection, which is

comparable to that provided by the SEA designation. For example, the Open Area and SEA designations both allow agricultural uses, grazing, recreational uses, greenhouses, trails, golf courses, oil and natural gas operations, and sand and gravel extraction activities, subject, in some instances, to a conditional use permit. However, certain uses (*e.g.*, residential uses, commercial uses, animal hospitals and campgrounds) are conditionally permitted in SEAs, but are not permitted within the Open Area designation under any circumstances. Consequently, the acreage within the existing SEA 23 proposed to be transferred to the Open Area designation (8 acres) will receive a degree of protection which is comparable to that provided by the County's SEA designation.

In addition, some of the sensitive habitat to be transferred to the Open Area designation has been transferred because it is not the type of habitat intended for protection within SEA 23 (*i.e.*, riparian habitat necessary for the unarmored threespine stickleback fish), and because much of the acreage would receive adequate protection under the Open Area designation. Specifically, the Santa Clara River SEA was designated predominantly because of the presence of habitat for the unarmored threespine stickleback. (*See*, Los Angeles County General Plan Background Report, p. OS-A30 to OS-A31.) Therefore, SEA habitat that does not contribute to the stickleback's survival may be removed from the SEA designation, particularly where, as here, the acreage is being redesignated to another preserve classification (Open Area). With regard to the eight acres of habitat redesignated to Open Area, some of that acreage exists on bluffs above the River and the remainder is generally fragmented and isolated. The County has further determined that the limited amount of habitat to be redesignated Open Area (8 acres) does not contribute significantly to the survival of the stickleback and, therefore, may be removed from SEA 23 as part of the boundary adjustments associated with the revised Specific Plan.

Second, as to both the one acre redesignated from SEA 23 for development (and not otherwise protected) and the 8-acre redesignation from SEA 23 to Open Area, within the Land Use Element, the General Plan states that: "It is the intent of the General Plan policy to preserve the County's significant ecological resources and habitat areas in viable and natural conditions." *See*, Los Angeles County General Plan, p. LU-A12. The redesignation of one acre of sensitive habitat for development and the 8-acre redesignation to Open Area will not affect the County's ability to preserve the existing SEA 23 in a viable and natural condition. After redesignation of the one acre, the existing SEA 23 area will contain approximately 385 acres of sensitive riparian habitat, which is five more acres of sensitive riparian habitat than presently exists in the SEA. Moreover, the one-acre proposed to be redesignated for development consists of small patches of fragmented and disconnected habitat distributed throughout the Specific Plan area, and that acreage is required for public roads, utilities and development. Such small, isolated habitat patches are considered to have a lower biological value than large areas of contiguous sensitive habitat. Consequently, redesignation of the one acre from existing SEA 23 does not pose a legitimate threat to the

continued viability of the sensitive resources with the existing SEA 23 boundary. As to the 8-acre redesignation, as stated above, the Open Area designation would provide resource protection comparable to that provided by the SEA designation.

In addition to overall habitat values, the acreage within the existing SEA 23 boundary would remain in a viable and natural condition in terms of other important ecological functions, even with implementation of the Specific Plan. The acreage within the existing SEA 23 boundary would continue to function as an east/west wildlife movement corridor and as habitat for the unarmored threespine stickleback, because the Specific Plan retains both the riparian vegetation in the Santa Clara River and the natural flow of the water without the need for periodic vegetation clearing. In addition, the Specific Plan would result in an increase in the amount of river bottom available to the unarmored threespine stickleback. The Specific Plan also establishes transitions, or "buffer" areas, to separate sensitive habitat within the existing SEA 23 boundary from the proposed urban land uses. In addition, the tributaries to the Santa Clara River within SEA 23 (Castaic, San Martinez, and Chiquito Canyon Creeks) would be maintained and preserved in a largely natural state with soft bottoms.

The Specific Plan is consistent with General Plan policies regarding the balancing of SEA policies against other competing public needs. In its discussion of SEA policies, the General Plan states: "Major factors influencing the realization of Plan [SEA] objectives...include...the competing priorities between resource preservation and other critical public needs." *See*, Los Angeles County General Plan, p. LU-A12. Adjustment of the existing SEA 23 boundary, including redesignation of one acre of sensitive habitat, will serve other critical public needs. For example, the Specific Plan will provide a broad spectrum of housing, including affordable housing that will help meet the County's long term housing needs. The size and single ownership of the Newhall Ranch site provide opportunities to develop a comprehensive master plan community in which land uses, infrastructure and public services are properly planned and sited. The Specific Plan's Business Park, Commercial and Mixed Use Land Use designations will provide approximately 18,700 permanent jobs that will help the County achieve its economic goals. The Specific Plan's bridge crossings implement portions of the County's Master Plan of Highways and are considered essential to the development of a local and regional transportation system. In addition, the Specific Plan's Resource Management Plan includes an extensive mitigation and habitat management program for the existing SEA 23/River Corridor SMA. The Resource Management Plan is considered a significant benefit to the River Corridor. The River Corridor SMA would also be dedicated to the public and managed, neither of which occur in SEAs (lands under the County's SEA designation remain under private control and are not typically managed for resource protection).

2.4.6.2 Specific Plan Development Within Existing SEA 23

The Land Use Plan proposed as part of the Newhall Ranch Specific Plan has been designed to avoid impacts to sensitive resources, and where avoidance is not possible, to minimize impacts where feasible. A total of 380 acres of sensitive habitat is present within the existing boundaries of SEA 23. Of the 380 acres, one~~28~~ acres (or 0.3~~7~~ percent of the sensitive habitat areas) would be directly impacted by proposed development under the Specific Plan.

The Los Angeles County General Plan identifies six criteria applicable to development proposed within SEAs. The criteria are used to ensure that proposed development is compatible with the resources found within SEAs. The information presented below compares the six compatibility criteria with the development proposed within the existing SEA 23 under the Newhall Ranch Specific Plan.

1) The development is designed to be highly compatible with the biotic resources present, including the setting aside of appropriate and sufficient undisturbed areas.

The Specific Plan satisfies this criterion. At the inception of the planning process for the Newhall Ranch Specific Plan, detailed site investigation studies were performed for purposes of analyzing development constraints and opportunities. The development constraints included identification of the existing boundaries of SEA 23 within the Newhall Ranch Specific Plan. *See*, Specific Plan, Ch. 2, Ex. 2.2-1, Ex. 2.2-2 and Ex. 2.2-3. The constraints analysis also identified sensitive vegetation/habitat zones within the existing boundaries of SEA 23. *See*, Specific Plan, Ch. 2, Ex. 2.2-1. Based on the constraints analysis, and other relevant information, the Specific Plan identified important objectives to be implemented in conjunction with the Specific Plan. Those objectives included, among other things: (a) preserving the Santa Clara River Corridor and adjacent wetlands containing significant natural resources for their resource value; and (b) identifying and protecting significant resources within SEA 23. *See*, Specific Plan, Ch. 2, pp. 2-1, 2-4. During the planning process, it was also acknowledged that adjustments to SEA boundaries were possible with detailed study of the existing SEA areas. *See*, Specific Plan, Ch. 2, p. 2-9.[27]

In addition, the following objectives were developed in order to balance the environmental and flood control issues presented by the Santa Clara River, as required by the General Plan. The objectives were

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[27] *See also*, Significant Ecological Areas, A Summary of County Policy Criteria and Procedures, County of Los Angeles Department of Regional Planning, June 1992, page 2.

used to determine the general boundaries of the proposed SEA 23, which would be set aside as the River Corridor SMA under the Specific Plan. These objectives are noted below:

(a) The flood corridor must allow for the passage of Los Angeles County Capital Flood flows without the permanent removal of natural River vegetation (except at bridge crossings);

(b) The banks of the River will generally be established outside of the "waters of the United States" as defined by Federal laws and regulations, and as determined by the delineation completed by the United States Army Corps of Engineers (ACOE) in August 1993;

(c) Where the ACOE delineation width is insufficient to contain the Capital Flood flow, the flood corridor will be widened by an amount sufficient to carry the Capital Flood flow without the necessity of permanently removing vegetation or significantly increasing velocity;

(d) Where development is proposed within the existing Los Angeles County 50-Year Capital Flood Plain, the land where development is to occur will be elevated in accordance with Los Angeles County policies to remove it from the flood plain and;

(e) Bank stabilization will occur only where necessary to protect against erosion.

The proposed adjustment in the existing SEA 23 boundaries would reduce the overall acreage of SEA 23 from 1,290 acres to 975~~819~~ acres, which is a reduction in land area of 315 acres. Approximately 23 acres of the total area redesignated involves sensitive habitat. However, the proposed changes to the SEA area must be understood in context. In this case, only a very small amount of sensitive habitat area (*i.e.*, one acre, or 0.08 percent of the existing SEA) is being redesignated from the existing boundaries of SEA 23 due to proposed development. In fact, the existing amount of sensitive riparian habitat that would occur in SEA 23 would actually *increase* under the Specific Plan by five acres, instead of the 103-acre decrease, which was proposed in the original Final EIR; 14 acres of sensitive riparian habitat would be added to the SEA, while one acre would be redesignated and then developed, and eight acres would be redesignated from SEA 23 to Open Area, because it is not riparian in nature, or it represents relatively small fragments of sensitive habitat isolated from the riparian resources of the river. In addition, a total of 62 acres of land is proposed to be added to SEA 23 (377 total acres proposed for redesignation from the existing SEA to residential and non residential land uses, while 62 acres are proposed for addition for a net reduction in existing SEA acreage of 315 acres). The redesignations were made with consideration to the type and quality of the habitat and the purpose of the SEA 23 (preservation of riparian habitats and associated species). A description of the disposition of land redesignated from SEA 23 is provided below. **Table 2.4-3, Proposed Changes to SEA 23**, above provides a summary of the proposed changes to SEA 23.

~~This adjustment would result in a SEA 23/River Corridor SMA which is approximately 471 net acres smaller than the existing SEA 23 (530 acres are being removed and 59 acres are being added resulting in a 471 net acre reduction). Of the area being removed from the existing boundaries of SEA 23, 335 net acres, or nearly 71 percent of the area is already disturbed land, which includes agricultural fields, roads and non native grasslands. Of the remaining 136 net acres being removed, 33 acres or 7 percent contains non~~

~~sensitive native vegetation, while 103 net acres, or just less than 22 percent, contain sensitive habitat types. However, not all of the sensitive habitat acreage being removed from SEA 23 will be developed.~~

~~In fact, only a relatively small amount of sensitive habitat (i.e., 28 acres, or 2 percent of the existing SEA) is being removed due to development. The balance of the sensitive habitat in SEA 23 (89 acres) is being transferred to other permanently preserved open area designations (i.e., SEA 20, Open Area). Indeed, 59 acres of habitat would be *added* to SEA 23, 14 acres of which would be sensitive habitat. In short, under the Specific Plan, most of the sensitive habitat being deleted from SEA 23 is simply being preserved under a different permanent preserve land use designation and 14 acres of currently unprotected sensitive habitat will be *added* to the SEA 23.~~

The Specific Plan also addresses the one ~~28~~acres of sensitive habitat proposed to be redesignated~~removed~~ from SEA 23 ~~due~~ to ~~development~~ non-residential land uses. The Specific Plan states that all riparian vegetation and all oak resources will be restored in the most suitable areas of the SEA 23/River Corridor SMA, as identified and required under the Specific Plan Resource Management Plan, or under regulations of the ACOE and CDFG.

The Specific Plan Resource Management Plan contains numerous mitigation measures designed to offset the loss of habitat due to the Specific Plan. For example, Mitigation Measure 4.6-63 requires 100 percent replacement/restoration of all riparian resources impacted by implementation of the Specific Plan. Several other measures (*e.g.*, Mitigation Measures 4.6-1 through 4.6-16) outline requirements for mitigation of impacts to riparian habitat through habitat restoration and enhancement plans.

Mitigation Measure 4.6-1 requires that habitat restoration/enhancement efforts "be conducted only on sites where soils, hydrology, and microclimate conditions are suitable for riparian habitat." Such sites necessarily occur *within* the Santa Clara River corridor. **Figure 2.4-8**, which graphically depicts the Specific Plan's candidate riparian restoration/enhancement areas, shows that nearly all such sites occur within the current boundaries of SEA 23. Moreover, a comparison of **Figure 2.4-8** and **Figure 2.4-~~5~~4** demonstrates that the candidate areas are comprised almost entirely of disturbed areas; therefore, after restoration, the sites can be considered "new" sensitive habitat within SEA 23.[28]

This discussion demonstrates that~~, of the 530~~ 309 acres ~~to be removed or transferred from SEA 23, 413 acres consist~~ of agricultural/disturbed areas and 11 acres of non-sensitive habitat types that are appropriately placed outside the SEA boundary "after a more detailed mapping" of the SEA would be

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[28] The Specific Plan Resource Management Plan's mitigation of impacts to riparian habitat was challenged and found adequate during the litigation surrounding the Final EIR for the Newhall Ranch Specific Plan. *See*, Statement of Decision, pp. 14-16.

redesignated from existing SEA 23 to residential and non-residential land uses, while~~. Of the remaining 117~~ five net acres of sensitive habitat would be added to the existing SEA 23. The net result is a 315-acre reduction in the size of the existing SEA 23. The five net acres of added sensitive riparian habitat is calculated as follows: ~~,75 e~~Eight acres will be ~~preserved under~~redesignated to Open Area ~~a different~~land use ~~designation~~category, and one~~28~~ acres ~~removed by development~~redesignated for non-residential land uses will be replaced through restoration or enhancement of appropriate areas within the boundaries of the existing SEA 23 or the proposed SEA 23/River Corridor SMA. Finally, pursuant to the Specific Plan, 14 acres of sensitive habitat would be *added* to the existing SEA 23. Consequently, the proposed development would result in ~~no~~a net increase in protected sensitive riparian habitat of approximately five acres within SEA 23. ~~loss of sensitive habitat and, in fact, would result in a net gain.~~Therefore, the Specific Plan is designed to be highly compatible with the biotic resources present in SEA 23.

Moreover, in areas adjoining the SEA on the south side of the River, the Specific Plan designates 444~~543~~ acres of Open Area, of which approximately 415~~451~~ acres will remain in a natural state. The balance will provide active recreational opportunities to residents within the Specific Plan. This Open Area includes the steep, oak-filled canyons, which contain blueline streams/tributaries to the River, the River bluffs, and ridges contiguous with the River Corridor. This Open Area preserves over approximately 197~~259~~ acres of sensitive habitats, including 149~~181~~ acres of coastal sage scrub, ~~413~~ acres of Cottonwood/Oak Woodland, 39~~46~~ acres of Coast Live Oak Woodland/Mainland Cherry, ~~5 acres of Southern Cottonwood Willow Riparian Forest~~5 acres of Elderberry Scrub, ~~8 acres of Southern Willow Scrub~~and 0.01 acre of mesic meadow. As a part of the Specific Plan, this Open Area would be offered to the County for dedication or placed under long-term management by another organization. After combining the land preserved in the revised SEA (975~~819~~ acres) with the preserved Open Area immediately adjacent to the revised SEA (415~~451~~ acres), a total of 1,390~~1,270~~ acres of undisturbed land would be preserved as part of the Specific Plan, including 577~~509~~ acres of sensitive habitat. Existing SEA 23 consists of 380~~353~~ acres of sensitive habitats. Due to Specific Plan implementation, 197~~156~~ additional acres of sensitive habitats within and adjacent to the SEA 23/River Corridor SMA will be permanently preserved when compared with the amount of restricted land within the existing SEA 23.

Upon approval of the Specific Plan, the provisions of the Resource Management Plan (RMP) would be effective. As discussed above, the RMP provides standards for the mitigation of impacts to the riparian and oak resources in the proposed SEA 23/River Corridor SMA through restoration and enhancement activities. The RMP would also require that a conservation easement be established over the proposed SEA 23/River Corridor SMA after development of areas adjoining the River are complete, and includes the eventual removal of cattle grazing. Furthermore, the RMP requires that a plan be prepared and

approved by Los Angeles County for the permanent ownership and management of the proposed SEA 23/River Corridor SMA as a "significant ecological area."

In summary, the Specific Plan is considered highly compatible with the biotic resources present within the existing boundaries of SEA 23 for the following reasons: (a) the Specific Plan proposes to set aside appropriate and sufficient undisturbed sensitive habitat areas within the existing boundaries of SEA 23; (b) the Specific Plan proposes to retain ~~the River Corridor~~SEA 23 in a largely natural state; (c) only a relatively small amount of sensitive habitat (*i.e.*, one~~28~~ acre, or 0.08~~2~~ percent of the existing SEA ~~[7 percent of existing riparian habitat]~~) is being ~~removed due to development~~redesignated for non-residential land uses; (d) the impacted area would be fully mitigated; (e) the River Corridor would still be sufficiently wide (and in certain locations widened) to accommodate the County's Capital Flood and still retain the sensitive riparian vegetation; (f) winter storm runoff would still continue to open its own channels through the River vegetation, flowing in a natural, non-invasive manner and preserve the meandering characteristics of the streambed; (g) the tributary canyons and bluffs on the south side of the River would still be preserved and provide an additional 444~~543~~ acres (including 415~~451~~ acres of undisturbed land), which would be dedicated to Open Area adjacent to the River; and (h) due to implementation of the Specific Plan, the amount of sensitive riparian habitat found in the existing SEA 23 would increase by approximately five acres and an additional 192~~156~~ acres of additional sensitive habitat areas ~~within and~~ adjacent to the SEA 23/River Corridor SMA would be permanently preserved.

A chapter addressing potential impacts due to channelization~~flooding~~ and bank hardening is provided in th~~is~~e Additional Analysis. As indicated in that chapter, no significant increases in velocity, erosion or sedimentation would occur in the River; therefore, biotic resources present within the existing boundaries of SEA 23 would not be significantly impacted.

2) The development is designed to maintain waterbodies, watercourses, and their tributaries in a natural state.

As discussed above, implementation of the Specific Plan would maintain the Santa Clara River in a largely natural state. Furthermore, as discussed in Section 4.2 (Flood) of the Final EIR, in a 50-Year Capital Storm, total storm flows subsequent to development would be decreased by approximately 12 percent, and total debris volume would be reduced by approximately 30 percent from their pre-development levels. Because development of the Specific Plan does not increase site runoff during a Capital storm, it would not result in upstream or downstream flooding of the River. During smaller two-year storms (rather than the 50-Year Capital Flood design event), the depth of flow in the Santa Clara River at the County line would change from approximately 2.34 feet under pre-development conditions

to approximately 2.5 feet under post-development conditions, which represents an increase of 1.6 inches in depth. A separate chapter in this Additional Analysis addresses potential impacts due to channelization~~flooding~~ and bank hardening, and indicates that no significant increases in velocity, erosion or sedimentation would occur in the River. Consequently, existing biotic resources would not be significantly impacted by implementation of the Specific Plan. The velocity of flow would increase no more than 4 percent at the County line due to development of the Specific Plan and, in all cases, the post-development velocity for the two year storm would be approximately 5.2 feet per second. This would not result in a substantial increase in erosiveness; therefore, existing biotic resources would not be significantly impacted.

A 6.9 million gallons per day (mgd) water reclamation plant (WRP) would be developed to serve the Specific Plan land uses. A recycled water distribution system would be designed to use tertiary treated wastewater from the WRP to irrigate land uses within the Specific Plan that can accept non-potable water. The Wastewater Section of the Final EIR anticipates that there would be approximately 286 to 1,025 acre-feet of the recycled water which may not be needed during the winter months and which could be discharged to the River. This results in an approximately 6 percent increase in the annual flow volume in the River at the County line. The discharge would be 319 acre-feet per month in the highest months of December and January. This translates to a flow rate of approximately 5.2 cubic feet per second (cfs). During a year of average rainfall, the WRP discharge of 5.2 cfs would increase the River flow of 56 cfs by about 9.3 percent. Although it is possible that the 5.2 cfs discharge could increase the River flow of 17 cfs by about 30 percent in a drought year, it is highly unlikely since irrigation requirements for landscaping in a drought year would increase and the actual discharge would be significantly reduced, if not eliminated. The average annual and peak WRP discharges of recycled water do not significantly increase the River flow, either annually or monthly.

Potential indirect impacts to the SEA 23 due to sedimentation and debris transport during construction and subsequent to development would be controlled by the installation of desilting and debris basins, drainage swales, slope drains, storm drain inlet/outlet protection, and sediment traps, all of which would be designed as part of the final drainage plans prepared for each subdivision map. Section 2.5, (Public Services and Facilities Plan) of the Specific Plan, provides conceptual drainage and flood control improvements which include National Pollutant Discharge Elimination System (NPDES) water quality basins; requires that all tributaries with flows greater than 2,000 cfs would require open drainage systems; and requires that all additional NPDES requirements be met.

The confluence of the Santa Clara River tributaries (Castaic, San Martinez, and Chiquito Canyon Creeks) with the River are all within the SEA 23 boundary, and are preserved in a largely natural state pursuant

to the Section 2.5 (Public Services and Facilities Plan) and Section 2.6 (Resources Management Plan) of the Specific Plan.

In summary, the Specific Plan has been designed to maintain waterbodies, watercourses, and their tributaries in a natural state. As indicated above, no significant increases in velocity, erosion, or sedimentation would occur in the river because of the Specific Plan. During most storm events, the velocity and depth of the river would remain unchanged from current conditions, since the course of the river is able to meander without being constrained by bridge abutments or bank protection. It is only in the infrequent, 50 to 100 year event where small increases in depth or velocity will occur at certain locations along the river. Please refer to the Floodplain Chapter for detailed analysis of Specific Plan impacts to the depth and velocity of flow water in the Santa Clara River. As indicated, these increases do not significantly affect the water flow in the River.

3) The development is designed so that wildlife movement corridors are left in a natural and undisturbed state:

Under the Specific Plan, SEA 23 would continue to function as a wildlife movement corridor because the Plan retains both the riparian vegetation in the River and the natural flow of the water without the need for periodic vegetation clearing; the Specific Plan now shows a substantially reduced level of impact to sensitive riparian habitat along the Santa Clara River (the originally proposed 103 acres of impact has been reduced to approximately one acre); the Specific Plan results in an increase of five acres in the amount of sensitive riparian habitat along the river; the plan also establishes transition areas to separate SEA 23 from the urban uses identified in the Land Use Plan, as discussed below; the three bridges over the river would be sufficiently high as to allow the continued use of the River by animals for movement east to west along and within the River route; and lighting controls are required to ensure that the SEA 23 would continue to function as a wildlife movement corridor. Section 2.5 (Public Services and Facilities Plan) and Section 2.6 (Resources Management Plan) of the Specific Plan provide objectives and conceptual plans for preserving the River and Salt Canyon in a natural and undisturbed state. The EIR ~~also~~ addresses impacts and imposes mitigation measures for any impacts that would occur. As a condition of approval, the applicant is also conserving in perpetuity approximately 1,517 acres of the Salt Creek watershed in Ventura County, adjacent to the Specific Plan site, which will enhance the Specific Plan's compatibility with animal movement in the region.

The tributaries (Castaic, San Martinez, and Chiquito Canyon Creeks) to the Santa Clara River within SEA 23 are all maintained and are preserved in a largely natural state with soft bottoms pursuant to Section 2.5 (Public Services and Facilities Plan) and Section 2.6 (Resources Management Plan) of the Specific Plan.

Furthermore, the remainder of these tributaries outside SEA 23 but within the Specific Plan are designated Open Area and are preserved in a largely natural state.

The Salt Canyon area of the Specific Plan serves as a wildlife movement corridor. The limited development proposed within SEA 23 would not have any impact upon this wildlife movement area. and as indicated above, approximately 1,517 acres of the Salt Creek watershed in Ventura County, adjacent to the Specific Plan site, would be conserved in perpetuity, thereby enhancing the Specific Plan's compatibility with animal movement in the region.

Caltrans has completed the widening of SR-126 from Fillmore in Ventura County to the I-5 freeway in Los Angeles County. As part of that widening project, major north/south animal movement undercrossings were installed under SR-126 at three locations. In addition, three additional larger undercrossings exist along SR-126 within the Specific Plan area at locations where bridges and culverts were constructed over secondary tributary stream courses. Because the Ventura County undercrossings were designed to facilitate north/south wildlife movement, and because the three undercrossings within the Specific Plan site are of sufficient size to accommodate north/south wildlife movement, County staff is of the opinion that north/south connectivity across the Santa Clara River will not be significantly impacted. For further information regarding Salt Canyon, please refer to Section 2.2 of thise Additional Analysis.

4) The development retains sufficient natural vegetative cover and/or open spaces to buffer critical resources from the proposed use.

Species that utilize the Santa Clara River corridor are typically found in the riverbed itself or within the riparian habitats found adjacent to the river course. As discussed under the first compatibility criterion above, after combining the land preserved in the revised SEA (975~~819~~ acres) with the preserved Open Area immediately adjacent to the revised SEA (415~~451~~ acres), a total of 1,390~~1,270~~ acres of undisturbed land would be preserved as part of the Specific Plan, including 577~~509~~ acres of sensitive habitat. The existing SEA 23 consists of 380~~353~~ acres of sensitive habitats. Due to Specific Plan implementation, the amount of sensitive riparian habitat in SEA 23 would actually increase by approximately five acres ~~156 acres of additional sensitive habitats within and adjacent to the River Corridor would be permanently preserved~~when compared with the amount of sensitive habitat within the existing SEA 23. This additional amount of land would provide sufficient habitat and open areas to buffer the sensitive resources from the one~~28~~ acres ~~of development proposed on~~ sensitive habitats redesignated for non-residential land uses within existing SEA 23.

In addition to the amount of land that will be permanently preserved for use by sensitive species, the Specific Plan requires a setback between the River and proposed land uses of 75 to 100 feet in width. This area will be planted with native species to buffer sensitive species from potential impact. The Specific Plan also provides transition areas between the riparian resources of the proposed SEA 23/River Corridor SMA and proposed urban development.

In general, the transition areas would be trails; Open Areas, including natural or revegetated slopes and other planted areas; and bank protection areas which would consist of buried bank stabilization. Approximately 34,000 lineal feet of bank hardening is necessary to protect development within the Specific Plan. Where protection is required on the north side of the river, approximately 73 percent of the required stabilization will consist of buried bank protection. On the south side of the River, buried bank protection represents 72 percent of the bank protection required along the river. Buried bank protection areas would be restored to a natural condition through the planting of native species over the stabilized areas, thereby enabling their use by sensitive animal species.

The regional River trail would extend along the northern edge for the entire five mile length of the Specific Plan. The regional River trail would be built on land which is elevated and provided with buried bank protection where necessary in order to eliminate flooding and bank erosion. Where bank protection does not exist, the trail would be located on a natural shelf above the elevation of the River.

The Specific Plan also includes 415~~451~~ acres of Open Area, including oak-filled canyons, River bluffs and a Community Park that would separate riparian habitats from urban development on the south side of the river. The Specific Plan contains a number of measures that are intended to promote compatibility between developed uses and preserved Open Area. For example, the Resources Management Plan (Section 2.6) contains standards covering recreation and access, location and nature of bank protection, and grading. The Resource Management Plan requires graded areas adjacent to and within SEAs to be clearly marked thereby buffering and avoiding important habitat areas from impacts from development. Furthermore, Chapter 4 (Design Guidelines) of the Specific Plan requires shielded lighting fixtures to minimize glare and direct rays impacts to adjacent areas, resulting in additional protection of the habitat areas.

The tributaries (Castaic, San Martinez, and Chiquito Canyon Creeks) to the Santa Clara River are all maintained with SEA 23, and are preserved in a largely natural state pursuant to Section 2.5 (Public Services and Facilities Plan) and Section 2.6 (Resources Management Plan) of the Specific Plan. Furthermore, the remainder of these tributaries within the Specific Plan are designated Open Area and are preserved in a largely natural state.

The Board of Supervisors previously evaluated the adequacy of the width of the proposed buffer area along the Santa Clara River when the Specific Plan was originally approved in March 1999. Prior to final approval, the Board required that the Specific Plan design be revised to incorporate an additional 100-foot buffer between development and riparian resources to protect riparian habitat and sensitive species within SEA 23 boundaries. This finding was arrived at after evaluating the potential impacts of proposed land uses along the entire length of the River, coupled with the existing habitat protection and enhancement provisions contained in the Specific Plan Resource Management Plan and Design Guidelines.

Exhibits depicting the Newhall Ranch River corridor riparian habitat buffers along the entire course of the Santa Clara River within the Specific Plan boundaries were presented to the Commission in a Staff Report, dated August 27, 2001. The exhibits show the width of the buffer between the riparian resources and adjacent development along the entire length of the River as originally approved by the Board. (Note that the exhibits do not reflect changes to the Potrero Bridge, the WRP site, and the other areas no longer proposed for development which increase the acreage of riparian habitat and buffer area.)

As shown on the exhibits, the width of the riparian habitat corridor varies from a minimum of 300 feet to 2,205 feet (0.4 miles) at its widest point. The total buffer area (478 acres) varies in width from a minimum of 135 feet to more than 800 feet, and is three-quarters the size of the riparian habitat area itself. The average buffer width is approximately 400 feet. As shown on the exhibits, the buffer widths are greatest where the existing riparian habitat corridor is the narrowest; in some cases two to three times greater.

The buffer area is comprised of several different components: (a) the Salt Creek wildlife corridor connection and the High Country half mile wide buffer at the west end of the Specific Plan on the south side of the river; (b) native upland habitats in the Open Area along the south side of the river; (c) disturbed areas within the River corridor that will be restored or enhanced as riparian habitat; (d) buried bank stabilization that will be revegetated with native riparian and upland plant species; and (e) landscaped open space areas such as community parks, the Regional River Trail and community trails. In addition, these Specific Plan buffer areas will be enhanced by the condition requiring the applicant to conserve approximately 1,517 acres of the Salt Creek watershed in Ventura County, adjacent to the Specific Plan site.

The Specific Plan, Chapter 2.6, Resource Management Plan, provides standards by which biological resources will be managed during construction and thereafter for the life of the community. It contains: (i) provisions for restoration and enhancement of disturbed areas such as agricultural fields; (ii) restrictions on pedestrian and vehicular access to the river corridor; (iii) design standards for transition

areas between development and the river; (iv) conveyance of conservation easements; and (v) preparation of a financial plan for the long term management of the riparian resources by the Center for Natural Lands Management. In addition, the Specific Plan, Chapter 4, Design Guidelines, contains provisions restricting the manner in which developed areas relate to the River corridor, including site planning, fencing, landscape design, grading and lighting. These measures satisfy the General Plan SEA design compatibility criteria as means to protect sensitive habitat and species, including the unarmored three-spine stickleback (UTS) and least Bell's vireo.

In summary, the Specific Plan retains sufficient natural vegetative cover and open space to buffer critical resources found in SEA 23 from the proposed development shown in the Specific Plan. Implementation of the Specific Plan would result in the direct preservation of 1,3901,270 acres of land along the Santa Clara River Corridor within the boundaries of the plan area. The Specific Plan also incorporates an extensive buffer area to protect critical resources ~~development setback of 75 to 100 feet dependent on the resource to buffer resources~~ within ~~the~~SEA 23 ~~River Corridor SMA~~.

5) Where necessary, fences or walls are provided to buffer important habitat areas from development.

The discussion of compatibility criterion 4 above describes how the Specific Plan incorporates vegetative cover and open space to buffer critical resources from proposed uses. In addition to these features, the Specific Plan also buffers habitat from proposed uses through development regulations and design guidelines. As indicated in Chapter 4 of the Specific Plan, future residential subdivisions and commercial development constructed within the Specific Plan area must include fences or walls that will preclude access to sensitive resources within SEA 23. As each tract or parcel map is submitted to the County of Los Angeles, it will be reviewed to determine whether proposed uses substantially comply with the standards, regulations, and guidelines of the Specific Plan, including those pertaining to fencing and walls to ensure that they buffer important SEA 23 habitat areas from development.

6) Roads and utilities serving the proposed development are located and designed so as not to conflict with critical resources, habitat areas or migratory paths.

The Specific Plan proposes the construction of three bridges and several utility lines across the Santa Clara River, within the existing SEA 23. Utilities serving the proposed Specific Plan, where feasible, would be incorporated with the River bridges. However, the Specific Plan also proposes two utility crossings as shown on **Figure 2.4-6**. Both would contain wastewater lines, and possibly water lines, natural gas piping and electrical power lines. Both crossings would be buried beneath the River and its banks. The construction disturbance zone is estimated at 85 feet wide but will vary dependent upon the design of the facility and construction methods employed. Specific information would be provided to

permitting authorities at the time of project design. The construction zone would be revegetated with native species upon completion of construction activities consistent with the Specific Plan and Federal and State resource permit requirements. As a result, potential impacts would be minimized and movement paths of animals would be unimpeded.

The Specific Plan also proposes three elevated highway bridge crossings over the Santa Clara River. The number and general location of the bridge crossings were established in order to minimize impacts on SEA 23 and other sensitive resources, and to minimize major access points to SR-126. Each of the bridge crossings is an extension of an existing road, creating a functional regional circulation system.

Construction of bridges would involve various equipment such as excavators, bulldozers, cranes, backhoes, haul trucks and concrete trucks. Temporary impacts would occur during installation of support columns in the riverbed as well as construction of bridge abutments. Excavations will be designed to minimize riverbed disturbance while satisfying the structural requirements of construction. The construction disturbance zone is estimated at 100 feet wide on each side of the bridge, but the actual distance will vary dependent upon the design of the facility and construction methods employed. Specific information would be provided at the time of bridge design. As with utility crossings, disturbed areas would be revegetated with native species upon completion of construction activities consistent with the Specific Plan and Federal and State resource permit requirements.

The bridge crossings would have support columns in the riverbed, but the crossings are elevated structures so as to reduce impacts on River vegetation and sensitive species and to allow species that move along the river course to continue to use existing resources. The elevated bridge crossings replace the existing at-grade agriculture crossings, which would reduce the amount of direct disturbance to the riverbed and its environs.

The three proposed bridges would connect the development areas south of the Santa Clara River to SR-126. SR-126 is a major east-west arterial along the north bank of the River serving local and regional traffic that is proposed for widening to six lanes from Potrero Canyon eastward through the Specific Plan boundary. These bridge routes also connect to, and are a continuation of, existing arterial roads north of SR-126, namely Commerce Center Drive, Chiquito Canyon Road and San Martinez Grande Road. Each of the three bridges is an essential feature of the overall Specific Plan circulation system, and each plays an essential role in providing the necessary traffic accessibility and capacity for the Specific Plan. As described below in the subsection entitled, "The Need for the Three Proposed Bridges and Their Designs," consistent with the County's General Plan, the bridge locations and designs were selected in such a way as to minimize impacts to sensitive biotic resources in and adjacent to the River, while at the

same time, balancing the topographical constraints of the site and engineering requirements of the structures and adjoining roadways.

The Santa Clara River, which flows westerly, parallels the southerly side of SR-126 and, in some areas, is immediately adjacent to this four-lane highway. The existing ground between the north side of the river and SR-126 is fairly level, while the southerly side of the river has bluffs several hundred feet high with some major drainages cutting the bluffs into segments. The basic design concept is to provide safe, four-way connections with existing roadways from the north, then extend southerly across SR-126 and the Santa Clara River, preserving as much as possible the biotic resources by spanning the river with bridges. After crossing the Santa Clara River, the design goal is to minimize grading of the bluffs by laying roads between bluff segments, along the sides of incised drainages.

The Potrero Bridge was scrutinized further to determine if increasing the span (length) of the bridge would reduce environmental impacts to the river within SEA 23. The proximity of development on the north side of the River adjacent to the Potrero Bridge was an issue previously reviewed by the Regional Planning Commission during the original approval process in 1996 and 1997. As a result of those concerns, the original Specific Plan was specifically revised in this area to reduce the direct and indirect impacts to the River, and to reduce the risk of bank erosion. The significant changes made at that time included: (a) 5.6 acres of development area was eliminated and converted to River corridor; (b) the Commercial and Medium residential designations were reclassified to Mixed Use to reduce the potential for more intrusive land uses; and (c) 190 residential units were eliminated.

By way of background, the Potrero Valley Road is a secondary highway in both the Specific Plan and the County Master Plan of Highways. The Potrero Bridge is the longest bridge in the Specific Plan with a total length of approximately 1,300 feet and a width of 84 feet (*See*, FAA, Section 2.4.7.4 and 2.4.7.5). At Commission hearings, discussions took place regarding the lengthening of this bridge span, and an exhibit was presented in the Regional Planning Commission's August 27, 2001 Staff Report (Exhibit 2), depicting the bridge with an increased span. As shown on that exhibit, the southerly abutment is located as close to the mouth of Potrero Valley as practicable to preserve the large sensitive cottonwood riparian habitat south of the active Santa Clara river channel.

Potential impacts from the Potrero Bridge (without any increase in its span) included loss of habitat from construction due to piers and the bridge "shadow effect" (2.5 acres), and changes in velocity, scouring or water depth due to narrowing of the watercourse. By extending the length of the bridge by an additional two spans (for a total length of 1,500 feet), the bridge "shadow effect" would increase by 0.4 acres, but no sensitive riparian habitat would be impacted, only existing farm field. The location of bank stabilization

would also need to be modified if the bridge abutment is moved north. However, by lengthening the bridge by two spans (for a total of 1,500 feet), an additional 2.9 acres of farm field could potentially become part of the river bottom to offset the shadow effect. Based on the Final Additional Analysis, this would have a beneficial impact by reducing river velocities 18 percent, and by increasing the amount of habitat available to the UTS. The width of the post-project floodplain would be increased in this area, allowing floodwaters to slow down and thereby reduce scour. This would have a beneficial impact and minimize the change in flows in the river system.

A report entitled, *Newhall Ranch Engineering Design Summary and Report for Bridge Crossings of the Santa Clara River* is attached as Appendix 2.4(a) to this Additional Analysis. The report is supplemental to the document entitled *Traffic Study for the Newhall Ranch Bridge crossings of the Santa Clara River* prepared by Austin-Foust Associates. This design summary addresses selection of the location and span of the three proposed bridge crossings of the Santa Clara River in the Newhall Ranch Specific Plan. It is intended to summarize the physical constraints, required design criteria and provisions adopted to satisfy those requirements.

2.4.7 THE NEED FOR THE THREE PROPOSED BRIDGES AND THEIR DESIGNS

The information presented above describes how the three proposed bridges are sensitive to the biological resources found in SEA 23. This section addresses why the bridges are needed and why they are proposed at the specified locations.

As indicated above, Circulation Element Policy 22 calls for "avoidance" of the "construction of transportation facilities within significant ecological areas unless found essential following a detailed analysis of alternatives, including a 'no project' alternative."[29] Furthermore, even if the transportation facility is still found to be necessary after the alternatives analysis, this policy requires that the facility be constructed "in the most environmentally sensitive manner." The information provided below indicates why the three crossings are essential. As discussed in detail below, the three bridge crossings are essential for a functional circulation system to serve the Specific Plan area and the region. In addition, the bridges are necessary to advance many County goals and policies related to transportation, land use, and other issues of public interest.

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29 General Plan, p. C-8.

2.4.7.1 Bridge Location and Purpose

This discussion describes the location and purpose of each of the proposed bridge crossings in the context of the Specific Plan site and the regional circulation system.

(a) Commerce Center Drive

This is the easternmost of the three proposed bridge crossings. Commerce Center Drive is currently designated as a major highway on the County Master Plan of Highways. When completed, it will extend southward to Magic Mountain Parkway, thereby providing a connection between the Commerce Center Drive interchange with SR-126 and the Magic Mountain Parkway interchange with I-5. Therefore, the crossing of the Santa Clara River will serve a vital subdivision/regional function, serving not only the Specific Plan site, but also future development in the Magic Mountain area and other areas immediately to the south (*e.g.*, Westridge and Stevenson Ranch). The inclusion of Commerce Center Drive in the existing Master Plan of Highways attests to its role as an important arterial highway link in this part of the Santa Clarita Valley.

(b) Long Canyon

This bridge, situated between the other two, will be the primary bridge crossing for the central portions of the Newhall Ranch Specific Plan. It will provide the necessary connection to SR-126 and direct access to the Business Park north of SR-126. Accordingly, this bridge would serve an essential link between residential areas south of the river and employment opportunities to the north as well as providing an alternative route for residents and employees to reach destinations both within and outside of the Specific Plan.

(c) Potrero Canyon

The Potrero Canyon bridge, like its Commerce Center Drive counterpart, is reflected in the CMPH, which shows a connecting roadway from SR-126 through the project area to I-5. Hence, this crossing of the River not only serves the westernmost part of the Specific Plan site, but also provides the arterial roadway continuity depicted in the County's long-range Master Plan of Highways.

2.4.7.2 The Need for the Bridges

The Specific Plan proposes three bridge crossings of the Santa Clara River. These bridges are intended to connect the Specific Plan development areas south of the Santa Clara River to State Route 126 (SR-126), a major east-west State Highway along the northern bank of the River. SR-126 serves local and regional traffic. The three bridge crossings are essential features of the overall Specific Plan circulation system, providing the necessary accessibility and capacity for the Specific Plan. The following discussion summarizes the function of the three proposed bridge crossings with respect to traffic and circulation and demonstrates that the bridge crossings are essential to implementation of the Newhall Ranch Specific Plan.

(a) Planning Principles

Development of the circulation plan for the Newhall Ranch Specific Plan, including the bridge crossings, involved a number of planning principles or "criteria" which guided formulation of that plan. The principles included (1) Countywide Highway Plan; (2) Accessibility; (3) Capacity; (4) Efficiency; (5) Opportunities; and (6) Constraints.

A brief discussion of each of these criteria is provided below.

(1) Countywide Highway Plan

The planned future roadway system in Los Angeles County is depicted in the County's Master Plan of Highways (CMPH). A hierarchy of roadway classifications defines the system and the CMPH itself shows the geographic delineation of the various roadways as a countywide highway system. The CMPH is based on long-range planning with respect to land use and transportation and is part of the Los Angeles County General Plan. All long-range planning must therefore show consistency with the CMPH. Two of the bridge crossings proposed in the Newhall Ranch Specific Plan are part of the existing CMPH; therefore, to exclude either would require a General Plan Amendment (GPA). Since the traffic analysis carried out for the Newhall Ranch Specific Plan reinforced the need for those bridges, these bridges were maintained as an integral part of the circulation system for the Newhall Ranch Specific Plan.

(2) Accessibility

SR-126 provides the primary access route between the Newhall Ranch site and the remainder of the Santa Clarita Valley. SR-126 is planned for upgrade to a limited access highway along much of its length as

part of the roadway improvements that will accompany the development of the Newhall Ranch Specific Plan. The proposed bridge crossings, therefore, form an essential component of the Specific Plan's circulation system, providing the necessary accessibility to serve the project area. The bridge crossings also provide alternate emergency access routes and establish north-south circulation continuity with existing roads north of SR-126 (San Martinez Grande Road, Chiquito Canyon Road, and Commerce Center Drive).

(3) Capacity

Traffic volumes crossing the Santa Clara River are projected to total 92,000 vehicles per day with buildout of the Newhall Ranch. When peak hour directionalities are considered, this corresponds to a total of 14 lanes of arterial highway capacity. Two bridges could not adequately provide this roadway capacity across the River. Therefore, the three-bridge plan is the most effective means of serving the forecasted traffic demand.

(4) Efficiency

Recognizing the costs and environmental impacts of constructing bridges across the Santa Clara River, the Specific Plan's circulation system is designed to attain the highest degree of efficiency in providing the necessary accessibility and capacity. The internal roadway system south of the River provides access to each bridge crossing that, in turn, provides a direct connection to SR-126. The hierarchical system requires the least amount of roadway construction affecting the river, while still providing adequate traffic capacity and maximizing efficiency.

(5) Opportunities

While opportunities for bridge crossings are largely related to geographic features, traffic factors also are important. Examples of relevant traffic factors include the ability to connect to SR-126 at points which are either existing or future planned intersections serving areas to the north. All three proposed bridge crossings achieve this criterion. The existing San Martinez Grande Road intersection will become the Potrero Canyon Bridge connection, Long Canyon bridge will connect to the existing Chiquito Canyon Road intersection and the Commerce Center Drive bridge will be part of a direct southward extension of that existing roadway. Two of these connection points are planned as future grade-separated interchanges with SR-126.

(6) Constraints

The constraints on locating the bridge crossings are largely geographic in nature; however, issues such as how Specific Plan traffic will be distributed to and from the bridges is an important consideration. The proposed Specific Plan is sensitive to issues such as geography, environmental impacts and terrain, while maximizing the efficiency of the roadways to be constructed.

2.4.7.3 The Bridges Advance Many Other County Goals and Policies

In addition to being essential components of a functional regional circulation system, the bridge crossings are necessary to advance numerous goals and policies of the Los Angeles County General Plan ("General Plan") and the Santa Clarita Valley Area Plan ("Area Plan") regarding: (i) transportation; (ii) land use; (iii) noise; (iv) safety; and (v) energy conservation and air quality.

(a) The Bridges Advance County Transportation Goals

The bridge crossings further many of the General Plan's transportation goals. For example, the General Plan Circulation Element includes a goal to "achieve an efficient and balanced, integrated, multimodal transportation system that will satisfy short and long-term travel needs for the movement of people and goods." GP, p. C-8. Related policies include: (i) "Support completion of the highway and freeway routes necessary to make the system operate efficiently;" (ii) "Support traffic-operation improvements for improved flow of vehicles;" and (iii) "Develop alternative transportation systems and procedures which will effectively reduce vehicle miles traveled ("VMT") by automobiles." GP, pp. C-8-C-9. Additional policies emphasize "the development of an improved public transportation system to link regional centers" and "the development of internal circulation systems in multi-purpose centers." GP, p. G-8. Incorporation of the proposed bridge crossings would further each of these goals and policies.

The Newhall Ranch land uses have been designed using a village concept, with higher intensity uses being clustered into Village Centers. This land use arrangement promotes the reduction of vehicle miles traveled by permitting more people to live near shopping, services, and recreation. The bridge crossings significantly reduce the travel distances between the Newhall Ranch Village Centers and the commercial uses north of the Santa Clara River. The bridges, therefore, improve traffic flow and efficiency and reduce automobile VMT. Furthermore, as discussed above, each of the proposed bridge crossings is an extension of an existing or planned highway. Therefore, the bridges also assist in the completion of the County highway and freeway system, making the system operate efficiently. Finally, because they create critical links between the development areas south of the Santa Clara River and the SR-126 and uses north

of the River, the bridges improve access both to other regional centers and to other uses within the Specific Plan area.

The proposed bridges also further the General Plan's goal to create: "Convenient bicycle routes throughout the County." GP, p. C-14. The General Plan also includes a goal to "[p]rovide bikeways which interconnect with other transportation modes." GP, p. C-17. In the same manner that the bridges provide convenient automobile access to and from land uses north of the Santa Clara River, they provide the same access for bicycles, furthering the General Plan's bikeway goals.

The bridge crossings also advance several Area Plan transportation policies. The Area Plan states: "Minimize travel time by concentrating community facilities, intensifying land use densities, and establishing central shopping and industrial facilities." AP, p. 16. Another policy states "[e]ncourage development of access throughout the Santa Clarita Valley," and specifies that, "[a]s development occurs in each community, appropriate links should be provided from residential areas to major destination points[.]" AP, p. 16. The Area Plan includes additional policies to: (i) "Encourage development of a transportation system consistent with the plan"; (ii) "Encourage the development of a public transportation system to meet resident requirements for access to public and private services, employment, and activity centers consistent with demand"; and (iii) "Implement an arterial network that will adequately serve the rural to urban, recreational, emergency, and everyday circulation needs of the Santa Clarita Valley." AP, pp. 16, 22.

As discussed above, the Specific Plan, in general, is designed to minimize travel time and average trip distance. Facilities are sited to reduce automobile trips and maximize use of pedestrian and bicycle trails. The proposed bridge crossings are an essential feature of the Specific Plan's transportation system, and, as such, contribute to the advancement of the Area Plan policies intended to minimize travel times and the develop efficient and appropriate access to all types of land uses throughout the Santa Clarita Valley.

(b) The Bridges Advance County Land Use Goals

The proposed bridge crossings further several General Plan land use goals. The Land Use Element of the General Plan includes goals "[t]o provide for land use arrangements that take full advantage of existing public service and facility capacities" and "[t]o coordinate land use with existing and proposed transportation networks." GP, p. LU-3. A related policy states: "Require that new developments in non-urban areas have adequate accessibility to paved roads and water lines of sufficient capacity." *Id.* The bridge crossings further these goals by providing access from Newhall Ranch to SR-126 and the existing

arterial road facilities north of the Santa Clara River. Moreover, the bridges themselves are extensions of existing or planned highways.

The bridge crossings also further General Plan goals related to commercial land uses and access to such uses. The General Plan states a goal "[t]o situate commercial activities in viable clusters that conveniently serve their market areas," as well as policies to "[p]lace major emphasis on channeling new intensive commercial development into multipurpose centers" and to "[e]ncourage the clustering of well designed highway oriented commercial facilities in appropriate and conveniently spaced locations." GP, p. LU-4.

The Newhall Ranch Specific Plan land uses include business park and commercial/mixed use that will provide an estimated 19,000 jobs. One of the business park land uses is planned for an area east of Chiquito Canyon Road and north of SR-126, and the other is planned for an area south of SR-126 and north of the Santa Clara River. The bridge crossings will provide access to those land uses, as well as to commercial uses in adjacent communities (*e.g.*, the Valencia Commercial Center, Legacy Business Park and the Valencia Industrial Center), from the Newhall Ranch development areas south of the River. In addition, the bridge crossings provide the Specific Plan's commercial and mixed-use centers with direct access to secondary or major highways, promoting the General Plan's policies related to "convenient commercial uses."

The bridge crossings will also further land use goals related to compatibility of development with the surrounding environment. The General Plan states a goal: "To encourage high quality design in all development projects, compatible with, and sensitive to, the natural and manmade environment." GP, p. LU-5. Related policies state: (i) "Concentrate well designed high density housing in and adjacent to centers to provide convenient access to jobs and services without sacrificing livability of environmental quality."; and (ii) "Assure that new development is compatible with the natural and manmade environment by implementing appropriate locational controls and high quality design standards." The arrangement of land uses on the Specific Plan site was based upon comprehensive studies of access and traffic, and environmental and topographic conditions. In addition, as discussed above, the bridge crossings have been designed in the most environmentally sensitive manner possible. The design and location of the bridges, in addition to the other Specific Plan land uses, strikes a favorable balance between functional development and environmental compatibility. Compatibility of the bridge crossings to the environment is also promoted through the Resource Management Plan of the Newhall Ranch Specific Plan, which provides for the long term restoration and management of the land within SEA 23.

(c) The Bridges Advance County Noise Control Goals

The bridge crossings would further the General Plan's goals related to minimizing transportation-related noise impacts. The General Plan includes the following noise goals: (i) "Reduce transportation noise to a level that does not jeopardize health and welfare."; (ii) "Minimize noise levels of future transportation facilities."; and (iii) "Establish compatible land use adjacent to transportation facilities." The Specific Plan and the bridge crossings further these noise goals.

The Land Use Plan, residential development standards, building setbacks, and Design Guidelines identified in the Specific Plan minimize noise impacts by establishing compatible land uses adjacent to transportation facilities and other significant sources of noise, placing commercial uses on major intersections and adjacent to arterial highways, and providing for the separation of low-density residential uses from arterial highways. In addition, the Specific Plan, as well as all future uses, is subject to the Los Angeles Noise Ordinance, as it exists on the date of adoption of the Specific Plan. By enhancing access and capacity within the regional transportation system, the bridge crossings further the General Plan's noise control objectives. Loss of the bridge crossings would increase traffic, and traffic-related noise levels, on proposed and existing alternate roads.

(d) The Bridges Advance County Safety Goals

The General Plan Safety Element includes a goal to: "Strengthen County short-term emergency response and long-term recovery capability." GP, p. SE-9. In addition, the Area Plan includes a policy to "[e]ncourage development of convenient services to meet the needs of Santa Clarita Valley residents including...police and fire protection[.]" GP, p. SE-15. Through the expansion of the highway system, including the three bridges across the Santa Clara River, and the provision of two additional fire stations, the Specific Plan ensures that short-term emergency response will be expanded in conjunction with the additional demands placed on the emergency response personnel. Development of the Specific Plan site without the bridges would likely *decrease* regional emergency response time by increasing traffic volumes on alternate routes.

(e) The Bridges Advance County Goals Related to Energy Conservation and Air Quality

The bridge crossings further various County transportation policies relating to energy conservation and air quality. The General Plan contains several environmental quality and conservation goals. For example, one goal states: "To achieve a transportation system that is responsive to economic,

environmental, energy conservation and social needs at the local community, area and countywide levels." GP, p. C-7. The Plan stresses "environmental compatibility...in developing transportation systems." *Id.* Related policies include: (i) "Conserve energy to ensure adequate supplies for future use."; (ii) "Restore and protect air quality through the control of industrial and vehicular emissions, improved land use management, energy conservation and transportation planning." (GP, p. G-5); (iii) "Support the development of a transportation system that will make a positive contribution to the improvement of air quality." (GP, p. G-6); (iv) "Promote land use arrangements that will maximize energy conservation." (GP, p. LU-7); and (v) "Encourage the efficient use and conservation of energy used in transportation." (GP, p. C-8).

The General Plan Background Report includes policies for the reduction of highway congestion, transportation-related degradation of the environment, and transportation-related energy consumption. BR, T-14-T-15. The Area Plan also contains policies regarding energy conservation and air quality, such as policies to "[p]romote air quality that is compatible with health, well-being, and enjoyment of life" and to "[c]onserve energy in all its forms to a degree commensurate with an optimum level of living and economic activities." *Id.* at 25, 30.

The proposed bridge crossings further all of the foregoing County policies by providing a direct connection between the development areas south of the River and SR-126, as well as the commercial uses north of the Santa Clara River. By reducing vehicle miles traveled, implementation of the bridges will reduce transportation-related fuel consumption and air emissions.

2.4.7.4 Bridge Siting and Design

In determining the location of the highway bridge structures for the Newhall Ranch Specific Plan, a series of design constraints were evaluated. For example, road design and safety standards dictate intersection angles, minimum curve radii, super-elevation, design speed and sight distance. These parameters play the most significant role in setting the ultimate location and geometry of a bridge.

The following is a discussion of how the highway design parameters (engineering criteria) affect each of the highway bridge crossings over the Santa Clara River.

(a) Commerce Center Drive Bridge

This is a six-lane major highway with a design speed requirement of 60 miles per hour (mph). Due to the northerly riverbank and abutment being only 50 feet south of Henry Mayo Drive, also a major highway,

the proposed bridge width requirement is 122 feet to accommodate both a left-turn pocket and exclusive right-turn lane in addition to the six through lanes. If Commerce Center Drive were extended directly south under one alternative (Alternative A), it would intersect a bluff segment approximately 190 feet high and require extensive grading. Instead, as another alternative (Alternative B), a pair of reverse curves could be used to move the alignment to the west to avoid the main portion of the bluff. The roadway rises at approximately a 1.6 percent slope as it extends south across the river. The maximum allowed cross-tilt, or banking toward the inside of a curve [super-elevation], is 5 percent. Safety requires that with a super-elevation of 5 percent and a design speed of 60 mph the centerline radius of a highway curve be no less than 1,725 feet to inhibit cars from skidding off the pavement. Since Commerce Center Drive and Henry Mayo Drive already exist, the first reverse curve must begin south of that intersection. Using the minimum required 400-foot tangent [straight] segment between reversing curves, the maximum westerly shift achieved at the south side of the river would be approximately 150 feet. With that maximum shift, the roadway would align with the west side of a drainage course when it reached the bluff (Alternative C). But, because a greater amount of sensitive habitat exists on that side of the bridge, an alternative alignment was selected (Alternative D) to run on the east side of that drainage course, which will impact less habitat while requiring only minor grading of the adjacent bluff (*See*, attached sketch in Appendix 2.4(a)). Based on this information, the most biologically sensitive alternative was selected for this bridge while still meeting the required safety and engineering criteria.

(b) Long Canyon Road Bridge

This is a minimum six-lane major highway with a design speed requirement of 60 mph. It is the southerly extension of a proposed realignment of existing Chiquito Canyon Road designed to create a safer, perpendicular intersection with SR-126 at a point approximately 210 feet east of the existing intersection. The northern riverbank and bridge abutments are approximately 1,000 feet south of the proposed SR-126 intersection. After crossing the river with a 122-foot wide bridge, an alternative alignment (Alternative E) employing a slight curve to the east has been introduced to avoid a cluster of oak trees and align the roadway with the drainage course between the approximately 150-foot high bluffs flanking the mouth of Long Canyon. The roadway grade rises at approximately a 1 percent slope as it crosses the river. Another alternative alignment (Alternative F) of Long Canyon Road would curve to the west in the interval between SR-126 and the northern riverbank and continue south to align with the west side of the drainage course at the mouth of Long Canyon, between the bluffs mentioned above. This alternative, because of its greater skew, would result in a slightly longer, curved bridge and possibly additional piers. Yet another alternative (Alternative G) would extend Long Canyon Road south from the existing Chiquito Canyon Road intersection with SR-126 to the west side of the drainage course on the south side of the river. However, because of the skewed existing alignment of Chiquito Canyon Road to

SR-126, this would be considered an inferior location for an interchange (*See,* ~~attached~~ sketch in Appendix 2.4(a)). Based on this information, the most biologically sensitive alternative was also selected for this bridge while still meeting the required safety and engineering criteria.

(c) Potrero Canyon Road Bridge

This is a minimum four-lane secondary highway with a design speed requirement of 60 mph. The first alternative considered (Alternative H) is the southern extension of a proposed realignment of the existing San Martinez Grande Canyon Road, which will meet SR-126 approximately 600 feet west of the existing intersection. It is approximately 2,170 feet from the proposed SR-126 at-grade intersection to the north riverbank and bridge abutment. Potrero Canyon Road is extended south from San Martinez Grande Canyon Road curving west with a 1,500-foot radius and a 4 percent super-elevation. A 400-foot tangent section followed by a reverse curve to the east aligns the roadway with the mouth of Potrero Canyon, between two 120-foot high bluffs, on the south side of the river. The roadway grade rises at approximately a 2 percent slope as it proceeds south across the river on an 84-foot wide bridge. The roadway continues south into the center of Potrero Canyon. This alternative avoids direct impact to sensitive riparian habitat. An alternative alignment considered (Alternative I) is similar, except that the roadway would shift further west impinging upon the west side of Potrero Canyon, requiring extensive grading of the bluff area even if the roadway were to "ramp up" at the maximum allowable 6 percent as it proceeds toward the bluff. It would also cause additional habitat impacts because of its longer crossing and direct impact to sensitive riparian habitat. Another alternative (Alternative J) is also similar to the proposed alignment and Alternative I, except that it would cut into the existing bluff area on the easterly side of the canyon, also requiring extensive grading. This alternative would impact slightly less habitat in the river because it is a shorter crossing, although the habitat type impacted would be sensitive riparian. The last alternative alignment (Alternative K) would be a southerly extension of the existing San Martinez Grande Canyon Road without any curves, on a shorter bridge and with less impact on habitat in the river than the proposed alignment. However, even with use of the maximum allowable 6 percent roadway gradient, this route would still require extensive grading in the bluff area on the south side of the river (*See,* ~~attached~~ sketch in Appendix 2.4(a)). This route also travels through sensitive riparian habitat in contrast to the preferred alternative. Consequently, while less impact to land area will occur, the sensitivity of the habitat affected is higher. Based on this information, the most biologically sensitive alternative was also selected for this bridge while still meeting the required safety and engineering criteria.

2.4.7.5 Alternative Bridge Spans

After horizontal and vertical alignments are fixed, the design criterion that most affects riparian resources is the bridge span. In order to achieve the goal of reduced impact on the river system, the span would be adjusted to minimize required disturbance of the natural riverbed. The length of the ideal span is determined by modeling various spans and the flow velocities they induce. In general, a shorter span narrows the flow, inducing higher velocities. Higher velocities can erode material from the natural riverbed. The Los Angeles County Public Works Department [LACDPW], in its Sedimentation Manual Chart Q-2, indicates which velocities will require streambed alteration by construction of riverbed stabilizers to prevent erosion. These stabilizers are "hardened" features that interrupt the soft, natural riverbed. They are inverted V-shaped reinforced concrete structures with some rip-rap extending downstream for a distance equal to twice the scour depth. Stabilizers are set at natural grade and buried to a sufficient depth to account for the scouring action that can occur during peak flows. When an acceptable span is identified, one which does not require the construction of stabilizers, further hydraulic studies are conducted to determine the scour depths associated with that span. The scour depth dictates the depth to which bridge structures must extend to avoid being undermined during peak flows. If the span is too narrow, the cutoff depth of the upstream edge of the bridge abutments or piers will become extremely deep, requiring more construction disturbance of the riverbed. To avoid this situation, the span is increased, reducing the cutoff depth and the associated construction disturbance. This process of assessing alternative spans results in the adopted span for the bridge. In order to reduce impacts on riparian resources, all of the Newhall Ranch Specific Plan bridge spans were increased to the point where streambed stabilizers would not be required.

Desirable bridge pier spacing is 100 feet. This is the maximum length for which concrete girders can be precast elsewhere and set in place without the need for forms to be installed across the riverbed. Also, the duration of construction disturbance is shortened when precast girders are used because the curing time for the concrete parallels other activities in the schedule. Closer spacing results in a greater number of piers required and increased riverbed disturbance.

The following is a discussion of how alternative bridge spans affect each of the Newhall Ranch highway crossings of the Santa Clara River.

(a) Commerce Center Drive Bridge Span

Using the LACDPW Capital Flood flow rate of 139,000 cubic feet per second (cfs) and the Sedimentation Manual Chart, the minimum span length sufficient to avoid riverbed stabilization was determined to be

1,000 feet. However, at that span, significant habitat on the northerly side of the river would be impacted, therefore as an alternative, the bridge was lengthened to 1,200 feet. The associated scour depth for pier and abutment cutoffs is 22 feet.

(b) Long Canyon Road Bridge Span

Again, using the LACDPW manual and Capital Flood flow rate of 163,000 cfs, reflecting the confluence of Castaic Creek, it was determined that the minimum span length allowable without hardening the riverbed is 980 feet. This bridge length allows the abutments to be placed outside of the non-flood watercourse, reducing impacts to riparian resources. The scour depth determined for pier and abutment cutoffs varies with flow velocities across the river from 10 feet to 29 feet.

(c) Potrero Canyon Road Bridge Span

With use of the LACDPW manual and the Capital Flood flow rate of 166,500 cfs, as previously described, it was determined that the minimum span length without streambed stabilization is 1,305 feet. The scour depth determined for pier and abutment cutoffs varies across the river from 14 feet to 28 feet. The widening of the Potrero Canyon Road bridge span by the Regional Planning Commission would only serve to further reduce the need for streambed stabilization and reduce the scour depth.

The criteria required and features provided for the highway bridge routes is provided in Appendix 2.4(a).

2.4.7.6 No Project Alternative

Consistent with Circulation Element Policy No. 22, the County also considered a "No Project Alternative." Under this alternative, the Specific Plan would not be implemented, no bridges would be constructed within SEA 23, and the Specific Plan site would be left in its present condition. Although, in its present condition, the site is already partially in a disturbed state, and although these disturbances would continue with the No Project Alternative, the environmental impacts of the No Project Alternative would be of a lesser magnitude in total than the Specific Plan. This includes a reduction in/avoidance of impacts to sensitive biological habitat areas in SEA 23 that fall within the footprint of the bridges (including habitat for certain endangered species). However, by retaining the site under existing conditions, most of the Specific Plan objectives would not be met. Furthermore, if development does not occur on the Specific Plan site, the anticipated future demand for housing and commercial services would likely stimulate development elsewhere in the Santa Clarita Valley, including development in less

accessible areas of the Valley with environmental resources that may be comparable to or of greater value than those found on the Specific Plan site.

In addition, if the Specific Plan were implemented without the bridge crossings (and thereby avoiding impacts to sensitive biological habitat areas in SEA 23 that fall within the footprint of the bridges including habitat for certain endangered species), an efficient and functional circulation system for the Specific Plan site would be impossible and the regional circulation system would be significantly impaired by this inefficiency. County goals and policies related to transportation, land use, noise, energy conservation and air quality would be hindered, as the Specific Plan site and the surrounding roadway system would be subjected to unnecessary additional vehicle miles traveled and transportation-related noise, fuel consumption and air emissions. Finally, without the bridges, short-term emergency response times in and around the Specific Plan site would not be improved, and might be impaired.

In its CEQA Findings and Statement of Overriding Considerations, the County rejected the No Project Alternative as infeasible because many of the basic objectives of the Specific Plan would not be attained. The County also found that many of the benefits associated with the Specific Plan would not be obtained under the No Project Alternative.

2.4.7.7 Conclusions Regarding the Bridge Crossings

The three proposed bridge crossing locations are essential for the safe and adequate circulation of traffic for the Specific Plan and the region. In addition, the bridge crossings are necessary to further numerous County goals and policies regarding transportation, land use and other important issues of public interest. A series of bridge alignment and bridge span alternatives were considered prior to selecting the proposed bridge alignments and designs. The three proposed bridge crossings of the Santa Clara River provide for balanced, efficient circulation of traffic between SR-126, existing development to the north and the Newhall Ranch Specific Plan. Except for possible isolated crossings, the roadway bridges also provide an opportunity for utilities to serve the Newhall Ranch project without additional disturbance of riparian resources. Each bridge complies with County engineering requirements and is strategically located and designed to provide maximum transportation effectiveness while minimizing impacts upon critical resources, habitat areas and animal movement paths in the riparian corridor.

2.4.8 CONCLUSIONS REGARDING SEA COMPATIBILITY

The land use plan proposed as part of the Newhall Ranch Specific Plan has been designed to minimize impacts to sensitive resources, and where avoidance is not possible, to minimize impacts where feasible.

A total of 380 acres of sensitive habitat areas exist within SEA 23 and only one~~28~~ acres~~ (or~~ 0.3~~seven~~ percent of sensitive habitat areas and 0.08~~two~~ percent of the original SEA) would be directly impacted by development. An additional five acres of sensitive riparian habitat would be added to the SEA, increasing the total amount of sensitive riparian habitat in the SEA from 380 to 385 acres. The entire 385 acres would remain protected in open space areas as part of the ~~revised~~ SEA 23 (River Corridor SMA). ~~SEA 20 or within the Open Area designations~~Eight acres of sensitive riparian habitat would be redesignated from SEA 23 to Open Area. This is consistent with criteria one that requires setting aside of appropriate and sufficient undisturbed area. Development on land already disturbed poses no direct impacts to resources found within ~~the~~ SEA 23. Of the one~~28~~ acres of sensitive habitat redesignated~~removed by development~~ in the SEA, 0.5~~20~~ acres of sensitive riparian habitat is being removed to accommodate ~~residential, commercial or mixed~~non-residential land uses and 0.5 acre is being removed to accommodate necessary infrastructure. As illustrated on **Figure 2.4-8~~4~~**, the affected land represents small patches of disconnected habitat distributed throughout the Specific Plan area rather than a contiguous patch of ~~28 acres~~land that provides higher habitat value. Based on the above information, the Newhall Ranch Specific Plan is compatible with the sensitive resources found within existing SEA 23 ~~as proposed~~.

2.5.1 INTRODUCTION AND SUMMARY

Portions of this section have been revised since the Newhall Ranch Draft Additional Analysis was circulated for public review in April 2001. This revised section completely replaces and supersedes the prior Section 2.5 (2001). Although this section replaces the prior version, the basic finding with respect to water resources remains unchanged. This finding is presented below. A redline copy of the original Section 2.5 with the revisions made is available for review upon request at the County of Los Angeles Public Libraries and County of Los Angeles Department of Regional Planning, 320 West Temple Street, 13th Floor, Los Angeles, California. Contact Lee Stark.

An adequate supply of water is available to meet the demands of the Newhall Ranch Specific Plan without creating significant environmental impacts.

2.5.1.1 Preface

This section describes the trial court's decision and Writ in the Newhall Ranch litigation. It also summarizes the water supply sources that would be used to meet the projected water demand for the Newhall Ranch Specific Plan in response to the trial court's decision and Writ.

2.5.1.2 Trial Court Decision Regarding Water Resources

The **Water Resources Section** was prepared in response to a decision and Writ of Mandate issued by the Kern County Superior Court (Honorable Roger D. Randall), finding that the Newhall Ranch Final EIR did not adequately demonstrate that sufficient water will be available for build-out of the Newhall Ranch Specific Plan ("Newhall Ranch" or "Specific Plan"). The trial court also directed the County of Los Angeles to take action to ensure that the Newhall Ranch Specific Plan is consistent with the General Plan Development Monitoring System (DMS) policies as they relate to water supplies.

On page 4 of the Writ (Appendix 1.0(a)), the trial court found that the Newhall Ranch Final EIR did not adequately demonstrate that sufficient water will be available for build-out of the Specific Plan. The trial court also found that the Specific Plan could only meet its water demands if it also utilized flood flows from Castaic Creek. However, the trial court found a lack of substantial evidence showing that modification of the agreement to allow the withdrawal of the flood flows and the storage of Newhall's

share of those flows was achievable. In addition, the trial court found a lack of substantial evidence to support a finding that a given volume of water could be stored in the Saugus Aquifer under the Aquifer Storage and Recovery ("ASR") Alternative. The trial court noted that there is an admitted lack of understanding as to the properties of the aquifers in question and that any assumptions based upon professional judgments are merely guesses as to the capacity of the aquifers which, if wrong, could substantially impact water available to the project and also the use of the aquifers by downstream users in Ventura County. Finally, the trial court found that the EIR's Mitigation Measure 4.11-6, standing alone, did not pass the scrutiny of the analysis found in the Stanislaus decision.[1]

In light of the ruling, the trial court directed any supplemental analyses to demonstrate that adequate water sources will be available for build-out of the Specific Plan, which may be achieved by securing other water sources consistent with CEQA and/or by developing a factual basis providing substantial evidence from which the Board of Supervisors could adequately assess the environmental impacts of the employment of the ASR alternative and its ability to meet water needs. The trial court also directed the County of Los Angeles to take action to ensure that the Newhall Ranch Specific Plan is consistent with the General Plan Development Monitoring System policies as they relate to water supplies. Finally, the trial court directed that the Board of Supervisors consider the additional analysis and adopt such mitigation measures, alternatives and/or additional or revised findings as may be necessary to comply with CEQA and the trial court's Writ.

In response to the trial court's direction, the **Water Resources Section** summarizes the water supply sources that would be used to meet the projected water demand for the Specific Plan and addresses the Specific Plan's consistency with County General Plan DMS policies.

2.5.1.3 Overview of Revised Project Water Supply and Demand Analysis

The County of Los Angeles and the Newhall Ranch applicant are responding to the trial court's decision and direction to demonstrate availability of identified water supplies by now relying on its own primary sources of water supply. The first source is the applicant's historical alluvial groundwater produced in the County of Los Angeles that is presently committed to agriculture uses. The second source is the applicant's purchase of water from Nickel Family LLC in Kern County (the "Nickel Water"). Because these two independent primary water sources meet the potable water needs of the Specific Plan, no potable water would be needed from State Water Project (SWP) and Castaic Lake Water Agency (CLWA) supplies.

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1 The trial court was referring to *Stanislaus Natural Heritage Project v. County of Stanislaus* (1996) 48 Cal.App.4th 182.

The applicant's right to the beneficial use of its agricultural water resources is well established under California law.[2] This agricultural water will be available for agricultural production until it is phased out by urban development. There would be a limit placed on the amount of groundwater converted to urban uses so that it will not exceed the amount already used for agricultural purposes. This agricultural water supply has historical long-term availability and reliability, and is an established supply. This agricultural water supply will provide approximately 81 percent of the Specific Plan's potable water need. The Alluvial aquifer has consistently been at or near its highest level and is not in an overdraft condition.

The Nickel Water consists of 1,607 acre-feet per year (AFY) of water purchased by the applicant from Nickel Family LLC. This water is 100 percent reliable on a year-to-year basis, and not subject to the annual fluctuations that can occur in dry year conditions. Pursuant to Nickel's contract water rights, the water delivered to Nickel for sale to Newhall must be high quality water, acceptable for delivery into the California aqueduct. In addition, delivery of the water to Nickel being sold to Newhall is mandatory, unaffected by annual hydrologic conditions. Consequently, the Nickel Water is not subject to unpredictable reductions in quality or quantity typical of other water sources. These characteristics make the Nickel Water a dependable water supply source. *See,* **Section 2.5.5.3, Newhall Ranch Water Supplies**, for additional information. The water would be delivered through the Kern County Water Agency and the State Water Project (SWP) system. The Nickel Water would only be needed on the Specific Plan site in years when all of the Newhall Agricultural Water has been used, which is estimated to occur after the 20th year of project construction. Up to that point in time, the unused Nickel Water would be available for storage in groundwater banking programs on an annual basis, which would then be used as a dry year supplemental supply. These two sources of supply would balance the Newhall Ranch Specific Plan potable water demand in normal/average years. The non-potable demand would be met by the use of reclaimed water supplied by the Newhall Ranch water reclamation plant (WRP) and reclaimed water that will be supplied by CLWA.

Furthermore, the applicant has undertaken several major steps to enhance the reliability of the water supply for the Newhall Ranch Specific Plan. Specifically, the applicant has accomplished the following:

- Secured 7,648 AFY of additional SWP water entitlement from landowners who are served by a member agency of the Kern County Water Agency.
- Purchased 55,000 AF of groundwater banking storage capacity, which includes the ability to use up to 4,950 AF of water during dry years as a water supply from the Semitropic Water Storage District.
- Determined through comprehensive groundwater testing that the local Saugus aquifer can be successfully used for groundwater banking through an aquifer storage and recovery (ASR) program.

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2 *See*, the California Supreme Court's decision, *City of Barstow v. Mojave Water Agency* (2000) 23 Cal.4th 1224.

- Along with members of the "Downstream Water Users," including the United Water Conservation District, forwarded a unanimously supported request to the State Department of Water Resources (DWR) to amend the 1978 Castaic Creek Flood Flow agreement, thereby making these flows available for use in groundwater banking and for other appropriate beneficial water uses. This step improves the potential to use Castaic Creek flood flows.
- Determined that CLWA could provide the applicant with supplemental water supplies, if needed.

The relationships between Newhall Ranch water demand and supply in normal/average and dry years are provided below in **Tables ES-1** and **ES-2**, and are illustrated in **Chart ES-1**.

2.5.1.4 Answers to Questions of the Trial Court

Provided below are the questions posed by the trial court with regard to Newhall Ranch water resources, along with the answers to each question posed.

Question: Is Sufficient Water Available for Build-out of the Specific Plan?

Answer: Yes

An adequate amount of water is available to meet the needs of the Specific Plan. In fact, actions being taken by the Specific Plan applicant will result in even more water being made available to the Specific Plan than is needed to meet its water need. The primary sources of water for the Specific Plan include supplies that are available for use today in the Santa Clarita Valley. To ensure that adequate water is available for the Specific Plan, the Specific Plan will rely on the following sources of water:

(a) Newhall Ranch Water Supplies

The following summary identifies the Newhall Ranch non-potable and potable water supplies needed to serve the Specific Plan site:

Non-Potable Supplies

Newhall Ranch Reclaimed Water. Reclaimed water (also referred to as "recycled water") from the Water Reclamation Plant ("WRP") proposed as part of the Newhall Ranch Specific Plan would be used to partially meet the non-potable water demands (*e.g.*, irrigation) of the Specific Plan. The availability of this source would occur in stages, mirroring the staged construction of the WRP on the Specific Plan site.

CLWA Reclaimed Water. CLWA would serve the Specific Plan site with reclaimed water from existing upstream WRPs, consistent with CLWA's draft "Reclaimed Water System Master Plan," which is being implemented in stages. This reclaimed water supply would meet the remaining non-potable water demand of the Specific Plan.

Table ES-1
Newhall Ranch Specific Plan
Normal/Average Year Potable And Non-Potable Water Usage
(Acre-Feet/Year)

	Demand	Supply	
		7,038	Newhall Agricultural Water (a)
		1,607	Nickel Water (b)
Potable	8,645	8,645	
		5,344	Newhall Ranch Reclaimed Water
		3,691	CLWA Reclaimed Water
Non-Potable	9,035	9,035	
Total (c)	**17,680**	**17,680**	

(a) Firm groundwater supply historically and presently used by the applicant for agricultural irrigation purposes on its agricultural land in The County of Los Angeles.

(b) The applicant has secured water under contract with Nickel Family LLC in Kern County. This water is 100 percent reliable on a year-to-year basis, and not subject to the annual fluctuations that can occur in dry year conditions. The water would be delivered through the Kern County Water Agency and the SWP system.

*(c) See, **Table 2.5-25, Summary of Newhall Ranch Water Demands.***

Additional Programs To Enhance Reliability Of Supplies

Groundwater Banking Program for Dry Years (h)		Supplemental Supplies	
Saugus Groundwater Banking/ ASR Program (e)	4,500	4,500	CLWA SWP and Other Supplies (g)
		4,566	Newhall/SWP Water (d)
		7,043	Castaic Creek Flood Flows (f)
Total	**4,500**	**16,109**	

*(d) Newhall/SWP water (7,648 acre-feet per year of annual entitlement) secured by the applicant from landowners served by a member agency of the Kern County Water Agency, which would be delivered through SWP facilities to CLWA. This source would be reduced to approximately 59.7 percent in average years as discussed in **Section 2.5, Water Resources** (4,566 = 7,648 x 0.597).*

(e) The Saugus Groundwater Banking/ASR Program involves injecting or "banking" 4,500 AFY of treated Newhall/SWP water or other available water at times when those sources are readily available in normal/average years. During drought periods, up to 4,100 AFY would be withdrawn from the groundwater bank to partially meet Specific Plan dry year water demand.

(f) Subject to approval by DWR, Castaic Creek flood flows could be used in normal/average years, when available, as a water source for the Semitropic Groundwater Banking Project (through a water transfer), or for the Saugus Groundwater Banking/ASR Program. This supply is variable; in some years, the flood flows are not available.

(g) In addition to Newhall/SWP Water and Castaic Creek Flood Flows, CLWA SWP entitlement and other CLWA supplies could be used as a source of water for injection into the Semitropic and Saugus Groundwater Banks.

(h) CLWA's SWP entitlement is 95,200 acre-feet per year. The amount of the water shown above is not a limitation on the amount of CLWA SWP supplies that could be used as a source of water; however, the CLWA supplies are only considered a supplemental source for Newhall Ranch, because the applicant has taken steps to secure its own primary potable water supplies.

Table ES-2
Newhall Ranch Specific Plan
Dry Year Potable and Non-Potable Water Usage
(acre-feet/year)

	Demand (c)	Supply	
		7,038	Newhall Agricultural Water (a)
		1,607	Nickel Water (b)
		865	Semitropic Groundwater Banking Project (e)
Potable	9,510	9,510	
		5,344	Newhall Ranch Reclaimed Water
		4,595	CLWA Reclaimed Water
Non-Potable	9,939	9,939	
Total	**19,449**	**19,449**	

(a) Firm groundwater supply historically and presently used by the applicant for agricultural irrigation purposes on its agricultural land in The County of Los Angeles.
(b) The applicant has secured water under contract with Nickel Family LLC in Kern County. This water is 100 percent reliable on a year-to-year basis, and not subject to the annual fluctuations that can occur in dry year conditions. The water would be delivered through the Kern County Water Agency and the SWP system.
(c) Demands are projected to increase in a dry year by approximately 10 percent due to a lack of local rainfall.

Additional Programs To Enhance Reliability Of Supplies

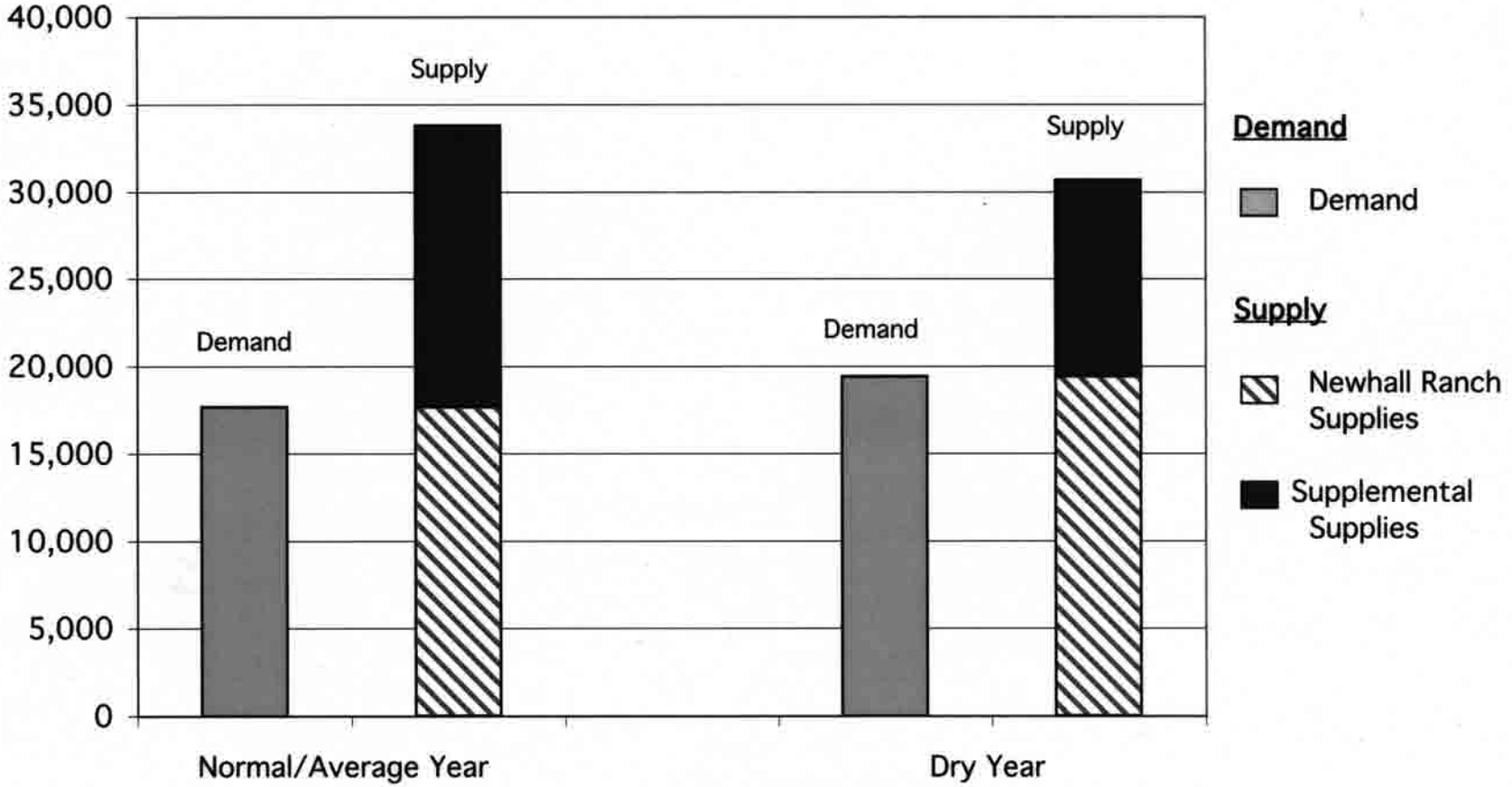
	Supplemental Supplies	
	3,044	Newhall/SWP Water (d)
	4,085	Semitropic Groundwater Banking Project (e)
	4,100	Saugus Groundwater Banking/ASR Program (f)
Total	**13,701**	

(d) Newhall/SWP water (7,648 acre-feet per year of annual entitlement) secured by the applicant from landowners served by a member agency of the Kern County Water Agency, which would be delivered through SWP facilities to CLWA. This source would be reduced to approximately 39.8 percent in dry years as discussed in ***Section 2.5, Water Resources*** *(3,044 = 7,648 x 0.398). This water is not related to CLWA's 95,200 AF entitlement.*
(e) The project applicant has entered into an agreement to secure water storage capacity of up to 55,000 acre-feet in the Semitropic Water Storage District Groundwater Banking Project. The stored water would be extracted in dry years in amounts of up to 4,950 AFY from the project. This supply will be used as a water source for the Specific Plan in dry years only. The storage capacity will be filled in the initial years (beginning in year 2005) from available water before Newhall Ranch demand requires this supply. Afterward, further demand for this water in wet/average years, on an as needed basis, could be met by banking excess Newhall/SWP Water, Castaic Creek Flood Flows, CLWA SWP entitlement and other supplies as available.
(f) The Saugus Groundwater Banking/ASR Program involves injecting or "banking" 4,500 AFY of treated Newhall/SWP water or other available water at times when those sources are readily available in normal/average years. During drought periods, up to 4,100 AFY would be withdrawn from the groundwater bank to partially meet Specific Plan water demand.

Chart ES-1

Newhall Ranch Water Demand vs. Supply

(acre-feet per year)



NOTE: SUPPLY IS GREATER THAN DEMAND

Potable Supplies

Newhall Agricultural Water. The project applicant would meet potable water demands of the Specific Plan by using Newhall's historical alluvial groundwater produced in the County of Los Angeles, which is presently committed to agricultural uses. No additional groundwater would be pumped over historical and present amounts; instead, the water presently used to irrigate crops would be treated and then used to partially meet the potable water needs of the Specific Plan.

Nickel Water. The applicant has secured water under contract with Nickel Family LLC in Kern County. This water is 100 percent reliable on a year-to-year basis, and not subject to the annual fluctuations that can occur in dry year conditions. The water would be delivered through the Kern County Water Agency and the SWP system. The Nickel Water would only be needed on the Specific Plan site in years where all of the Newhall Agricultural Water has been used, which is estimated to occur after the 20th year of project construction. Up to that point in time, the unused Nickel Water would be available for storage in groundwater banking programs on an annual basis, which would then be used as a dry year supplemental supply.

Semitropic Groundwater Banking Project. The project applicant has entered into an agreement to reserve and purchase water storage capacity of up to 55,000 acre-feet in the Semitropic Water Storage District Groundwater Banking Project. The stored water could be extracted in dry years in amounts of up to 4,950 AFY from the project. This supply will be used as a water source for the Specific Plan in dry years only. Sources of water that can be stored in this banking project include, but are not limited to, Nickel Water, Newhall/SWP supplies, and Other CLWA Supplies.

(b) Supplemental Water Supplies

As summarized above, there are sufficient water supplies to meet the Newhall Ranch Specific Plan demand. However, it remains important for the Santa Clarita Valley to hedge against potential regulatory and operational risks that may adversely affect the reliability of water supplies over the years. Although the purveyors have planned and developed water supplies to maintain reliability into the future even with a repeat of statewide droughts, the Santa Clarita Valley water agencies are faced with impacts due to the potential future promulgation of increasingly stringent water quality standards, litigation over water supplies and allocations, environmental constraints and changes in SWP operational criteria. These regulatory and operational uncertainties are many times unanticipated developments and not easily quantifiable. However, these types of uncertainties have occurred throughout the history of California's development of water resources. It is expected that they will continue in the future. A major challenge in water planning is to determine the appropriate measures of insurance to safeguard against these uncertainties to enhance supply reliability. One way of providing supply insurance against such risks is to secure additional or supplemental water supplies. The summary provided below identifies some of the important supplemental water supplies that could be available to serve the Newhall Ranch Specific Plan:

Newhall/SWP Water. The project applicant has entered into an agreement to reserve and ultimately purchase 7,648 AFY of additional State Water Project (SWP) water entitlement, which would be delivered through SWP facilities to CLWA and be available to serve the Specific Plan.

The same SWP reliability parameters discussed above for CLWA SWP water would apply to this source of water.

Castaic Creek Flood Flows. Subject to approval by DWR, Castaic Creek flood flows could be used as a variable supply source in normal/average years, when available, for the Semitropic Groundwater Banking project (through a water transfer), or for the Saugus Groundwater Banking/ASR program (from CLWA).

Semitropic Groundwater Banking Project. The project applicant has entered into an agreement to reserve and purchase water storage capacity of up to 55,000 acre-feet in the Semitropic Water Storage District Groundwater Banking Project. Sources of water that could be stored in this banking project include, but are not limited to, Nickel Water, Newhall/SWP supplies, and Other CLWA Supplies. The stored water would be extracted in dry years in amounts of up to 4,950 AFY from the project. Up to 865 AFY of this amount would be used as a primary water source during dry years. The remainder (4,085 AFY) would be available as a supplemental source.

Saugus Groundwater Banking/ASR Program. The Groundwater Banking/Aquifer Storage and Recovery (ASR) program, which involves installation of six wells in the Saugus aquifer, would be used to inject or "bank" 4,500 AFY of treated SWP water or other available water when those sources are readily available in normal/average years. During drought periods, when SWP water supplies or other available sources are curtailed, the ASR wells would then be used to recover up to 4,100 AFY to partially meet Specific Plan water demand. In lay terms, the program would operate much like a local bank. Water would be deposited (injected) into the groundwater basin and later withdrawn (recovered), when needed, in dry years.

CLWA SWP and Other Supplies. A relatively small portion of CLWA's existing SWP Table A water entitlement could be used, if needed, to supplement a portion of the Specific Plan's potable water need. As a SWP contractor, CLWA may also obtain additional SWP supplies from or through DWR in connection with other programs. The other SWP supplies include the Turnback Water Pool program, the Interruptible water program, Surplus water provisions and Carryover water. These SWP supplies are available in average/normal years as water supply sources for the Saugus Groundwater Banking/ASR program and the Semitropic Groundwater Banking project. However, the CLWA supplies are only considered a supplemental source for Newhall Ranch because the applicant has taken steps to secure its own primary potable water supplies.

The surplus of water created by existing water sources and the actions of the applicant will ensure an adequate supply of water for the Specific Plan without creating significant impacts on existing water supplies or downstream water users. For additional information on this topic, please see, **Subsection 2.5.5, Newhall Ranch Water Demand and Supplies**, below. Several of the identified Specific Plan sources presently exist in the Santa Clarita Valley (*e.g.*, Newhall's agricultural water and CLWA's SWP water) and several of the sources, consistent with CEQA, are reasonably expected to occur as the Specific Plan builds out (*e.g.*, Newhall Ranch Water Reclamation Plant reclaimed water, CLWA reclaimed water, Saugus Groundwater Banking/ASR program water, Newhall/SWP water, Nickel Water).

Question: Is the Saugus Groundwater Banking/ASR Program Feasible?

Answer: Yes

The results of injection and recovery tests conducted by the applicant demonstrate that implementing a groundwater banking/ASR program in the Saugus Formation is feasible. The determination that the Saugus Groundwater Banking program is feasible is based on the actual injection and pumping tests conducted at wells in the Saugus Formation from July 2000 through October 2000, as well as groundwater modeling. (*See, Newhall Ranch ASR Impact Evaluation,* CH2MHill; and *Assessment of the Hydrogeologic Feasibility of Injection and Recovery of Water in the Saugus Formation, Santa Clarita Valley, California,* Slade.) The testing and the modeling show that there is no discernible effect on Alluvial water levels or the Santa Clara River, from either Saugus Formation well injection or pumping. For additional information on this topic, please see, **Subsection 2.5.5.3(d)(5)** entitled, **Saugus Groundwater Banking/ASR Program.**

Question: Is the Newhall Ranch Specific Plan Consistent with the General Plan Development Monitoring System Policies as They Relate to Water Supplies?

Answer: Yes

The Newhall Ranch Specific Plan is consistent with the County's General Plan DMS policies as they relate to water supplies. This analysis has been completed to determine if sufficient water supplies will be available for the Specific Plan under the County's General Plan Development Monitoring System (DMS) requirements. The projected total water demand for the Specific Plan is 17,680 acre-feet per year in average years and 19,449 acre-feet per year dry years. The analysis addresses water supply requirements resulting from buildout of all pending, recorded, and approved projects listed in the County's DMS, plus the Newhall Ranch Specific Plan. Under the DMS analysis, there will be sufficient water supplies for the entire demand of the Newhall Ranch Specific Plan and all pending, approved and recorded projects in DMS. Because two independent primary water sources have been secured to meet the potable water needs of the Specific Plan, no additional potable water would be needed from State Water Project (SWP) and the Castaic Lake Water Agency (CLWA) supplies. In fact, a water surplus of approximately 16,566 to 44,103 AFY would occur in average years and a surplus of approximately 16,552 to 88,089 AFY would occur in dry years.

The analysis also shows that the Newhall Ranch Specific Plan site is located immediately adjacent to existing development and the retail water service area of the Valencia Water Company. The site is also

within the wholesale service area of CLWA. The Newhall Ranch Specific Plan site is located approximately one eighth of one mile from the Magic Mountain Theme Park, Castaic Junction, and the Valencia Commerce Center, and approximately three quarters of a mile from the Valencia Industrial Park. All of these existing development areas are served by County or other public services, and provide commercial services and job opportunities. As indicated above, more than enough water supplies are available to the Specific Plan to meet its projected demand. For additional information on this topic, please see, **Subsection 2.5.5.4(a)(1)** entitled **"DMS General Plan Consistency"**.

2.5.1.5 Summary of Applicable Legal Standards

The Specific Plan is analyzed in this **Water Resources Section** with respect to its water demand, water supply and the potential environmental impacts associated with supplying water to the site. The section also identifies mitigation measures to ensure that there is adequate water availability and delivery for build-out of the Specific Plan. In conducting the analysis presented in this section, a good-faith effort was made to provide meaningful information regarding water demand, water supplies and the significant environmental effects that are reasonably foreseeable given those water supplies. It should be emphasized, however, that CEQA does not require that project sponsors actually secure sources of water for a long-term project before an EIR will be viewed as "adequate". Instead, under CEQA, it is sufficient to identify water sources, to show that the water sources are adequate and available for build-out of the project, and to consider the impacts of supplying such water to the project site.[3]

In addition, as discussed in the Newhall Ranch Final EIR, it should be emphasized that the County of Los Angeles has already determined that a "program" or "first-tier" EIR is appropriate for the Specific Plan because the Newhall Ranch planning process is at the general plan and zoning stages only, to be followed by subsequent project-specific subdivision maps and further environmental review, and because the build-out for Newhall Ranch is projected to occur over approximately 25 to 30 years.[4]

Consistent with the CEQA standards for a program/first-tier EIR, the County contemplates that further environmental documentation will be required as the Specific Plan moves from the general plan/zoning stages to project-specific subdivision maps. The environmental documentation for project-specific subdivision maps will involve the preparation of supplemental or subsequent Environmental Impact Reports in accordance with the requirements of CEQA and the CEQA *Guidelines*. By imposing a supplemental and/or subsequent EIR requirement on future project-specific subdivision map

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3 *See, Stanislaus Natural Heritage Project v. County of Stanislaus* (1996) 48 Cal.App. 4th 182, 205-206.

4 For further information regarding program EIR standards and "tiering" guidelines, please refer to CEQA (Public Resources Code §§21068.5, 21093) and the CEQA *Guidelines* (*Guidelines* §§15146, 15168, 15385).

applications, the County will ensure that, as part of the Specific Plan subdivision map process, water availability will be verified for each subdivision map under review by the County through its Development Monitoring System ("DMS"), which is a required component of the County's General Plan. As each Specific Plan subdivision map is processed, the County will require confirmation from the water purveyor that it can serve each subdivision with available water supplies. The County will also continue to monitor implementation of all water-related mitigation measures adopted as part of the Newhall Ranch Final Program EIR.

2.5.1.6 Reference Documents

The following documents were used as reference materials in the preparation of the **Water Resources Section**:

(a) *2000 Urban Water Management Plan* ("UWMP"), dated December 2000, prepared for CLWA and three of the four retail water purveyors in the Santa Clarita Valley: Santa Clarita Water Company, Newhall County Water District and Valencia Water Company, including, a technical memorandum prepared by Richard C. Slade & Associates, LLC, dated November 16, 2000 (Appendix C to UWMP), and a letter from Joseph C. Scalmanini, Luhdorff and Scalmanini Consulting Engineers, dated December 15, 2000, regarding review of the groundwater components of the UWMP (Appendix D to the UWMP);

(b) *1999 and 2000 Santa Clarita Valley Water Reports* prepared by the Upper Santa Clara Valley Water Committee, dated February 2000, and March 2001, respectively;

(c) *2001 Santa Clarita Valley Water Report* prepared by the Santa Clarita Valley Water Purveyors, dated March 2002;

(d) *Assessment of the Hydrogeologic Feasibility of Injection and Recovery of Water in the Saugus Formation, Santa Clarita Valley, California,* February 2001, by Richard C. Slade & Associates, LLC, including, the Technical Appendix, *Hydrogeologic Conditions in the Saugus Formation, Santa Clarita Valley, California,* February 2001, by Richard C. Slade & Associates, LLC;

(e) *Newhall Ranch ASR Impact Evaluation,* prepared by CH2MHill, February 2001;

(f) Newhall Ranch Updated Water Resources Impact Evaluation, prepared by CH2MHill, October 2002;

(g) *Draft Integrated Water Resources Plan,* Water Demand and Supply Evaluation, dated February, 1998, prepared by Bookman Edmonston/Montgomery Watson Consulting Engineers for CLWA;

(h) *Water Management Program,* prepared by Valencia Water Company, dated December 1995, and Valencia's *Water Management Program,* dated November 29, 2001;

(i) *Hydrogeologic Investigation of the Perennial Yield and Artificial Recharge Potential of the Alluvial Sediments in the Santa Clarita Valley of Los Angeles County, California,* dated December 1986, a 2-volume report prepared by Richard C. Slade & Associates;

(j) *Hydrogeologic Assessment of the Saugus Formation in the Santa Clarita Valley of Los Angeles County, California,* dated February 1988, a 2-volume report prepared by Richard C. Slade & Associates;

(k) Final EIR for the Semitropic Groundwater Banking Project, including Draft EIR, Findings and Mitigation Monitoring Plan, 1994 (State Clearinghouse No. 93072024);

(l) *Management of the California State Water Project*, Bulletin 132-95, Department of Water Resources, November 1995;

(m) *Management of the California State Water Project*, Bulletin 132-96, Department of Water Resources, August 1997;

(n) *Management of the California State Water Project*, Bulletin 132-98, Department of Water Resources, November 1999;

(o) *Critical Water Shortage Contingency Plan*, Governor's Advisory Drought Planning Panel, December 29, 2000;

(p) *The California Water Plan Update, Bulletin 160-98*, Department of Water Resources, November 1998;

(q) Final Programmatic Environmental Impact Statement/Environmental Impact Report ("Final EIS/EIR") for the CALFED Bay-Delta Program, dated July 2000, including the August 28, 2000 Record of Decision;

(r) *Final Project Report, Update of Basin Plan for Piru, Sespe, and Santa Paula Hydrologic Areas*, State of California, The Resources Agency, Department of Water Resources, Southern District, June 1989;

(s) Nickel Water agreements and related environmental documentation;

(t) *2001 Update Report on the Hydrogeologic Conditions in the Alluvial and Saugus Formation Aquifer Systems*, Volumes I and II, prepared by Richard C. Slade & Associates LLC, July 2002;

(u) *Water Transfer Issues in California*, Final Report to the California State Water Resources Control Board by the Water Transfer Workgroup, June 2002;

(v) *Programmatic Record of Decision*, prepared by the CALFED Bay-Delta Program, August 28, 2000;

(w) *Draft Recommendations to Streamline State and Federal Water Approval Process in California*, prepared by the CALFED Water Transfer Streamlining Subcommittee;

(x) *A Guide to Water Transfers*, Draft, prepared by SWRCB staff, July 1999;

(y) *The Role of Water Transfers in Meeting California's Water Needs*, prepared by the Legislative Analyst Office, September 8, 1999;

(z) *Groundwater Management in California*, prepared by DWR, 1999;

(aa) *Water Transfers in California: Translating Concept Into Reality*, DWR, 1993; and

(bb) *The Transfer of Water Rights in California: Background and Issues*, Governor's Commission to Review California Water Rights Law, Staff Paper No. 5, 1977.

(cc) *Draft Final Eastern Santa Clara Subbasin Groundwater Study Site Characterization Phase (Remedial Investigation) Quality Assurance Project Plan*, Prepared for United States Army Corps of Engineers, Los Angeles District, Southern Pacific Division, October 2002, Prepared by CH2M Hill.

(dd) *Draft Final Eastern Santa Clara Subbasin Groundwater Study Site Characterization Phase (Remedial Investigation) Work Plan*, Prepared for United States Army Corps of Engineers, Los Angeles District, Southern Pacific Division, October 2002, Prepared by CH2M Hill.

(ee) *Draft Final Eastern Santa Clara Subbasin Groundwater Study Site Characterization Phase (Remedial Investigation) Community Involvement Work Plan,* Prepared for United States Army Corps of Engineers, Los Angeles District, Southern Pacific Division, October 2002, Prepared by CH2M Hill.

(ff) *Draft Final Eastern Santa Clara Subbasin Groundwater Study Site Characterization Phase (Remedial Investigation) Field Sampling Plan,* Prepared for United States Army Corps of Engineers, Los Angeles District, Southern Pacific Division, October 2002, Prepared by CH2M Hill.

(gg) *Draft Report, Recycled Water Master Plan,* Castaic Lake Water Agency, May 2002.

All of the reference documents are incorporated by this reference. The documents identified in paragraphs (a), (b), and (d) are presented in Appendix 2.5 of the original Draft Additional Analysis (April 2001). Due to the size, the documents identified in paragraphs (g) through (s), above, are available for public review by contacting: Impact Sciences, Inc., Tom Worthington, 30343 Canwood Street, Suite 210, Agoura Hills, California 91301, (818) 879-1100; or the County of Los Angeles Department of Regional Planning, Lee Stark, 320 W. Temple Street, Room 1346, Los Angeles, California 90012, (213) 974-6467. The documents identified in paragraphs (c), (f), (s) and (t) are provided in the Revised Draft Additional Analysis in Appendix 2.5.

2.5.2 OVERVIEW OF WATER RESOURCES SECTION

The purpose of this section is to provide an overview of the **Water Resources Section**. The **Water Resources Section** contains the information provided below in response to the trial court's decision and Writ.

Section 2.5.3, Existing Setting. This section describes the existing water purveyors in the Santa Clarita Valley and their service areas, and summarizes important characteristics applicable to the water service area in the Santa Clarita Valley, which includes the Specific Plan site. The data found in the section provides an important backdrop to understanding water supplies and demand in the Santa Clarita Valley generally, as well as understanding Newhall Ranch's water demand and supplies.

Section 2.5.4, Water Supplies and Demand in the Santa Clarita Valley. The section provides important regional information regarding water sources for the Santa Clarita Valley, including the Specific Plan site. The section summarizes two aspects of the water supply and demand picture, which provide context to the Specific Plan. First, the section summarizes the existing and planned future water supplies for the Castaic Lake Water Agency ("CLWA") service area, including the Specific Plan site. Second, the section summarizes the historic, existing and projected water demands within the CLWA service area.

Section 2.5.5, Newhall Ranch Water Demand and Supplies. This section is the "heart" of the **Water Resources Section**. This section specifically responds to the trial court's inquiries and directions with respect to available water sources for the Specific Plan. This section demonstrates that adequate water sources will be available for build-out of the Specific Plan by showing that the project applicant has secured other water sources and developed the factual basis for feasibly utilizing the Saugus Groundwater Banking/ASR Program. This section also includes tables depicting the Specific Plan and cumulative water demand and supply data. The tables, for convenience, are duplicated and provided at the end of this section. Because two independent primary water sources have been secured to meet the potable water needs of the Specific Plan, no potable water would be needed from State Water Project (SWP) and CLWA supplies.

Section 2.5.6, Water Impacts Analysis. As directed by the trial court's decision and Writ, this section assesses the environmental impacts associated with providing the identified water supplies to the Specific Plan, including the impacts of the Saugus Groundwater Banking/ASR Program. The environmental impacts are also assessed against specified "significance thresholds" identified in this section. The issues addressed in this section include, among other topics: (a) impacts from groundwater pumping associated with the Saugus Groundwater Banking/ASR Program; (b) impacts from valley-wide groundwater

pumping; (c) impacts of reclaimed water use; (d) perchlorate impacts; (e) water quality impacts of increased SWP water importation; and (f) impacts to sensitive biological resources in and along the Santa Clara River and downstream, which would result in the provision of water to the Specific Plan site.

Based on the analysis in this section, the issues presented above did not give rise to the identification of any unmitigated significant environmental impacts resulting from the provision of water to the Specific Plan site.

Sections 2.5.7 and **2.5.8, Mitigation Measures and Significant Impact Findings.** Consistent with the trial court's decision and Writ, this section evaluates feasible mitigation measures and makes findings that the provision of water to the Specific Plan does not result in any unavoidable significant impacts.

Water Tables: The tables depicting the Specific Plan and cumulative water demand and supply are briefly summarized below and are provided for convenience. For further information regarding the water tables and the Specific Plan demand and supplies, please refer to **Section 2.5.5** of this report.

Table 2.5-1, Specific Plan Demand and Supply Comparison, shows the Specific Plan's water demand and water supply sources;

Table 2.5-2, Existing Plus Specific Plan Demand and Supply for the Santa Clarita Valley, shows both the existing water demand and the Specific Plan demand and compares that demand against the water supplies in the Santa Clarita Valley, including the Newhall Ranch supplies;

Table 2.5-3, Scenario 1: DMS Buildout Scenario Demand and Supply for the Santa Clarita Valley, shows a cumulative development scenario involving existing development demand, plus demand associated with build-out of the development monitored by the County's Development Monitoring System ("DMS") for the Santa Clarita Valley, plus the Specific Plan demand, and compares that "DMS Buildout Scenario" to the water supplies for Santa Clarita Valley, including the Newhall Ranch supplies;

Table 2.5-4, Scenario 2: Santa Clarita Valley Cumulative Buildout Scenario Water Demand, shows a more extensive cumulative build-out scenario involving existing development, plus DMS demand, plus Specific Plan demand, and "additional urban demand" associated with both partial build-out of the Valley in the year 2020 and full build-out of the Valley in the year 2045;

Table 2.5-5, Scenario 2: Santa Clarita Valley Cumulative Buildout Scenario Water Supplies, depicts the water supplies for both the Santa Clarita Valley and the Specific Plan under the Valley's "Cumulative Buildout Scenario;" and

Table 2.5-6, Scenario 2: Santa Clarita Valley Cumulative Buildout Scenario Water Demand and Supply, depicts both the water demand and supply for the Santa Clarita Valley under the more extensive "Cumulative Buildout Scenario".

As shown in **Table 2.5-1** and **Chart 2.5-1**, the Specific Plan's total average year water demand is 17,680 acre-feet per year (AFY), of which 8,645 AFY represents the annual potable demand and 9,035 AFY represents the annual non-potable demand. In a dry year, demand increases by approximately 10 percent due to a reduction in local rainfall. In an average year, an additional 4,500 acre-feet is required to inject into the Saugus aquifer as part of the proposed Saugus Groundwater Banking/ASR Program.

Table 2.5-2, shows both existing water demand and Specific Plan demand and compares that demand against the water supplies in the Santa Clarita Valley, including the Newhall Ranch supplies. As shown on **Table 2.5-2**, water supplies range from 121,085 AFY to 138,585 AFY and 112,530 to 131,530 AFY in average and dry years, respectively. These water supplies more than meet the existing plus Specific Plan demand in Santa Clarita Valley. It should be noted that the scenario depicted in this table would not actually occur. This scenario assumes that the only new development that would occur in the Santa Clarita Valley would be on the Newhall Ranch Specific Plan site. However, new development would actually occur simultaneously on the Newhall Ranch site and at other locations in the Santa Clarita Valley. Such scenarios are depicted on **Tables 2.5-3** through **2.5-6** below.

As shown in **Table 2.5-3** and **Chart 2.5-2**, under the "DMS Buildout Scenario," water supplies range from 116,594 to 144,131 AFY and 121,635 to 193,172 AFY in average and dry years, respectively. These water supplies more than meet the existing, plus Specific Plan, plus DMS demand of 100,028 acre-feet per year in an average year and the demand of 105,082 AFY in a dry year. In fact, a surplus of water ranging from 16,566 to 44,103 AFY and 16,552 to 88,089 AFY would occur in an average and dry year, respectively. This surplus would be available in normal/average years for water banking programs (*e.g.*, Saugus Groundwater Banking/ASR Program, Semitropic Groundwater Banking Project, *etc.*).

Tables 2.5-4, **2.5-5** and **2.5-6**, and **Charts 2.5-3** and **2.5-4** show the water picture for both partial build-out of the Santa Clarita Valley and the Specific Plan by the year 2020, and full build-out of the Valley by the year 2045. Under partial buildout, total water demands, including Newhall Ranch, would be 105,200 AFY in an average year and 112,750 AFY in a dry year. The water supplies at partial build-out range from 129,722 to 159,722 AFY and 133,167 to 197,667 AFY in average and dry years, respectively, which

would more than meet the expected demand. In fact, a surplus of water ranging from 24,522 to 54,522 AFY and 20,417 to 84,917 AFY would occur in average and dry years, respectively.

Under full build-out to the year 2045, total water demands, including Newhall Ranch, would be 153,500 AFY in an average year and 163,900 AFY in a dry year. The water supplies at full build-out range from 165,010 to 174,210 AFY in average years, and would be approximately 194,245 AFY in dry years. Again, these water supplies would exceed expected demands over the long-term. In fact, a net water supply surplus ranging from 11,510 to 20,710 AFY in average years, and approximately 30,345 AFY would be available in dry years. This surplus of water would be available in normal/average years for banking programs (*e.g.*, Semitropic Groundwater Banking Project, other groundwater banking projects, *etc.*). In short, the water supply picture for the Santa Clarita Valley, including Newhall Ranch, shows that water supplies exceed existing, near-term and long-term projected demand.

Table 2.5-1
Specific Plan Demand and Supply Comparison
(acre-feet per year)

		Average	Dry
Newhall Ranch Water Demand			
- Potable Demand		8,645	8,645
- Non-Potable Demand		9,035	9,035
	Subtotal	17,680	17,680
- Dry Year 10% Increase in Demand [f]		0	1,768
	Total	**17,680**	**19,449** [f]
Additional Groundwater Bank Programs			
- Saugus Groundwater Banking/ASR Program		**4,500**	**0**
Newhall Ranch Water Supply			
- Non-Potable Supplies			
- Newhall Ranch Reclaimed Water		5,344	5,344
- CLWA Reclaimed Water		3,691	4,595
	Subtotal	9,035	9,939
- Potable Supplies			
- Newhall Ranch Agricultural Water		7,038	7,038
- Nickel Water[a]		1,607	1,607
- Semitropic Groundwater Banking Project		0	865
	Subtotal	8,645	9,510
	Total	**17,680**	**19,449**
Additional Groundwater Programs/Supplemental Supplies			
- CLWA SWP and Other Supplies [b]		4,500	0
- Newhall/SWP Water [b]		4,566	3,044
- Castaic Creek Flood Flows [e]		7,043	0
- Semitropic Groundwater Banking Project		0	4,085[c]
- Saugus Groundwater Banking/ASR Program		0	4,100[c]
	Total	**16,109**	**11,229**
	Total Supplies	**33,789**	**30,678**
	Total Surplus[d]	**11,609**	**11,229**

[a] *The applicant has secured water under contract with Nickel Family LLC in Kern County. This water is 100 percent reliable on a year-to-year basis, and not subject to the annual fluctuations that can occur in dry year conditions. The water would be delivered through the Kern County Water Agency and the SWP system.*

[b] *Consistent with the DWRSIM model, the figures show SWP entitlement (including the Newhall/SWP water entitlement of 7,648 AF per year) reduced in average years to approximately 59.7 percent of entitlement and in dry years to approximately 39.8 percent of entitlement. In any given year, the actual amount of SWP water deliveries could be above or below these model projections.*

As these programs are needed in dry years, they could be used up to the amounts indicated (as needed).

[c] *The surplus shown above is the net water available for injection into banking programs (e.g., Semitropic Groundwater Banking Project, other groundwater banking projects, etc.).*

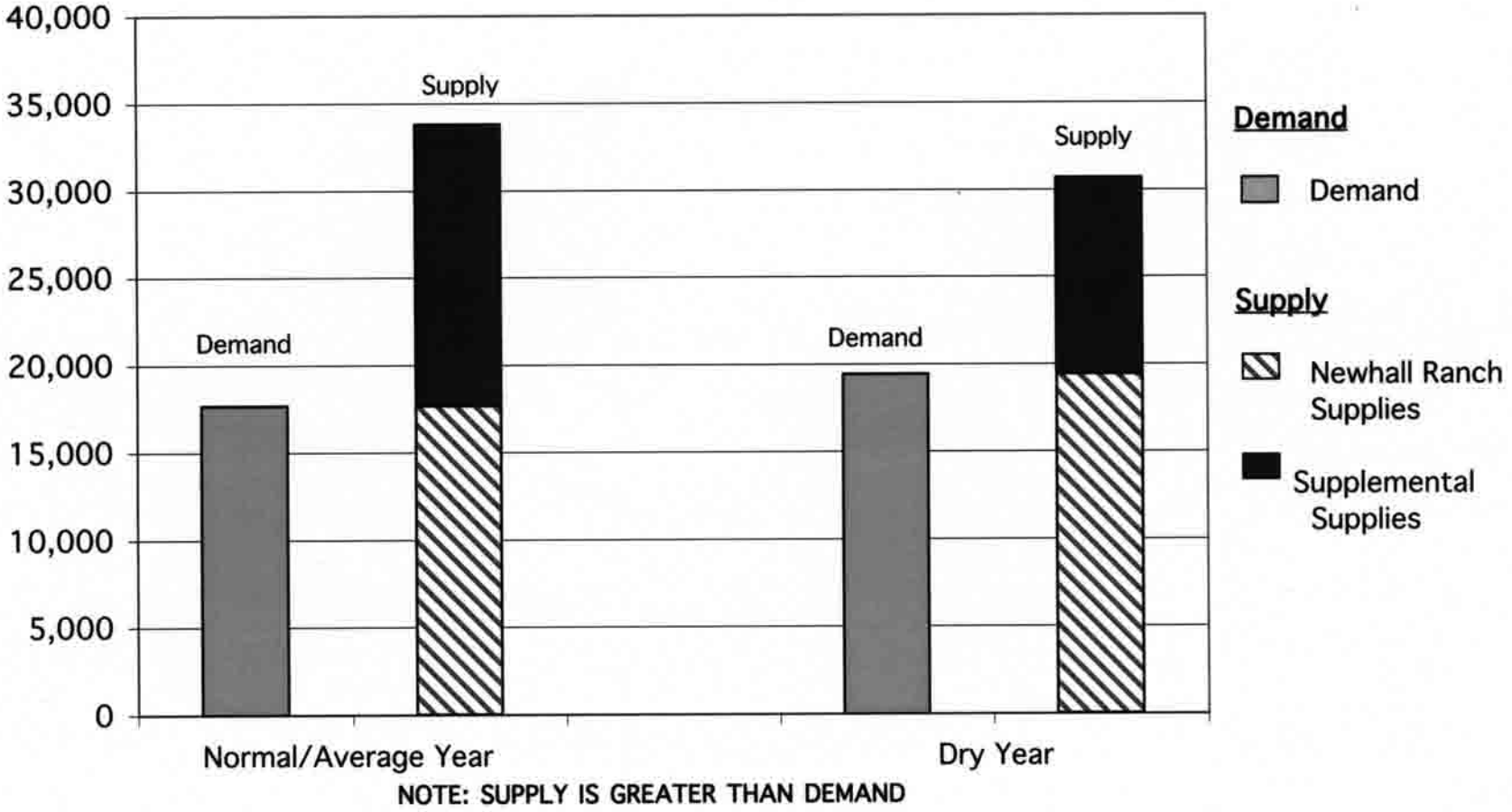
[d] *See, discussion in* **Section 2.5.5**. *Castaic Creek flood flows are a variable source of water that could be used, when available, in wet and average years, for the Semitropic Groundwater Banking Project (through water transfers) or the Saugus Groundwater Banking/ASR Program (from CLWA through Valencia Water Company).*

[e] *In single dry years, demand could increase by 10 percent. In multi-dry years, actual demand is expected to decrease by approximately 20 percent as it did in 1991 due to implementation of voluntary conservation measures.*

Chart 2.5-1

Newhall Ranch Water Demand vs. Supply

(acre-feet per year)

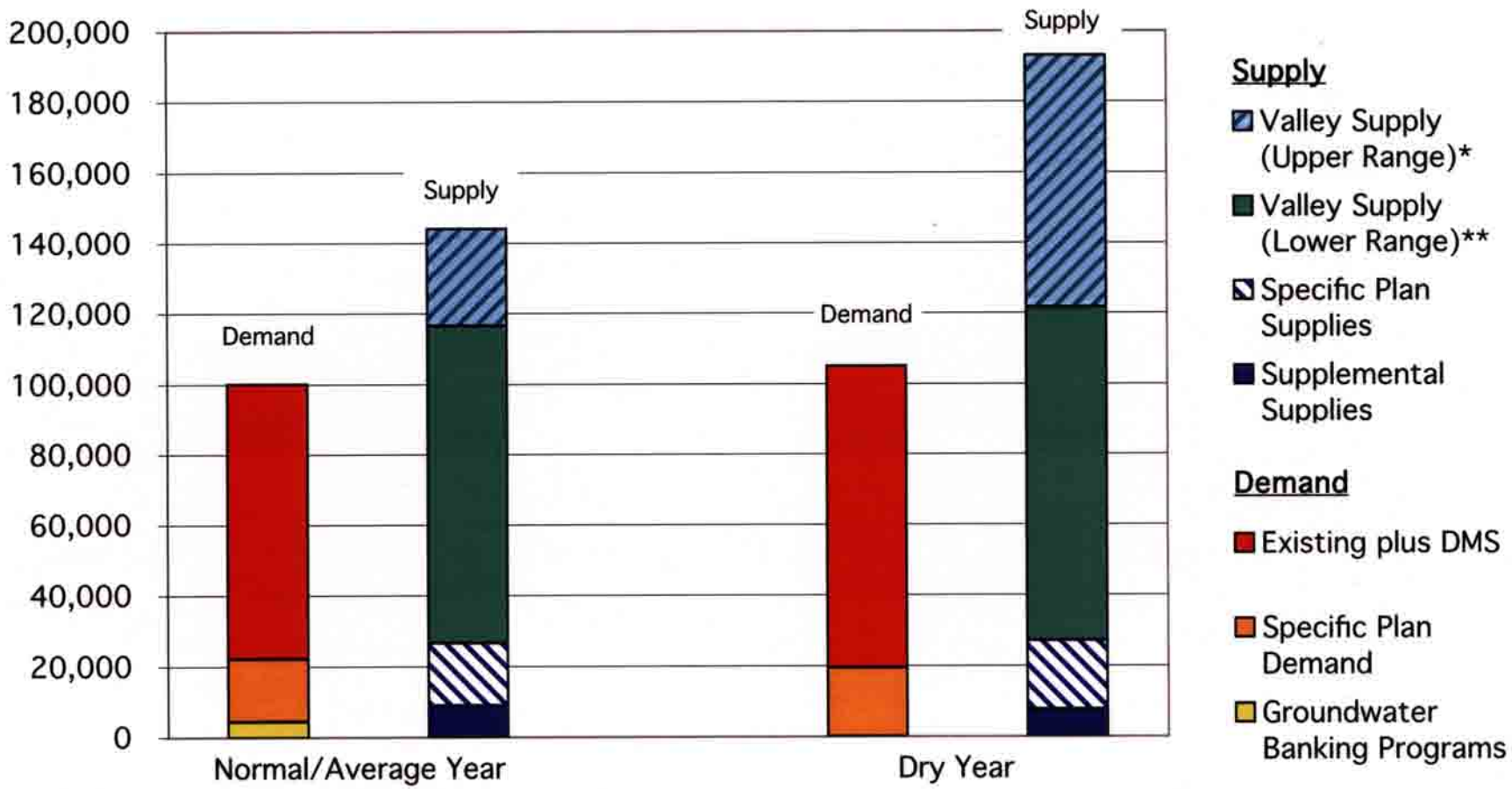


NOTE: SUPPLY IS GREATER THAN DEMAND

Chart 2.5-2

Current DMS Buildout Scenario Water Demand vs. Supply

(acre-feet per year)



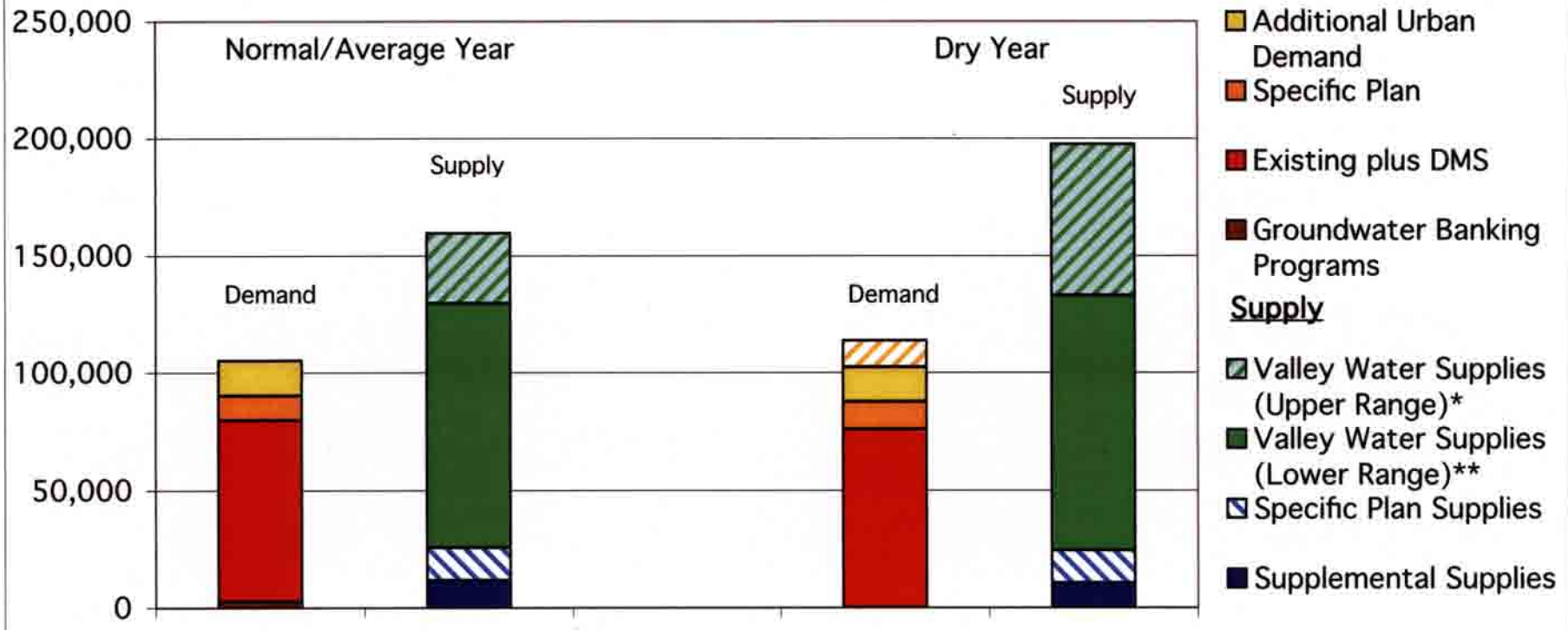
* Upper Range = Water supply expected when the upper range of the supply ranges are considered (see Table 2.5-36).

** Lower Range = Water supply expected when the lower range of the supply ranges are considered (see Table 2.5-36).

NOTE: DMS includes City of Santa Clarita and and unincorporated County area.

Chart 2.5-3

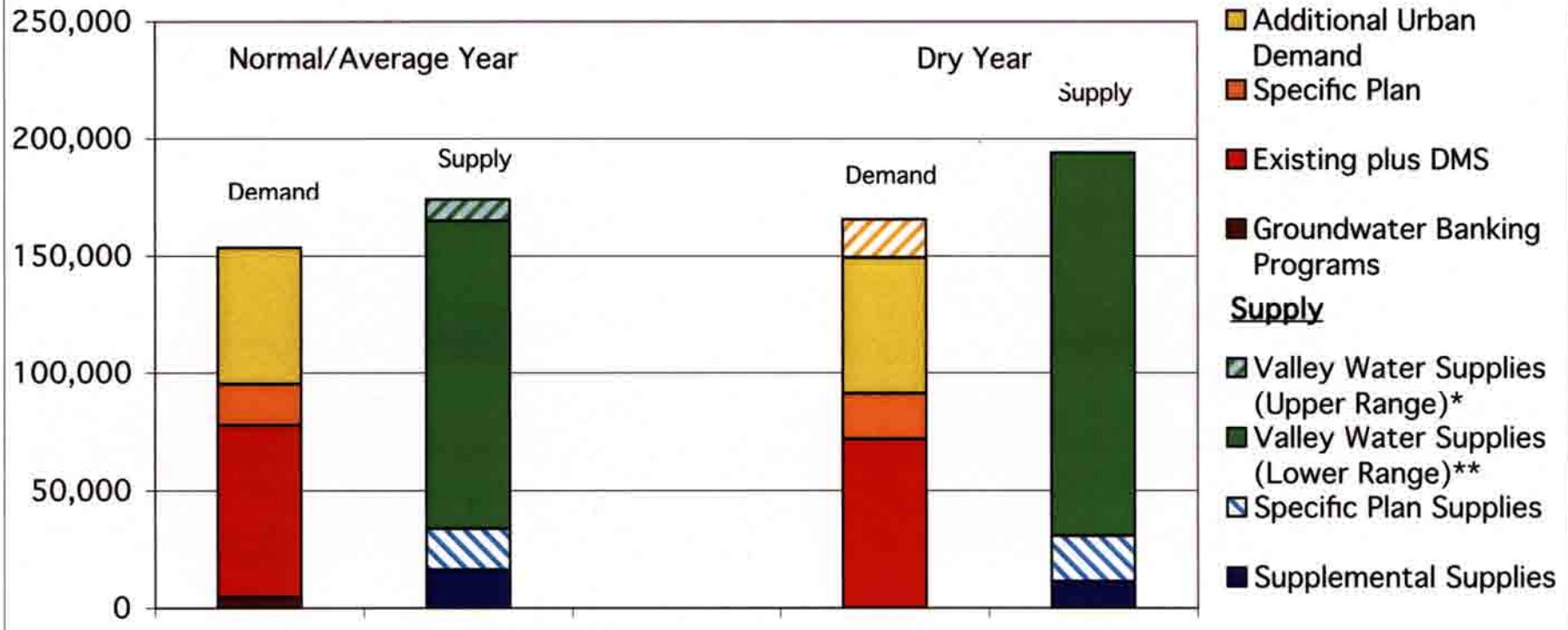
Santa Clarita Valley Cumulative Buildout Scenario
Water Demand vs. Supply
Full Buildout (2020)
(acre-feet per year)



* Upper Range = Water supply expected when the upper range of the supply ranges are considered (see Table 2.5-37).
** Lower Range = Water supply expected when the lower range of the supply ranges are considered (see Table 2.5-37).
NOTE: Includes City of Santa Clarita and and unincorporated County area.

Chart 2.5-4

Santa Clarita Valley Cumulative Buildout Scenario
Water Demand vs. Supply
Full Buildout (2045)
(acre-feet per year)



* Upper Range = Water supply expected when the upper range of the supply ranges are considered (see Table 2.5-37).
** Lower Range = Water supply expected when the lower range of the supply ranges are considered (see Table 2.5-37).
NOTE: Includes City of Santa Clarita and and unincorporated County area.

Table 2.5-2
Existing Plus Specific Plan Demand and Supply for the Santa Clarita Valley
(acre-feet per year)

	Average Years	Dry Years
Santa Clarita Valley Demand		
- Existing Demand[a]	76,769	76,769
- Dry Year 10% Increase in Demand	0	7,677
- Specific Plan Demand[b]	17,680	19,449
Potable Demand	8,645	8,645
Non-Potable Demand	9,035	9,035
Dry Year 10% Increase in Demand	0	1,768
Saugus Groundwater Banking/ASR Program	4,500	0
Total	**98,949**	**103,895** [i]
Santa Clarita Valley Supply[c]		
- Local Supply		
a. Groundwater		
- Alluvial Aquifer	30,000 to 40,000	30,000 to 35,000
- Less Newhall Ranch Agricultural Water	(7,038)	(7,038)
- Saugus Aquifer	7,500 to 15,000	11,000 to 15,000
- Saugus Aquifer (new wells)	0	10,000 to 20,000
b. Reclaimed Water	0	0
- Imported Supplies		
a. SWP Supplies[d]	56,800	37,900
Less Portion for Newhall Ranch	(1,607)	(2,472)
Total	**85,655 to 103,155**	**79,390 to 98,390**
Newhall Ranch Specific Plan Supplies		
- Non-Potable Supplies		
Newhall Ranch Reclaimed Water	5,344	5,344
CLWA Reclaimed Water	3,691	4,595
Subtotal	9,035	9,939
- Potable Supplies		
Newhall Ranch Agricultural Water	7,038	7,038
Nickel Water	1,607	1,607
Semitropic Groundwater Banking Project	0	865
Subtotal	8,645	9,510
Total	**17,680**	**19,449**
Additional Groundwater Programs/Supplemental Supplies		
CLWA SWP and Other Supplies[d]	4,500	0
Newhall/SWP Water[g]	4,566	3,044
Castaic Creek Flood Flows[h]	7,043	0
Semitropic Groundwater Banking Project	0	4,085
Saugus Groundwater Banking/ASR Program	0	4,100
Total	**16,109**	**11,229**
Total Supplies	**121,085 to 138,585**	**112,530 to 131,530**
Total Surplus[f]	**22,136 to 39,636**	**8,635 to 27,635**

[a] *Source: The County of Los Angeles Department of Regional Planning, Inventory Information for Water Service, July 2002.*

[b] *This demand would occur starting with the Specific Plan's buildout year of approximately 2030. Newhall Ranch buildout is assumed to occur from 2005 to 2030 at a rate of 864 dwelling units per year, with water demands of 707 AFY average.*

[c] *Source: UWMP, December 2000, Tables 2-6 and 4-1.*

[d] *Consistent with the DWRSIM model, the figures show SWP entitlement reduced in average years to approximately 59.7 percent of entitlement and in dry years to approximately 39.8 percent of entitlement. In any given year, the actual amount of SWP water deliveries could be above or below these model projections. Deliveries of water associated with CLWA's SWP entitlement of 95,200 acre-feet per year are affected by a number of factors, including hydrologic conditions, the status of SWP facilities' construction, environmental requirements and evolving policies for the Bay-Delta. Several programs are in place that have the potential to improve the reliability of SWP water (See, Urban Water Management Plan, December 2000, page 2-10).*

[e] *Consists of surplus SWP water available in normal/average years from CLWA water transfers, Interruptible SWP water, SWP Turnback Pool program, SWP Surplus water provisions and SWP Carryover Water program.*

[f] *The surplus shown above is the net water available for injection into banking programs (e.g., Semitropic Groundwater Banking Project, other groundwater banking projects, etc.), not including Castaic Creek Flood Flows.*

[g] *This source consists of CLWA SWP Table A water plus Newhall/SWP Water (purchase consists of 7,648 AF of surplus Table A entitlement water) reduced in average years to approximately 59.7 percent of entitlement and in dry years to approximately 39.8 percent of entitlement.*

[h] *See, discussion in* ***Section 2.5.5****. Castaic Creek flood flows are a variable source of water that could be used, when available, in average and wet years, for the Semitropic Groundwater Banking Project (through water transfers) or the Saugus Groundwater Banking/ASR Program (from CLWA through Valencia Water Company).*

[i] *Consistent with the UWMP, December 2000, demand is increased by approximately 10 percent in dry years.*

Note: The scenario depicted in this table would not actually occur. This scenario assumes that the only new development that would occur in the Santa Clarita Valley would be on the Newhall Ranch Specific Plan site. However, new development would occur actually simultaneously on the Newhall Ranch site and at other locations in the Santa Clarita Valley. Such scenarios are depicted on ***Tables 2.5-3*** *through* ***2.5-6*** *below.*

Table 2.5-3
Scenario 1: DMS Buildout Scenario Demand and Supply for the Santa Clarita Valley
(acre-feet per year)

	Average Years			Dry Years		
Santa Clarita Valley Demand						
- DMS Demand [a]	87,674			87,674		
- Dry Year 10% Increase in Demand	0			8,767		
- Specific Plan Demand [b]	17,680			19,449		
Potable Demand		8,645			8,645	
Non-Potable Demand		9,035			9,035	
Dry Year 10% Increase in Demand		0			1,768	
- Additional Groundwater Banking Program	4,500			0		
- Less Conservation [j]	(9,825)			(10,808)		
Total	**100,028**			**105,082**		
Santa Clarita Valley Supply [c]						
- Local Supply						
a. Groundwater						
Alluvial Aquifer	30,000	to	40,000	30,000	to	35,000
- Less Newhall Ranch Agricultural Water	(7,038)			(7,038)		
Saugus Aquifer	7,500	to	15,000	11,000	to	15,000
Saugus Aquifer (new)	0		0	10,000	to	20,000
b. Reclaimed Water	1,700		10,737	1,700		10,737
Less CLWA Reclaimed Water Supply for Newhall Ranch	(1,033)			(1,033)		
- Imported Supplies						
a. SWP Supplies [d]	56,800			37,900		
b. Water Banking/Conjunctive Use				10,000 to 52,500		
c. Desalination	2,000	to	3,000	2,000	to	3,000
Total	**89,963**	**to**	**117,500**	**94,518**	**to**	**166,055**
Specific Plan Supplies						
- Non-Potable Supplies						
WRP Reclaimed Water	5,344			5,344		
CLWA Reclaimed Water Supply for Newhall Ranch	1,033			1,033		
Subtotal	6,377			6,377		
- Potable Supplies						
Newhall Ranch Agricultural Water	7,038			7,038		
Nickel Water [k]	1,607			1,607		
Newhall/SW P Water (Average Years); Semitropic Groundwater Banking Project [e] (Dry Years)	2,658			4,427		
Subtotal	11,303			13,072		
Total	**17,680**			**19,449**		
Additional Groundwater Programs/Supplemental Supplies						
Newhall/SWP Water [h]	1,908			3,044		
Castaic Creek Flood Flows [i]	7,043			0		
Semitropic Groundwater Banking Project [e]	0			523		
Saugus Groundwater Banking/ASR Program [e]	0			4,100		
Total	**8,951**			**7,667**		
Total Supplies	**116,594**	**to**	**144,131**	**121,635**	**to**	**193,172**
Total Surplus [g]	**16,566**	**to**	**44,103**	**16,552**	**to**	**88,089**

[a] *Complete buildout of DMS land uses is estimated to occur in 2012.*

[b] *This demand would occur starting with the Specific Plan's buildout year of approximately 2030. Newhall Ranch buildout is assumed to occur from 2005 to 2030 at a rate of 864 dwelling units per year, with water demands of 707 AFY average.*

[c] *Source: UWMP, December 2000, Tables 2-6 and 4-1.*

[d] *Consistent with the DWRSIM model, the figures show SWP entitlement reduced in average years to approximately 59.7 percent of entitlement and in dry years to approximately 39.8 percent of entitlement. In any given year, the actual amount of SWP water deliveries could be above or below these model projections. Deliveries of water associated with the Agency's SWP entitlement of 95,200 acre-feet per year are affected by a number of factors, including hydrologic conditions, the status of SWP facilities' construction, environmental requirements and evolving policies for the Bay-Delta. Programs are in place that have the potential to improve the reliability of imported water (See, UWMP, December 2000, page 2-10).*

[e] *As these programs are needed in dry years, they could be used up to the amounts indicated (as needed).*

[f] *Consists of surplus SWP water available in normal/average years from CLWA water transfers, Interruptible SWP water, SWP Turnback Pool program, SWP Surplus water provisions and SWP*

[g] *Carryover Water program.*

[h] *The surplus shown above is the net water available for injection into banking programs (e.g., Semitropic Groundwater Banking Project, other groundwater banking projects, etc.), not including*

[i] *Castaic Creek Flood Flows.*

Newhall/SWP water consists of 7,648 AF of surplus Table A entitlement water reduced in average years to approximately 59.7 percent of entitlement and in dry years to approximately 39.8

[j] *percent of entitlement.*

See, discussion in **Section 2.5.5**. *Castaic Creek flood flows are a variable source of water that, when available in average and wet years, could be used for the Semitropic Groundwater Banking*

[k] *Project and/or Saugus Groundwater Banking/ASR Program.*

The UWMP (pages 3-8 and 3-9) indicates that water demand can be expected to decrease through implementation of water conservation practices in the CLWA service area.

Nickel Water consists of 1,607 AF of water purchased by Newhall Land and delivered via the Kern County Water Agency. This water is 100 percent reliable and is not affected by same factors that reduce the reliability of SWP water.

Table 2.5-4
Scenario 2: Santa Clarita Valley Cumulative Buildout Scenario Water Demand
(acre-feet per year)

	Partial Buildout (year 2020)		Full Buildout (year 2045)	
	Average	Dry	Average	Dry
Buildout Demand				
- DMS Demand	87,674	87,674	87,674	87,674
Dry Year 10% Increase in Demand	0	8,767	0	8,767
- Newhall Ranch Specific Plan [a]	10,608	11,669	17,680	19,449
Potable Demand	5,187	5,187	8,645	8,645
Non-Potable Demand	5,421	5,421	9,035	9,035
Dry Year 10% Increase in Demand	0	1,061	0	1,768
- Additional Urban Demand	14,818	14,818	58,126	58,126
Dry Year 10% Increase in Demand	0	1,482	0	5,812
- Additional Groundwater Banking Program (ASR)	2,700	0	4,500	0
- Less Conservation	(10,600)	(11,660)	(14,480)	(15,928)
Total	**105,200** [c]	**112,750** [b]	**153,500** [d]	**163,900** [b]

[a] *Newhall Ranch buildout is assumed to occur from 2005 to 2030 at a rate of 864 dwelling units per year, with average water demands of 707 AFY.*

[b] *Consistent with the UWMP, December 2000, demand is increased by approximately 10 percent in dry years (102,500 x 1.10 = 112,750 and 149,000 x 1.10 = 163,900).*

[c] *Source: UWMP, December 2000, Table 3-5.*

[d] *Source: UWMP, December 2000, Table 3-5, using a straight-line projection from 2020 to 2045.*

[e] *The Urban Water Management Plan (pages 3-8 and 3-9) indicates that water demand can be expected to decrease through implementation of water conservation practices in the CLWA service area.*

Note: It is expected that the existing plus DMS demand would reach its peak in approximately 2012. The Newhall Ranch Specific Plan demand would begin in approximately 2005 and would reach its peak in approximately 2030. The additional urban demand would begin in approximately 2013, after DMS demand peaks, and would reach its peak in approximately 2045.

Table 2.5-5
Scenario 2: Santa Clarita Valley Cumulative Buildout Scenario Water Supplies
(acre-feet per year)

	Partial Buildout (year 2020)		Full Buildout (year 2045)	
	Average Years	Dry Years	Average Years	Dry Years
Santa Clarita Valley Water Supplies [a]				
Local Supply				
a. Groundwater				
Alluvial Aquifer	30,000 to 40,000	30,000 to 35,000	35,000	32,500
Less Newhall Ranch Agricultural Water	(7, 038)	(7,038)	(7,038)	(7,038)
Saugus Aquifer	7,500 to 15,000	11,000 to 15,000	11,250	13,000
Saugus Aquifer (new wells)	0	10,000 to 20,000	0	15,000
b. Reclaimed Water	17,000	17,000	17,000	17,000
Less CLWA Reclaimed Water Supply for Newhall Ranch	(2,215)	(2,215)	(3,691)	(4,595)
Imported Supplies				
a. CLWA SWP Table A Water [b]	56,800 to 66,300	37,900	73,700 to 82,900	40,200
b. Water Banking/Conjunctive Use	0	10,000 to 52,500	0	52,500
c. Desalination	2,000 to 5,000	2,000 to 5,000	5,000	5,000
Total	**104,047 To 134,047**	**108,647 to 173,147**	**131,221 to 140,421**	**163,567**
Newhall Ranch Specific Plan Supplies				
- Non-Potable Supplies				
Newhall Ranch Reclaimed Water	3,206	3,206	5,344	5,344
CLWA Reclaimed Water	2,215	2,215	3,691	4,595
Subtotal	5,421	5,421	9,035	9,939
- Potable Supplies				
Newhall Ranch Agricultural Water	7,038	7,038	7,038	7,038
Nickel Water	1,607	1,607	1,607	1,607
Semitropic Groundwater Banking Project [c]	0	0	0	865
Subtotal	8,645	8,645	8,645	9,510
Total	**14,066**	**14,066**	**17,680**	**19,449**
Additional Groundwater Programs/Supplemental Supplies				
CLWA SWP and Other Supplies	0	0	4,500	0
Newhall/SWP Water [f]	4,566	3,044	4,566	3,044
Castaic Creek Flood Flows [e]	7,043	0	7,043	0
Semitropic Groundwater Banking Project [c]	0	4,950	0	4,085
Saugus Groundwater Banking/ASR Program [c]	0	4,100	0	4,100
Total	**11,609**	**10,454**	**16,109**	**11,229**
Total Supply	**129,722 to 159,722**	**133,167 to 197,667**	**165,010 to 174,210**	**194,245**

[a] *Source: UWMP, December 2000, Tables 2-2, 2-6 and 4-1.*

[b] *Assumes that by year 2045 the Interim Delta Improvements have been implemented.*

[c] *As these programs are needed in dry years, they could be used up to the amounts indicated (as needed).*

[d] *Consists of surplus SWP water available in normal/average years from CLWA water transfers, Interruptible SWP water, SWP Turnback Pool program, SWP Surplus water provisions and SWP Carryover Water program.*

[e] *See, discussion in Section 2.5.5. Castaic Creek flood flows are a variable source of water that could be used, when available, in average and wet years, for the Semitropic*

[f] *Groundwater Banking Project (through water transfers) or the Saugus Groundwater Banking/ASR Program (from CLWA through Valencia Water Company). SWP entitlement reduced in average years to approximately 59.7 percent of entitlement and in dry years to approximately 39.8 percent of entitlement. In any given year, the actual amount of SWP water deliveries could be above or below these model projections.*

[g] *In dry years under full buildout, amount of SWP water delivered to Newhall Ranch is assumed to be approximately 66 percent of SWP water delivered in average years. Actual future conditions possibly may result in Newhall Ranch using Nickel Water, CLWA SWP Water and Newhall/SWP water.*

Table 2.5-6
Scenario 2: Santa Clarita Valley Cumulative Buildout Scenario Water Demand and Supply
(acre-feet per year)

	Partial Buildout (year 2020)		Full Buildout (year 2045)	
	Average Years	Dry Years	Average Years	Dry Years
Total Buildout Demand [b]	105,200 [a]	112,750	153,500 [c]	163,900
Santa Clarita Valley Water Supplies [d]	104,047 to 134,047	108,647 to 173,147	131,221 to 140,421	163,567
Newhall Ranch Specific Plan Supplies	14,066	14,066	17,680	19,449
Additional Groundwater Programs/Supplemental Supplies	11,609	10,454	16,109	11,229
Total Supply	**129,722 to 159,722**	**133,167 to 197,667**	**165,010 to 174,210**	**194,245**
Total Surplus [e]	**24,522 to 54,522**	**20,417 to 84,917**	**11,510 to 20,710**	**30,345**

[a] *Source: 2000 UWMP, December 2000, Table 3-5, plus Saugus Groundwater Banking/ASR Program injection demand.*
[b] *Consistent with the UWMP, December 2000, demand is increased by approximately 10 percent in dry years.*
[c] *Source: UWMP, December 2000, Table 3-5, using a straight-line projection from 2020 to 2045, plus Saugus Groundwater Banking/ASR Program injection demand.*
[d] *Source: UWMP, December 2000, Tables 2-2, 2-6 and 4-1.*
[e] *The surplus shown above is the net water available for injection into banking programs (e.g., Semitropic Groundwater Banking Project, other groundwater banking projects, etc.).*

2.5.3 EXISTING SETTING

2.5.3.1 Preface

This section describes the existing water purveyors in the Santa Clarita Valley and their service areas, and summarizes important characteristics applicable to the water service area in the Santa Clarita Valley, which includes the Specific Plan site. The data found in the section provides an important backdrop to understanding water supplies and demand in the Santa Clarita Valley generally, as well as understanding Newhall Ranch's water demand and supplies.

2.5.3.2 Water Purveyors in Santa Clarita Valley and Their Service Areas

(a) Castaic Lake Water Agency

For most residents within the Santa Clarita Valley, domestic water service is provided by four retail water purveyors: Los Angeles County Waterworks District 36, Newhall County Water District, Santa Clarita Water Division of CLWA and Valencia Water Company. However, these four retail water purveyors actually obtain all or a portion of their water supplies from the Castaic Lake Water Agency.

CLWA was formed in 1962 as a wholesale water agency for the purpose of contracting with the California Department of Water Resources ("DWR") to provide a supplemental supply of imported water from the State Water Project ("SWP") to serve retail water purveyors in the Santa Clarita Valley.[5] CLWA is one of 29 agencies with long-term water supply contracts with DWR for SWP water.[6] CLWA obtains SWP water from the upper reservoir at Castaic Lake, a storage reservoir of the SWP. CLWA serves the City of Santa Clarita, the unincorporated Santa Clarita Valley in Los Angeles County and portions of Ventura County. CLWA's service area covers approximately 195 square miles. **Figure 2.5-1** depicts CLWA's service area.

CLWA's physical water delivery system is comprised of facilities needed to treat and convey SWP supplies to the retail water purveyors. The funding for CLWA's expansion, modification and addition to its current facilities and programs is through its Capital Improvement Plan ("CIP"). As part of CLWA's annual budget process, the CIP is reviewed and updated as necessary. An integral part of CLWA's CIP is

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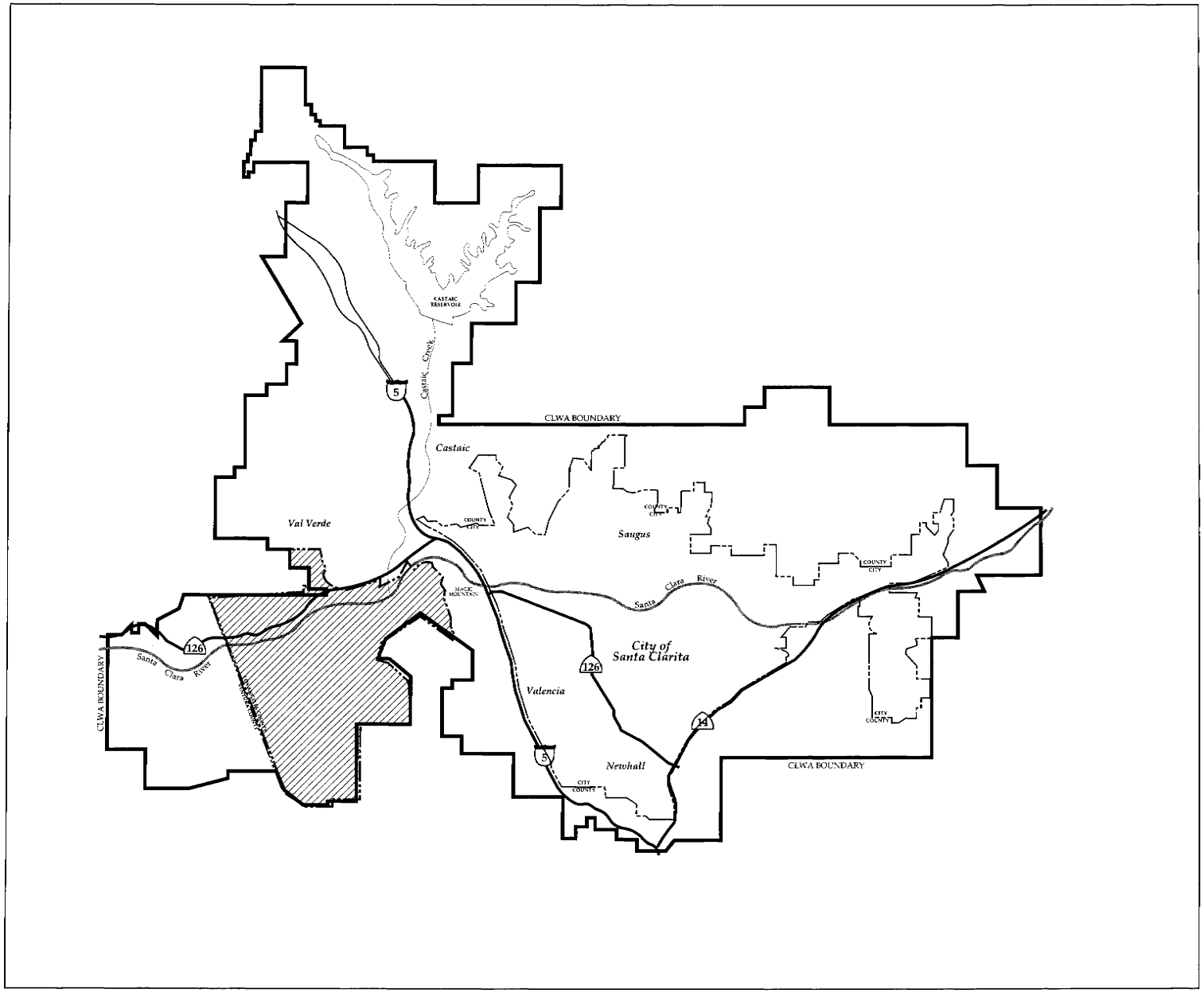
5 *See*, California Water Code Appendix Sections 103-1, 103-15.

6 CLWA also provides retail water service through a contract with the Santa Clarita Water Division of CLWA since September 1999.

its capital facilities fee, or development impact fee, which is a source of revenue to fund additional facilities and programs required to accommodate growth within the service area. As part of CLWA's CIP, funding has been established to provide for the purchase of additional imported supplies, implementation of reclaimed water (also referred to as "recycled water") programs and enhancement of groundwater, as well as groundwater banking/conjunctive-use programs both inside and outside the CLWA service area. According to CLWA, implemented over time, these measures will provide assurance that there will be sufficient supplies to meet water demands. Seawater and local brackish water desalination coupled with other contractual water exchanges could also provide the additional water supplies to meet anticipated community needs. It should be noted that desalination water would not likely be delivered to the Santa Clarita Valley. Desalination water would be exchanged for non-desalination water owned by another water agency located nearer to the desalination source. According to CLWA, the priority for implementation of some of these supply approaches will be driven in part by the relative cost.

CLWA's existing water delivery system is presented in **Figure 2.5-2.** As shown in that figure, CLWA owns and operates two water filtration plants, the Earl Schmidt Filtration Plant, with a current water capacity of 28 million gallons per day ("mgd"), and the Rio Vista Water Treatment Plant, with a water capacity of 30 mgd. The two plants have a current capacity to treat a total of 58 mgd. These plants were designed to accommodate expansion as required. CLWA has currently authorized a private consultant to proceed with the pre-design of the Earl Schmidt plant expansion to increase the plant's treatment capacity to a total of approximately 50 mgd. The expanded plant is scheduled to be on-line by mid-2003. CLWA also owns and operates an intake pump station at the Earl Schmidt plant, a pump station at the Rio Vista plant, major water transmission lines, and storage tanks and reservoirs.

CLWA treats the SWP water at its two water filtration plants and then distributes the water to the local retail water purveyors in the Santa Clarita Valley. From CLWA's two existing plants, the treated SWP water is delivered by gravity to the retail water purveyors through CLWA's distribution network of pipelines and turnouts. Local water retailers, such as Valencia Water Company, combine SWP water with groundwater from their own municipal-supply wells in the Alluvial aquifer and Saugus formation to meet water demand within their respective service areas. The actual mix between SWP and groundwater distributed by the water retailers to their respective service areas is variable over time and is based upon availability and operational and cost considerations.



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L E G E N D

SPECIFIC PLAN SITE

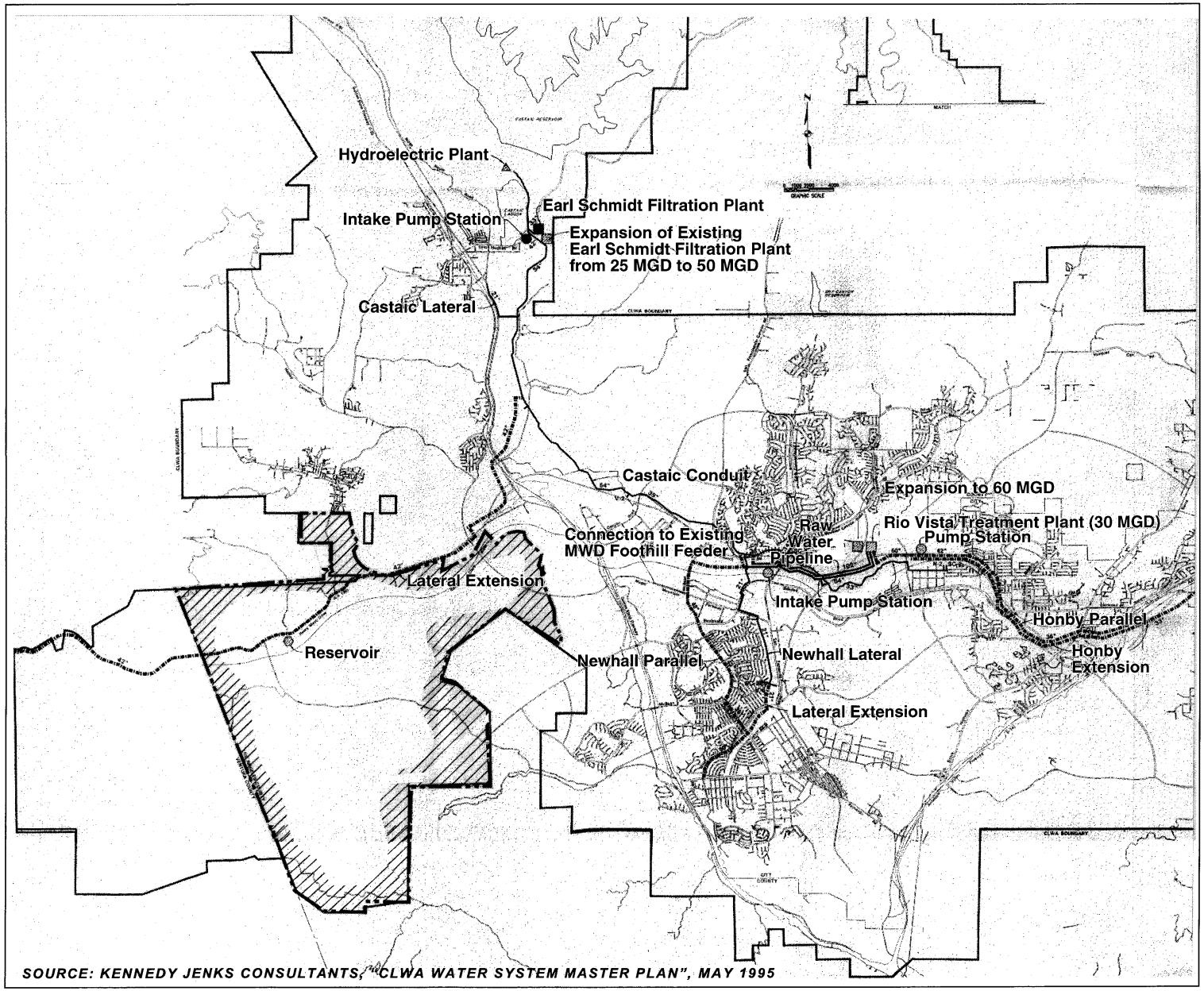
CASTAIC LAKE WATER AGENCY BOUNDARY

IMPACT SCIENCES INC

NORTH

FIGURE 2.5-1

CASTAIC LAKE WATER AGENCY SERVICE AREA



SOURCE: KENNEDY JENKS CONSULTANTS, "CLWA WATER SYSTEM MASTER PLAN", MAY 1995

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L E G E N D

- FILTRATION PLANT
- TREATMENT PLANT
- EXPANSION
- INTAKE PUMP STATION
- PUMP STATION
- HYDROELECTRIC PLANT
- RESERVOIR

IMPACT SCIENCES INC

NORTH

FIGURE 2.5-2

CASTAIC LAKE WATER AGENCY WATER DELIVERY SYSTEM

CLWA's current total entitlement to SWP water is 95,200 AFY.[7] Of that amount, CLWA obtained 41,000 AFY from KCWA, through its member district Wheeler Ridge-Maricopa Water Storage District ("Wheeler Ridge"), pursuant to a March 1999 water transfer agreement. CLWA analyzed the potential environmental impacts of the water transfer in a Final EIR entitled, "Supplemental Water Project Environmental Impact Report", dated February 1999 (SCH No. 98041127) ("the CLWA EIR"). A project opponent filed a petition for Writ of mandate in April 1999, challenging the adequacy of the CLWA EIR under CEQA. The trial court rejected the petition, finding that the CLWA EIR complied with CEQA, and the petitioner appealed.

In a decision issued in January 2002, the appellate court reversed the trial court's judgment but not on any of the specific grounds urged by the petitioner. Rather, the appellate court found that, since the appeal had been filed, another EIR, which studied the environmental effects of the Monterey Agreement ("the Monterey Agreement EIR"), had been ordered decertified. Because it found that the CLWA EIR had "tiered" on the now-decertified Monterey Agreement EIR, the appellate court held that the CLWA EIR also must be decertified. Notably, the appellate court found that, were it not for the intervening decertification of the Monterey Agreement EIR, it "would have affirmed [the trial court's] judgment." *See, Friends of the Santa Clara River v. Castaic Lake Water Agency* (2002) 95 Cal.App.4th 1373, 1387.

Importantly, although the appellate court ordered the CLWA EIR decertified, it did *not* order CLWA to void its approval of the water transfer agreement itself. Instead, the appellate court remanded the matter to the trial court for further proceedings concerning the remedy, stating that the trial court was in a "better position" than the appellate court to make the factual determinations necessary to devise an appropriate remedy. *Id.* at 1388.

The trial court held a hearing on September 24, 2002, to hear argument on whether the water transfer agreement should be allowed to remain intact while CLWA completes a new EIR. As directed by the appellate court, the trial court ordered CLWA to vacate its certification of the CLWA EIR. However, the trial court did not order CLWA to vacate its approval of the water transfer agreement itself. Rather, the court ruled that CLWA may utilize and rely on the 41,000 AFY. During the hearing, the petitioner argued that CLWA should not be permitted to rely on the additional entitlement to serve either existing or projected new water users within its service area, nor should it be permitted to rely on the entitlement for planning purposes. The court rejected the petitioner's argument, expressing concern that such a ruling could usher in an unnecessary water shortage in the Santa Clarita Valley and referencing substantial

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7 An acre-foot is 43,560 cubic feet. An acre-foot of water has been generally defined as "an irrigation-based measurement equaling the quantity of water required to cover an acre of land to a depth of one-foot." *See, Brydon v. East Bay Mun. Utility Dist.* (1994) 24 Cal.App.4th 178, 182, fn. 1.

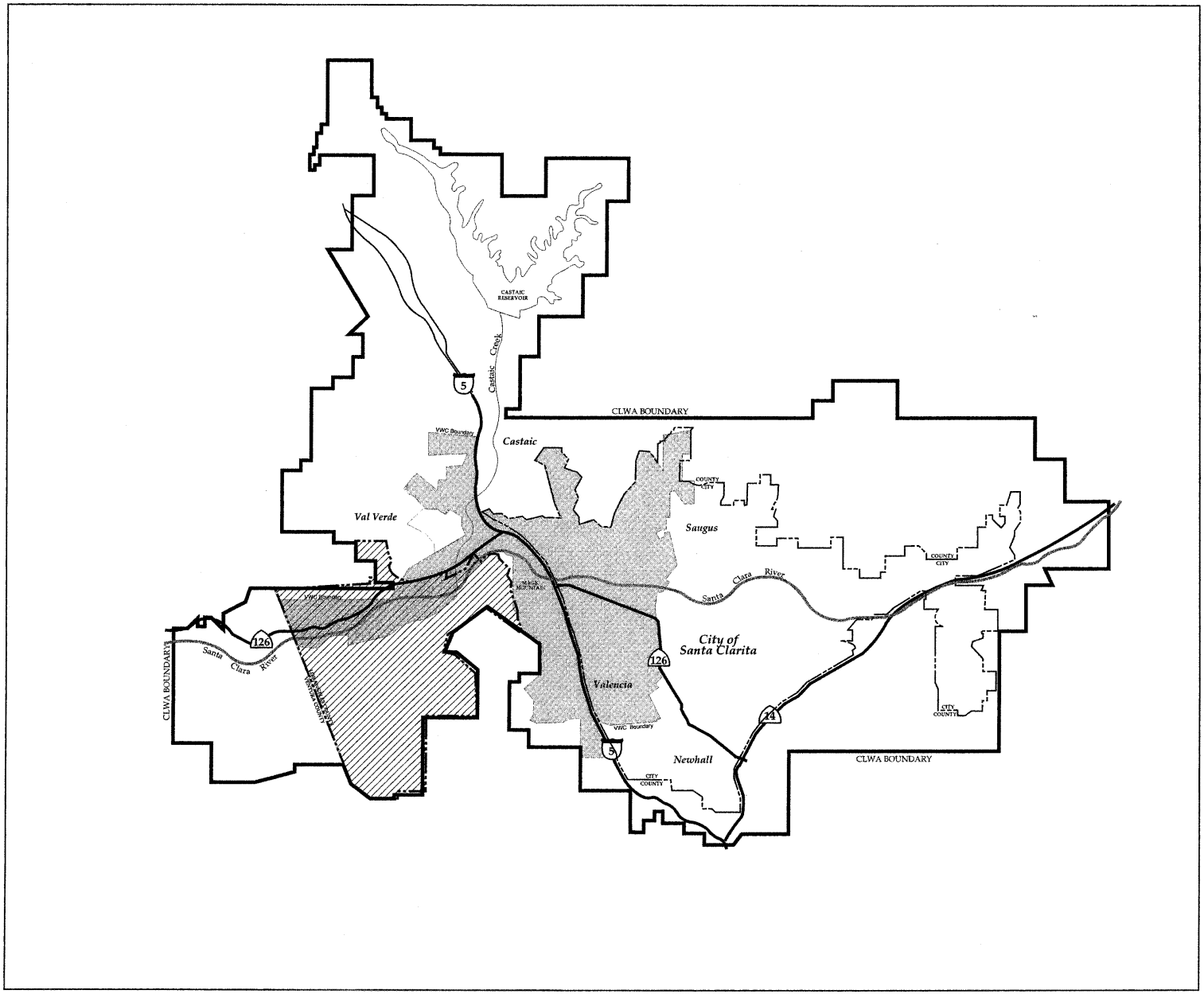
evidence, provided by CLWA, that such a shortage was a possibility. The trial court allowed that the petitioner may renew its application for a prohibition on CLWA's use of the 41,000 AFY if the petitioner could provide evidence that CLWA is actually using the additional entitlement for purposes the petitioner considers improper. A copy of the trial court's judgment and Writ, along with a transcript of the September 24, 2002 hearing, is provided in Appendix 2.5(n) to the report.

Regardless of the litigation surrounding the CLWA EIR and the water transfer agreement, an adequate supply of water is available to meet the demands of the Newhall Ranch Specific Plan. In addition, CLWA is currently in the process of preparing a new EIR for the water transfer agreement, consistent with CEQA and the appellate court opinion. CLWA has hired an environmental consultant and the work on the new EIR is well underway. In addition, Specific Plan reliance on any of the 41,000 AFY would not occur, *if at all*, until late in the Specific Plan's 25- to 30-year buildout period, by which time the dispute over the CLWA EIR will have been resolved. More importantly, the CLWA SWP water is considered only one of several *supplemental* water supply sources available to the Specific Plan. Even if that source were removed entirely, the Specific Plan would still have more than sufficient water to serve both its potable and non-potable needs.

(b) Valencia Water Company

Valencia Water Company, an investor-owned company regulated by the California Public Utilities Commission ("CPUC"), is one of the four retail water agencies within the Santa Clarita Valley. Valencia's current service area includes a mix of residential and commercial land uses, mostly comprised of single-family homes, apartments, condominiums and a number of local shopping centers and neighborhood commercial developments. The City of Santa Clarita and Los Angeles County special irrigation districts are the largest overall water users for irrigation purposes. Magic Mountain Amusement Park is the largest individual commercial water user. The service area includes two golf courses, the Valencia Industrial Center and the Valencia Commerce Center. The service area also includes light industrial uses that can be classified as service oriented with a light manufacturing/assembly mix. All water services are metered, with the exception of fire services.

Figure 2.5-3 shows the service area of Valencia Water Company. The Newhall Ranch Specific Plan site and the VWC Service Area are located within the CLWA service area and the Newhall Ranch Specific Plan site is partially within the service area of the VWC. Valencia is expected to be the retail water purveyor for the Newhall Ranch Specific Plan.



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L E G E N D

- SPECIFIC PLAN SITE
- VALENCIA WATER COMPANY SERVICE AREA
- CASTAIC LAKE WATER AGENCY BOUNDARY

IMPACT SCIENCES INC

NORTH

FIGURE 2.5-3

VALENCIA WATER COMPANY SERVICE AREA

SOURCE: Impact Sciences, Inc., 1997.

As build-out of the Specific Plan proceeds over time, each Newhall Ranch tentative subdivision map would require preliminary and final water plans for review and approval by the Valencia Water Company. The plans would indicate anticipated water demand, required water storage facilities, booster pump stations, and on-site and off-site piping needed for adequate domestic and fire water flow pressure to the Specific Plan site.

Once the final water plan for a subdivision is approved by the Valencia Water Company, Valencia would file an "advice letter" with the CPUC seeking to expand its service territory to add the Newhall Ranch subdivisions that are currently not within its service area. The CPUC would consider Valencia's requests to expand its service area to add the new Newhall Ranch subdivisions and assure itself that adequate water supplies are available to meet demand.[8]

(c) Retail Water Purveyor Service Areas

CLWA and the four retail water purveyors provide water to most residents of the Santa Clarita Valley. A description of the service areas of the local retail purveyors is provided below.

The Los Angeles County Waterworks District 36 service area encompasses approximately 7,635 acres in the Hasley Canyon area and the unincorporated community of Val Verde. The District obtains its full water supply from CLWA turnouts. The District presently has no operating groundwater extraction facilities.

The Newhall County Water District service area lies within three distinct geographical areas of the Santa Clarita Valley: Newhall, Pinetree and Castaic. The District's service connections are located over a 34 square mile area. The District's water supplies are obtained from groundwater wells and SWP water from CLWA turnouts.

Santa Clarita Water Division of CLWA service area includes portions of the City of Santa Clarita and unincorporated portions of Los Angeles County in the communities of Saugus, Canyon Country and Newhall. The Company's water supplies are obtained from groundwater wells and SWP water from CLWA turnouts.

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8 *See*, Public Utilities Code, Sections 451 and 2708. In addition, the CPUC's role in water planning is set forth in *Sierra Club, Angeles Chapter v. Valencia Water Company*, D.99-04-061, dated April 22, 1999.

The Valencia Water Company service area, as stated above, serves a portion of the City of Santa Clarita and the unincorporated communities of Castaic, Newhall, Saugus, Stevenson Ranch and Valencia in Los Angeles County. Valencia's service area is approximately 25 square miles. Valencia's water supplies are obtained from groundwater wells and SWP water from CLWA turnouts. **Figure 2.5-4** illustrates the respective service areas of CLWA and the four retail water purveyors in the Santa Clarita Valley.

As of 1999, the four retail water purveyors service approximately 50,000 connections in the Santa Clarita Valley. The specific breakdown by purveyor is provided in **Table 2.5-7**.

Table 2.5-7
Santa Clarita Valley Retail Water Purveyors

Purveyor	Connections
Los Angeles County Waterworks District 36	827
Newhall County Water District	6,758
Santa Clarita Water Division of CLWA	21,100
Valencia Water Company	20,865
Total	**49,550**

Source: UWMP 2000.

(d) CLWA's Allocation of Imported Water Supplies

In January 1996, CLWA adopted a resolution changing the method of allocating imported water among the four retail water purveyors served by CLWA. CLWA's prior allocation system divided the total water supply among the four retail purveyors based on fixed percentages. CLWA's fixed percentage of water allocated to Valencia Water Company was 35.9 percent, or approximately 19,500 acre-feet based on CLWA's total entitlement at that time of 54,200 acre-feet.

Under the new approach, CLWA's fixed-percentage allocation to retail purveyors was replaced with a "first-come, first-served" allocation method.[9] CLWA distributes imported water supplies among "water service areas" established by CLWA on a basis that allows imported water to be delivered to these areas where it is needed. CLWA's current allocation system, defined by Section 103-29.5 of CLWA's governing act as interpreted by CLWA, is based on the collection of water connection fees and other contributions paid by new development within each "water service area". Under CLWA's new allocation method, water supplies available to CLWA are allocated among the CLWA-defined "water

9 Based on personal communications with CLWA (Robert C. Sagehorn) and Valencia Water Company (Robert J. DiPrimio).

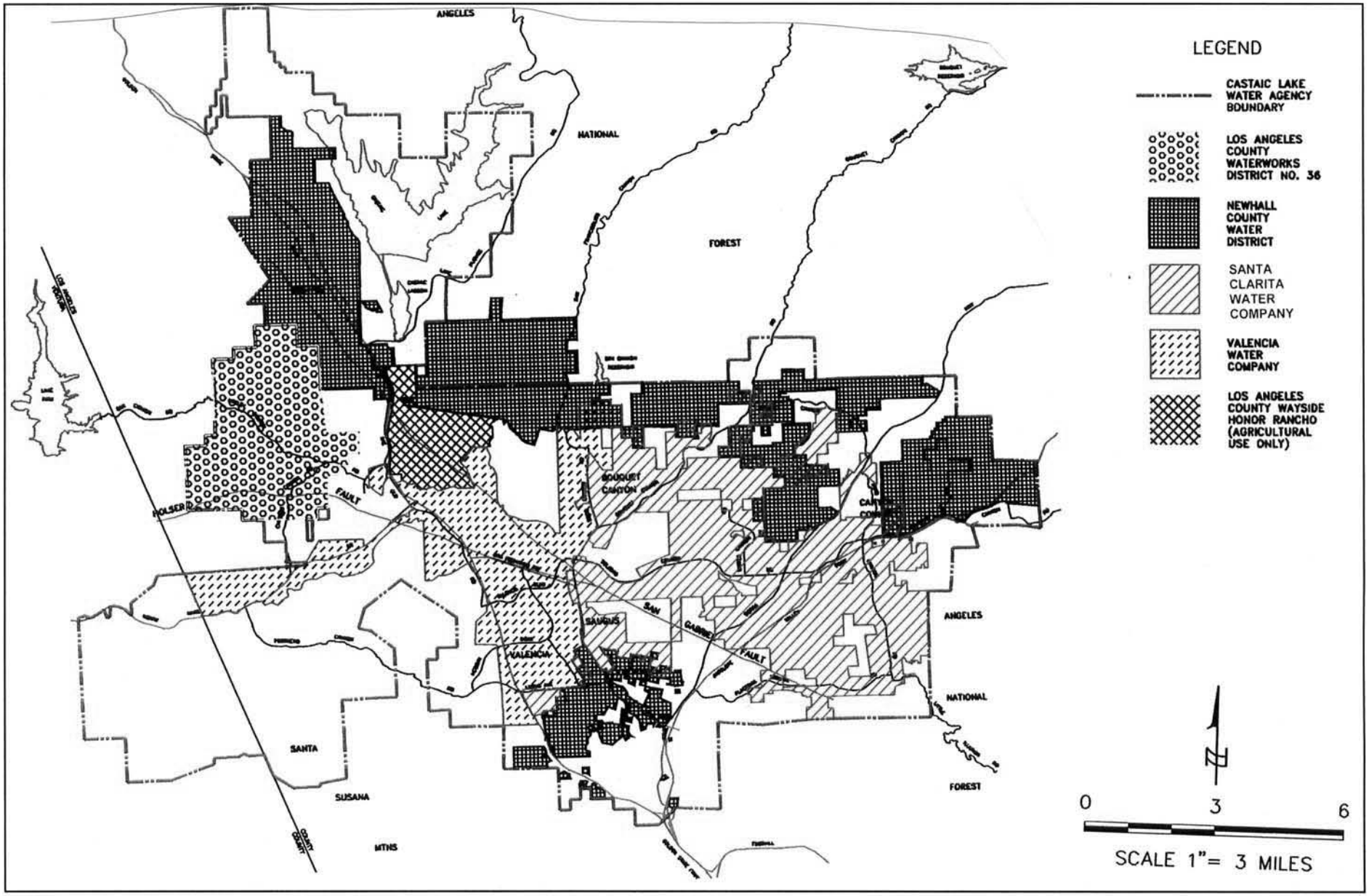

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FIGURE 2.5-4

WATER SERVICE AREA FOR ALL SANTA CLARITA VALLEY PURVEYORS

service areas" based on the payment of water connection fees and other contributions that fund CLWA's Capital Program. Historically, however, CLWA has not been required to allocate imported water supplies to the retail water purveyors, because the available supply of imported water has been sufficient to meet all purveyor requests. Even in the extreme drought year, 1991, no allocation was necessary, because the four retail purveyors entered into a water sharing agreement by which the purveyors shared all available water supplies and, with the help of significant conservation, were able to meet all water demand in the Santa Clarita Valley. Accordingly, absent the need for an allocation during times of limited supply under CLWA's new method, CLWA supplies are delivered to retail water purveyors on a first-come, first-served basis.

In light of CLWA's new allocation method, Valencia expects that its share of water supplies from CLWA will significantly increase for the following reasons: (a) Valencia's "water service area" includes significant amounts of existing and planned development; (b) water supplies are now allocated among CLWA-defined "water service areas," and Valencia's "water service area" significantly contributes to the funding of the CIP; and (c) water supplies are now delivered by CLWA to the purveyors on a first-come, first-served basis. Accordingly, SWP water supplies in the Santa Clarita Valley are evaluated on a valley-wide basis, rather than on individual percentage allocations to retail purveyors.

(e) The Upper Santa Clara Valley Water Committee

The wholesale and retail water purveyors in Santa Clarita Valley meet regularly as a technical group to coordinate the water resources of the Valley. The group has been commonly known as the Upper Santa Clara Valley Water Committee ("the Committee"). One of the highest priorities of this group is to provide an adequate water supply for the CLWA service area, safeguard existing water resources and develop both short-term and long-range plans for the efficient use of water in the Valley.

Over the years, the Committee has documented the availability of water resources in the region, assessed the condition of the local groundwater aquifers and their hydrogeologic character and reviewed aquifer storage capacity and the perennial yield and recharge rate of the aquifers. The Committee has also studied the potential for conjunctive use of both groundwater and imported water resources. In addition, the Committee continues to monitor water quality, including plans for the treatment of water to maintain good quality water for use in the Santa Clarita Valley.

Other cooperative efforts of the Committee have included development of drought contingency plans, evaluation of landfill impacts on the groundwater basin, coordination of emergency response procedures and implementation of valley-wide conservation programs. In 1985, the Committee prepared the area's

first Urban Water Management Plan. In 1998, the Committee participated with CLWA in the preparation of a draft Integrated Water Resources Plan ("IWRP"), which assessed the existing and long-term water supply and demand of the Santa Clarita Valley. In addition to identifying the range of water demands and supplies, the IWRP addressed opportunities to improve water supply reliability for the Santa Clarita Valley. The plan suggested a phased approach toward development of the supplies needed to meet projected demands. This approach combined additional acquisition of imported water, water conservation, surface and groundwater storage, water transfers and exchanges and water reclamation in an integrated strategy designed to meet increasing water demands while assuring a reasonable degree of supply reliability.

In 1998, 1999, 2000 and 2001, the Committee prepared Annual Water Reports (also referred to as "water reports") providing information about the local water supplies and water demands in Santa Clarita Valley. These water reports are required as part of the Newhall Ranch EIR mitigation measures imposed by Los Angeles County. The information presented in the water reports is intended to supplement information already required by the County's Development Monitoring System ("DMS"). The DMS is used by both the County and the City of Santa Clarita to track development activity in the Santa Clarita Valley, and it requires that adequate water supplies be in place prior to development taking place. The information presented in the water reports will be used by the County in connection with future land use decisions for the Newhall Ranch Specific Plan site and by the County and City of Santa Clarita for development projects in the Santa Clarita Valley in general.

In addition, in December 2000, the Santa Clarita Valley's water agencies jointly sponsored preparation of the 2000 Urban Water Management Plan ("UWMP"). The UWMP covers the CLWA service area, which includes the service areas of the four retail water purveyors. The UWMP presents information about the water supply, water demand, water reclamation (also referred to as "water recycling"), water conservation and reliability planning in the CLWA service area over a 20-year time frame. Consultants with expertise in water resource management were retained to assist CLWA and retail water purveyors in preparing the UWMP.

In April 2001, opponents of the UWMP filed a lawsuit against CLWA and the retail water purveyors challenging the adequacy of the UWMP under the Urban Water Management Planning Act and the Public Trust doctrine. CLWA and the purveyors successfully demurred to the Public Trust doctrine claim and the trial court ordered the claim dismissed. The trial court has not yet ruled on the petitioners' claims challenging the adequacy of the UWMP.

The Santa Clarita Valley Water purveyors have adopted resolutions approving the UWMP. The State Department of Water Resources (DWR) has also accepted the UWMP for filing. In addition, DWR indicated in its review that the Santa Clarita Valley water purveyors had addressed virtually all of the requirements of the Urban Water Management Planning Act, including all of the more significant provisions relating to water supply, demand and reliability. Accordingly, the UWMP is considered to be in compliance with the Urban Water Management Planning Act. Whatever the outcome of the UWMP litigation, however, it is not expected to have any impact on the validity of this water resources analysis. The bulk of the UWMP data utilized in this report relates to aspects of the plan not challenged in the current litigation. Moreover, all of the UWMP data cited in this report is provided for informational purposes only. It is not required for CEQA compliance.

(f) Water Reclamation Plants in the Santa Clarita Valley

Most existing wastewater generated in the Santa Clarita Valley is treated at two WRPs, which are upstream of the proposed Newhall Ranch Specific Plan site. The two plants are operated by the County Sanitation Districts of Los Angeles County ("CSDLAC").

The Saugus WRP, a tertiary treatment plant, is located southeast of the intersection of Soledad Canyon Road and San Fernando Road. The Valencia WRP, also a tertiary treatment plant, is located on The Old Road, north of Magic Mountain Parkway. The two facilities are illustrated in **Figure 2.5-5**. The Saugus WRP, located in District No. 26, has a permitted capacity of 6.5 mgd. The Valencia WRP, in District No. 32, is presently undergoing expansion of an additional 9 mgd, which will be completed in 2003. Once constructed, the permitted capacity of the Valencia WRP is anticipated to be 21.6 mgd.~~recently completed an expansion of its facilities to increase its permitted capacity to 13.5 mgd.~~

These two WRPs have been interconnected to form a regional treatment system known as the Santa Clarita Valley Joint Sewerage System ("SCVJSS"). The relationship between the two districts was established through a joint powers agreement that created the regional treatment system and permits the Valencia WRP to accept flows that exceed the capacity of the Saugus WRP.

Due to site space constraints, the Saugus WRP, completed in 1962, will not be expanded beyond its current permitted capacity of 6.5 mgd. In ~~1999~~2002, the Saugus WRP had an average monthly effluent flow of 5.60~~2~~ mgd (6,294 AFY), which is approximately 86 percent of its ~~design~~ permitted capacity. Effluent from the Saugus WRP contains about 723 milligrams per liter TDS (total dissolved solids) and is discharged to the Santa Clara River west of Bouquet Canyon Road (UWMP 2000).

The Valencia WRP, completed in 1967, has a current permitted capacity of 12.613.5 mgd. The ultimate planned capacity for the Valencia WRP is 27.622 mgd. In 19992002, the average monthly effluent flow for the Valencia WRP was 10.4412.11 mgd (11,693 AFY), which is approximately 83 96 percent of its current design permitted capacity. Effluent from the Valencia WRP is discharged to the Santa Clara River west of The Old Road (UWMP 2000).

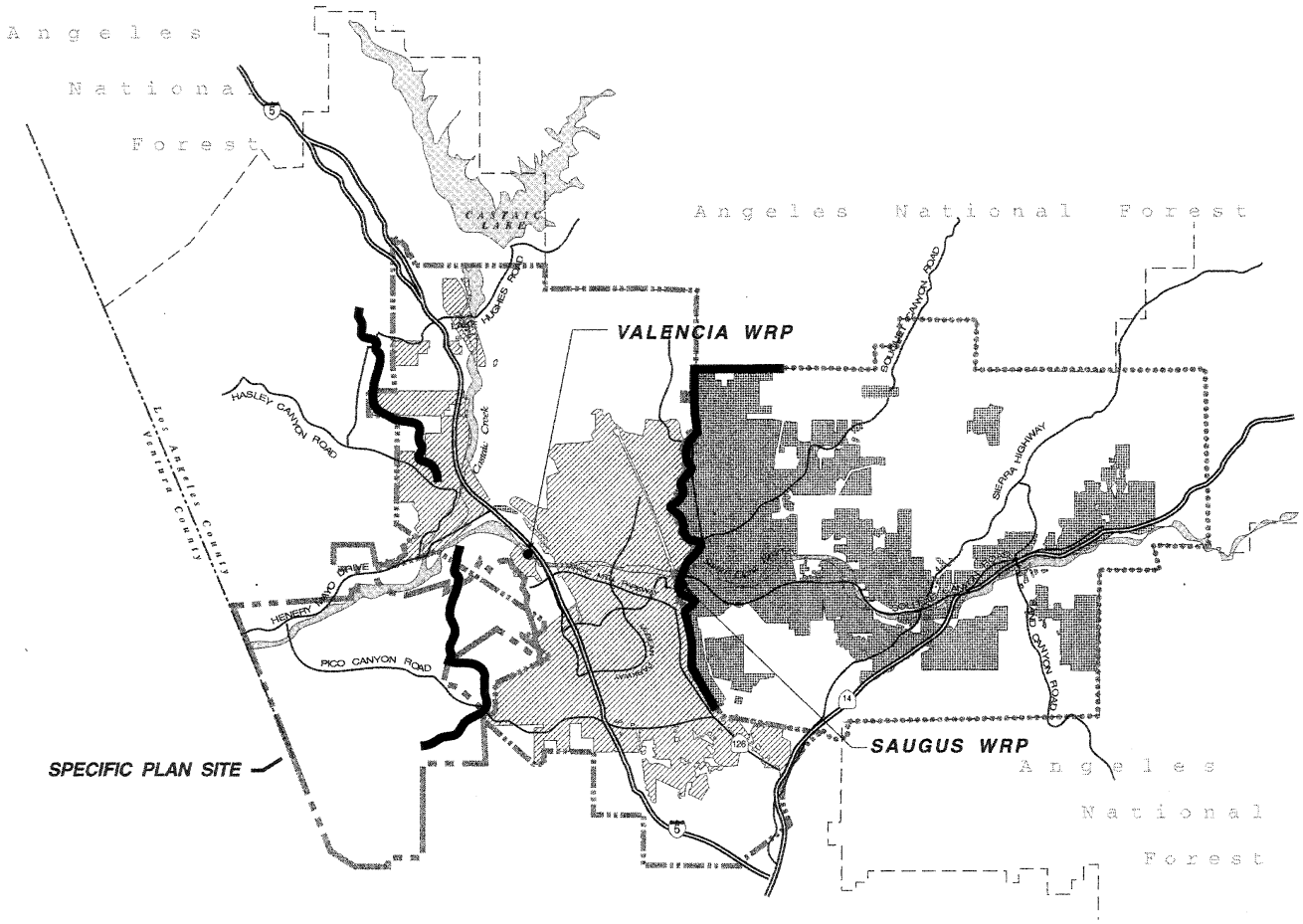
The Newhall Ranch Specific Plan proposes a new 6.9 mgd WRP on the Newhall Ranch site to exclusively serve the Specific Plan. The proposed Newhall Ranch WRP would be located near the western edge of the Specific Plan site along the south side of State Route (SR)-126. Effluent from the proposed Newhall Ranch WRP would be used to partially meet non-potable water demands within the Specific Plan site. According to the Newhall Ranch Final EIR, the proposed WRP is projected to produce an average of approximately 5,630 AFY. Of this amount, 5,344 AFY would be used for irrigation, with the remaining 286 AFY discharged to the Santa Clara River during winter months when demands are low. This supply is projected to meet 59 percent of the 9,035 AFY of potential non-potable water demands for the Specific Plan (please see, Newhall Ranch Specific Plan and Water Reclamation Plant Final EIR, Appendix 4.11). The remainder of the non-potable demand is expected to be met by using reclaimed water to be provided through CLWA as part of CLWA's projected reclaimed water program. This program is described in Chapters 2.0, 5.0 and 7.0 of the UWMP.

For further information regarding use of reclaimed water from the existing WRPs and the proposed Newhall Ranch WRP, please refer to **Section 2.5.5** below.

2.5.3.3 Existing Water Service Area Characteristics

To understand water supplies and demand in the Santa Clarita Valley, it is important to highlight some of the important local conditions or characteristics of the area. These local conditions affect water demand and supplies in the Santa Clarita Valley, including the Specific Plan site and surrounding areas. The section describes local climatic conditions, regional demographics, existing topography and regional area geology and surface water flows in the Santa Clarita Valley and downstream.

In addition, the section briefly summarizes the effects of statewide drought conditions on the Santa Clarita Valley. As explained below, in general, there was minimal impact on the Santa Clarita Valley prior to the 1990-1991 statewide drought conditions. The 1990-1991 statewide drought impacted water supplies in the Santa Clarita Valley; however, on balance, the Valley responded well to those drought conditions. Since the 1990-1991 drought, CLWA and the other retail water purveyors have continued to work cooperatively to ensure that water demands are met in response to varying hydrologic conditions and increasing demand from existing and planned growth. This effort includes the decision by most of the Valley's water agencies to jointly prepare the UWMP. The UWMP describes current and future implementation of water conservation measures (called Water Demand Management Measures) within the CLWA service area, and it updates the Valley's "Water Shortage Contingency Plan".



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L E G E N D

- COUNTY SANITATION DISTRICT No 26
- COUNTY SANITATION DISTRICT No 26 POTENTIAL SERVICE AREA
- COUNTY SANITATION DISTRICT No 32
- COUNTY SANITATION DISTRICT No 32 POTENTIAL SERVICE AREA
- DRAINAGE AREA BOUNDARIES

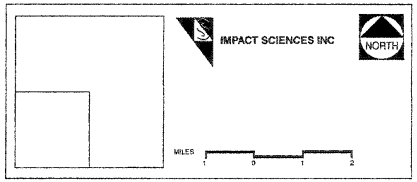


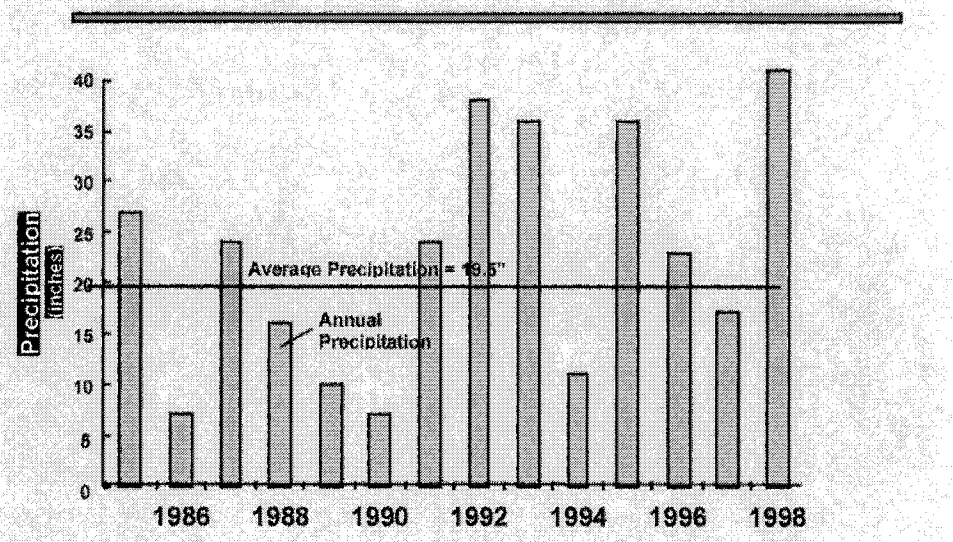
FIGURE 2.5-5

EXISTING WATER RECLAMATION PLANTS AND SANITATION DISTRICTS

(a) Climate

The climate in the Santa Clarita Valley is generally characterized as semi-arid and warm. Summer months are dry with temperatures that can reach as high as 110°F. Winter months are somewhat cool with temperatures that can drop as low as 20° F. Typically, "dry" years (less than 10 inches of rainfall per year) are followed by "wet" years (greater than 20 inches of rainfall per year) in a cyclical pattern. Average rainfall is approximately 19 inches per year in the flat areas and approximately 27 inches per year in the mountains. The region is subject to wide variations in annual precipitation.[10] **Figure 2.5-6** illustrates the annual rainfall in the Valley and graphically depicts the time periods with low rainfall.

Figure 2.5-6
Rainfall in the Santa Clarita Valley



(b) Regional Demographics

The water purveyors provide water service to residential, commercial, industrial and agricultural customers within CLWA's service area, including Santa Clarita Valley. Water service is also provided for other uses, such as fire service and utility line cleaning.

CLWA reports that the number of new service connections in its service area increased from 39,299 in 1990 to 49,550 in 1999 (**Table 2.5-8**). As shown on **Table 2.5-8**, the increase in the number of new service

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10 *See, Newhall Ranch ASR Impact Evaluation*, prepared by CH2MHill, February 2001, Section 4.

connections was slightly more than 500 connections per year in 1991, to a maximum of 2,028 connections in 1999, representing an average annual increase of 1,139 new service connections.

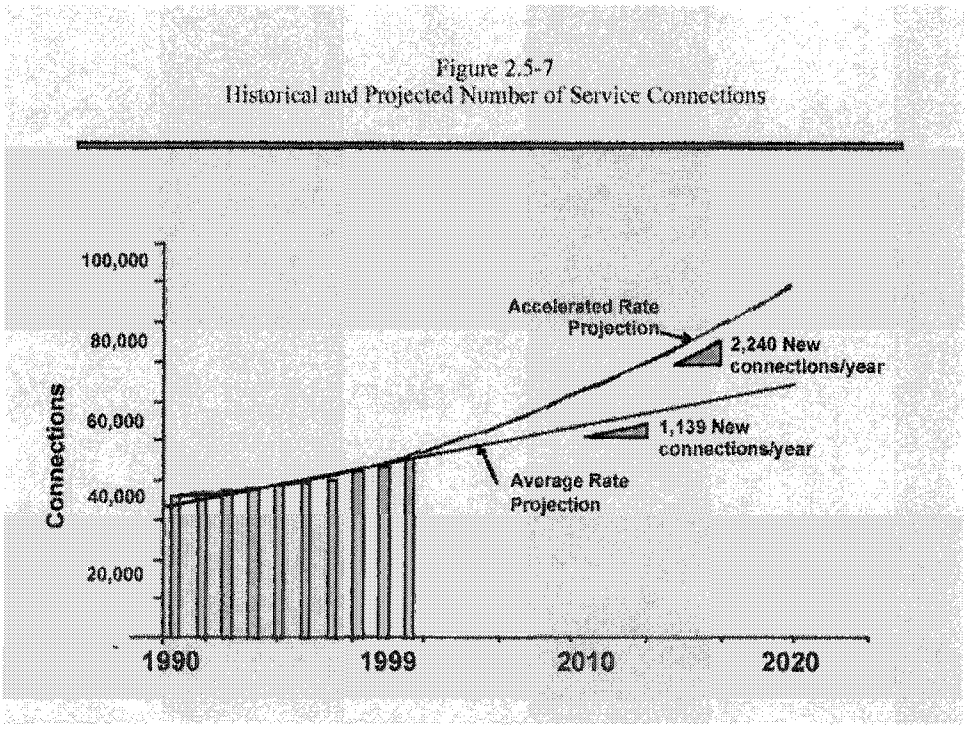
Table 2.5-8
Historical Number of Service Connections

Service Connections	1990	1992	1994	1996	1998	1999
Valencia	14,272	14,854	15,703	17,420	19,863	20,865
Newhall	5,854	6,144	6,294	6,477	6,585	6,758
Santa Clarita Water Division of CLWA	18,550	19,000	19,400	19,650	20,300	21,100
LA County #36	623	736	752	768	774	827
Total	**39,299**	**40,734**	**42,149**	**44,315**	**47,522**	**49,550**

Source: UWMP 2000.

To determine the future number of service connections in the CLWA service area, the UWMP used two different projection techniques. Using an "average rate" regression technique, the number of connections is projected to be about 70,000 in the year 2020. Under the second technique (accelerated rate projection), the UWMP projects the connections to be about 96,000 by the year 2020. **Figure 2.5-7** depicts the historical and projected number of service connections in the CLWA service area.

Figure 2.5-7
Historical and Projected Number of Service Connections



(c) Topography

The CLWA service area encompasses the relatively flat-lying Santa Clarita Valley, the eastern portion of the Santa Clara River Valley and portions of the surrounding hills and mountains. The mountains include the Santa Susana and San Gabriel Mountains to the south and the Sierra Pelona and Leibre-Sawmill Mountains to the north. Elevations range from about 800 feet on the valley floor to about 6,500 feet in the San Gabriel Mountains. The headwaters of the Santa Clara River are at an elevation of about 3,200 feet at the divide separating this hydrologic area (*i.e.*, the Upper Santa Clara River Hydrologic Area) from the Mojave Desert.

The Newhall Ranch Specific Plan is located within the East Groundwater Subbasin of the Santa Clara River Valley.[11] This area is upstream of the other groundwater basins in the Santa Clara River Valley drainage. The western end of the East Subbasin extends to roughly the Los Angeles County/Ventura County boundary line. The Piru groundwater basin is located to the west in Ventura County. The two groundwater basins are connected through relatively thin alluvial deposits (in the Alluvial aquifer) that overlie relatively impermeable Pico Formation bedrock deposits at this location. Groundwater in the Santa Clarita Valley also discharges to the Santa Clara River, which flows into Ventura County.

(d) Regional Geology

The geology within and adjacent to the CLWA service area consists of relatively thin alluvial deposits (Alluvium) overlying a deeper, relatively thick Saugus Formation in certain areas. **Figure 2.5-8** delineates the location of the Alluvium and the Saugus Formation. As discussed in further detail below, both the Alluvium and Saugus Formation contain water-bearing sediments capable of becoming saturated so as to provide water to wells. These water-bearing sediments constitute the local "groundwater reservoir" for the Santa Clarita Valley.[12]

The upper basin, called the Alluvium or Alluvial aquifer, generally underlies the Santa Clarita Valley and side canyons. The main river valley consists of medium-grained sand on the west to cobbly sand in the east. Due to the unconsolidated to poorly consolidated condition of the Alluvium, and its lack of cementation, the Alluvium has relatively high permeability and porosity. The maximum thickness of the Alluvium varies along the Santa Clarita Valley, but is generally considered to be 200 feet. The groundwater is pumped from wells up to 200 feet in depth. The Alluvium is estimated to store over 240,000 acre-feet of water. It has supplied approximately 30,000 to 40,000 acre-feet per year in

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11 *See, Newhall Ranch ASR Impact Evaluation*, prepared by CH2MHill, February 2001, Section 3, Figure 3-2.

12 This section is based on information from the *Newhall Ranch ASR Impact Evaluation*, prepared by CH2MHill, February 2001, Sections 3 and 4, and *Hydrogeologic Conditions in the Saugus Formation, Santa Clarita Valley, California*, prepared by Richard C. Slade & Associates, LLC, January 2001.

average/normal years, and 30,000 to 35,000 acre-feet per year in dry years. The annual average groundwater production from the Alluvial aquifer during the 1990s was approximately 33,500 AFY.

Underlying the Alluvium deposits in the main portion of the Santa Clarita Valley is the Saugus Formation. The Saugus Formation consists of unconsolidated to semi-consolidated sandstone and conglomerate materials. Two faults, the active San Gabriel fault, and the potentially-active Holser fault, traverse the area. Although maximum thickness of the Saugus Formation is reported to be 8,500 feet, the estimated water-bearing thickness of the formation ranges from 5,500 feet between the San Gabriel fault and the Holser fault to 1,500 feet northeast of the San Gabriel fault. It is estimated that the amount of groundwater in storage in the Saugus Formation is about 1.65 million acre-feet. Of the 1.65 million acre-feet, the area north of the San Gabriel fault is estimated to contain approximately 130,500 acre-feet, the area between the Holser and San Gabriel faults is estimated to contain approximately 641,000 acre-feet and the area south of the Holser fault is estimated to contain approximately 641,000 acre-feet. The Saugus Formation is pumped by wells extending to about 2,000 feet in depth. It has supplied approximately 7,500 to 15,000 acre-feet per year in average/normal years, and 11,000 to 15,000 acre-feet per year in dry years.

(e) Hydrology of the Santa Clarita Valley

Most of the CLWA service area is within the Santa Clarita Valley groundwater basin (also referred to as the east subbasin of the Santa Clara River Valley.) The primary drainage course in the service area is the Santa Clara River.[13] **Figure 2.5-9** depicts the geology and hydrologic cycle in Santa Clarita Valley. **Figure 2.5-10** shows the Santa Clarita Valley, East Subbasin, with respect to other groundwater basins downstream of the Specific Plan area. **Figure 2.5-11** shows the locations of production wells in the Alluvial aquifer and Saugus Formation.

The Santa Clara River and its tributaries flow generally westward from the Santa Clarita Valley to the Pacific Ocean. The principal tributaries to the Santa Clara River include Mint Canyon, Bouquet Canyon, San Francisquito Canyon and Castaic Creek. Water flow in the canyon areas is ephemeral, and diminishes rapidly after most rainfall events. The local surface water bodies include the Santa Clara River, Bouquet Reservoir and Castaic Lake. Various reaches of the Santa Clara River were listed by EPA in 1999 as impaired due to high concentrations of chloride, nitrogen, nitrates and nitrites, high coliform count and dissolved oxygen.

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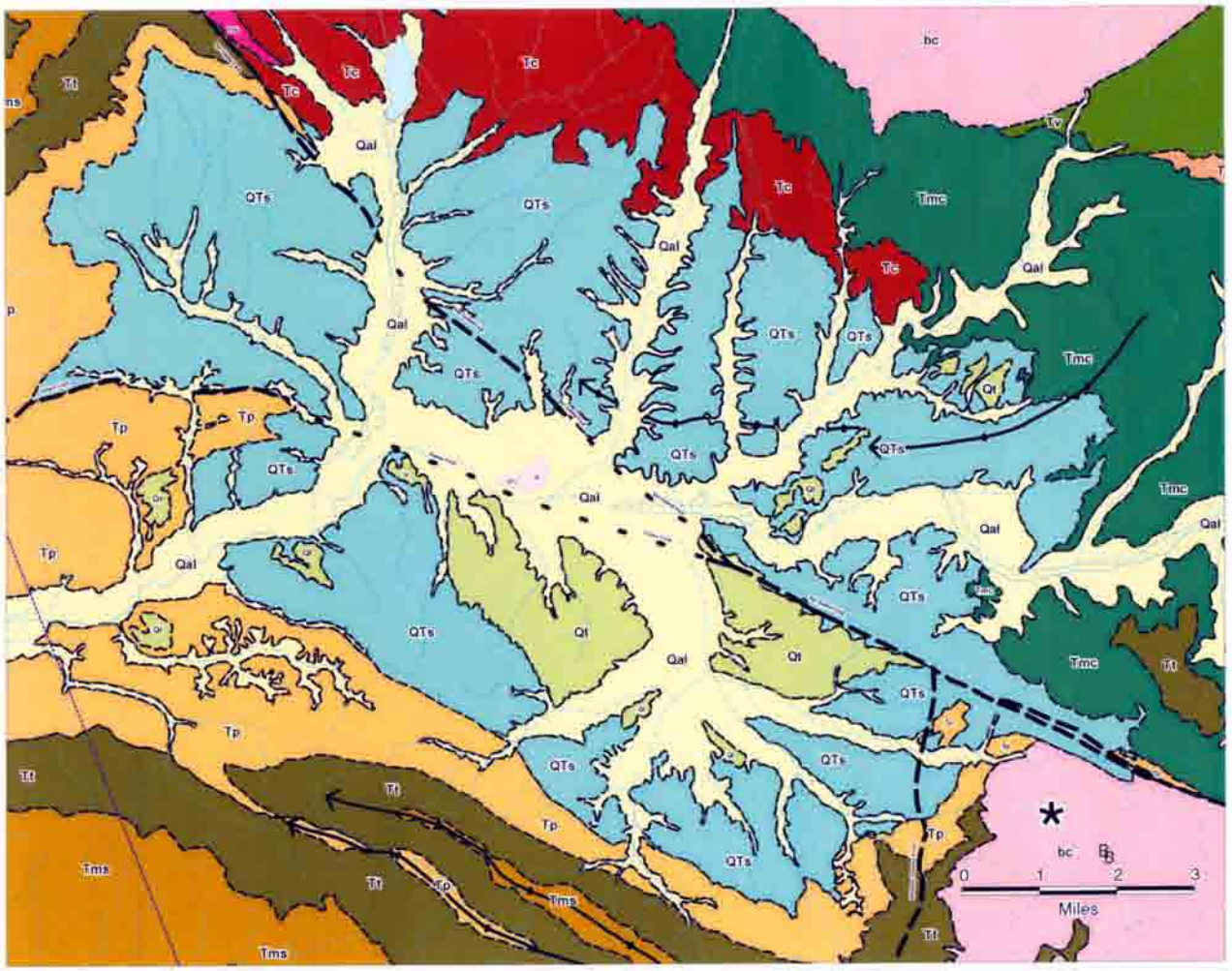
13 The information contained in this section is from *Newhall Ranch ASR Impact Evaluation*, prepared by CH2MHill, February 2001, and an updated technical memorandum prepared by CH2MHill.



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Mapped Geologic Formations

Qal = Undifferentiated Alluvium (Quaternary Age)	Potentially Water Bearing
Qt = Terrace Deposits (Pleistocene Age)	
QTs = Saugus Formation (Plio-Pleistocene Age)	
Tp = Pico Formation (Miocene Age)	Non Water Bearing
Tt = Towsley Formation (Miocene Age)	
Tms = Modelo Formation (Miocene Age)	
Tc = Castaic Formation (Miocene Age)	
Tvb = Violin Breccia (Miocene Age)	
Tmc = Mint Canyon Formation (Miocene Age)	
Ttc = Tick Canyon Formation (Miocene Age)	
Tv = Vasquez Formation (Oligocene Age)	
bc = Undifferentiated Basement Complex (pre-Tertiary Age)	

Mapped Geologic Structures

- Approximate Surface Trace of Fault
- Approximate Concealed Trace of Fault
- Approximate Surface Trace of Anticlinal Fold Axis with Direction of Plunge
- Approximate Surface Trace of Synclinal Fold Axis with Direction of Plunge
- Approximate Geologic Contact

Note: Only major faults and fold axis are shown.
Geology adapted from Oakeshott (1958), Winterer & Durham (1962), Nilsen (1978), Stitt (1980), Saul & Woolfenden (1981), Smith (1984), Dibblee (1991, 1992a,b, 1993, 1994a,b,c, 1995a,b,c).

NORTH

FIGURE 2.5-8

LOCATION OF ALLUVIAL AND SAUGUS FORMATION

The sources of surface water in the Santa Clarita Valley include precipitation, irrigation return flows, groundwater discharge, and treatment plant discharges to the Santa Clara River from the two existing WRPs. Another significant source of surface flow comes from the increased importing of SWP water supplies by CLWA to its service area.

Since 1980, CLWA has been importing SWP water as a supplemental water source to the retail water purveyors in its service area. The total amount of SWP water delivered to the service area from 1980 through 1997 was 253,800 acre-feet.

In order to evaluate historical and projected surface flow to Ventura County from imported SWP water in Santa Clarita Valley, an updated technical memorandum was prepared by CH2MHill. The objective of the updated technical memorandum was to estimate the historical and projected flow to Ventura County due to the importation of SWP water by CLWA and the use of that water in the Valley.

Based on the updated technical memorandum, imported SWP water is used to meet both residential and non-residential interior and exterior water demands. A portion of the imported SWP water finds its way into the Santa Clara River watersheds where it recharges local aquifers and flows downstream to Ventura County. Stream gage data collected at the County line (USGS Gage No. 11108500) from 1953 to 1996 demonstrates a 60 percent increase in average annual flow since the importation of SWP water, even during dry years (the annual flow of 17,596 cubic feet per second (cfs) in 1991, a drought year, exceeds the annual average flow prior to importation of 16,479 cfs). The source of this additional flow in the Santa Clara River watershed includes imported SWP water.

The SWP water used to meet residential and non-residential interior water demands ultimately reaches the local existing WRPs in the Valley. Historically, the treated water has been discharged to the Santa Clara River, where it contributes significantly to the natural surface water and groundwater flows reaching Ventura County. As discussed below, although a significant portion of the imported water used for irrigation is lost through evapotranspiration to the atmosphere, SWP water has significantly increased the flow of surface water and groundwater flows in the Santa Clara River watershed.

Based on the updated technical memorandum, it is estimated that approximately 136,544 acre-feet of imported SWP water has been added to the Santa Clara River through return flow and discharges from existing water treatment plants in Santa Clarita Valley. It is estimated that approximately 18,000 AFY enhanced the watershed and flowed downstream to Ventura County in 1999.

In the future, when CLWA takes its full 95,200 AFY entitlement of SWP water, CH2M Hill estimates that approximately 22,160 AFY will enhance the watershed and flow to Ventura County (CH2M Hill, 2001). Consequently, similar to other watersheds where water importation has occurred (*e.g.*, Santa Ana River), the flow in the Santa Clara River watershed is, and will continue to be, significantly enhanced by importing SWP water to the watershed. The importing of SWP water, and the use of that water in the CLWA service area, will continue to result in a net benefit in the amount of surface flow into Ventura County.

(f) Effects Of Drought

Drought cycles will affect the Specific Plan in two ways. First, local droughts in the Santa Clarita Valley historically have resulted in short-term increased water demand, short-term increased groundwater pumping, and short-term decreased recharge to the local groundwater system. Second, a state-wide drought affects water availability in the SWP system and ultimately deliveries from the SWP system. Droughts have occurred locally in 1947-1950, 1958-1960 and 1990-1991. Recent statewide droughts have occurred in 1976-1977 and 1987-1992.[14] Since the area's water supplies are dependent upon rainfall conditions both locally and statewide, it is important to note that wet and dry year conditions do not occur at the same time in Northern and Southern California. As a result, the water purveyors in Santa Clarita Valley are able to adjust the mix of available water resources on a year-to-year basis in response to local and statewide hydrologic conditions.

Prior to 1990-1991, drought conditions statewide had a minimal impact upon the Santa Clarita Valley other than requiring additional water supply to compensate for the lack of spring rainfall for irrigation (*e.g.*, crops, lawns and gardens). In 1990-1991, however, for the first time, statewide drought conditions caused cutbacks in imported SWP supplies in the Santa Clarita Valley. Water production also declined in some wells operating in the shallow, outlying reaches of the Alluvial aquifer. However, because Valencia Water Company's alluvial wells are located in the major water bearing reaches of the aquifer, none of Valencia's alluvial wells experienced loss of production during 1990-1991. In addition to the alluvial groundwater supplies, the water purveyors in Santa Clarita Valley pumped

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14 The 1987-1992 drought was notable for its six-year duration. Statewide reservoir storage was about 40 percent of average by the third year of the drought. The State Water Project met contractors' delivery requests during the first four years of the drought, but then were forced by declining reservoir storage to reduce deliveries substantially. The SWP terminated deliveries to agricultural contractors and provided about 30 percent of requested urban deliveries in 1991, the single-driest year of the drought. A 1991 Governor's executive order resulted in implementation of a state drought water bank. (*Critical Water Shortage Contingency Plan*, Governor's Advisory Drought Planning Panel, December 29, 2000.)

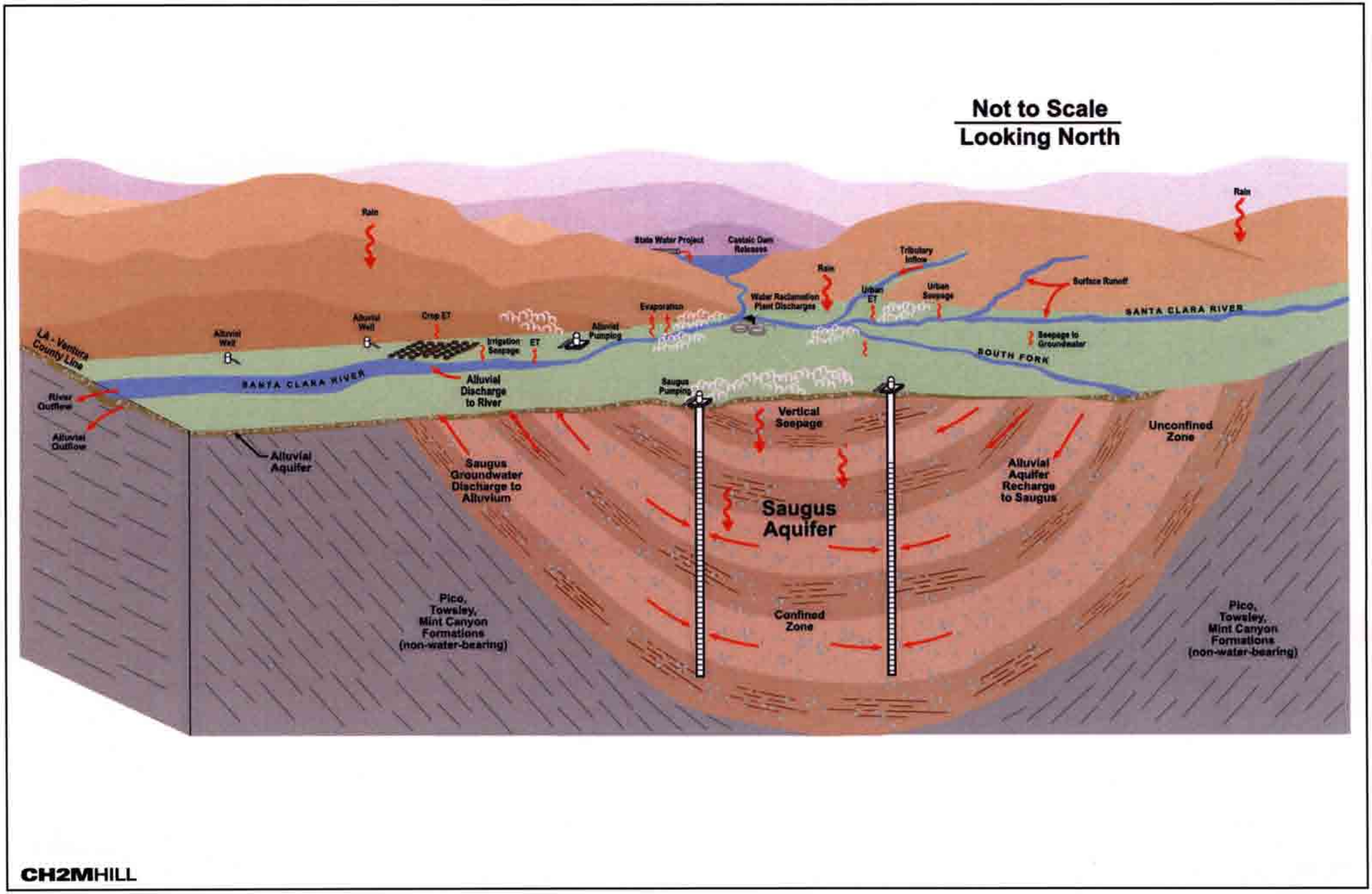

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FIGURE 2.5-9

GEOLOGY AND HYDROLOGIC CYCLE– SANTA CLARITA VALLEY

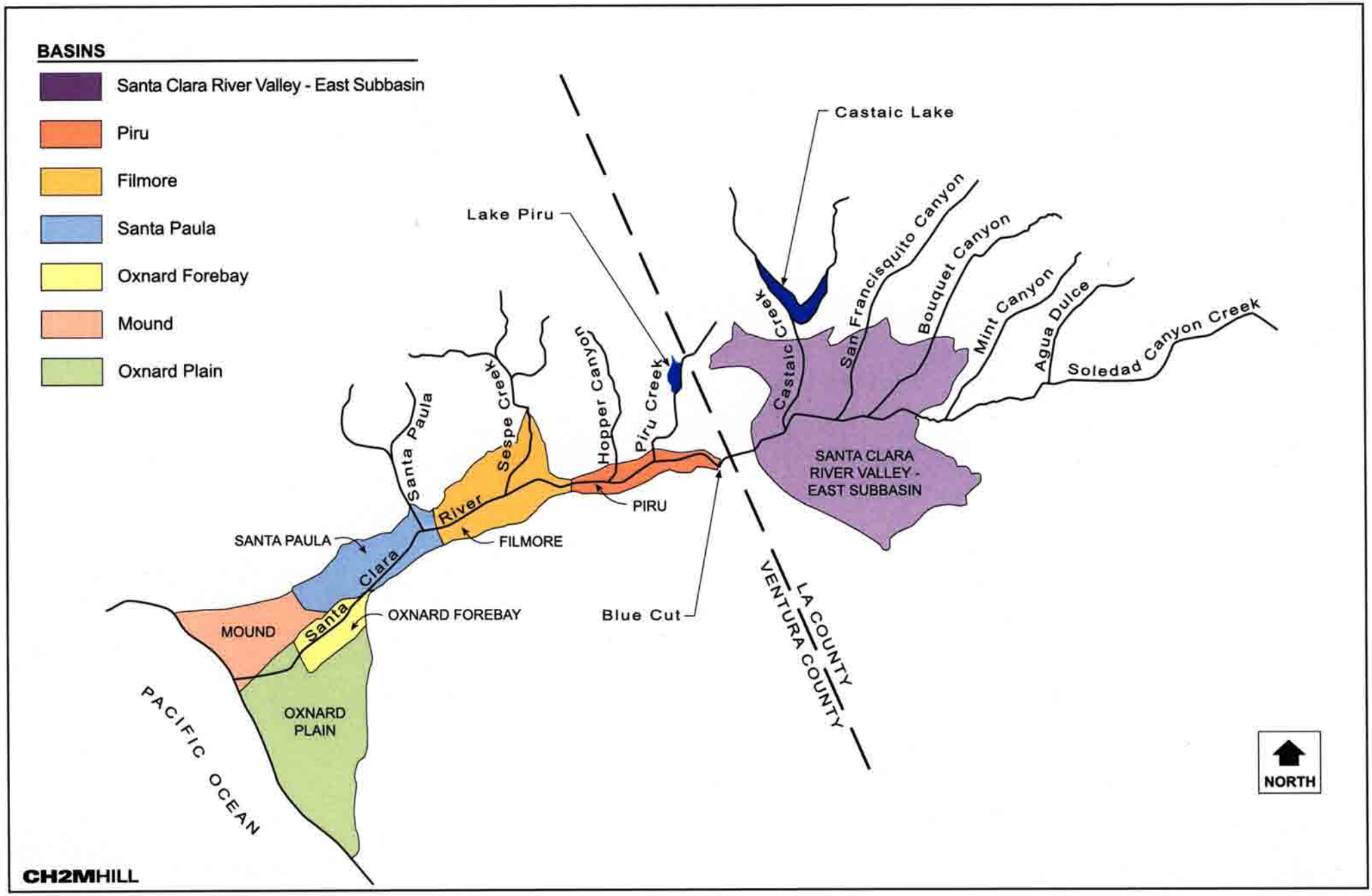

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FIGURE 2.5-10

GROUNDWATER BASINS IN THE SANTA CLARA RIVER DRAINAGE

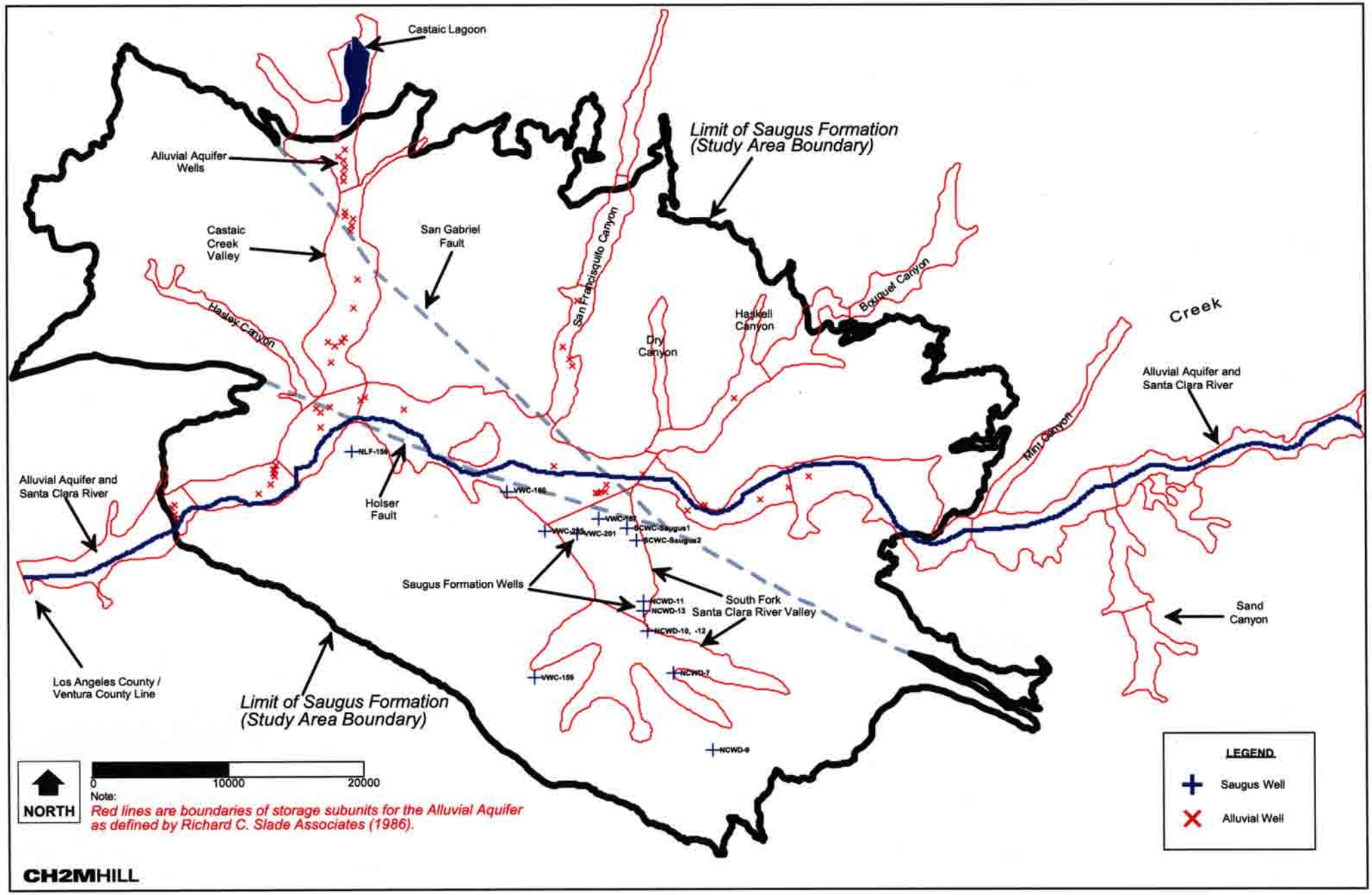

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FIGURE 2.5-11

GROUNDWATER PRODUCTION WELL LOCATION– SANTA CLARITA VALLEY

more water from the Saugus Formation in 1990-1991, and requested that their customers voluntarily conserve water by 10 percent. Actual water use in the valley decreased by 20 percent as a direct result of water conservation efforts.

Due to the steps taken by the local purveyors, water demands in the Santa Clarita Valley were met for the duration of the 1990-1991 drought. CLWA also elected not to participate in the state's Drought Water Bank because alternate local supplies were available to meet water demands in the Valley. In addition, members of the Upper Santa Clara Valley Water Committee signed a "Drought Emergency Water Sharing Agreement," agreeing to share water from all sources, and to facilitate beneficial water transfers, exchanges and wheeling arrangements. The Committee also worked with the City of Santa Clarita and the County of Los Angeles to implement water use ordinances for Valley residences, review water consumption and supply data and recommend measures to encourage conservation.

Since the 1990-1991 drought, CLWA and the other retail water purveyors have continued to work cooperatively to ensure customer demands are met under varying hydrologic conditions and with overall increasing demands from planned growth. These efforts have included water resource planning activities, acquisition of new water supplies and construction of transmission and treatment facilities, as discussed in further detail below. These efforts include the decision by most of the Valley's water agencies to jointly prepare the UWMP. The UWMP describes current and future implementation of water conservation measures (called Water Demand Management Measures) within the CLWA service area. These conservation measures are described in Chapter 5.0 of the UWMP. The UWMP also includes an update to the Valley's "Water Shortage Contingency Plan". The updated plan is based on the water agencies' actual experience in addressing water shortages in the Valley in 1991 (due to the continuation of the 1990-1991 statewide drought) and in 1994 (due to the 1994 Northridge earthquake). The updated plan is described in Chapter 6.0 of the UWMP.

At the state level, significant changes have also occurred in California's water management framework since the last statewide drought of 1987-1992. For further information regarding these statewide changes, please refer to **Section 2.5.4**, subsection, **SWP Reliability** and *Critical Water Shortage Contingency Plan*, Governor's Advisory Drought Planning Panel, December 29, 2000 (Chapter 2).

2.5.4 WATER SUPPLIES AND DEMAND IN THE SANTA CLARITA VALLEY

2.5.4.1 Preface

This section provides important regional information regarding available water sources for the Santa Clarita Valley, including the Specific Plan site. The section summarizes two important aspects of the water picture, which provide context to the water supply and demand analysis of the Specific Plan. First, the section summarizes the existing and planned future water supplies for the Castaic Lake Water Agency ("CLWA") service area, including the Specific Plan site. Second, the section summarizes the historic, existing and projected water demands within the CLWA service area.

Historically, local groundwater extracted from the Alluvial aquifer and Saugus formation has been the primary source of water in the Santa Clarita Valley. However, since 1980, local groundwater supplies have been supplemented with imported water from the SWP. These current water supplies are described in this section.

This section also briefly describes the groundwater resources of the Santa Clarita Valley and SWP water supplies, including reclaimed water, groundwater banking supplies, water transfers and desalted water. In addition, in recent years, water conservation has become an increasingly important factor in water supply planning. Conservation planning is a required component of the UWMP prepared by the water purveyors in the Santa Clarita Valley. Finally, this section describes the UWMP's current drought contingency planning for the Santa Clarita Valley.

As discussed above, this section provides cumulative water demand data for informational purposes only; it is not required by CEQA because the applicant has secured sufficient water sources (Newhall Agricultural Water, Nickel Water, *etc.*) to serve the Specific Plan through buildout. These water sources, which are independent of the water sources provided by CLWA (*i.e.*, regional/cumulative CLWA/SWP supplies), include either: (a) water already being used by the applicant on an annual basis (*i.e.*, agricultural groundwater); or (b) "new" water purchased by the applicant for the purpose of serving the water needs of the Specific Plan (*i.e.*, Nickel Water, Newhall/SWP Water, *etc.*). The use of these available supplies does not result in the consumption of the regional/cumulative water supplies of the Santa Clarita Valley. With regard to the former, the supplies are already in use on an annual basis, resulting in no change in regional/cumulative water supplies. As to the "new" supplies identified above, they would not exist *but for* implementation of the Specific Plan.

2.5.4.2 Local Groundwater Supplies

Prior to 1980, local groundwater extracted from the Alluvial aquifer and the Saugus formation was the primary water source for the Santa Clarita Valley. The current capacities and future potential of these aquifers are discussed below, including the reliance on these sources during drought periods. The groundwater information presented below is based on: (a) a 2-volume report prepared by Richard C lade & Associates ("Slade") entitled, *Hydrogeologic Investigation of the Perennial Yield and Artificial Recharge Potential of the Alluvial Sediments in the Santa Clarita Valley of Los Angeles County, California,* dated December 1986; (b) a 2-volume report prepared by Slade entitled, *Hydrogeologic Assessment of the Saugus Formation in the Santa Clarita Valley of Los Angeles County, California,* dated February 1988; (c) a technical memorandum prepared by Slade, dated November 16, 2000 (Appendix C to UWMP); (d) a letter from Joseph C. Scalmanini, Luhdorff and Scalmanini Consulting Engineers, dated December 15, 2000, regarding review of the groundwater components of the UWMP (Appendix D to the UWMP); (e) a report prepared by Slade entitled, *Assessment of the Hydrogeologic Feasibility of Injection and Recovery of Water in the Saugus Formation, Santa Clarita Valley, California,* dated February 2001, including the Technical Appendix by Slade entitled, *Hydrogeologic Conditions in the Saugus Formation, Santa Clarita Valley, California,* February 2001; (f) a report prepared by CH2MHill entitled, *Newhall Ranch ASR Impact Evaluation,* dated February 2001; (g) a report prepared by Slade entitled, *2001 Update Report Hydrogeologic Conditions in the Alluvial and Saugus Formation Aquifer Systems,* dated July 2002; and (h) a report prepared by CH2MHill entitled, *Newhall Ranch Updated Water Resources Impact Evaluation,* dated September 2002.

As stated above, the groundwater basin underlying the CLWA service area consists of two aquifers comprised of the Alluvial aquifer and the deeper underlying Saugus Formation (*See previous,* **Figure 2.5-8**). The two aquifers occupy approximately 84 square miles in the central portion of CLWA's service area.

The geologic sediments in the Alluvial aquifer and the underlying Saugus Formation have been assessed according to their relative water-bearing characteristics. The term "water-bearing characteristics" means the relative ability of the geologic materials to contain, transmit and yield groundwater to wells. As such, two geologic divisions are recognized in the Santa Clarita Valley: a water-bearing sediment group and a nonwater-bearing rock group. Depending upon water levels, the water-bearing sediments are capable of becoming saturated, which allow the sediments to provide water that can be extracted by pumping through wells. As such, the sediments in these aquifers constitute the "groundwater reservoir" in the Santa Clarita Valley.

The water-bearing sediments have been penetrated to various depths by numerous water wells in the region and historically have provided virtually all of the groundwater extracted in the Valley. Underlying the water-bearing sediments is the relatively impermeable, nonwater-bearing bedrock.

Figure 2.5-8 illustrates the water-bearing sediments in the Alluvium (shown as map symbol, Qal), in the terrace deposits (shown as Qt) and in the geologically older sediments known as the Saugus Formation (shown as QTs). For the most part, the water-bearing sediments are geologically younger, more permeable, less consolidated and less structurally deformed than the underlying relatively impermeable, nonwater-bearing bedrock.

(a) Alluvial Aquifer

The water-bearing sediments in the Santa Clarita Valley consist of the alluvial or valley fill deposits that underlie the Santa Clara River and its tributaries. Typically, the Alluvial aquifer tends to be the deepest along the central portion of the river, and thins or pinches-out as the flanks of the adjoining hills are approached. The maximum thickness of the Alluvial aquifer varies in the Santa Clarita Valley, but is generally considered to be approximately 200 feet. (Slade 1986, 2000.) The Alluvium is able to produce good quality water where saturated.

Groundwater present in the alluvial deposits in the Santa Clarita Valley is unconfined. Natural sources of recharge to the Alluvium include deep percolation of direct precipitation; infiltration of stream runoff flowing into the valley along the Santa Clara River and its tributaries; subsurface inflow from the adjoining (upgradient) portions of the Alluvial aquifer to the north and east of the Valley; and discharge of groundwater from the Saugus Formation to the Alluvial aquifer on the west side of the Santa Clarita Valley.

Man-made sources of recharge to the Alluvial aquifer include deep percolation of irrigation seepage; percolation of stormwater runoff from urban areas; percolation of surface flow and underflow from Castaic Dam in the Castaic Creek area; percolation of water released by the Los Angeles Department of Water and Power from its reservoir facilities in Dry Canyon and upper Bouquet Canyon; and percolation of discharges to the Santa Clara River from the existing WRPs.

Outflow or discharge from the Alluvial aquifer occurs by water well extractions. Additional discharge occurs by subsurface outflow through the Alluvial aquifer to the downstream Piru groundwater basin to the west, and by seepage to underlying permeable portions of the Saugus Formation, particularly in the eastern portion of the basin. Discharge also occurs by evapotranspiration in areas where deep-rooted

riparian vegetation grows along the main Santa Clara River channel, particularly along the western reach of the river.

Available aquifer test data from Alluvial wells indicate that the Alluvial aquifer is unconfined (*i.e.*, aquifer is under water table conditions). Transmissivity values range from 35,000 to over 400,000 gallons per day per foot and specific yield values range from about 0.09 to 0.16 (Slade, 1986).

As to the municipal-supply water well extraction from the Alluvial aquifer, the Newhall County Water District ("NCWD"), the Santa Clarita Water Division of CLWA ("SCWD") (formerly the Santa Clarita Water Company), Valencia Water Company ("VWC") and the Wayside Honor Rancho ("WHR") own and operate municipal-supply wells and extract water from this aquifer. The Newhall Land and Farming Company also owns and operates private agricultural-supply wells and extracts water from this aquifer.[15] **Figure 2.5-12** illustrates a typical well configuration.

Groundwater levels in the Alluvial aquifer have varied over the period of available record, reflecting changes in pumping and variations in the amount of recharge and discharge.[16] Because of the generally high permeability of the Alluvium and the hydraulic interrelationship between the Alluvial aquifer and the Santa Clara River and its tributaries, groundwater levels may rapidly fluctuate over the course of a year, and, to a large degree, in response to precipitation, runoff and groundwater pumping.

The amount of groundwater in storage in the Alluvium can vary considerably because of the effects of recharge and discharge from the aquifer. Slade (2000) has estimated the historic quantity of water stored in the Alluvial aquifer at 240,000 acre-feet following periods of high rainfall. The historical annual production of the Alluvial aquifer is estimated to be between 30,000 to 40,000 AFY in normal/average rainfall years (Slade 2000; Scalmanini 2000). During dry years, the Alluvial aquifer production should be reduced to the range of 30,000 to 35,000 AFY (Slade 2000). These amounts include the agricultural water that the Newhall Land and Farming Company ("Newhall") pumps for agricultural irrigation purposes on Newhall's land in Los Angeles County. Newhall pumps an average of approximately 7,038 AFY for its agricultural operations in Los Angeles County.

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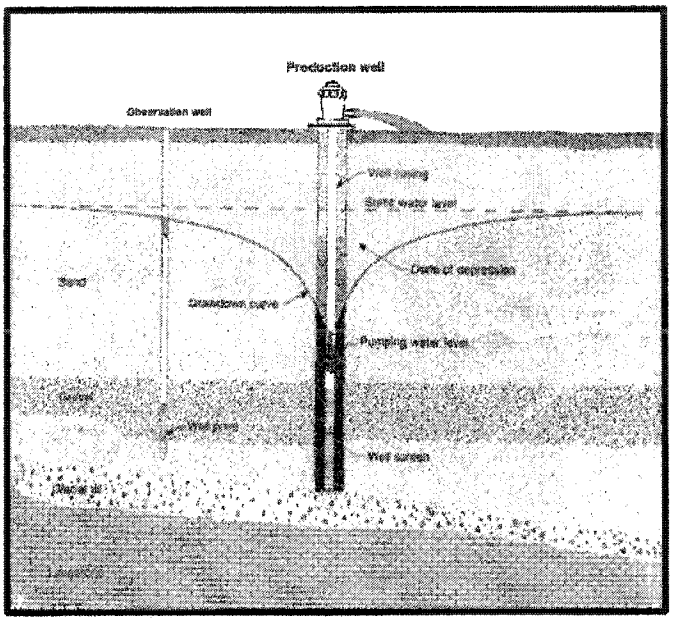
15 The wells identified above do not include pumping of water from this aquifer by other privately-owned industrial, agricultural, ranch or domestic-supply wells. Production of water from these other wells is estimated to be 500 acre-feet per year.

16 Available records generally extend back to the 1950s, with some data available from about 1930 to 1947.

Figure 2.5-12
Typical Well Configuration
Source: UWMP 2000



Based on the results of Slade (1986, 2000), and the operating experience of the Santa Clarita Valley water purveyors, Scalmanini (2000) addressed the sustainable yield of the Alluvial aquifer and found that the range of pumping from the Alluvial aquifer (30,000 to 40,000 AFY in normal/average years, and 30,000 to 35,000 AFY in dry years) is consistent with studies of the aquifer and the successful operating experience of the aquifer over the last 50 years:

> "[T]he Alluvium has been managed within its perennial yield,[17] while pumping in the broad range of nearly 20,000 AFY to more than 42,000 AFY. Although there have been seasonal and longer term intermittent lowering of ground-water levels in response to both variations in pumping and variations in precipitation (and associated recharge), *the long-term trend in Alluvial ground-water levels has been stable, with no persistent trend toward lower water levels and associated depletion of ground-water storage.* While the cited ranges for Alluvial pumpage in various year-types suggest that, overall, the average extraction will be greater than the perennial yield reported by Slade in 1986, recent high Alluvial pumping and sustained high ground-water levels suggest that an updated perennial yield analysis would result in a higher value of perennial yield than that reported by Slade nearly 15 years ago. Ultimately, however, the exact number is not as important as operating in a range of production that does not cause undesirable results such as chronic ground-water level decline; [and] the ranges cited in the UWMP would certainly fit that criterion. In any case, in light of the range of historical pumping from the Alluvium and the lack of any chronic ground-water level depression as a result of that pumping, it

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17 Perennial yield is defined as the maximum quantity of water that can be withdrawn annually from a groundwater resource under a given set of conditions without causing an undesirable result. The phase "undesirable result" is understood to refer to a gradual lowering of the groundwater levels resulting eventually in depletion of the supply, subsidence, increased energy costs, desiccated wetland or degraded water quality. Source: *California Groundwater Management*, Groundwater Resources Association of California, Steve Bachman, Carl Hauge, Kevin Neese, Anthony Saracino.

> appears sound to plan on long-term ground-water supplies from the Alluvium in the general ranges of pumping included in the UWMP, which are consistent with what has been successfully practiced over the last 50 years." (*Emphasis added.*) (Scalmanini 2000.)

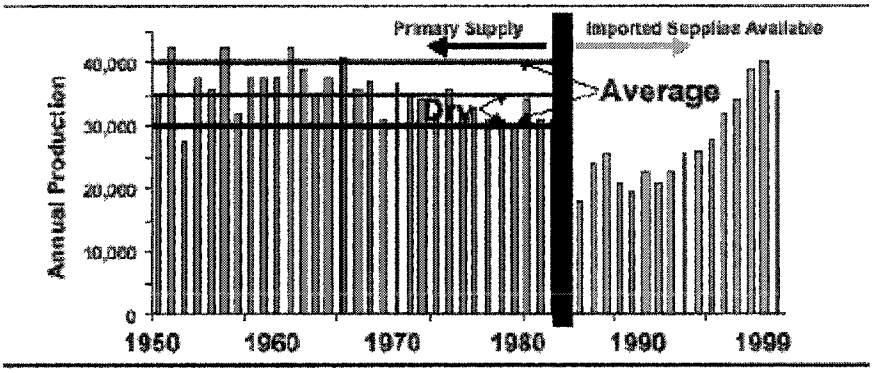
This information indicates that use of the Alluvium has occurred without adverse affects such as long-term water level decline or degradation of groundwater quality. The current management practice of the Santa Clarita Valley water purveyors is to prioritize the use of the Alluvial aquifer because of the aquifer's ability to rapidly recharge, store and produce good quality water on an annual basis. Like most groundwater basins, it is possible to intermittently stress the Alluvial aquifer (*i.e.*, pump in excess of the perennial yield value for one or more years without long-term adverse effects). Short-term withdrawal in excess of the perennial yield may temporarily lower groundwater levels, however, subsequent decreases in pumping and natural recharge results in a rapid return of groundwater levels and associated refilling of groundwater storage with no harm to the resource. Historical groundwater data collected from the Alluvial aquifer over many hydrologic cycles demonstrate that groundwater elevations return to normal in average or wet years following periods of abnormally low rainfall.

(1) Historical and Current Conditions of the Alluvial Aquifer

Over the last 50 years, groundwater production from the Alluvial aquifer has ranged from 20,000 AFY to more than 40,000 AFY. Since the introduction of SWP supplies to the CLWA service area, total pumpage from the Alluvial aquifer has ranged from a low of about 20,000 AFY (in 1983) to a high of 43,000 AFY (in 1999); average pumpage from the Alluvium over that period has been 28,500 AFY. Agricultural pumpage of the aquifer throughout the 1950s was consistently in the range of 33,000 AFY to 41,000 AFY (*1999 Water Report*, p. 9).

Figure 2.5-13 depicts historical Alluvial aquifer groundwater production from 1950 to 1999. The historical data and all technical information indicate that the Alluvial aquifer is in good operating condition. The data and related information show that the Alluvial aquifer has produced annually up to 40,000 AFY without any undesirable results (such as long-term water level declines or degradation of the water quality).

Figure 2.5-13
Historical Groundwater Production - Alluvial Aquifer
(acre-feet per year)



Source: UWMP 2000.

(2) Groundwater Levels in the Alluvial Aquifer

Based on available data, the groundwater levels over the last 20 years are generally higher than over the preceding 30 years. In some locations of the Alluvial aquifer, there are intermittent dry-period declines (and an associated use of some groundwater from storage) followed by wet-year recoveries (and associated refilling of storage space). On a long-term basis, whether over the last 20 years when average pumpage was slightly less than the 1986 estimate of perennial yield or over the last 40 to 50 years (since the 1950s - 1960s), the Alluvial aquifer shows no trend toward decreasing water levels or storage decline. Based on the available data, pumpage from the Alluvial aquifer has been and continues to be within the perennial yield of the aquifer. (*1999 Water Report*, p. 10; Scalmanini, 2000, p.2.)

(3) Groundwater Flows in the Alluvial Aquifer

In general, groundwater movement in the Alluvium beneath the side canyons is toward the east-west trending Santa Clarita Valley and then westward in the Alluvium toward the Los Angeles County/Ventura County line. This general pattern of groundwater flow in a westerly direction remains unchanged whether groundwater levels are high or intermittently depressed. This finding is based on an examination of aquifer extent and historical groundwater levels.

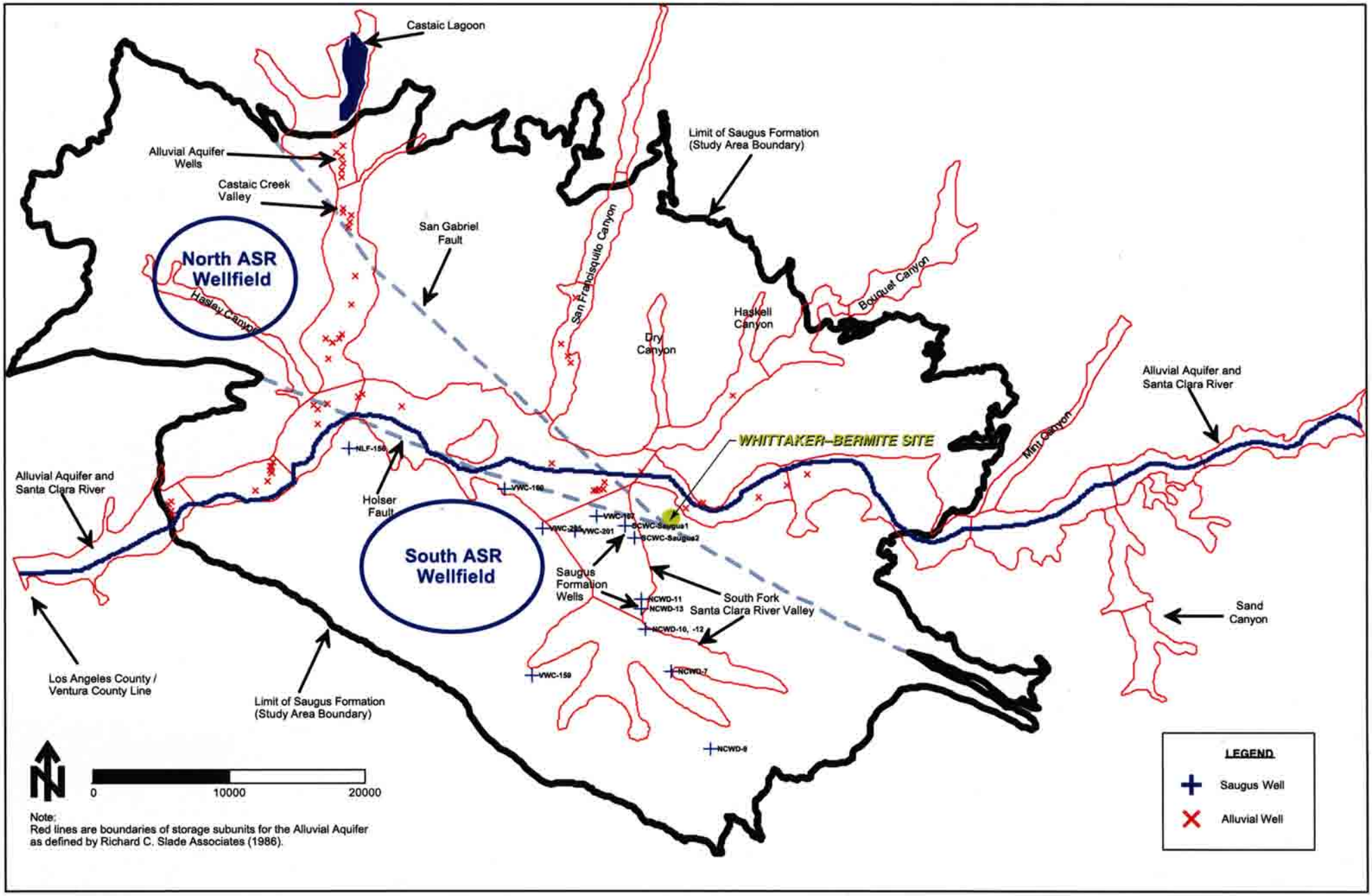
The data suggest that potential groundwater outflow at the westerly end of the Alluvium has remained unchanged for the period of available data, independent of the fluctuations in other parts of the Alluvium (in the central to easterly part of the Santa Clarita Valley). As a result, although not quantified, the nearly

constant long-term groundwater levels suggest that potential outflow from the basin has remained nearly constant throughout the historical variations in pumpage and hydrologic conditions (*1999 Water Report*, p. 12).

(4) Water Quality in the Alluvial Aquifer

The principal water quality concern in waters from the Alluvial aquifer is total dissolved solids ("TDS"). TDS concentrations in the Alluvial aquifer typically range from 400 to 700 milligrams per liter ("mg/l"), and the water is considered moderately hard to hard. (UWMP 2000) Groundwater quality variations also inversely correlate with precipitation and stream flow: Wet periods have produced substantial recharge of higher quality water (low TDS) and dry periods have resulted in an increase in TDS (and individual component constituents) in the deeper parts of the aquifer.

In addition, the water purveyors have tested municipal-supply water wells in the Alluvial aquifer in response to claims that groundwater supplies in the Alluvium are contaminated from ammonium perchlorate. Perchlorate is used in the manufacture of rocket propellants, munitions and fireworks. The alleged source of perchlorate is a facility in the Santa Clarita Valley known as the Whittaker-Bermite site. As shown in **Figure 2.5-14**, the Whittaker-Bermite site is located approximately five miles away from the nearest site proposed for ASR wells. No perchlorate has been detected during laboratory testing for perchlorate in any municipal-supply water wells in the Alluvial aquifer. (Slade, 2002; UWMP 2000.) In addition, each local water purveyor regularly collects groundwater samples from the numerous municipal-supply wells in the Alluvial aquifer. The wells will continue to be sampled, tested and monitored for possible detection of perchlorate, and any other contaminants. The sampling, testing and monitoring of the numerous municipal-supply wells in the Alluvial aquifer actually serve as an early warning device for the possible detection (and ultimate treatment) of perchlorate and other contaminants. For further information regarding perchlorate and other contaminants in the Valley's other aquifer, Saugus Formation, please refer to **Section 2.5.4.4(b)(4)**, below.



NEWHALL RANCH™
Newhall Ranch Company

FIGURE 2.5-14

LOCATION OF ASR WELLS RELATIVE TO WHITTAKER–BERMITE SITE

(b) Saugus Formation

Underlying the Alluvial aquifer in the main portion of the Santa Clarita Valley and extending to the surrounding foothills is the Saugus Formation. The Saugus Formation contains lenticular[18] and interfingered[19] beds of poorly- to well-consolidated sandstone, conglomerate, and siltstone that are at least 5,000 feet thick in the deepest part of the basin. The degree to which these beds are laterally continuous is unknown. However, interpretations of geophysical electric log data by Slade (2000) indicates that some more permeable sand zones may be laterally continuous from one end of the basin to the other. The deepest and oldest portion of the Saugus Formation was deposited in a marine environment (the Sunshine Ranch member) and consists of siltstone, shale, and fine-grained sandstone of low permeability.

Faulting and folding of the rocks in the region have caused the sedimentary rocks, including the Saugus Formation, to form a bowl-shaped structure. The Saugus Formation and the underlying bedrock dip generally toward the center of the "bowl" from all locations along the bottom (basal) contact of the Saugus Formation.

Dominating the geologic structure in the project area is the northwesterly-trending San Gabriel fault. A spur from this fault, referred to as the Holser fault, trends west through the project area. South of the faults, the Saugus Formation is thickest and this is the area where the majority of Saugus municipal water wells are located. North of the San Gabriel fault, the Saugus Formation is older, thinner and finer grained than south of the fault. Little groundwater development has occurred north of the San Gabriel Fault.

The Saugus Formation is recharged by two principal sources: (1) deep percolation of precipitation in the exposed portions of the Saugus in the highlands surrounding the valley, and (2) seepage from the Alluvial aquifer along the Santa Clara River and its tributaries, particularly on the eastern end of the Santa Clarita Valley. Minor recharge may also occur in limited areas through irrigation seepage where the land overlying the Saugus is cultivated. In the eastern part of the Santa Clarita Valley, the Saugus Formation is underlain by older, relatively impermeable rocks of the Castaic Formation and Mint Canyon Formation, which form the bottom and sides of the "bowl-shaped" Saugus structure. Little, if any, groundwater exchange occurs between these formations and the Saugus Formation (*See*, **Figure 2.5-15**).

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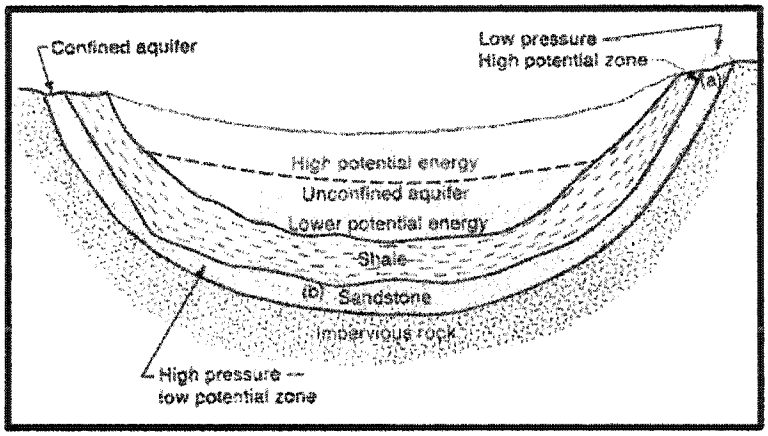
18 Lenticular: Shaped approximately like a double convex lens. When a mass of rock thins out from the center to a thin edge all around, it is said to be lenticular in form.

19 Interfinger: To grade or pass from one material into another through a series of interlocking or overlapping wedge-shaped layers.

Figure 2.5-15
Cross-Section of Groundwater Basin
Source: UWMP 2000



The amount of water-bearing sediments in the Saugus Formation is substantial. Slade (2002) estimated that the amount of water stored in the Saugus Formation is approximately 1.65 million acre-feet. A determination of the perennial yield of the Saugus Formation has not been made because information on the aquifer characteristics is limited. However, for planning purposes, the annual production of the Saugus Formation is estimated to be between 7,500 to 15,000 AFY in normal/average years and 21,000 to 35,000 AFY in dry years. (Slade 2000; UWMP 2000.)

Discharge from the Saugus Formation occurs in part through groundwater extraction from wells as deep as 2,000 feet. Discharge from the Saugus Formation also occurs at the west end of the valley (west of the I-5 bridge) where Saugus groundwater is known to discharge to the Alluvial aquifer. This discharge of groundwater from the Saugus Formation into the Alluvial aquifer is promoted in this area by the presence of older and relatively impermeable rocks of the Pico Formation that underlie and form the western boundary of the Saugus Formation (where they are exposed at the ground surface). These older rocks of the Pico Formation form a barrier to groundwater flow and force Saugus groundwater to discharge upwards into the Alluvial aquifer approximately 2.5 miles upstream of the county line (refer to **Figure 2.5-10**). The Saugus does not discharge at "Blue Cut," which is located approximately 3.5 miles downstream of the Saugus/Pico Formation contact and about 1 mile downstream of the County line.

As a result of the folding of the Saugus, Pico, and Mint Canyon Formations in the Santa Clarita Valley, permeable sand layers in places within the Saugus Formation are oriented so that they are in direct connection with the overlying Alluvial aquifer. Consequently, recharge to the Saugus may be greatest in these areas, particularly on the east side of the Valley. Also, discharge to the Alluvium is enhanced where permeable sand layers of the Saugus are contacting the Alluvial aquifer on the western end of the Valley where the Saugus discharges.

Available aquifer test data from Saugus wells located near the center of the Valley where the Saugus is thickest indicate that the Saugus is semi-confined (under pressure). Transmissivity values range from 80,000 to 160,000 gallons per day per foot and storativity values are on the order of 10^{-3} to 10^{-4}. In areas where the Saugus crops out, the uppermost saturated zones are partially unconfined because the permeable beds are folded upwards. In the highlands, the Saugus beds are exposed at the ground surface, and in the valley the Saugus beds are in contact with the Alluvial aquifer.

Based on the results of Slade (1988, 2000), and the operating experience of the water purveyors, Scalmanini (2000) undertook an independent review of the information regarding the Saugus Formation, and concluded that:

> "The Saugus Formation is the more difficult of the two aquifers in the area to assess, both in terms of dry period water supply and long-time dependability, primarily because there is no historical operating experience in the range of dry-year Saugus pumping cited in the UWMP. The memorandum in Appendix C [Slade 2000] includes a brief discussion of historical pumpage (up to a maximum of nearly 15,000 AFY, and an average of slightly more than 7,000 AFY over the last 20 years), limited historical water levels (no long-term change or other evidence of overdraft, with current levels comparable to pre-development levels), and ground-water storage (on the order of one million AF in storage in the depth zone of 500 to 2,500 feet). Based on these conditions and a couple of other considerations (large areal extent and substantial vertical depth of the Saugus, and typically deep well completions with sufficient available drawdown in wells), *it is concluded that it is hydrogeologically feasible to increase pumpage from the Saugus for short-term periods in a ramped manner from 15,000 to 25,000 to 40,000 AFY.* The memorandum is not specific with regard to pumping outside the "short-term" periods when pumpage might be increased; however, it implies that increased pumpage would occur only during dry periods, and that pumpage would decline to lower values in wet and normal period such that the long-term stability in water levels and storage discussed in the memorandum would be maintained." (*Emphasis added.*) (Scalmanini 2000)

Focusing on the projected groundwater supplies depicted in the UWMP and whether those supplies were "realistic" under average and dry year conditions, Scalmanini (2000) concluded that:

> "[B]oth the Alluvium and the Saugus are reasonable and sustainable sources at the yields represented in the Plan. As such, those yields are not overstated and will not deplete or "dry up" the ground-water basin; and there is no need to "reduce" them for purposes of planning within the context of an Urban Water Management Plan." (Scalmanini 2000)

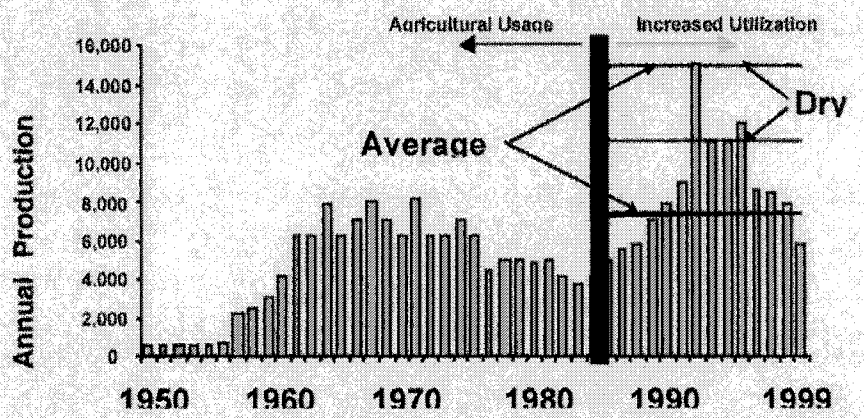
(1) Historical and Current Conditions of the Saugus Aquifer

From 1980 through 1998, total pumpage from the Saugus Formation has ranged from a low of about 3,850 AFY in 1983 to a high of nearly 15,000 AFY in 1991. Average pumpage over that period has been nearly 7,400 AFY (*1999 Water Report*). Slade has estimated that the historical annual production of this formation

is 7,500 AFY to 15,000 AFY. (Slade 2000.) **Figure 2.5-16** depicts the historical groundwater production from the Saugus Formation from 1950 to 1999.

Wells drilled into the Saugus aquifer south of the San Gabriel fault are anticipated to produce 1,500 to 2,000 gallons per minute, from a depth of 1,500 to 2,500 feet.

Figure 2.5-16
Historic Annual Production - Saugus Formation



(2) Groundwater Levels of the Saugus Aquifer

Although there have been seasonable water level changes, in response to groundwater pumping, the long-term trend in the Saugus aquifer (over the last 35 to 40 years) shows relatively stable groundwater levels (*1999 Water Report* [Figure II-13]). There is no trend toward a sustained decline in Saugus water levels or storage, which would be indicative of overdraft conditions. On that basis, and with recognition that historical (pre-1980) pumpage was quite small, and that average pumpage over the last two decades has been less than the reported range of potential recharge to the Saugus aquifer, pumpage from the Saugus aquifer has been and continues to result in the long-term stability of water levels and storage capacity.

Scalmanini (2000) has concluded that it is feasible to increase pumping from the Saugus for short-term periods in a ramped manner from 15,000 AFY to 25,000 AFY to 40,000 AFY based on: (a) historical

pumping data; (b) the amount of groundwater in storage (on the order of 1.4 million acre-feet in the depth zone of 500 to 2,500 feet); (c) the areal extent and substantial vertical depth of the Saugus; and (d) typically deep-well completions with sufficient available drawdown in the wells. The increased pumping from the Saugus would occur in dry periods, and the pumping would decline to lower values in wet and normal/average periods, to allow for recharge, such that the long-term stability in groundwater levels and storage would be maintained.

Based on work from Slade (2000) and Scalmanini (2000), the UWMP conservatively estimates that water supplies from the Saugus Formation can be withdrawn up to approximately 21,000 to 35,000 AFY in dry years, without any adverse effects, for short-term periods. The UWMP also indicates that the drilling of additional wells in the Saugus would be required to obtain these production levels for future water supplies (*See*, UWMP 2000, Table 2-4).

(3) Groundwater Flows of the Saugus Aquifer

Groundwater movement in the Saugus aquifer is toward the center of the valley from the highlands and then toward the western end of the Santa Clarita Valley where it discharges naturally into the Alluvial aquifer.

(4) Water Quality Of The Saugus Aquifer (Including Perchlorate)

TDS/Perchlorate. The primary water quality concerns in waters from the Saugus aquifer are TDS and perchlorate detection.

TDS. The total dissolved solids (TDS) concentration of Saugus Formation groundwater typically ranges from 500 to 900 mg/l. The California Secondary Maximum Contaminant Level (SMCL) is expressed as a range with the midpoint or ("upper") level for TDS being 1000 mg/l. No fixed consumer acceptance contaminant level has been established for TDS.

On behalf of Valencia Water Company, Richard C. Slade & Associates re-examined all available TDS data from Saugus Formation water wells in the Santa Clarita River Valley, as part of a May 2000 presentation to the California Public Utilities Commission (PUC). The original laboratory data were used to recalculate TDS using a more standard, additive method described in a United States Geological Survey report by Hem (1992). These data were then compared to historic pumping and water level records to look for any discernible trends in TDS concentrations over time, and to examine if these trends were related to changes in groundwater production.

The results of that evaluation revealed that although there has been a slight increase in TDS levels in most Saugus Formation wells in the past 40 years, this increase could not be correlated with increased groundwater production. In fact, there is some evidence that TDS concentrations actually dropped during the period of greatest Saugus Formation groundwater production.

Perchlorate. As stated above, perchlorate is used in the manufacture of solid rocket propellants, missiles and fireworks. Sources of drinking water have been contaminated by perchlorate in areas in which such manufacturing has occurred. The primary human health concern related to perchlorate is that it can interfere with the thyroid gland's ability to utilize iodine to produce thyroid hormones, which are required for normal body metabolism, as well as growth and development. Perchlorate in very high doses has been used in medicine in the treatment of Graves' disease, a condition in which excessive amounts of thyroid hormone are produced.

Because perchlorate historically has not been considered a common drinking water contaminant, there are currently no federal or state drinking water standards regulating perchlorate. However, in September 2002, Senate Bill 1822 was passed. The new law requires the State Office of Environmental Health Hazard Assessment to perform a perchlorate risk assessment and adopt a perchlorate public health goal by January 1, 2003. SB 1822 also requires the State Department of Health Services ("DHS") to adopt a primary drinking water standard for perchlorate by January 1, 2004.

DHS previously established an initial provisional "action level" for water utilities in the event that perchlorate is detected in an amount exceeding 18 parts per billion ("ppb") or micrograms per liter ("ug/l"). Data from DHS showed that perchlorate concentrations lower than 18 ppb were not considered to pose a health concern for the public. In January 2002, based on draft health risk evaluations released by the U.S Environmental Protection Agency ("EPA"), DHS reduced the perchlorate action level to 4 ppb. In January 1999, DHS adopted a regulation identifying perchlorate as an unregulated chemical for which monitoring is required.[20]

The alleged source of perchlorate detected in the Saugus aquifer is a facility in the Santa Clarita Valley known as the former Whittaker-Bermite facility.[21] Perchlorate has been detected in four wells in the

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20 "Unregulated" refers to the absence of a drinking water standard, or maximum contaminant level ("MCL"). DHS has advised water utilities about required and recommended actions to be taken if the "action level" is exceeded, including notices to local agencies and water utility customers. For further information regarding DHS action related to perchlorate, please refer to DHS's internet website located at http://www.dhs.cahwnet.gov/, and, specifically, http://www.dhs.cahwnet.gov/ps/ddwem/chemicals/perchl/actionlevel.htm.

21 Please refer to Plate 1 in the report prepared by Richard C. Slade & Associates entitled, *Hydrogeologic Conditions in the Saugus Formation, Santa Clarita Valley, California*, February 2001. The report may be found in Appendix 2.5 to the Draft Additional Analysis (April 2001).

eastern part of the Saugus aquifer, near the former Whittaker-Bermite facility. It has been suggested that the detection of perchlorate in the Saugus aquifer dramatically limits its usefulness as a local water supply source and that reports prepared by the water purveyors "overestimate" groundwater supplies by not properly accounting for perchlorate detected in certain wells in the Saugus aquifer. As discussed below, the water purveyors in Santa Clarita Valley have reported the existence of perchlorate in the Saugus aquifer for several years, and, based on the information provided below, the Saugus aquifer remains an important and viable groundwater resource for the Santa Clarita Valley. Due to the high value of this local water resource, the purveyors have placed a high priority on replacing the impacted groundwater extraction capacity by installing wellhead treatment and the construction of new wells.

The CLWA Integrated Water Resources Plan ("IWRP"), dated February 1998, the 1998, 1999, 2000 and 2001 Santa Clarita Valley Water Reports and the UWMP 2000 have disclosed that perchlorate was detected in certain specified wells in the Saugus aquifer. Since 1997, groundwater samples have been collected from at least 12 municipal-supply water wells in the Saugus aquifer for purposes of conducting laboratory testing for perchlorate. Based on laboratory test results, and additional information obtained by the water purveyors, four Saugus Formation municipal-supply wells located near the Whittaker-Bermite facility have been voluntarily placed on inactive status due to perchlorate detection. The eight other Saugus wells in the area are active and available for use.

The testing of the impacted municipal-supply wells has occurred over time. For example, testing of Newhall County Water District ("NCWD") Well No. 11 showed perchlorate concentrations ranging between 9.9 and 23 ppb between May 1997 and October 2000. This well is currently on inactive operational status, and NCWD has voluntarily refrained from using the well since 1998. The testing of Valencia Water Company ("VWC") Well No. 157 between 1997 and 2000 also showed perchlorate concentrations ranging from not-detected to 14 ppb. This well is also currently on inactive operational status, and VWC has voluntarily refrained from using the well since 1997. Finally, the testing of Santa Clarita Water Division of CLWA's ("SCWD") Saugus-1 and Saugus-2 wells in 1997 and 1998 revealed perchlorate concentrations ranging from 16 and 42 ppb in Well 1, and 12 and 45 ppb in Well 2. Neither of these two wells is currently being pumped.

Results of on-going laboratory testing of all other active Saugus Formation municipal-supply wells have shown non-detect concentrations of perchlorate. VWC Well Nos. 201, 205 and 160 were sampled and analyzed for perchlorate in the third quarter of 2000, with both samples returning not-detected results. NCWD's Saugus Formation water wells were all tested for perchlorate in October 2000, with all samples returning not-detected results. Slade has reported that the Saugus aquifer is and will continue to be a

viable source of water supply for the water purveyors in the Santa Clarita Valley as long as efforts remain in place to treat impacted wells on an interim basis to contain the plume.

As to groundwater production, the recent voluntary closure of four of the 12 Saugus municipal-supply wells is due, in part, to caution related to perchlorate; however, the water purveyors have limited their use of the Saugus aquifer for other significant reasons as well. For example, because the Alluvial aquifer remains essentially full, the water purveyors are pumping water from wells in the shallower Alluvial aquifer because the water is readily available, and because it costs less to pump water from the Alluvial wells when compared to pumping from the deeper Saugus aquifer. In addition, SWP water is now available to all local purveyors, making this imported water supply more readily available than in the past. The local water purveyors also have developed an overall strategy of maintaining the Saugus aquifer as a firming supply for drought years in the event SWP supplies are curtailed.

In addition to the water purveyors' strategy regarding groundwater production from the Saugus aquifer, in November 2000, CLWA, NCWD, SCWD and VWC filed suit against the current and prior owners of the former Whittaker-Bermite facility. The lawsuit requests that the current and prior owners pay all necessary costs of response, removal of the perchlorate contaminant, remediation action costs and other damages associated with the contamination. Under federal and state law, the current and prior owners of that facility have the responsibility for the clean-up activities and costs.

In 2002, CLWA and the U.S Army Corps of Engineers also entered into an agreement to assess groundwater conditions in the Saugus aquifer within the Eastern Santa Clara Basin. Funded by a $7 million appropriation from the federal Government, $4 million of which has been earmarked for groundwater investigations related to perchlorate contamination in the Santa Clarita Valley, with matching funds from CLWA, the purpose of the study is to sufficiently characterize the condition of the Whittaker-Bermite site and evaluate long-term and interim solutions for clean-up of the contaminated soil and groundwater. The groundwater study will be implemented pursuant to Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and related Federal regulations.[22]

Other studies regarding the nature and extent of the perchlorate in the Alluvial and Saugus aquifers have already commenced. In addition, the local water purveyors continue routine sampling of the existing wells. CLWA's board of directors recently approved a project to perform pre-design services for treatment of groundwater to contain the perchlorate plume.

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22 CERCLA is found at Title 42 USC Section 9601 at sec. Related Federal regulations are also found at 40 CFR Part 300.

The current studies are still in their initial stages; however, based on the study results to date, there is no indication that perchlorate has impacted more than the original four Saugus water supply wells. Concentrations of perchlorate have been detected in Alluvial monitoring wells near the Whittaker-Bermite site boundary and in shallow groundwater under the Saugus Metrolink site, but there is no evidence that these impacts have the potential to impact Alluvial and Saugus water supply wells.

In addition, CLWA and the other retail water purveyors in the Santa Clarita Valley plan to pursue clean-up activities at the specified well sites using treatment technologies that have been approved by the Department of Health Services. As discussed below, in the past few years, much progress has been made in developing treatment methods capable of removing perchlorate from groundwater supplies.

Perchlorate Treatment Technology. Effective technologies presently exist to treat perchlorate in water in order to meet drinking water standards. In a publication from the U.S. Environmental Protection Agency ("EPA"), *Region 9 Perchlorate Update*, June 1999,[23] the EPA discussed the current state of perchlorate treatment technology, and the current and planned treatment development efforts being carried out as part of U.S. EPA Superfund program studies, U.S. Air Force research, water utility-funded studies, and the federally-funded research effort underway by the East Valley Water District, California and the American Water Works Association Research Foundation ("AWWARF"). The EPA also summarized two of the technologies that are in use today, which are capable of removing perchlorate from groundwater supplies. Each technology is discussed below, along with a brief summary of the specific application of each method used to remove perchlorate from groundwater supplies in the San Gabriel Valley.

Ion Exchange Method. The first of the two perchlorate-removal technologies receiving the most attention is ion exchange, in which the perchlorate ion is replaced by chloride, a chemically similar but nontoxic ion. Ion exchange processes have been used in homes and businesses for water softening for decades. Bench- and pilot-scale studies have demonstrated that ion exchange systems can reliably reduce perchlorate concentrations in San Gabriel Valley groundwater from approximately 75 ppb to below detectable levels. The studies have also provided valuable information on resin selection and regeneration, brine production, and cost that will guide the design and operation of full-scale systems.

The ion exchange treatment method has been approved by DHS for use in the San Gabriel Basin. In February 2001, DHS approved La Puente Valley County Water District's ("LPVCWD") application to amend its domestic water supply permit. After considering a detailed engineering report, and overseeing

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23 *See*, EPA Internet website, Perchlorate, and Region 9 Perchlorate Update, found at http://www.epa.gov/ogwdw/ccl/perchlor/perchlo.html.

a pilot program, DHS granted LPVCWD's application to amend its domestic water supply permit, and to operate two existing domestic water supply wells in the San Gabriel Basin for purposes of treating perchlorate-contaminated water from the wells and providing the treated water to its customers for drinking and other domestic uses.[24]

LPVCWD's water treatment facility consists of pumping and treating perchlorate contaminated groundwater from two of its domestic-use wells. An ion separation ("ISEP") unit will be used to remove the perchlorate. The ISEP process involves an ion exchange resin that is used to remove the perchlorate from the groundwater. The resulting perchlorate brine from the District's wellhead will be discharged from an existing line to either a new pipeline or the sanitary sewer system after obtaining appropriate permits from local agencies. The treatment has been demonstrated to produce final treated water to non-detect contaminate levels.

Biological Treatment Methods. To date, considerable effort has been directed at developing biological treatment methods for removing perchlorate from groundwater. In the biological treatment process, microbes destroy perchlorate by converting the perchlorate ion to oxygen and chloride. In most cases, nutrients must be added to sustain the microbes. Microbes have been used for decades in the treatment of drinking water supplies as part of a process known as slow sand filtration.

A six month pilot-scale study of a biological process has been completed for the San Gabriel Basin, demonstrating the reduction of perchlorate from approximately 75 ppb to below detectable levels. The same process is being used in a recently constructed full-scale system at the Aerojet site in Northern California, where perchlorate concentrations exceed 1,000 ppb. A biological process also has been used to treat perchlorate-contaminated wastewaters resulting from the manufacture and maintenance of rocket motors, where perchlorate concentrations may exceed 500,000 ppb.

Biological treatment methods are believed to be capable of producing potable water, but additional testing must be completed to determine whether a biological process can reliably and cost-effectively produce drinking water-quality water. However, the necessary tests are planned for later this year, when a biological treatment system designed to produce potable water for use in the San Gabriel Valley will be in operation.

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24 A copy of LPVCWD's Water Permit Amendment (No. 04-16-01 PA-000), dated February 15, 2001, along with the engineering report and other information are provided in Appendix 2.5 to the Draft Additional Analysis (April 2001).

The San Gabriel Valley project involves the installation of not only the ion exchange technology to remove perchlorate, but also a second groundwater treatment system utilizing a biological process to remove perchlorate. The biological treatment train system will be constructed at LPVCWD's well site and will initially be used to demonstrate the ability to biologically reduce perchlorate concentrations using microbes. The biological treatment system will consist of a bioreactor to remove perchlorate, followed by a standard multi-media filter, followed by UV/hydrogen peroxide (oxidation) to lower contaminant concentrations to comply with DHS drinking water standards. The treated water will flow through Granular Activated Carbon ("GAC") pressure vessels to "polish" the treated water to ensure that all contaminants are removed. The fully-treated water will then be disinfected.

During the demonstration, all water treated by the biological treatment system will be discharged in compliance with an NPDES permit, which will be obtained from the Regional Water Quality Control Board. After the demonstration phase, a permit will be requested from DHS to provide the full-treated water to LPVCWD's customers. Following receipt of the DHS permit, the biological treatment train system will continue to operate and provide fully-treated water to LPVCWD customers. As part of the biological treatment system, ethanol will be stored on site and used to foster microbial growth. A permit will be obtained from the local agency to store the ethanol on site.

Biological treatment methods are new to many water utilities. However, biologically-active filters have been used in drinking water treatment for decades to help remove particles and biodegradable organic matter. As stated above, the San Gabriel Valley project will rely on biological treatment for primary perchlorate removal, and is expected to include GAC as a backup process capable of limited perchlorate removal.

Other Treatment Methods. Other technologies have also been demonstrated as capable of removing perchlorate, but probably at higher cost. Reverse osmosis and nanofiltration were tested by researchers at the Metropolitan Water District of Southern California and shown to be effective in removing perchlorate, but they are likely to be much more expensive to operate than ion exchange processes. Liquid phase GAC also removes perchlorate, but only for a limited period of time before regeneration or replacement of the carbon is required. Frequent carbon replacement would make relying solely on GAC for perchlorate removal very expensive. Perchlorate cannot be removed from water by conventional filtration, sedimentation or air stripping technologies.

In addition to the proven treatment methods, a U.S. patent was recently granted for a new treatment device that reportedly renders perchlorate harmless. The device is a hollow-fiber membrane biofilm reactor, that, through a natural biochemical process of electron transfer, turns perchlorate into innocuous

chloride. Perchlorate contaminated water is run through the biofilm reactor, which contains a bundle of thousands of hollow fiber membranes into which hydrogen gas is fed. The hydrogen gas diffuses through the membrane walls into the water as it flows past the fibers. Bacteria attach to the surface of the membrane because they gain energy from the process of transferring electrons and act as catalysts for the transfer of electrons from hydrogen gas to the oxidized contaminant, such as perchlorate. The contaminants are reduced to harmless end products while the hydrogen gas is oxidized to water.

The advantage of the biofilm reactor method over existing methods is that it destroys the contaminant without creating brine or other waste products, which must then be disposed of. The creators of the biofilm reactor device have embarked on a pilot study of the treatment method in La Puente, California, treating groundwater that is highly contaminated with perchlorate. Results of the study have shown that the biofilm reactor can effectively treat 0.3 gallons of water per minute. The current research is supported by a grant from the U.S. Environmental Protection Agency and administered by AWWARF.

In the coming year, the results of perchlorate treatment research funded by a $2 million Federal appropriation to the AWWARF will be available. AWWARF is funding studies into biological treatment methods, ion exchange, reverse osmosis, nanofiltration and other processes. The result of the AWWARF research should allow more efficient design and operation of the ion exchange and biological treatment processes, and may identify other technologies capable of cost-effectively removing perchlorate from water.

Summary. Due to the high value of this local water resource, the purveyors have placed a high priority on replacing the impacted groundwater extraction capacity by installing wellhead treatment and the construction of new wells. The "best" technology for removal of perchlorate will probably vary from site to site. At this time, however, ion exchange and biological treatment systems have been approved for construction and operation in the San Gabriel Valley. The San Gabriel Valley project will continue to provide cost and performance data over the years that will be available to other water utilities for other sites. The results from recent and on-going studies will also be of use to water utilities in need of reliable, easy-to-operate treatment methods that can reduce perchlorate concentrations to low or non-detectable levels.

Other Water Contaminants. Water quality regulations are constantly changing as contaminants that are not typically found in drinking water are being analyzed by DHS and U.S. EPA. In addition, existing water quality standards are becoming more stringent in terms of allowable levels in drinking water.

Hexavalent Chromium. Over the past year, hexavalent chromium (chromium 6) has become an important new water quality concern in southern California. In a letter dated March 27, 2001 DHS asked the California Environmental Protection Agency to establish a specific public health goal (PHG) for chromium 6. The PHG would formally identify a level of chromium 6 in drinking water that does not pose a significant human health risk. DHS has adopted regulations adding chromium 6 to the list of unregulated chemicals requiring monitoring, effective January 3, 2001. The regulations require drinking water systems to monitor for unregulated chemicals for which drinking water standards have not been established. The objective of the regulations is to collect data throughout the state to determine the occurrence of these chemicals to help DHS make regulatory decisions that will adequately protect public health.

DHS currently regulates chromium in drinking water as total chromium. DHS' drinking water standard for total chromium is 50 parts per billion (ppb). Total chromium is comprised of chromium 3 and chromium 6. Both are naturally occurring and are found in groundwater. Chromium 3 is an important dietary supplement necessary for public health. While chromium 6 is a known occupational carcinogen through inhalation, scientists differ over the potential health effects posed when consumed in water. Due to the level of public concern about chromium 6, the DHS regulations were adopted on an emergency basis to expedite monitoring for this chemical. All drinking water systems with sources determined by DHS to be vulnerable to chromium 6 must monitor to enable DHS to determine both its occurrence and the proportion of chromium 6 in the "total chromium" level.

The retail water purveyors in the Santa Clarita Valley have implemented a monitoring schedule in compliance with these regulations. Preliminary scanning samples taken throughout the Santa Clarita Valley have shown trace levels (<1 ppb) of chromium 6. These levels are likely attributed to naturally occurring chromium in the rocks and soil. For further information, please refer to the following DHS website, http://www.dhs.ca.gov/ps/ddwem/chemicals/Chromium6/Cr+6index.htm.

MTBE. Additional water quality regulations have been promulgated and/or revised over the past year. For example, MTBE (methyl-tertiary butyl ether) has been a concern for the past few years, and on May 17, 2000, DHS adopted a primary maximum contaminant level (MCL) for MTBE of 0.013 mg/L. CLWA and the local water purveyors have been testing for MTBE since 1997, and, to date, have not detected it in any of the production wells or in the treated SWP water supplies.

(c) Summary of Local Groundwater Supplies

In summary, **Table 2.5-9**, shows the existing and projected groundwater supplies from the Alluvial and Saugus aquifers. The groundwater projections are from the UWMP and the updated analysis by Slade (UWMP 2000, Appendix C).

Table 2.5-9
Existing and Planned Groundwater Supplies[1]
(acre-feet per year)

Source	Average/Normal Year	Dry-Year
Alluvial Basin	30,000 - 40,000	30,000 - 35,000
Saugus Formation	7,500 - 15,000	11,000 - 15,000
Saugus Formation (new wells)*		10,000 - 20,000
Total Supply:	**37,500 - 55,000**	**51,000 - 70,000**

Source: UWMP 2000.

[1] *Studies by Richard Slade & Associates in October 2000 (UWMP Appendix C).*

* *Planned program for future implementation pursuant to the UWMP 2000. According to the UWMP 2000, prior to implementing increases in production from groundwater supplies, CLWA will analyze the feasibility, cost and potential water quality and environmental effects of such a program. However, according to the UWMP 2000, preliminary analyses and recent studies have concluded that additional pumping can be carried out.*

2.5.4.3 Reclaimed Water Supplies

Water reclamation (or recycling) is defined as the treatment and disinfection of municipal wastewater to provide a water supply suitable for non-potable reuse (*e.g.*, landscape irrigation). Under specified conditions, the state now requires the use of reclaimed water when available. (*See*, Senate Bill 2095 (Johnston) and Government Code Section 65602 relating to water recycling.) Section 65602 states in part:

> "(a) The waters of the state are of limited supply and are subject to ever-increasing demands.
>
> (b) The continuation of California's economic prosperity is dependent on adequate supplies of water being available for future uses.
>
> (c) It is the policy of the state to promote the efficient use of water through the development of water recycling facilities.
>
> (d) Landscape design, installation, and maintenance can and should be water efficient.
>
> (e) The use of potable domestic water for landscaped areas is considered a waste or unreasonable use of water within the meaning of Section 2 of Article X of the California Constitution if recycled water is available that meets conditions described in Section 13550 of the Water Code."

Section 65605(b) also requires that a local agency adopt a recycled (or reclaimed) water ordinance that will:

> "[s]tate that it is the policy of the local agency that recycled water determined to be available pursuant to Section 13550 of the Water Code shall be used for non-potable uses within the designated recycled water use area set forth by the local agency when the local agency determines that there is not an alternative higher or better use for the recycled water, its use is economically justified, and its use is financially and technically feasible for projects under consideration by the local agency."

Reclaimed water is available for use in the Santa Clarita Valley from two existing WRPs operated by the County Sanitation Districts of Los Angeles County, the Saugus WRP, located in District 26 and the Valencia WRP, in District 32.

CLWA is currently in the process of updating its draft *Reclaimed Water System Master Plan* (Master Plan) (Kennedy Jenks Consultants, 1993). The purpose of the Master Plan was to evaluate and plan for the use of reclaimed water as a reliable water source to meet a portion of the non-potable water demand in the Santa Clarita Valley. The Master Plan outlined a multi-phase program to deliver reclaimed water to the valley totaling 10,000 acre-feet. CLWA's reclaimed water supply is projected to be 1,700 acre-feet per year by 2003. Projections in the UWMP show a total reclaimed water supply of 17,000 acre-feet by the year 2020. This amount is in addition to the reclaimed water originating at the Newhall Ranch WRP.[25]

Reclaimed Water Demand. The Master Plan identified potential reclaimed water users with existing and future demands totaling 10,361 acre-feet per year. Of the total demand, 1,215 acre-feet per year of demand is outside the CLWA service area.

Since reclaimed water is used for non-potable purposes such as landscape irrigation, demand for reclaimed water follows a highly seasonal pattern. Reclaimed water demand is generally low during wet winter months and increases dramatically during hot, dry summer months to meet greater irrigation requirements. For the annual demand of 10,361 acre-feet per year identified in the Master Plan, the total peak monthly demand is 1,922 acre-feet and the total peak daily demand is 20.5 mgd.

In addition to the reclaimed water demand identified in the Master Plan, if the proposed Newhall Ranch development is approved, the non-potable water demand in the CLWA service area could increase by 9,035 AFY (Newhall Ranch non-potable demand). The peak monthly non-potable demand for Newhall

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25 *See*, UWMP 2000, page 2-9. *See also*, CLWA's draft *Reclaimed Water System Master Plan* (Kennedy Jenks Consultants, 1993), which is incorporated by reference and available for public review at the County of Los Angeles, Department of Regional Planning, Lee Stark, 320 W. Temple Street, Room 1346, Los Angeles, California 90012 (213) 974-6467.

Ranch has been estimated to be 1,275 acre-feet (approximately 13.8 mgd). Assuming re-approval of the Newhall Ranch Specific Plan, the total non-potable water demand within the CLWA's service area is expected to reach approximately 19,396 acre-feet per year. This demand will be highly seasonal, with peak demands during summer months when the weather is hot and dry and irrigation needs are greatest.

Table 2.5-10, below, summarizes the reclaimed water demands.

Table 2.5-10
Reclaimed Water Demand

Item	Annual Demand (acre-feet per year)	Peak Monthly Demand (acre-feet)	Peak Demand (acre-feet)	Daily mgd
Within CLWA Service Area [a]	9,146	1,690	55.6	18.00
Outside CLWA Service Area [a]	1,215	233	7.5	2.45
Newhall Ranch[b]	9,035	1,275	42.5	13.81
Total	**19,396**	**3,198**	**105.6**	**34.26**

[a] From *CLWA Reclaimed Water Master Plan*, September 1993
[b] From *CLWA Integrated Water Resources Plan, Water Demand and Supply Evaluation*, February 1998; *Technical Memorandum, Update to: Addendum to Water Resources and Wastewater Management for the Newhall Ranch Project*, January 18, 1999, CH2MHILL.
Source: UWMP 2000.

Reclaimed Water Supplies. The two existing WRPs in the Santa Clarita Valley that can potentially supply reclaimed water to meet the identified non-potable water demands in the CLWA service area are the Valencia WRP and the Saugus WRP. A third plant has been proposed as part of the Newhall Ranch Specific Plan.

Due to site space constraints, the Saugus WRP, completed in 1962, will not be expanded beyond its current permitted capacity of 6.5 mgd. In ~~1999~~2002, the Saugus WRP had an average monthly effluent flow of 5.6~~02~~ mgd (6,294 AFY), which is approximately 86 percent of its ~~design~~ permitted capacity. Effluent from the Saugus WRP contains about 723 milligrams per liter TDS (total dissolved solids) and is discharged to the Santa Clara River west of Bouquet Canyon Road (UWMP 2000).

The Valencia WRP, completed in 1967, has a current permitted capacity of 12.6~~13.5~~ mgd. The ultimate planned capacity for the Valencia WRP is 27.6~~22~~ mgd. In ~~1999~~2002, the average monthly effluent flow for the Valencia WRP was ~~10.44~~12.11 mgd ~~(11,693 AFY)~~, which is approximately ~~77~~ 96 percent of its current ~~design~~ permitted capacity. Effluent from the Valencia WRP contains approximately 753 milligrams per liter TDS (total dissolved solids) and is discharged to the Santa Clara River west of The Old Road (UWMP 2000).

The Newhall Ranch Specific Plan proposes a 6.9 mgd WRP on the Newhall Ranch site to exclusively serve the Specific Plan. The proposed Newhall Ranch WRP would be located near the western edge of the Specific Plan site along the south side of SR-126. Effluent from the proposed Newhall Ranch WRP would be used to partially meet non-potable water demands within the Specific Plan site. According to the Newhall Ranch Final EIR, the proposed WRP is projected to produce on average approximately 5,630 AFY. Of this amount, 5,344 AFY would be used for irrigation, with the remaining 286 AFY discharged to the Santa Clara River during winter months when demands are low. This supply is projected to meet approximately 59 percent of the 9,035 AFY of potential non-potable water demands for the Specific Plan. The remainder of the non-potable demand is expected to be met by reclaimed water from CLWA, consistent with its updated *Reclaimed Water System Master Plan.*

Table 2.5-11 summarizes CLWA's reclaimed water supplies:

Table 2.5-11
Reclaimed Water Supplies

	Current Capacity (mgd)	Ultimate Capacity (mgd)	Flow (1999)		TDS (mg/l)
			mgd	acre-feet	
Saugus WRP	6.5	6.5	5.602	6,27194	723
Valencia WRP	12.613.5	2227.6	10.4412.1	12,8561,09 3	753
Total	2019.1	28.534.1	16.06	19,12717,9 87	--

Source: UWMP 2000 and County Sanitation Districts of Los Angeles County, Letter Dated January 13, 2003.

2.5.4.4 Imported SWP Water Supplies

(a) SWP Overview

In 1951, the California Legislature authorized construction of a large state water storage and delivery system.[26] Eight years later, in 1959, the Legislature authorized the submission for voter approval of a $1.75 billion general obligation bond issue to build the State Water Project ("SWP") system. The voters approved the measure, which enabled DWR to commence construction of the SWP.[27]

26 *See,* DWR, Bulletin No. 132-95 (Nov. 1996) p. xxiii; DWR Bulletin No. 132-98 (Nov. 1999) p. xxvii-xxxv.

27 *See,* Wat. Code §12930 *et seq.*; DWR, Bulletin No. 132-93 (Sept. 1994) p. 15.

The DWR operates and manages the SWP facilities.[28] The SWP is the largest state-built, multi-purpose water project in the country. The SWP was designed and built to deliver water, control floods, generate power, provide recreational opportunities and enhance fish and wildlife habitats. SWP water supplies are used for both urban and agricultural uses throughout California. The SWP facilities consist of a complex system of dams, reservoirs, power plants, pumping plants, canals and aqueducts to deliver water.[29]

At the inception of the SWP, DWR entered into individual water supply contracts with agricultural and urban water suppliers (SWP contractors) throughout California. The contracts were the method used to fund construction and operation of the SWP facilities for the delivery of water to the SWP contractors. Each such contract sets forth a maximum annual entitlement of SWP water, which is stated in Table A to the contract ("Table A entitlement").

There are currently 29 SWP contractors with water supply contracts with DWR. A SWP contractor may annually request that DWR deliver water in the following year in any amount up to the SWP contractor's Table A entitlement. The SWP contracts provide that in a year when DWR is unable to deliver the full amount of contractor requests, deliveries to contractors will be reduced so that total deliveries equal total available supply for that year. Some SWP contractors, including CLWA, historically have never requested delivery of their full annual entitlement because lower growth, other water supplies and water conservation efforts have held their demand below projections. Other SWP contractors historically have ordered their full Table A entitlement nearly every year.

Existing long-term SWP water supply contracts call for the annual delivery of 4,103,651 acre-feet of entitlement water by 1997 through SWP facilities, gradually increasing to a maximum of 4,172,686 acre-feet by 2020. Actual demand, however, has not developed as projected, owing to circumstances, which have changed since the long-term contracts were signed in the 1960s. The changes include slower population growth, changes in local land use, local water conservation programs and conjunctive-use programs. The most SWP entitlement water delivered to date (1999) in any year was about 3.1 million acre-feet in 1989. The demands for SWP water are expected to increase as the population of California continues to increase.[30]

(b) Monterey Agreement

By 1994, disputes arose among the many agricultural and urban SWP contractors and DWR regarding the availability and distribution of water through SWP facilities. To avoid potential litigation, DWR and

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28 *See*, DWR, Bulletin No. 132-93, (Sept. 1994) p. 15.

29 *See*, DWR, Bulletin No. 132-98 (Nov. 1999) p. xxvii.

30 *See*, DWR, Bulletin 132-98 (Nov. 1999), p. xxvii.

agricultural and urban SWP contractors met in Monterey, California to attempt to resolve the on-going disputes. After negotiations, DWR and the agricultural and urban SWP contractors agreed to a statement of principles, which became known as the "Monterey Agreement."

The Monterey Agreement, signed by DWR and many of the agricultural and urban SWP contractors in 1994, established principles to be incorporated in contract amendments (the Monterrey Amendments) to be offered to the SWP contractors. To date, all but two SWP contractors (Plumas County Flood Control and Water Conservation District and Empire West Side Irrigation District) have accepted the amendments. The amendments have three primary objectives: (i) to increase the reliability of all SWP contractors' water supplies; (ii) to stabilize the rate structure in order to improve the financial viability of the SWP; and (iii) to increase water management flexibility for all SWP contractors.

The Monterey Agreement provided a number of water management tools that have allowed local agencies to maximize their use of available supplies, thus meeting increased demand without construction of new SWP facilities. Most of these tools are environmentally beneficial or neutral. They include:

(a) **Water Transfers.** SWP contractors can transfer unneeded entitlement to other contractors on a permanent basis. This provides financial relief from SWP charges for the seller and additional water supplies for the buyer.

(b) **Turnback Pool.** SWP contractors with unneeded supplies on a short-term basis can turn their water back into a pool for purchase by other contractors.

(c) **Storage Outside Service Area.** SWP contractors are permitted to store water outside their service area (for example, in a groundwater banking project) for later use within their service areas.

(d) **Terminal Reservoirs.** SWP contractors are permitted to utilize flexible storage in Castaic Lake and Lake Perris to enhance their water supply reliability.

(e) **SWP Allocation.** Allocation of available SWP supply is made based on the proportion of each contractors' entitlements, rather than historical use with agricultural SWP contractors being cut first as in the past. This provides additional reliability to agricultural contractors earlier in the year, which improves their planning capability.

(f) **Interruptible Water.** Interruptible water (available surplus water) is distributed on an equal basis among SWP contractors rather than to agricultural SWP contractors first.

(g) **Flexibility.** Additional flexibility is granted to SWP contractors wishing to increase or decrease the entitlement amounts in their contracts.

(h) **Banking.** The Kern Water Bank was transferred to SWP agricultural users for development and use. This transfer has provided agricultural users as well as other local agencies with additional flexibility and water supply reliability.

(i) **Non-Project Water.** Use of project facilities for conveyance of non-project water is permitted to assist SWP contractors, which are able to locate additional sources of water.

As stated above, the Monterey Agreement has facilitated water transfers among SWP contractors. These water transfer provisions have resulted in 130,000 acre-feet of agricultural SWP contractors' entitlement being available for sale to urban SWP contractors. Agreements already have been executed among contractors to purchase the additional entitlement from the agricultural SWP contractors. Agreements for the additional entitlement of SWP water are effective upon execution (DWR Bulletin No. 132-96, August 1997, Ch. 1, p.5), and, therefore, are considered permanent water reallocations of SWP Table A entitlement. These permanent transfers of SWP entitlement have allowed urban SWP contractors to obtain additional SWP Table A entitlements, thereby increasing their overall deliveries, even in times of drought. The permanent transfers of SWP entitlement have also allowed SWP urban contractors to increase the reliability of their deliveries by having more entitlement available overall.

The DWR now has approximately eight years of experience in implementing the Monterey Agreement and the associated water management tools identified above. The SWP contractors have come to rely on the Monterey Agreement water management tools and other provisions in their planning activities. Some of the results to date include:

(a) Up to 200,000 acre-feet transferred annually in the Turnback pool program;

(b) Nearly 100,000 acre-feet transferred in permanent entitlement transfers;

(c) Nearly 1,000,000 acre-feet stored outside SWP contractors' service areas;

(d) Utilization of terminal reservoirs' flexible storage; and

(e) Delivery of up to 200,000 acre-feet annually in Interruptible water (available surplus water).

(c) Monterey Agreement Environmental Review and Litigation

The Monterey Agreement gave rise to potentially significant environmental effects requiring analysis under the California Environmental Quality Act. Therefore, a Program EIR was prepared to address the potentially significant environmental effects of implementing the Monterey Agreement. The Final Program EIR was certified in October 1995. The adequacy of the Final EIR was challenged in litigation arising under the California Environmental Quality Act. The Sacramento Superior Court upheld the adequacy of the EIR. Before and after the trial court's decision, DWR and the agricultural and urban SWP contractors who had executed the Monterey Agreement began implementing various amendment provisions, including the completion of permanent transfers of Table A entitlement among agricultural

and urban SWP contractors. The trial court's decision was subsequently appealed. On appeal, the petitioners sought a Writ to prevent further implementation of the Monterey Agreement during the appeal. However, the appellate court denied the requested Writ (DWR Bulletin 132-98, November 1999, Ch. 6, p. 2).

The appellate court reversed the trial court's decision. The appellate court held that the Program EIR for the Monterey Agreement was improperly prepared by the Central Coast Water Agency, as "lead agency" under CEQA, rather than by DWR, which should have been the "lead agency". The appellate court also found that the EIR did not sufficiently discuss implementation of a "no project" alternative. The court then concluded that a new EIR must be prepared and certified. Finally, the court held that the trial court improperly dismissed the plaintiffs' challenge to DWR's transfer of title to the Kern Water Bank from DWR to Kern County Water Agency.

The appellate court then remanded the case to the trial court and directed that the trial court issue a Writ of mandate vacating certification of the EIR and retaining jurisdiction until DWR certifies an EIR in accordance with CEQA. The appellate court further directed that the trial court consider whether the Monterey Agreement may continue to be implemented while the new EIR is being prepared. (*See, Planning & Conservation League v. Department of Water Resources* (2000) 83 Cal.App.4th 892.)

The appellate court decision invalidated certification of the EIR, but did not set aside, invalidate or otherwise vacate the Monterey Agreement. In addition, no court orders have been issued to "stay" further implementation of the Monterey Agreement.

In October 2000, DWR filed a petition asking the California Supreme Court to review the appellate court decision. The California Supreme Court denied the petition for review and the matter was remanded to the trial court for further proceedings, consistent with the appellate court's decision. The trial court has not issued a final ruling in the action.

In March 2001, the parties to the Monterey Agreement litigation commenced confidential mediation discussions in San Francisco. In a "Joint Statement on the Monterey Amendments Litigation", dated July 18, 2002, the parties to the litigation stated that they "have reached a joint agreement on the principles for settling the lawsuit[.]" The parties also stated that DWR had commenced preparing a new EIR for the Monterey Agreement. Finally, the parties indicated that the mediation effort would continue for the purpose of converting the settlement principles into a legal agreement, which they intended to file with the Superior Court within 60 to 90 days. The joint statement stated that the details of the settlement

would be announced once the settlement agreement is final. A copy of the Joint Statement on the Monterey Amendments Litigation, dated July 18, 2002, is provided in Appendix 2.5(p) to the report.

(d) Santa Clarita Valley SWP Supplies

CLWA SWP Table A Entitlement. Imported water from the SWP has been a supplemental source of supply to the Santa Clarita Valley since 1980. The SWP is contracted to deliver 4.2 million acre-feet of water per year to 29 contracting agencies. CLWA is a contracting agency with a current annual SWP entitlement of 95,200 acre-feet per year, or about 2.3 percent of the total.

As discussed in other portions of the Additional Analysis, CLWA acquired the additional SWP Table A entitlement when it purchased 41,000 AFY in 1999 from water agencies in Kern County (Kern County Water Agency and Wheeler Ridge-Maricopa Water Storage District ("WRMWSD"). This acquisition increased CLWA's SWP Table A entitlement to its present level of 95,200 AFY. The CLWA/WRMWSD water transfer has been completed, CLWA has paid approximately $47 million for the additional entitlement, the monies have been delivered, the sales price has been financed through CLWA by tax-exempt bonds, and DWR has increased CLWA's SWP Table A entitlement because it was a permanent transfer/reallocation of SWP Table A entitlement between SWP contractors.

Prior to completion of the CLWA/WRMWSD water transfer, the proposed transfer was the subject of environmental review by the water agencies. The agencies selling the 41,000 acre-feet of SWP Table A entitlement to CLWA assessed the environmental consequences of the proposed transfer within their service area in a Final EIR, dated June 1998. This EIR was certified in 1998 and has never been the subject of judicial review. As a result, the EIR is conclusively presumed to be valid (Pub.Res.Code §21167.2).

CLWA also prepared a supplemental Final EIR, which assessed the environmental effects of CLWA's acquisition of the 41,000 acre-feet within its service area. The Board of Directors of CLWA certified the Supplemental Final EIR in March 1999. Thereafter, in April 1999, a lawsuit was brought challenging the adequacy of the EIR under CEQA (*Friends of the Santa Clara River, et al. v. Castaic Lake Water Agency, et al.*, Case No. BS 056954). The trial court ruled in favor of CLWA and upheld the adequacy of the EIR under CEQA.

In October 2000, the plaintiffs filed an appeal. As discussed above, the appellate court reversed the trial court's judgment and ordered CLWA's EIR decertified. However, the appellate court did not order CLWA to void its approval of the water transfer. Instead, the appellate court remanded the matter to the trial court for further proceedings. After a hearing on September 24, 2002, the trial court concluded that

CLWA could utilize the 41,000 AFY to which it is entitled. For further discussion of that litigation, please see **Section 2.5.3.2(a)**, above.

Status of CLWA's Acquisition Under the Monterey Agreement. The CLWA/WRMWSD transfer of SWP Table A entitlement was the type of water transfer that fell within the provisions of the Monterey Agreement. As stated above, under the Monterey Agreement, certain SWP agricultural contractors agreed that 130,000 acre-feet of their Table A entitlement could be transferred to urban contractors. The CLWA 41,000 acre-feet acquisition was a part of the 130,000 acre-feet of SWP Table A entitlement, which has been transferred under the Monterey Agreement.

In effect, the Monterey Agreement provided a blanket pre-approval for those transfers by the participating SWP contractors, thus facilitating transfers of Table A entitlement from agricultural to urban SWP contractors. As stated above, the environmental documentation for the Monterey Agreement has been decertified. However, the pending legal proceedings have not invalidated the Monterey Agreement or enjoined either the Monterey Agreement or further implementation of the Monterey Agreement.

Even if the Monterey Agreement was invalidated, however, CLWA's permanent acquisition of an additional 41,000 acre-feet of SWP Table A entitlement could occur under existing SWP water supply contract provisions (without the need for the Monterey Agreement). It should be noted that the Kern County Water Agency has reaffirmed its willingness to allow transfers of up to 130,000 acre-feet of SWP Table A entitlement under pre-Monterey Agreement conditions even if the Monterey Agreement is ultimately invalidated.

In addition, the acquisition could proceed as a water transfer under existing law. *See, e.g.*, Water Code §§382, 383 (authority for transferring surplus water) and Water Code §§1745, *et seq.* (authority for transferring non-surplus water). Furthermore, nothing in the existing SWP water supply contracts, or applicable law, prohibit such water transfers with or without the Monterey Agreement. The Monterey Agreement simply provides a specific vehicle for accomplishing transfers of SWP Table A entitlement from agricultural to urban SWP contractors; the amendments under the Monterey Agreement are not the exclusive means by which that entitlement may be transferred. In support of that fact, in 1981 (almost 15 years before the Monterey Agreement), the entire SWP Table A entitlement of the Hacienda Water District was permanently transferred to the Tulare Lake Basin Water Storage District, pursuant to an agreement approved by DWR.

Finally, CLWA is not a party to the pending Monterey Agreement litigation (*Planning Conservation League v. Department of Water Resources* (2000) 83 Cal. App.4th 892)). Although not a party, an adverse final

judgment invalidating the Monterey Agreement could affect CLWA's completed acquisition of the 41,000 acre-feet, which could in turn impair CLWA's supply of SWP water through its contracts with DWR and other SWP contractors. However, CLWA believes that an adverse outcome in the Monterey Agreement litigation is not likely to adversely affect CLWA's water supplies over the long-term because: (a) CLWA believes that such a result is unlikely to "unwind" executed and completed agreements with respect to the permanent transfer of SWP water entitlements; (b) existing SWP water supply contract provisions allow such transfers (without the need for the Monterey Agreement); and (c) existing law enables CLWA to enter into contracts outside the context of the Monterey Agreement.

(e) CLWA SWP Deliveries

It has been suggested that CLWA has not received its requests for the delivery of SWP Table A entitlement from DWR over the years. This is not correct.

With limited exception, as shown below, DWR's allocation to CLWA has been 100 percent of CLWA's actual request for SWP water supplies. Based on annual water supply information provided by DWR, there have been only two years on record since 1980 (1991 and 1992) when DWR's delivery to CLWA was not 100 percent of CLWA's requested need. Despite the reduced DWR allocation in those two years, the amount of SWP water delivered to CLWA was sufficient to meet all local water supply needs in the Santa Clarita Valley. **Table 2.5-12,** below, summarizes the DWR's annual SWP supply to CLWA from 1990 to 2000.

Table 2.5-12 includes several important features regarding CLWA's annual water supply since 1990. The features of this table, are discussed below.

The "Entitlement" column represents CLWA's total annual entitlement to the SWP. From 1990 until 1999, CLWA's full annual SWP entitlement was 54,200 AFY. The full annual SWP entitlement of 95,200 AFY, shown in the "Entitlement" column in the year 2000, reflects the permanent acquisition of an additional 41,000 AFY of SWP entitlement in 1999 from the Kern County Water Agency.

The "DWR Allocation" column represents the amount of the entitlement allocated to CLWA by DWR. Note that its has often been the case (*e.g.*, 1995-2000) that CLWA received from DWR an allotment of entitlement far in excess of its actual need. Consequently, CLWA turned back (returned) significant amounts of water into the turnback pool (*See,* discussions of these programs in **Section 2.5.4.4(i)** below).

Table 2.5-12
Castaic Lake Water Agency
Annual SWP Water Supply Information
from Department of Water Resources

Year	CLWA Entitlement (AF)	DWR Allocation (%)	Entitlement Allocated (AF)	Imported Water Delivered/ Need (AF)	Percent of Entitlements Allocated (%)
1990	54,200	100%	54,200	21,613	40%
1991	54,200	30%	16,260	7,968	49%
1992	54,200	45%	24,390	13,911	57%
1993	54,200	100%	54,200	13,393	25%
1994	54,200	50%	27,100	14,389	53%
1995	54,200	100%	54,200	16,996	31%
1996	54,200	100%	54,200	18,093	33%
1997	54,200	100%	54,200	22,148	41%
1998	54,200	100%	54,200	20,254	37%
1999	54,200	100%	54,200	27,282	50%
2000	95,200	100%	95,200	32,579	34%
2001	95,200	39%	37,128	35,356	95%
2002(est)	95,200	70%	66,640	42,000	63%

Source: Castaic Lake Water Agency, November 2002.
*1) **CLWA Entitlement:** Represents the total quantity of SWP entitlement under contract by CLWA since 1990. There are 29 contracting agencies with a maximum SWP entitlement totaling 4,172,786 acre-feet. In 1992, CLWA acquired the water supply of the Devil's Den Water District (i.e., its 12,700 AFY contract entitlement). By Year 2000, CLWA had acquired 41,000 AFY of contract entitlement from the Kern County Water Agency and the Wheeler Ridge-Maricopa Water Storage District.*
*2) **DWR Allocation:** Represents the amount of the entitlement allocated to CLWA by DWR. Note that its has often been the case (e.g., 1995-2000) that CLWA received from DWR an allotment of entitlement far in excess of its actual need. Consequently, CLWA turned back (returned) significant amounts of water into the turnback pool (See, discussions of these programs in **Section 2.5.4.4(i)** below).*
3) Actual imported water delivered by CLWA in 1991 was 3,846 AF and 11,890 AF in 1992. The difference between these deliveries and the Imported Water Delivered/Need column is the amount of groundwater pumped into CLWA's system during 1991 and 1992.
***Other observations:** In 1994, CLWA deliveries were disrupted by the Northridge Earthquake. The Table does not account for Devil's Den deliveries, flexible storage account balance, transfers to Westlands Water, Flood Flow deliveries, groundwater pumped during the 1991 drought into CLWA's system, etc.*

The "Entitlement Allocated" column is the amount of CLWA's entitlement available for delivery to CLWA in a given year by DWR. Many factors can affect the amount of water delivered by DWR, including environment conditions and weather. The " Imported Water Delivered/Need" column is the actual amount of SWP water required by CLWA to meet local water demand. Since 1990, this amount is typically far less than the Entitlement amounts available to CLWA. These deliveries include not only the entitlement water, but also local groundwater, "Carry-Over", "Interruptible" and "Local Flood Flow Water" supplied by DWR over the years. Had CLWA participated in any "Drought Water Bank" programs, DWR deliveries under such programs would have been reflected in this column as well; however, CLWA has not needed to participate in any of the statewide drought programs due to available local supplies and voluntary conservation programs.

DWR's annual Turnback Pool program has been in place since execution of the Monterey Amendments. The program is an internal SWP mechanism that provides for pooling potentially unused SWP supplies

early in the year for purchase by other SWP contractors at a set price. The program is intended as an incentive to return unneeded water early in the year for reallocation among SWP contractors on willing-buyer/seller basis. *See, Critical Water Shortage Contingency Plan,* Governor's Advisory Drought Planning Panel, December 29, 2000, p. 3-11.

Through this program, any SWP water that CLWA deems is not needed in a given year is returned to DWR. This unused water is then made available to the SWP and other SWP contractors. CLWA participated as a "seller" in this program from 1996 through 2000, with over 127,000 acre-feet in sales of unused water. Several other SWP contractors have also returned unused SWP water to DWR, with a 5-year total return of over 1 million acre-feet. Under this program, CLWA could participate as a "buyer", rather than a "seller", in the event additional SWP supplies were needed for storage, water banking projects or other conjunctive use programs.

(f) SWP Facilities

As discussed above, the SWP is a large water supply, storage, and distribution system authorized by the California Legislature in 1959. In 1960, California voters approved the $1.75 billion bond issue to begin building SWP facilities. The SWP currently includes 32 storage facilities, reservoirs and lakes, 17 pumping plants, three pumping-generating plants, five hydroelectric power plants, and about 660 miles of aqueducts and pipelines. Principal SWP facilities are shown in **Figure 2.5-17**.

The primary purpose of the SWP is to distribute water to 29 urban and agricultural water contractors in Northern California, the San Francisco Bay Area, the San Joaquin Valley and Southern California. The 29 SWP contractor service areas are shown in **Figure 2.5-18**.

The primary water source for the SWP is within the drainage of the Feather River, a tributary of the Sacramento River. Runoff is stored behind Oroville Dam in Butte County, which is the project's largest storage facility. The water is then released down natural channels to the Sacramento-San Joaquin Delta.

In the southern Delta, water is pumped by the Harvey O. Banks Delta Pumping Plant into the 444 mile-long California Aqueduct. The South Bay Aqueduct, located just south of the Banks Pumping Plant, conveys water to Alameda and Santa Clara counties. Water in the California Aqueduct travels along the west side of the San Joaquin Valley. Some SWP water is stored in the San Luis Reservoir, which is jointly

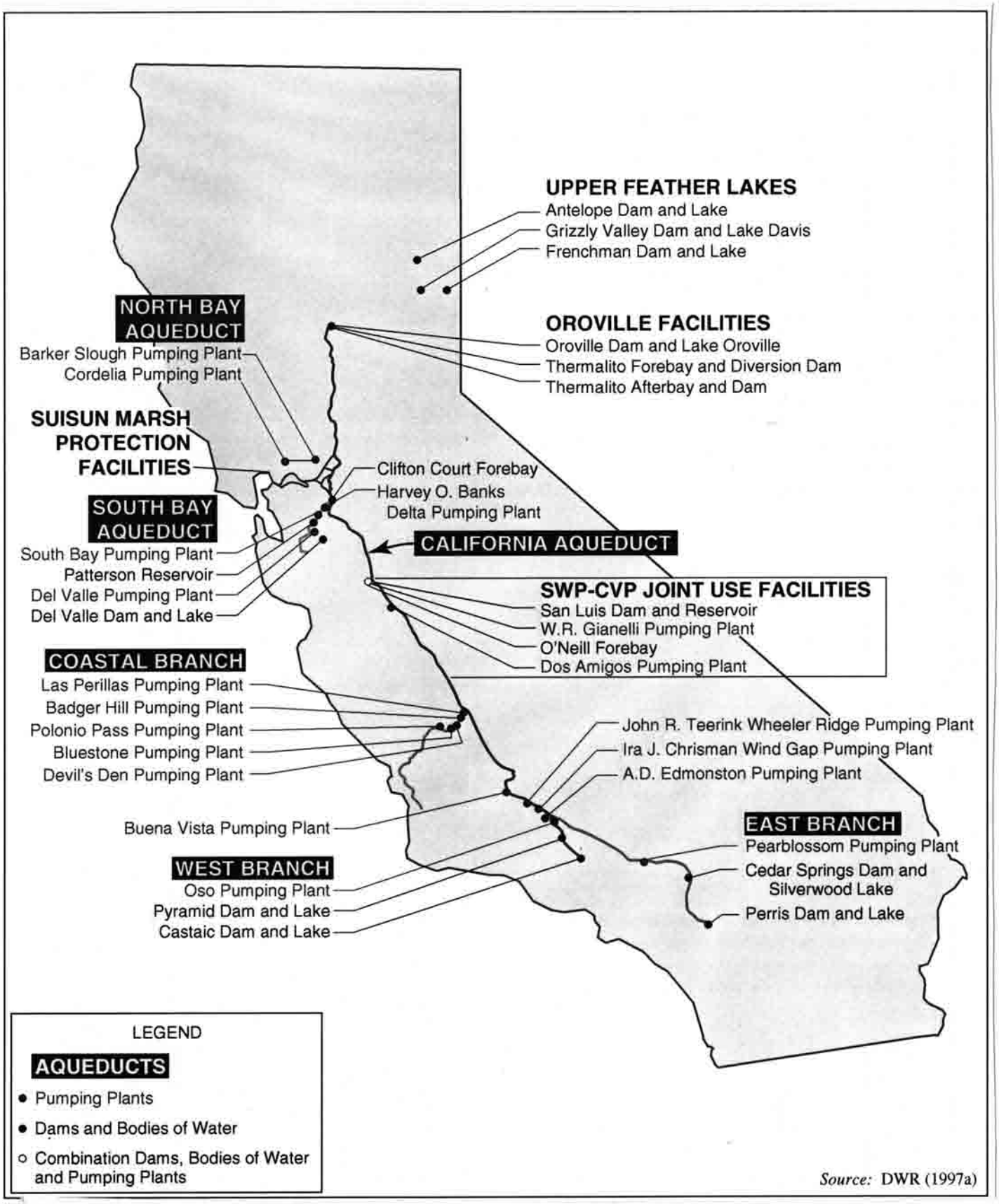

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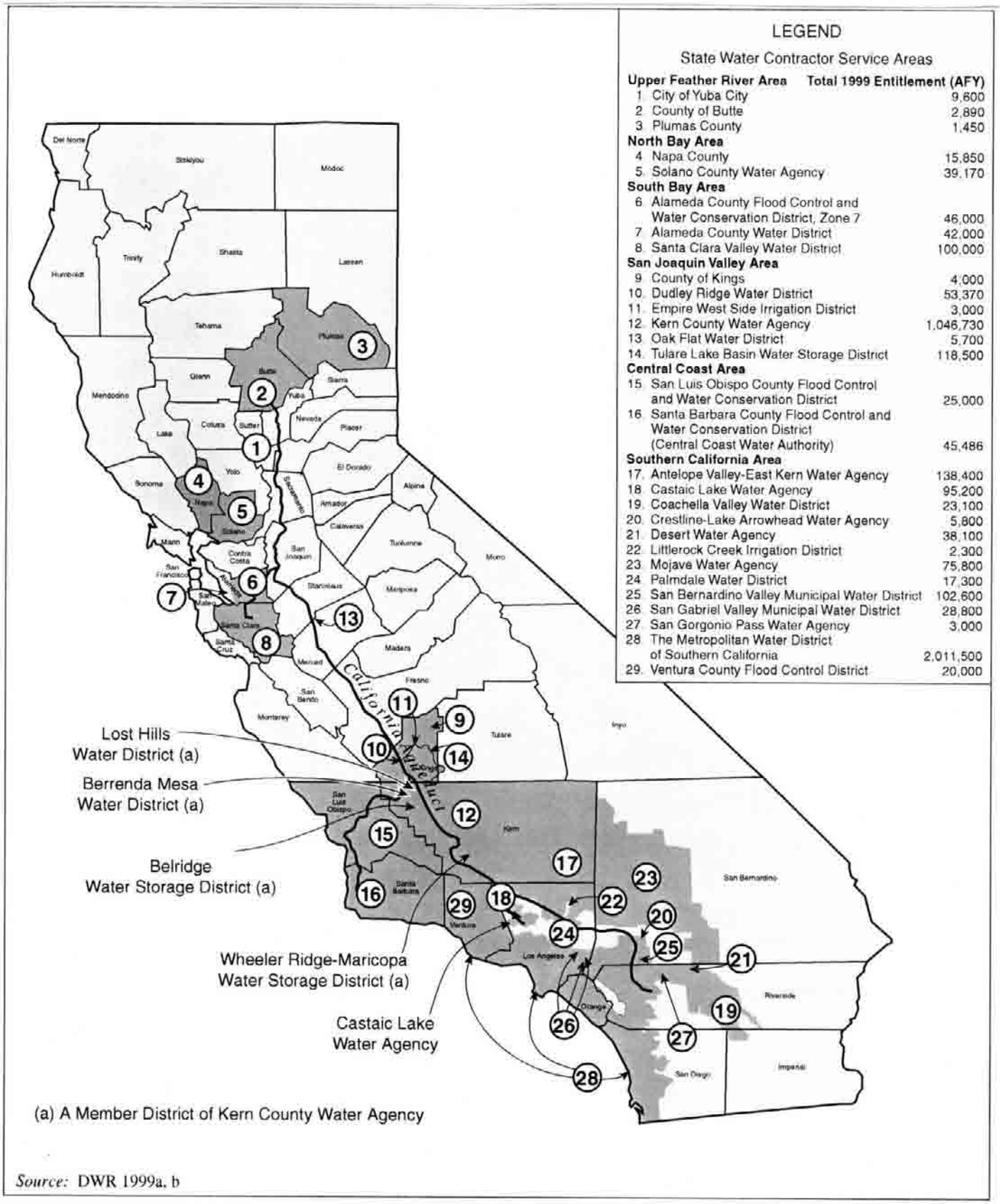
FIGURE 2.5-17
PRINCIPAL STATE WATER PROGRAM FACILITIES



Source: DWR 1999a, b

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FIGURE 2.5-18
STATE WATER PROGRAM CONTRACTOR SERVICE AREAS

operated by the DWR and the U.S. Bureau of Reclamation. From the San Luis Reservoir, waters in the SWP continue southward.

SWP water then flows south to the Tehachapi Mountains, where the A.D. Edmonston Pumping Plant lifts the water 1,926 feet to enter 10 miles of tunnels and siphons that traverse the Tehachapi mountains. After crossing the Tehachapis, the aqueduct divides into two branches. The West Branch Aqueduct delivers water to Pyramid and Castaic reservoirs to serve CLWA and other SWP contractors in Southern California. The East Branch Aqueduct flows through the Antelope Valley and delivers water to Silverwood Lake. The water is then transported to San Bernardino and Riverside Counties, and stored in the Lake Perris reservoir.

Many other reservoirs add to the storage capacities of the SWP. **Table 2.5-13**, below, lists the major storage facilities of the SWP and their storage capacity. In addition to the water storage facilities included in the SWP system, additional storage is available within the SWP contractors' service area (*e.g.*, 800,000 acre-feet of storage in the Diamond Valley Reservoir and 300,000 acre-feet in the Los Posas Basin within the service area of the Metropolitan Water District of Southern California).

(g) SWP Water Deliveries

SWP Deliveries. In the early 1960s, DWR entered into individual water supply contracts with various agricultural and urban water suppliers or contractors. Each contractor (shown in **Figure 2.5-18**) was provided with entitlement and capacity rights to the SWP aqueduct and storage system in return for payments intended to cover operation and maintenance, bondholder obligations and repayment of moneys loaned from the California Water Fund.

DWR water supply contracts require the SWP to deliver 4.2 million AFY to 29 SWP contractors. Although the SWP is not fully constructed, since the end of the six-year drought in 1992, the SWP has fully met SWP contractors' water needs every year, except the dry year of 1994. Of SWP water deliveries, about 70 percent is delivered to SWP urban contractors and about 30 percent is delivered to SWP agricultural contractors.[31]

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31 *See*, DWR NEWS, State Water Project Plans 100 Percent Deliveries, March 14, 2000, (http://wwwdwr.water.ca.gov/dir-dwr...00R2/Mar.14,00-SWP_Full_Deliv.html). The DWR annually issues a series of allocation estimates, starting with conservative estimates in early winter months. Estimates are subject to change during the winter and spring months as more rainfall and snowpack data becomes available. DWR conducts five monthly snow surveys each winter and spring to assess snow conditions and make estimates about snowmelt runoff and future water supply. During the last six years, watersheds feeding the SWP have experienced heavy precipitation, which resulted in high volumes of water delivery through the SWP. Deliveries in wet years typically range around 3 million acre-feet. The current delivery projection is much lower than prior years. For example, DWR estimates that the SWP will deliver about 824,000 acre-feet during calendar year 2001. This current delivery projection, although subject to change, is approximately 20 percent of the amount requested by SWP contractors. *See*, DWR NEWS, State Water Project Adjusts Estimates for 2001 Water Deliveries, January 31, 2001, http://www.dwr.water.ca.gov/2001newsreleases/1-31-01.

From statewide perspective, the maximum capacity of the overall SWP transportation system is generally limited by the capacity of the system pumps. Therefore, the capacity of the California Aqueduct is 10,300 cubic feet per second ("cfs") at its northern end and 4,480 cfs below the Edmonston pumping plant. (1,000 cfs is approximately 82.6 acre-feet per hour, 1,980 acre-feet per day and 725,000 AFY.) If these transportation rates were maintained for a full year, they would result in the transport of approximately 7.2 million acre-feet near the Delta and 3.2 million acre-feet to users in Southern California. Examples of the capacity of the canals and tunnels in the SWP transportation system are shown in **Table 2.5-14.**

Table 2.5-13
Major SWP Reservoirs

SWP Division (Location)	Reservoir	Total Storage(AF)
Oroville Field Division		3,762,670
	Frenchman Lake	55,480
	Antelope Lake	22,570
	Davis Lake	64,370
	Oroville Reservoir	3,537,580
	Thermalito Diversion Pool	13,350
	Thermalito Forebay	11,700
	Thermalito Afterbay	57,040
	Small Storage Facilities	580
	Aqueduct Pools	0
Delta Field Division		130,909
	Clifton Court Forebay	31,260
	Bethany Reservoir	5,070
	Lake Del Valle	77,110
	Small Storage Facilities	142
	Aqueduct Pools	17,327
San Luis Field Division (Joint Use)		1,148,967
	O'Neill Forebay (Total Storage = 56,430)	29,500
	San Luis Reservoir (Total Storage = 2,027,840)	1,062,183
	Los Banos Reservoir	34,560
	Little Panoche Reservoir	5,580
	Small Storage Facilities	0
	Aqueduct Pools	17,144
San Joaquin Division		27,541
	Small Storage Facilities	16
	Aqueduct Pools	27,525
Southern Division		979,182
	Silverwood Reservoir	74,970
	Lake Perris	131,450
	Quail Lake	7,580
	Pyramid Reservoir	171,200
	Elderberry Forebay	32,480
	Castaic Lake	323,700
	Castaic Lagoon	5,560
	Small Storage Facilities	1,580
	Aqueduct Pools	230,662
SWP Total		**6,049,269**
	Reservoirs & Small Storage Facilities	5,756,611
	Aqueduct Pools	292,658

Source: Data Handbook, *State Water Project, 1997.*

Table 2.5-14
Examples of SWP Transportation System Capacity

Location	Facility or Structure	Design Capacity (cfs)
Delta Intake	Clifton Court Forebay Channel	10,300
Near Kings/Kern County Line	SWP Aqueduct Canal	7,300
Grapevine	SWP Aqueduct Canal	4,400
South of the Tehachapis and before the East Branch/West Branch Split	SWP Aqueduct Canal	5,360
West Branch to Castaic Lake	Lower Quail Lake Canal	1,564

Source: Compiled by Impact Sciences, Inc.

SWP Deliveries to CLWA. CLWA is a contracting public agency with a current entitlement of 95,200 AFY. **Table 2.5-12**, above, summarizes the SWP water deliveries to the CLWA service area from 1980 to 2000.

The local supplies received by CLWA from the SWP are treated, filtered and disinfected at the two existing filtration plants in Santa Clarita Valley. The plants have a current capacity to treat a total of 58 mgd. From the existing plants, the treated water is delivered by gravity throughout the CLWA service area through a distribution network of pipelines and turnouts. One of the existing plants, the Earl Schmidt Filtration Plant, has a current design capacity of 28 mgd. CLWA is currently designing an expansion of the plant's treatment capacity to a total of 50 mgd. In addition, the process performance of the plant is being evaluated and will be improved to assure continuous compliance with state and federal water quality regulations. The expanded plant is scheduled to be on-line by mid-2003. Ultimate plant design planning by CLWA indicates that the combined treatment capacity of the treatment plants would be approximately 180 mgd.

(h) SWP Reliability

The demands of SWP contractors vary from year-to-year depending on many factors, including the amount of winter rains, agricultural markets, the availability (and cost) of other water resources, municipal and industrial demands and environmental requirements associated with the Sacramento-San Joaquin Delta ("Delta"), where the water supplied by the SWP originates. To account for these variable supplies and demands, DWR and the SWP contractors have developed a system that annually allows for the identification of the anticipated demands of each SWP contractor (a request of supply) and the system supplies (a DWR allocation of those supplies). Other water resources (Turnback Pool and Interruptible Water) are available from time-to-time to SWP contractors whose needs are not met by the annual entitlement allocation. The total planned annual delivery capability of the SWP (approximately 4.2 million acre-feet) is distributed by contract among the 29 SWP contractors, based on their respective

entitlements. As a result of various factors, the SWP annual deliveries of both entitlement water and non-entitlement water have ranged from approximately 550,000 acre-feet to 2,850,000 acre-feet (DWR 1997b). In 1999, the SWP delivered approximately 3.1 million AFY of both entitlement and non-entitlement water. (UWMP 2000.) The SWP delivered approximately 3.5 million acre-feet of entitlement and non-entitlement water in 2000.[32]

CLWA's current SWP Table A entitlement of 95,200 AFY is affected by, and can be reduced due to, a number of factors, including hydrologic conditions, the status of SWP facilities' construction, environmental requirements and evolving policies for the Delta. Because of these factors, SWP supplies are subject to reduction, particularly during drought periods. The programs listed below have the potential to improve the reliability of SWP water.

Monterey Agreement/Amendments. As discussed above, the Monterey Agreement between DWR and the agricultural and urban contractors provides substantial opportunities for SWP contractors, including CLWA, to increase water management flexibility by providing more tools to maximize the use of existing facilities and, in doing so, increase water supply reliability. The Monterey Agreement changed SWP water allocation rules by specifying that, during drought years, project supplies are to be allocated proportionately based on entitlements. Water is allocated to urban and agricultural purposes on an entitlement proportional basis, deleting a previous initial supply reduction to agricultural contractors. The agreement further defines and permits permanent sales of SWP entitlements and provides for transfer of up to 130,000 acre-feet of annual entitlement from agricultural use to municipal use, of which CLWA has purchased 41,000 acre-feet. The Agreement also allows SWP contractors to store water in another agency's reservoir or groundwater basin, facilitates the implementation of water transfers and provides a mechanism for using SWP facilities to transport non-project water for SWP water contractors. The Agreement provides greater flexibility for SWP contractors to use their share of storage in SWP reservoirs. CLWA currently has access to about 4,700 acre-feet of storage in Castaic Lake.

CALFED Bay Delta Program. The CALFED Bay Delta program is a cooperative State-Federal process with the goal of developing a long-term solution to the many competing water needs of the Sacramento-San Joaquin Bay-Delta. The program is a 30-year, three-phased effort addressing a number of issues including ecosystem quality, water quality, water system reliability and system vulnerability. Implementation of the CALFED improvements over time can significantly improve CLWA's ability to maintain delivery of high quality water and provide needed water supplies during dry years.

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32 *See*, The State Water Project Delivery Reliability Report, August 2002, Draft, found at http://swpdelivery.water.ca.gov.

Interim Delta Improvements. Potential supply development for the SWP includes interim Delta improvements that involve: (1) south Delta channel enlargements and construction of four barriers to improve south Delta flow circulation; and (2) installation of acoustic fish barriers on the Sacramento River. The interim improvements would enable the use of additional pumps at Banks Pumping Plant when flow conditions are sufficient, and permit the relaxation of certain current operational constraints. It is also anticipated that these improvements would change the Delta fisheries on a positive basis. Therefore, the expected supply yield would improve. Although this solution is considered viable and cost-effective, it does not constitute a permanent solution to the Delta.

Full Delta Fix. As the overall demand for water increases and the need for low-salinity imported water intensifies, a long-term solution to the Delta becomes critical. It is expected that a Delta transfer facility would provide a long-term solution to Delta problems, increase supply reliability, reduce habitat impacts and improve the water quality of Delta diversions. Goals would be to minimize the effects of the SWP export pumps on Delta fisheries and greatly improve the quality of the exported water.

South of Delta Storage. The potential exists for additional storage south of the Delta. This storage could include both reservoir projects and groundwater banking/conjunctive-use storage. The reliability of the SWP supply would increase significantly, especially during dry years, with the development of south of Delta storage. However, the benefits of the storage would be maximized if a full Delta fix were implemented. As part of the CALFED analysis, approximately 3 million acre-feet of total storage capacity could be implemented south of the Delta.

Figure 2.5-19 and **Table 2.5-15**, below, summarize the variability in SWP supplies available to CLWA by the year 2020 under the following different CALFED improvement scenarios:

(a) **Under Existing Conditions**, based on the DWRSIM model and historical hydrologic conditions, CLWA would receive approximately 37,900 acre-feet about 10 percent of the time (which is considered to be in a dry period) and approximately 56,800 acre-feet about 50 percent of the time (which is considered to be in average/normal rainfall periods).

(b) **Under Interim Delta Improvements**, CLWA would receive approximately 40,200 acre-feet about 10 percent of the time and approximately 73,700 acre-feet about 50 percent of the time.

(c) **Under a Full Delta Fix**, CLWA would receive approximately 63,900 acre-feet about 10 percent of the time and approximately 95,200 acre-feet about 50 percent of the time.

(d) **Under a South of Delta Storage**, CLWA would receive its full entitlement about 50 percent of the time.

Figure 2.5-19
Projected State Water Deliveries
Source: IRWMP 2000

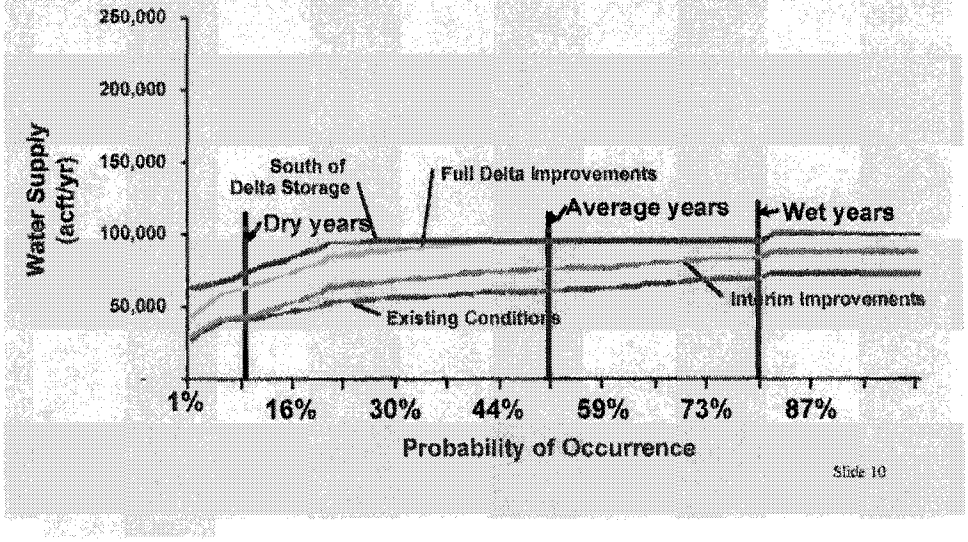


Table 2.5-15
Projected State Water Project Supplies
(acre-feet per year)

	Wet-Year	Average/Normal Year (50% Occurrence)	Dry-Year (10% Occurrence)
Existing Conditions	66,300	56,800	37,900
Interim Delta Fix	82,900	73,700	40,200
Full Delta Fix	95,200	95,200	63,900
South of Delta Storage & Full Delta Fix	95,200	95,200	75,800

Source: Based on DWRSIM modeling (assuming full requests for all contractors).

DWRSIM-Modeling Results. As stated above, the amount of water available to CLWA has been calculated through the use of a computer model, commonly known as the DWRSIM model. This model, developed by DWR, was used to forecast CLWA water supply under various meteorological and land use changes as well as regulatory constraints. The reliability analysis derived from the DWRSIM model generally provides a conservative projection of SWP operations. For example, SWP delivery projections are usually based on *advance* requests reported by SWP contractors. These requests generally overstate the *actual* need for SWP deliveries. Therefore, there is additional SWP water available for actual distribution despite the DWRSIM modeling results shown above. In addition, as a mathematical model, DWRSIM is limited to the amount of water actually requested and does not include water available in excess of requests. Therefore, as noted below, the modeling results should be supplemented with

information based on historic availability of additional SWP water supplies. It should be noted that DWR has prepared a new computer model, known as CALSIM. When compared with DWRSIM, this model generally forecasts that more water will be available in average/normal years and slightly less water will be available in dry years. However, because this new model is presently in draft form only, the analysis presented in this document continues to utilize the DWRSIM model.

Historically, the SWP has delivered water in excess of SWP contractors' requests. From 1962 to 1999, the SWP delivered water in excess of the SWP contractors' requests in all but four years. Based on historical information, it is estimated that there is a 90 percent probability that CLWA would be able to obtain more water than the DWRSIM modeling results suggest—even without consideration given to the "Delta" improvements called for under the CALFED process (Black & Veatch, February 2001).

Drought Water Bank. Another program with the potential to improve the reliability of SWP water in drought periods is the state's Drought Water Bank. The Drought Water Bank is implemented as needed by an Executive Order by the Governor, or a finding by the DWR's director that water deliveries will be curtailed. The purpose of the Bank is to help California's urban, agricultural and environmental interests meet their water supply needs during dry years. The procedure was used successfully in 1991, 1992 and 1994 when DWR purchased water from willing sellers and sold the water to willing buyers under a set of allocation guidelines. However, in future dry years, the use of the state's Drought Water Bank would have to take into consideration local groundwater management ordinances, which restrict or control groundwater export. The proliferation of these local ordinances makes it less likely that the state's Drought Water Bank would rely on water transfers involving groundwater export in future dry years.

Drought Planning. In addition to the Drought Water Bank, the CALFED Record of Decision (August 28, 2000) called for the Governor to convene a panel, chaired by the DWR director, to develop a contingency plan for reducing the impacts of critical water shortages primarily for agricultural and urban water users. The contingency plan, known as the Governor's Advisory Drought Planning Panel, *Critical Water Shortage Contingency Plan*, December 29, 2000, building upon experience gained from implementing the Drought Water Bank, identifies available water resources (*e.g.*, water transfers, water exchanges, groundwater programs) and funding mechanisms to minimize the impacts created by drought conditions. The plan has been completed, circulated for public comment and finalized.

The contingency plan provides a brief background on California's water supplies and the hydrologic conditions potentially associated with critical water shortages. Chapter 2 describes changed water management conditions since the most recent statewide drought of 1987-1992. Chapter 3 describes the challenges in dealing with critical water shortages given these changed conditions. The challenges

include constraints on availability and capacity of conveyance and storage facilities, regulatory restrictions and uncertainties, competition for limited water supplies among existing water purchasing programs and other identified issues. Chapter 4 presents the panel's recommendations for actions to be undertaken to address critical water shortages.

In the plan, the panel focused on the significant water management changes that have occurred since the statewide drought in 1987-1992. These developments include changes in water demand due to population growth, changes in institutional conditions affecting use of surface water and groundwater, construction of new water supply facilities, legislative changes and pending implementation of CALFED actions.

Since the last statewide drought of 1987-1992, two of the beneficial changes that have occurred in California are the construction of new water supply facilities and an expansion in groundwater recharge/storage capacity. **Table 2.5-16**, below, shows the major water conveyance facilities constructed or under construction since the last statewide drought.

Table 2.5-16
Large-Scale Conveyance Facilities Constructed Since the Last Drought

Facility	Agency	Length (miles)	Maximum Capacity (cfs)
Coastal Branch Aqueduct	Department of Water Resources	100	100
Eastside Reservoir Pipeline	Metropolitan Water District of Southern California	8	1,000
East Branch Enlargement	Department of Water Resources	100	2,100 (this phase increased existing capacity by approximately 750 cfs)
Mojave River Pipeline	Mojave Water Agency	70	94
Old River Pipeline (Los Vaqueros Project)	Contra Costa Water District	20	400
East Branch Extension (under construction)	Department of Water Resources	14	104
Inland Feeder Project (under construction)	Metropolitan Water District of Southern California	44	1,000
Morongo Basin Pipeline	Mojave Water Agency	71	100
New Melones Water Conveyance Project (Farmington Canal)	Stockton East Water District and Central San Joaquin Water Conservation District	21	500

Source: Critical Water Shortage Contingency Plan, *Governor's Advisory Drought Planning Panel, December 29, 2000.*

In addition, there has been an expansion in groundwater recharge/storage capacity since the last statewide drought. **Table 2.5-17**, below, describes some of the larger groundwater recharge/storage projects currently operating in California. The projects that are now operational since the last drought are those operated by the Semitropic Water Storage District, the Arvin-Edison Water Storage District, the Kern Water Bank Authority, the Mojave Water Agency and the Calleguas Municipal Water District. These groundwater recharge/storage projects rely either wholly or in part on recharge supplies from the SWP. Therefore, the project's operations are subject to SWP restrictions in drought periods, as well as the availability of conveyance capacity. If water transfers provide a component of recharge supplies, availability of SWP conveyance capacity becomes a limiting factor (Contingency Plan, November 2000). ~~However, a~~As discussed above, the maximum capacity of SWP storage and conveyance facilities is extensive (4.2 million acre-feet); however, those facilities have not been completed. This capacity ~~also~~ has been enhanced since the statewide drought of 1987-1992.

(i) SWP - Other Water Deliveries

In addition to delivering "Table A" entitlement to the SWP contractors, the SWP conveys water to and stores water for contractors and other public agencies through other contracts and programs. (DWR Bulletin 132-98, November 1999, Ch. 9.) These contracts and programs include, for example, the following:

Turnback Water Pool Program. Under Article 56(d) of the Monterey Amendments, the Turnback Water Pool Program was initiated through Notice to the SWP Contractors No. 97-3, dated February 5, 1997 (DWR Bulletin 132-98, November 1999, Ch. 9). All SWP contractors who signed Monterey Amendments are permitted to participate in the program. The program allows SWP contractors to offer a portion of their approved entitlement for sale in a turnback pool for use outside their service area. Other contractors interested in purchasing this water can then request a portion or all of it. Based on supply and demand, the turnback water is then allocated among the selling and purchasing contractors. CLWA has participated in this program as a selling contractor. This program allows "excess" water to be made available to SWP contractors throughout the state of California.

Interruptible Water Program. The Interruptible Water Program allows an SWP contractor to take delivery of water over the approved and scheduled allocations for the current year. Interruptible water is available for delivery on a short-term basis as determined by the DWR, when scheduled project demands are being delivered and operational requirements for project water deliveries, water quality and other

requirements are being met. (DWR Bulletin 132-98, November 1999, Ch. 9.) CLWA is one of the SWP contractors that can participate in this program based upon its proportionate entitlement.

Table 2.5-17
Examples of Groundwater Storage Projects

Agency and Project Location	Comments
Alameda County Water District Niles Cone, Alameda County	Seawater intrusion management and conjunctive use, District recharges local runoff and imported surface supplies from its SWP 42 taf annual contractual entitlement. Average annual recharge of 25 taf.
Arvin Edison Water Storage District Kern County	A 350 taf banking program is being developed with MWD. Estimated extraction capability is 40 to 75 taf/year.
Calleguas Municipal Water District Las Posas Basin, Ventura County	Uses injection wells to recharge its imported MWD supplies. Maximum storage capacity of 300 taf. At full implementation, maximum annual extraction rate estimated to be 72 taf. Providing local emergency storage is a major project purpose.
City of Bakersfield Kern River Fan Area, Kern County	Initial operation of 2,800-acre recharge facility began in 1978. City has rights to Kern River water, and long-term contracts with three water agencies that store and extract water in coordination with the city.
Coachella Valley Water District Upper Coachella Valley, Whitewater River Channel Area	Recharge from local Whitewater River supplies and from MWD's imported Colorado River Aqueduct water exchanged for SWP contractual entitlements of CVWD and Desert Water Agency.
Kern Water Bank Authority Kern River Fan Area, Kern County	6,800 acres of recharge basins. The Authority is a joint powers agency that operates the project on behalf of local water agencies. Recharge supplies may be local surface water or imported supplies
The County of Los Angeles Department of Public Works, Los Angeles River and San Gabriel River watersheds, Los Angeles County	Extensive recharge facilities employing about 2,400 acres of spreading areas, and injection wells at three seawater intrusion barriers (Alamitos, Dominguez Gap, and West Coast). County operates the river systems for the dual purpose of flood control and groundwater recharge, and also recharges imported and reclaimed water provided by others.
Monterey County Water Resources Agency Salinas River Valley, Monterey County	Releases from MCWRA's Nacimiento and San Antonio Reservoirs are managed to provide recharge for upper valley. MCWRA distributes reclaimed water produced by the Monterrey Regional Water Pollution Control Agency for in-lieu recharge in the lower valley, to help reduce seawater intrusion. MCWRA's 45-mile distribution system can convey 19.5 taf of reclaimed water.
Mojave Water Agency Mojave River Basin, San Bernardino County	Basin has been adjudicated by court. The ephemeral Mojave River is the only local surface supply. To reduce overdraft, MWA's two new 71-mile pipelines import SWP supplies for recharge in spreading areas in the river channel. MWA's initial SWP contractual entitlement of 50.8 taf annually was augmented by the 1997 purchase of an additional 25 taf of annual entitlement.
Pioneer Project, Kern County Water Agency, Kern County	Recharge project with 1,200 acres of ponds capable of recharging 146 taf per year. Annual recovery capacity of 98 taf. Estimated storage of 400 taf. Project began operation in 1995.
Orange County Water District Santa River Watershed, Orange and Riverside Counties	Recharges Santa Ana River water regulated at Prado Dam, also recharges reclaimed water. Operates series of recharge basins along lower river and two seawater intrusion barriers. One barrier is jointly operated with the County of Los Angeles. Typically recharges about 300 taf annually.
Santa Clara Valley Water District Santa Clara County	District formed in 1929 to combat declining groundwater levels and associated land subsidence. Has 20 recharge basins covering about 390 acres, and also recharges in stream channels. District typically recharges over 100 taf annually, with a combination of local and imported supplies. Estimated operational storage is 550 taf.
Semitropic Water Storage District Kern County	Banking (in-lieu recharge) program with one maf storage capacity. Banking partners include MWD (350 taf), Santa Clara Valley WD (350 taf), Alameda County WD (50 taf), Zone 7 Water Agency (65 taf), and Vidler Water Company (185 taf).
United Water Conservation District Santa Clara River Watershed, Ventura County	Operates Lake Piru on Piru Creek and Freeman Diversion Dam on the Santa Clara River in conjunction with spreading areas at Saticoy, El Rio and Piru.
Zone 7 of Alameda County Water Conservation and Flood Control District Alameda County	Recharges imported SWP water (46 taf annual contractual entitlement) in local stream channels.

Source: Critical Water Shortage Contingency Plan, Governor's Advisory Drought Planning Panel, December 29, 2000.

Surplus Water Provisions. Pursuant to the Monterey Amendments, the Surplus Water Provisions allow certain SWP contractors to take delivery of "surplus" water; that is, water in excess of that required to meet all demands for entitlement water. CLWA is one of the SWP contractors that can avail itself of surplus water as needed based upon its proportionate entitlement.

Carryover Water. For several years, DWR has offered SWP contractors the opportunity to carryover a portion of their undelivered entitlement water from one year for delivery during the next year. The carryover program was designed to encourage the most effective and beneficial use of water and to avoid obligating the contractors to use or lose the water by December 31 of each year. The SWP contractors' long-term water supply contracts and amendments state the criteria of carrying over entitlement water from one year to the next. CLWA is one of the SWP contractors that can avail itself of carryover water. In 1997, 263,759 acre-feet of carryover water was approved by DWR for future delivery to SWP contractors. (DWR Bulletin 132-98, November 1999, Ch. 9.)

Both CLWA's SWP Table A water entitlement and SWP water from the foregoing programs are water supply sources that could be used in groundwater banking programs. These water supply sources are available during average/normal years for injection or "banking" in groundwater basins. The stored water can then be pumped when SWP supplies are reduced in dry years. In particular, these water supply sources could be available from CLWA for use in the Saugus Groundwater Banking/ASR program and the Semitropic Groundwater Banking Project, which are discussed in further detail below and in **Section 2.5.5.**

2.5.4.5 Groundwater Banking and Conjunctive-Use Projects

With recent developments in conjunctive-use and groundwater banking programs, the UWMP states that significant opportunities currently exist to improve the reliability of local and imported water supplies in Santa Clarita Valley. The term "conjunctive-use" generally means the coordinated operation of multiple water supplies to achieve improved supply reliability. Most conjunctive-use concepts are based on storing water supplies in times of surplus for use in times of drought. A typical program involves importation of additional surface supplies from the SWP during wet periods, recharging the water in a local groundwater basin and pumping out the stored water from wells when SWP supplies are reduced during a drought.

Groundwater banking programs generally involve storing available SWP supplies during wet years in groundwater basins (*e.g.*, the San Joaquin Valley and the Saugus Formation). The water would be stored either directly by surface spreading or injection/extraction wells, or indirectly by supplying surplus SWP

water to farmers in-lieu of groundwater pumping for agricultural uses. During dry periods, the stored water could be pumped out and exported to the Aqueduct, or used by farmers in exchange for their surface water allocations and delivered to CLWA through SWP facilities. Several potential conjunctive use and groundwater banking opportunities are available for use in the Santa Clarita Valley. Upon implementation, such programs can provide the following significant benefits in terms of water management and planning:

(a) A location to store available supplies in wet years, thus maximizing the efficient use of water resources;

(b) A dry-year supply that augments existing supplies reduced by drought or other shortages; and

(c) A storage "reservoir" that can be drawn upon when supplies are insufficient during unforeseen emergencies.

These benefits allow such programs to "firm up" and enhance the reliability of both existing and future water supplies. **Table 2.5-18** below summarizes the projected water supply benefits for each of the identified groundwater banking and conjunctive use projects in the UWMP.

Table 2.5-18
Projected Groundwater Banking and Conjunctive-Use Supplies[1]
(acre-feet per year)

Source	Dry Year
Kern Water Bank	25,000
Semitropic Water Bank	30,000
Kern Delta Water Bank	40,000
North Los Posas Water Bank	10,000
Saugus (ASR)[2]	-
Total	**105,000**

[1] *Assumes Groundwater Banking Programs would only be called on in dry-years. All groundwater banking programs are available in wet and average/normal years.*
[2] *The UWMP did not rely on a Saugus Aquifer Storage and Recovery ("ASR") program because the current feasibility analysis for such a program was still underway at the time the UWMP was completed in December 2000.*
Source: UWMP 2000

On-going groundwater banking programs include the Kern Water Bank, the Semitropic Water Storage District, the Kern Delta Water District and the North Los Posas Water Bank. Each program is discussed in further detail below.

Kern Water Bank. The Kern Water Bank was established by DWR in 1988 as a statewide conjunctive-use program to increase the yield and enhance the reliability of the SWP. Eight elements were identified, seven sponsored by local agencies with the eighth being DWR's Kern Fan Element. The Kern Fan

Element (later transferred to Kern Water Bank Authority) included the purchase of 19,900 acres of land and construction of recharge basins, extraction wells and related facilities. The original plan was to store SWP water underground in years of abundant supply and extract the banked water in dry years for use by SWP contractors. This original plan was divided into elements, such as Kern Fan, Semitropic and Cawelo. Initial studies indicated that the Kern Fan Element could store as much as 1,000,000 acre-feet of water and provide up to 140,000 acre-feet of water to the SWP in dry years. The other seven elements vary significantly in size. The Semitropic Local Element is the largest of these with more than 1,000,000 acre-feet of storage, while Cawelo Water District is the smallest with a storage capacity of about 110,000 acre-feet. The Semitropic element is discussed further below.

In 1994, the Kern Water Bank Authority (KWBA) was established to develop and operate the Kern Water Bank. The KWBA is a joint powers authority consisting of six water agencies. The KWBA constructed recharge basins and began recharging water in 1995. KWBA is now constructing additional basins, extraction wells and water conveyance facilities.

In October 1997, the KWBA, in conjunction with state and federal fish and wildlife agencies, established a Habitat Conservation Plan and Natural Community Conservation Plan that is preserving wildlife in the area while ensuring an adequate water supply for the future. When the KWBA's new water recharge facilities are completed, they will provide Kern County farming interests with the capability of storing more than 1,000,000 acre-feet of water on a permanent basis. Currently, more than 760,000 acre-feet is in storage.

Semitropic Water Storage District. The Semitropic Water Storage District (also referred to as "Semitropic" or "District") provides SWP for irrigation. The District is located in the San Joaquin Valley in the northerly part of Kern County immediately east of the California Aqueduct. Using the immense groundwater storage capacity available to Semitropic (one million acre-feet), the District has developed a groundwater-banking program. The District operates the program by taking additional SWP supplies in wet years and returning the water in dry years. As part of this dry-year return, Semitropic can leave its entitlement in the Aqueduct and increase its groundwater production. Semitropic has also constructed facilities so that groundwater can be pumped into their canal and, through reverse pumping plants, actually delivered to the California Aqueduct. Semitropic currently has five banking partners: the Metropolitan Water District, Santa Clara Valley Water District, Alameda County Water District, Alameda County Zone 7 and Vidler Water Company. The total amount of storage under contract is approximately 1,000,000 acre-feet. The stored water may be extracted in annual amounts of up to 90,000 acre-feet for all banking partners.

In addition, Semitropic has recently completed environmental documentation to construct new storage and return facilities. These new facilities will provide Semitropic with the additional capability to extract and pump-back to the California Aqueduct approximately 200,000 acre-feet annually. The total return capability of Semitropic in dry years is expected to be approximately 290,000 acre-feet.

Kern Delta Water District. Kern Delta Water District is in the process of developing a banking agreement with the Metropolitan Water District. Kern Delta is in the San Joaquin Valley southwest of Bakersfield and obtains imported supplies from the Kern River, 180,000 acre-feet of pre-1914 rights, and the SWP under contract through Kern County Water Agency for a maximum annual entitlement of 25,000 acre-feet. Under the proposed Kern Delta banking program, in wet years, additional water would be supplied to Kern Delta where it would augment groundwater supplies through either direct groundwater recharge by spreading or by in-lieu replenishment. In dry years, previously stored supplies would be returned to the Metropolitan Water District, either by direct groundwater pumpback or through exchange of other supplies available to Kern Delta. Total return capability in dry years would be 40,000 acre-feet, with a total storage capacity of 200,000 to 240,000 acre-feet.

North Las Posas Water Bank. The North Las Posas Groundwater Basin is about 18 miles long and 4.5 miles wide, and is located in Southern California near Los Angeles. Water to this area is supplied by the Calleguas Municipal Water District, which imports all of its water from the Metropolitan Water District.

Investigations have shown that the North Las Posas Groundwater Basin has available storage capacity of about 300,000 acre-feet, primarily as a result of historic groundwater production. It is projected that the North Las Posas Water Bank could be used to return up to 10,000 acre-feet of previously stored water when needed.

2.5.4.6 Water Transfers

Another opportunity available to CLWA for increasing water supplies and enhancing reliability is to participate in voluntary water transfer programs (UWMP, Ch. 2.0). Since the statewide drought of 1987-1992, water transfers have developed into a viable supplemental source to improve supply reliability. The initial concept for water transfers was codified into law in 1986 when the California Legislature adopted the "Katz" Law (California Water Code Sections 1810-1814) and the Costa-Isenberg Water Transfer Law of 1986 (California Water Code Sections 470, 475, 480-483). These laws help to define the parameters for water transfers and establish a variety of approaches through which water or water rights can be transferred among individuals or agencies.

A water transfer can involve water sales, water ranching/farming and water sharing, and usually occurs as a form of spot, option and core transfers agreements. The cost of water transfer varies depending on the type, term and location of the transfer. Up to 27 million acre-feet of water are delivered for agricultural use every year. Over half of this water is in the Central Valley, and much of it is delivered by, or adjacent to, SWP and Central Valley Project conveyance facilities. This allows for the voluntary transfer of water to many urban areas through SWP facilities, including the CLWA service area.

One of the most important aspects of any resource planning process is flexibility. A flexible strategy minimizes unnecessary or redundant investments (or stranded costs). The voluntary purchase of water between willing sellers and buyers can be an effective means of achieving flexibility. However, not all water transfers have the same effectiveness for ensuring flexibility. Within the resource planning process and through ultimate implementation, several different types of water transfers have been undertaken:

Core Transfers. Agreements to purchase a defined quantity of water every year, whether needed or not. These transfers have the benefit of more certainty in costs and supply, but tend to offset surplus imported water (available in most years) that is already paid for.

Spot Market Transfers. Water that is purchased only during the time of need (usually a drought). Payment for these transfers occurs only when water is needed, but there is usually greater uncertainty in terms of costs and availability of supply. An example of such a transfer was the state's Drought Water Bank. An additional risk of spot market transfers is that the purchase may be subject to institutional limits or restricted access (*e.g.*, requiring the purchasing agency to institute rationing before it is eligible to participate in the program).

Option Contracts. Agreements that specify the amount of water needed and the frequency or probability that the supply will be called upon (an option). These transfers have the best characteristics of both core and spot transfers. With option contracts, the potential for redundant capacity is minimized, as are the risks associated with cost and supply availability.

The most viable types of water transfers are core and option transfers and, as such, represent the CLWA's long-term strategy (UWMP, Ch. 2.0). The costs for these types of transfers have been estimated to be about $60 to $160 per acre-foot for core transfers (compared to the initial cost of $1,100 to $2,000 per acre-foot for SWP entitlement), and $250 per acre-foot for option transfers. Although the option transfer costs might seem high, the equivalent average annual cost is much less, about $65 to $112 per acre-foot. The reason the average annual option transfer costs are much lower is due to the variable likelihood that the transfers will be needed.

2.5.4.7 Water Exchanges: Brackish and Seawater Desalting

Water exchanges represent the use of water that belongs to another entity either by trading water for water or by paying the cost of the water development and transmission. One opportunity for future exchange is through brackish and seawater desalting (UWMP, Ch. 2.0).

Large scale seawater desalination processes usually occur by one of two means: membrane processes and thermal processes. Membrane processes such as reverse osmosis (RO) use pressure to push seawater through semi-permeable membranes. The membrane acts as a filter allowing water to pass but not dissolved solids and impurities. Thermal processes utilize heat to separate the water from the salt and other impurities in the seawater. Thermal facilities tend to be more common but are often located in areas where fuel is inexpensive. Therefore, as membrane technology closes the cost gap, RO will become a less costly and more energy efficient desalination technology.

Desalination of seawater is technically feasible, but has historically been an expensive procedure. However, recent seawater desalination projects seem to indicate that the cost of seawater desalination, in some site-specific situations, has decreased in recent years. The competitive proposal process for the design, construction, and operation of the 25 mgd Tampa, Florida, seawater desalination plant gained worldwide attention. The best and final offer had a first year water cost of $560/acre-feet and a 30-year nominal cost of water of $680/acre-feet. This compares favorably to past desalination costs reported to be in the range of $1,300 to over $2,000 per acre-feet. The Tampa project includes a number of favorable factors that contribute to the low water price.

In Trinidad, a 23-year contract was awarded to build, own, and operate a 28.8 mgd seawater desalination facility. The plant will supply water at a first-year price of $865/acre-feet (1999).

A third example is the Long Beach Desalination Project, currently in the planning stages. Poseidon Resources, the Long Beach Water Department and Southern California Edison are key participants in this project. The project includes a 20-40 mgd desalination plant and appurtenant facilities. The $90 to $180 million private investment will present no financial risk to the public partners, while at the same time providing substantial water supplies.

Current projects would seem to indicate that the cost of seawater desalting is at a point where it could become a viable resource option. As discussed above, 20,000 to 40,000 acre-feet per year will be available as part of the proposed Long Beach project. CLWA has assumed that between 2,000 and 5,000 acre-feet per year of desalted water could be purchased for use in the CLWA service area.

2.5.4.8 Water Conservation and Water Supply Planning

In recent years, water conservation has become an increasingly important factor in water supply planning (UWMP, Ch. 5.0, 7.0). Although not considered a "supply" source, water conservation measures have the same effect by reducing overall water demand, making more water available for use at the local and state level. In the Santa Clarita Valley, CLWA and the four retail water purveyors have actively implemented water conservation programs for many years, and additional programs are planned for the future (UWMP, Ch. 5). CLWA is now a signatory to the Urban Water Conservation Council Memorandum of Understanding regarding the use of best management practices.

In summary, CLWA and the purveyors have developed extensive water conservation efforts, and the CLWA service area has achieved significant reductions in actual water usage through these programs. During the early 1990s (hot/dry period), the overall water requirements, due to the effects of weather, were projected to increase by approximately 10 percent. As a result of the conservation efforts, the overall water requirement actually decreased by 20 percent.

CLWA has adopted the water conservation goal of an overall 10 percent reduction in normal demand. Residential and commercial water usage can be expected to decrease through the implementation of existing and future programs. CLWA and the purveyors assume that water conservation can decrease water usage in normal years by approximately 10 percent (which is considered a conservative estimate).

Water Demand Measures and Best Management Practices. The Urban Water Management Act lists 14 Demand Management Measures that correspond to the 14 urban Best Management Practices ("BMPs"), or water use efficiency measures, promulgated by the California Urban Water Conservation Council. Adoption of the BMPs is presently voluntary; about 250 water agencies throughout the State have committed to implement them.

The recent CALFED Bay-Delta Program requires mandatory adoption of the BMPs by December 2002. Consistent with the UWMP, the water agencies of the Santa Clarita Valley have committed to implement the BMPs.

Implementation of Best Management Practices. The Demand Management Measures/Best Management Practices that are currently being implemented by the Santa Clarita Valley water agencies, or planned for implementation, are listed below.

1. **Water Survey Programs for Single and Multi-Family Residential Customers.** The programs target and market the identified residential customers. The water agencies in Santa Clarita Valley will continue to implement these surveys and later implement the BMP.

2. **Residential Plumbing Retrofit.** The program identifies residences constructed since 1992 and develops distribution strategy for water saving devices. The water agencies in Santa Clarita Valley will continue to implement this program and later implement the BMP.

3. **System Water Audits, Leak Detection and Repair.** This program involves leak detection and repair. The water agencies in Santa Clarita Valley will continue to implement this activity.

4. **Metering with Commodity Rates for New Connections and Retrofit of Existing Connections.** The metering of all new connections and retrofitting is already done by agencies in Santa Clarita Valley.

5. **Large Landscape Conservation Programs and Incentives.** These programs offer water use surveys to non-residential customers with large landscape areas. The water agencies in Santa Clarita Valley are partially complying with this activity, and will later implement the BMP.

6. **High Efficiency Washing Machine Rebate Program.** This program offers rebates for purchase of horizontal-axis washing machines. The water agencies in Santa Clarita Valley do not offer rebates (nor do local energy providers or wastewater agencies). Local agencies are exempt from implementation.

7. **Public Information Program.** This program implements an appropriate public information program on water efficiency. The water agencies in Santa Clarita Valley offer a very extensive and effective, award-winning program.

8. **School Education.** This program provides water efficiency classes and information to schools. The water agencies in Santa Clarita Valley offer an extensive and effective award-winning program.

9. **Conservation Programs for Commercial, Industrial, and Institutional (CII) Customers.** These programs identify such accounts, rank them according to water use and offer water use surveys and incentives. The water agencies in the Santa Clarita Valley not yet implementing the programs will implement the BMP at a later date.

10. **Wholesale Agency Programs.** CLWA provides financial incentives or equivalent to retailers, along with technical support and information. Local water agencies will continue to implement this activity.

11. **Conservation Pricing.** The water agencies in the Santa Clarita Valley institute conservation pricing. Local agencies will continue to implement a variety of pricing structures that meet the terms of this requirement.

12. **Water Conservation Coordinator.** The water agencies in the Santa Clarita Valley designate staff to oversee water conservation program implementation. Local agencies will continue to implement.

13. **Water Waste Prohibition.** CLWA enforces measures prohibiting water waste; however, CLWA does not possess police powers.

14. **Residential Ultra-Low-Flow Toilet (ULFT) Replacement Program.** The programs determine number of service connections constructed before 1992 and offer toilet replacements. Local agencies will implement this BMP at a later date.

2.5.4.9 Local Water Contingency Planning

In addition to the conservation programs, during the 1991 drought year, the local water agencies in the Santa Clarita Valley prepared and implemented a Water Shortage Contingency Plan. It was again implemented in 1994 due to the Northridge earthquake. In both instances, the contingency plan worked effectively. The summary provided below describes various aspects of the updated water shortage contingency plan for the Santa Clarita Valley (UWMP, Ch. 6.0).

Drought Committees. In past droughts, two committees were formed to address drought conditions: the Upper Santa Clara Valley Water Committee, consisting of the local water agencies in the Santa Clarita Valley, and the City of Santa Clarita Drought Committee. Each reviewed information on water production and demand. The Water Committee agreed to cooperate in sharing water resources regardless of contractual or water rights during the emergency. The City committee made recommendations to the City Council and the water purveyors.

Drought Conditions. In the event of a continued drought, it is assumed that the SWP Table A deliveries to CLWA would be curtailed, and that a state Drought Water Bank would be formed. In addition, a combination of supplies would be available such as short-term water exchanges, participation in DWR's dry-year water program, deliveries from CLWA's flexible water account in Castaic Lake Reservoir, and local groundwater pumping in accordance with the UWMP. Reclaimed water availability is also assumed to be available.

Earthquake or Other Natural Catastrophes. If a major earthquake were to occur, or if other catastrophic natural events were to occur elsewhere in the State, it could affect the Santa Clarita Valley. Local storage in reservoirs, combined with requests to the public to reduce consumption, would provide an adequate supply for about seven days. Experts agree that at least 72 hours may elapse before outside help is received; during this period and beyond, the pumping capacity of the retail agencies should provide sufficient water.

Contamination. No extended problems with water contamination are anticipated, since the quality of local supplies is good, and steps can be readily taken to isolate a contamination problem. As discussed above, the presence of perchlorate found in one area of the Saugus Formation is currently being addressed through the development of a cleanup plan for this aquifer.

Stages of Action. The agencies have agreed on a four-stage rationing plan, when needed. The trigger points for these stages have been established, priorities set and consumption limits established. A public

hearing must be called to implement the rationing plan, and various monitoring procedures have been adopted.

Taken together, an updated water shortage contingency plan for the Santa Clarita Valley is in place, and has been successfully implemented in the past (UWMP, Ch. 6.0).

2.5.4.10 Summary Of Water Supplies For Santa Clarita Valley

As discussed above, this discussion of water supplies and demand in the Santa Clarita Valley provides cumulative water demand data for informational purposes only. Because the applicant is either securing or creating all of the water supplies necessary to serve the Specific Plan's potable and non-potable water needs, the Specific Plan will not contribute to a decline in regional water supplies. Consequently, this discussion of regional water supplies and demand is not required for CEQA compliance.

The reliability of water supplies available to the CLWA service area does not depend on the "Full Delta Fix" and other water supply improvements recommended by the CALFED Program. CLWA and the retail water purveyors in the Santa Clarita Valley continue to pursue and fund their own local water supply programs. Recently, local water reliability enhancement programs have been undertaken to ensure that the water needs of the service area can be met into the future. As part of this endeavor, numerous programs are being undertaken simultaneously to safeguard against the onset of the next dry-year.

As an example, CLWA's long-term Capital Improvement Plan ("CIP") is currently funding the purchase of additional SWP supplies, groundwater storage programs both inside and outside CLWA's service area, surface water storage programs, water conservation and recycling programs, short-term pumping from the Saugus Formation and short-term exchanges from other agencies on an as-needed basis. In 2001, CLWA took several specific actions to enhance, preserve and strengthen the quality and reliability of existing and future water supplies in the Santa Clarita Valley. Those actions included, among others, completing the preliminary design for expansion of the Earl Schmidt Filtration Plant from 25 mgd to 55 mgd; obtaining permission from DHS to increase filter flow at the Filtration Plant; negotiating a transfer of 8,786 AFY of 2001 Castaic Creek Flood Flows to CLWA for treatment and use; negotiating with DWR an extended carry-over program for 2001 SWP allocations; signing the Memorandum of Understanding Regarding Urban Water Conservation in California; and working to complete acquisition of an additional 16,000 AFY of SWP entitlement, following appropriate environmental review, which is underway. These measures implemented over time provide the assurance that alternative supplies will be available in the

CLWA service area to meet local water demands well into the future. For long-term planning purposes, water supplies and facilities are added on an incremental basis and in advance of need.

At the same time, however, CLWA, the four local retail water purveyors and other purveyors in the state readily acknowledge that it would be economically imprudent now, or in the short-term, to acquire all of the water supplies and facilities needed for the next twenty-five to thirty years. This type of an approach would represent an unfair shift of costs from future customers in new developments to existing customers in existing developments. In fact, water agencies in California are generally prohibited by law from imposing fees and charges for water supplies and facilities unless those fees and charges are reasonably related to actual services provided.

(a) Availability of Local Supplies

As shown in **Table 2.5-19**, projected total future supplies from local groundwater and reclaimed water sources range from 52,700 to 87,000 AFY in a dry year, and in an average/normal year range from 39,200 to 72,000 AFY.

Table 2.5-19
Planned Local Supplies
(acre-feet per year)

Source	Average/Normal Year	Dry-Year
Groundwater		
Alluvial Aquifer	30,000-40,000	30,000-35,000
Saugus Formation	7,500-15,000	11,000-15,000
Saugus Formation (new wells)*	--	10,000-20,000
Reclaimed Water	1,700-17,000	1,700-17,000
Total Local Supplies	39,200-72,000	52,700-87,000

* *Planned program for future implementation pursuant to the UWMP 2000. According to the UWMP 2000, prior to implementing increases in production from groundwater supplies, CLWA will analyze the feasibility, cost and potential water quality and environmental effects of such a program. However, according to the UWMP 2000, preliminary analyses and recent studies have concluded that additional pumping can be carried out.*

Source: UWMP 2000, Table 2-4.

(b) Availability of Imported Supplies

As shown in **Table 2.5-20**, projected supplies from the SWP, water banking/conjunctive-use projects, water transfers and desalination range from 74,400 to 108,900 AFY in wet years up to 148,400 to 192,700 AFY in dry years. The estimated range for an average/normal year is 67,000 to 108,900 AFY.

Table 2.5-20
Planned Imported Supplies
(acre-feet per year)

Source	Wet Year	Average/Normal Year	Dry Year
SWP Supplies	66,300 - 95,200	56,800 - 95,000	37,900 - 75,800
Banking/Conjunctive Use*	--	--	105,000
Water Transfers*	6,100 - 8,700	5,200 - 8,700	3,500 - 6,900
Desalination*	2,000 - 5,000	2,000 - 5,000	2,000 - 5,000
Total Imported Supplies	**74,400 - 108,900**	**67,000 - 108,900**	**148,400 - 192,700**

Source: UWMP 2000
* *Planned programs for future implementation pursuant to UWMP 2000, Table 2-5.*

(c) Total Water Supply Availability

As shown in **Table 2.5-21**, for long-term planning purposes, total water supplies available to the CLWA service area range from 201,100 to 279,700 AFY in dry years, and from 103,200 to 180,900 AFY in average/normal years. For critical dry years, when the reliability of the SWP can be reduced to below 39.8 of SWP entitlement, CLWA would utilize dry year supplies available from the Saugus aquifer, and water banking and conjunctive use projects as indicated in **Table 2.5-21**.

Table 2.5-21
Total Supplies
(acre-feet per year)

Source	Average/Normal Year	Dry Year
Local Supplies		
Groundwater		
Alluvial Aquifer	30,000 - 40,000	30,000 - 35,000
Saugus Formation	7,500 - 15,000	11,000 - 15,000
Saugus Formation (new wells)*	--	10,000 - 20,000
Reclaimed Water*	1,700 - 17,000	1,700 - 17,000
Imported Supplies		
SWP Supplies	56,800 - 95,200	37,900 - 75,800
Water Banking/Conjunctive Use*	--	105,000
Water Transfers*	5,200 - 8,700	3,500 - 6,900
Desalination*	2,000 - 5,000	2,000 - 5,000
Total Supplies	**103,200 - 180,900**	**201,100 - 279,700**

Source: UWMP 2000.
* *Planned programs for future implementation pursuant to the UWMP 2000, Table 2-6.*

The remaining portion of this section summarizes "water demand" in the Santa Clarita Valley.

2.5.4.11 Water Demand In The Santa Clarita Valley

This section describes the historic, existing and projected water use (demand) within the CLWA service area. The information in this section is based on the UWMP.

The UWMP described historic and existing water usage in the Santa Clarita Valley and the methodology used to forecast future water demand for the valley. Water usage consists of residential, commercial, industrial, recreational, agriculture and other uses. Existing land-use data, new housing construction information and population data were also compiled for the Santa Clarita Valley. The information was then compared to historic trends in water service connections and customer water usage to determine the reasonableness of the projected information. In addition, the UWMP considered the effects of weather and conservation on historic water usage.

Based on the information provided in the UWMP, this section summarizes the historical and existing water demand in the Santa Clarita Valley and forecasts the water demand in the Valley through 2020.

(a) Historical And Existing Water Demand In Santa Clarita Valley

Based on the UWMP, the historical and existing water usage was based upon service connections from the four retail water purveyors in the CLWA service area. As shown in **Table 2.5-22**, the total number of new service connections has increased from 39,299 in 1990 to 49,550 in 1999. This increase in the number of service connections represents slightly more than 500 per year in 1991, to a maximum of 2,028 in 1999, representing an average annual increase of 1,139 new service connections per year.

Table 2.5-22
Historical Number of Service Connections

Service Connections	1990	1992	1994	1996	1998	1999
Valencia	14,272	14,854	15,703	17,420	19,863	20,865
Newhall	5,854	6,144	6,294	6,477	6,585	6,758
Santa Clarita	18,550	19,000	19,400	19,650	20,300	21,100
LA County #36	623	736	752	768	774	827
Total	**39,299**	**40,734**	**42,149**	**44,315**	**47,522**	**49,550**

Source: UWMP 2000

(b) *Projected Water Demand In Santa Clarita Valley By 2020*

In order to forecast future water demand through 2020, the UWMP basically utilized both the extrapolation method (based on service connections) and the econometric method (based on land-use analysis) as the most accurate means of forecasting water demand through 2020. This combined forecast took the projected growth in new service connections, accounted for the effects of housing trends, land-use changes, development trends, weather and conservation effects to create an estimated increase in water demand through 2020.

Table 2.5-23 depicts the projected average/normal year water demand for the Santa Clarita Valley through 2020.

Table 2.5-23
Projected Normal/Average Year Water Demand
(acre-feet per year)

	2005	2010	2015	2020
Urban Uses	66,600	77,700	90,900	106,000
Agricultural Uses[1]	15,100	12,400	9,800	7,100
Conservation Savings[2]	(6,600)	(7,700)	(9,100)	(10,600)
Total Projected Demand	**75,100**	**82,400**	**91,600**	**102,500**

1 *Agricultural water usage is expected to decrease from 17,800 AFY in 1999 to about 7,100 AFY by 2020 due to increased development in the Santa Clarita Valley. This decrease in agricultural demand includes the approximately 7,038 AFY of Newhall Land and Farming Company agricultural water that would be used to partially meet the potable water demands of the Newhall Ranch Specific Plan as Newhall Land and Farming Company's agricultural lands in Los Angeles County are converted to urban uses.*

2 *Conservation savings refers to the effects of conservation on water usage. According to the UWMP, urban water usage can be expected to decrease through implementation of water conservation practices in the CLWA service area. Based on existing programs, the UWMP projects that water conservation will decrease water usage by at least 10 percent.*

Source: UWMP 2000, Table 3-5

To determine the projected water demand in dry years, the UWMP relied on studies showing that hot-dry weather may generate a 10 percent increase in both urban and agricultural water usage above and beyond the average/normal year water demand. Therefore, this percentage was used to generate the dry-year demands shown in **Table 2.5-24**. No conservation savings are reflected in the water demand projections shown in **Table 2.5-24**. **Table 2.5-24** also provides the overall projected water demand for the Santa Clarita Valley through 2020 in average/normal years and dry years.

Table 2.5-24
Projected Dry-Year Water Demand
(acre-feet per year)

	2005	2010	2015	2020
Total Projected Normal/Average Year Demand	75,100	82,400	91,600	102,500
Plus 10% Increase in Usage in Dry-Years	7,510	8,240	9,160	10,250
Total Projected Dry-Year Demand	**82,610**	**90,640**	**100,760**	**112,750**

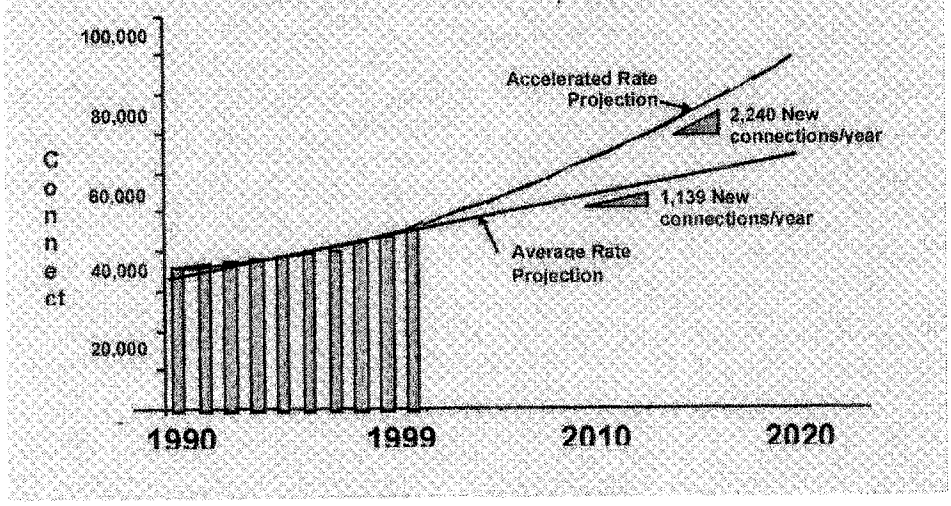
Source: UWMP 2000, Table 3-5 and Table 4-2

In considering the future number of service connections needed within the CLWA service area, the UWMP utilized two different methodologies. The first methodology, referred to as the extrapolation method, evaluates projected water usage based on the extrapolation of service connections throughout the CLWA service area. Using this method, service connections are exponentially projected for the CLWA service area through 2020. Under this method (exponential projection), the number of new service connections is projected to increase from 49,550 in 1999 to about 96,000 in 2020, representing an annual average increase of about 2,240 new connections per year.

The second methodology evaluates projected water usage based on projected land-use and demographic trends within the CLWA service area. Using this method, service connections are forecasted by using a simplified (average rate) regression for the CLWA service area through 2020. Under this method, the number of new service connections is projected to increase from 49,550 in 1999 to about 70,000 in 2020, representing an average annual increase of 1,139 new service connections per year.

Figure 2.5-20 depicts the historical and projected number of service connections in the CLWA service area by the year 2020. The figure shows about 96,000 new connections in 2020, with an average annual increase of 2,240 connections per year from 2000 to 2020, using the accelerated rate projection); and it shows about 70,000 new connections in 2020, with an average annual increase of 1,139 connections per year from 2000 to 2020, using the average rate projection).

Figure 2.5-20
Historical and Projected Number of Service Connections



2.5.5 NEWHALL RANCH WATER DEMAND AND SUPPLIES

An adequate supply of water is available to meet the demands of the Newhall Ranch Specific Plan without creating significant environmental impacts.

2.5.5.1 Preface

This section is the "heart" of the **Water Resources Section**. This section specifically responds to the trial court's inquiries and directions with respect to available water sources for build-out of the Specific Plan. This section demonstrates that adequate water sources will be available for build-out of the Specific Plan by showing that the project applicant has secured other water sources and developed the factual basis for feasibly utilizing the Saugus Groundwater Banking/ASR program.

2.5.5.2 Newhall Ranch Demand

This section presents the water demand for the Newhall Ranch Specific Plan. In this discussion, the Specific Plan's water demand is assessed in conjunction with the existing water demand in the Santa Clarita Valley, as well as the future cumulative water demand in the Santa Clarita Valley under near-term and long-term conditions.

(a) Specific Plan Water Demand

Water demand projections serve as the basis for all water planning of a community. Accurate projections of water demands are required to provide a strong foundation for both reliable water supply planning and water system facility planning, layout and sizing.

(1) Methodology

The Newhall Ranch Specific Plan proposes a dual water system. One system would provide potable water for indoor and outdoor uses and the other parallel system would provide reclaimed water for outdoor (irrigation) uses. To plan a dual water distribution system for potable and non-potable water, water demands must be "disaggregated," which means that the water demands must be differentiated into indoor (potable) demands, outdoor potable demands and outdoor demands that can be met with non-potable water. The availability of reclaimed water to meet portions of the non-potable outdoor demand is based on the amount of water that can be reclaimed at a WRP. The amount of reclaimed water, in turn, is based on the amount of water used for indoor purposes, which is then sent to the WRP to be treated and disinfected to provide a water supply suitable for non-potable uses.

In this case, the applicant intends to use reclaimed water from the Newhall Ranch WRP, and reclaimed water from upstream WRPs as it becomes available through CLWA's Reclaimed Water System Master Plan.[33]

Since reclaimed water is not used in the Santa Clarita Valley as of the time of this writing, neither the CLWA nor the local water retail purveyors have developed potable and non-potable water demand factors. Therefore, CH2MHILL reviewed the Irvine Ranch Water District (IRWD) in Orange County, a long-term leader in water reclamation, for a potable/non-potable methodology for estimating disaggregated water demands.

The IRWD created 19 land use categories for which water use factors were determined, and from which water demands could be projected. Water use factors disaggregate demands into residential, nonresidential and irrigation water demand. Residential water demands are further subdivided into interior and local exterior demands,[34] the bulk of which must meet potable water standards. Water demands for common area irrigation within residential neighborhoods are calculated as "irrigation" demands, which may be met with non-potable water. Non-residential potable demands are also divided into interior and exterior water demands for businesses, institutions, schools and parks. Under the IRWD method, irrigation demands include all landscape irrigation demands that can be met with non-potable water, such as for greenbelts, parkways, golf courses, school yards, common areas and parks. IRWD further derived population projections from land use factors by applying average occupancy estimates of 2.0 to 3.5 persons per dwelling unit, depending on the land use (*See,* Newhall Ranch Final EIR Appendix 4.11 for a more detailed discussion of IRWD methodology).

The water use factors used in the IRWD approach have been compared for consistency with the factors used by CLWA and Valencia Water Company. Generally, the approaches provide similar estimates of total water demands; however, the IRWD approach provides a more refined breakdown of demands and wastewater generation to allow water balance estimates. Consequently, the IRWD approach was applied to the Newhall Ranch Specific Plan.[35]

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33 As part of an updated Reclaimed Water System Master Plan, CLWA expects to provide up to 17,000 acre-feet of reclaimed water for use in the Santa Clarita Valley (UWMP, Chapter 7.0).

34 Interior water demands include drinking, bathing, laundry, sanitation, *etc.*, and are generally considered synonymous with water that enters the wastewater collection and treatment system. Local exterior water is used for landscape irrigation near the home, washing cars, filling swimming pools, *etc.*

35 For comparison purposes, water demand factors used by VWC in planning its service area were applied to the land use categories in the Specific Plan. VWC factors yield an estimated annual demand of about 17,566 acre-feet per year compared to the 17,680 acre-feet of demand created by the proposed Specific Plan. The IRWD approach provided a slightly more conservative (about 0.6 percent higher) estimate and allowed for a more detailed breakdown of water demand by type.

(2) Water Demands

Annual Demands. Applying the IRWD water demand estimating approach to land use projections for the Specific Plan yields an estimated total annual demand of 17,680 acre-feet per year. Of this total, 8,645 acre-feet per year must be met with potable supplies and 9,035 acre-feet per year could be met from potable or non-potable supplies. **Table 2.5-25**, below, summarizes water demands by type and use. Based on this table, residential demands are 9,801 acre-feet per year, total nonresidential demands are 1,231 acre-feet per year and open area and parks demands are 6,648 acre-feet per year. The Specific Plan is expected to build out over approximately a 25-year period, beginning in 2005. The projected Specific Plan water demand in five-year increments through the year 2030 is presented in **Table 2.5-26**.

A portion of the Specific Plan's water demand would be met with non-potable supplies from the Newhall Ranch WRP. It is estimated that approximately 5,630 to 7,763 AFY of non-potable supply (treated discharges from the WRP) would be available to meet a portion of the Specific Plan's demand of 17,680 AFY. The balance of the total non-potable demand would be met by using CLWA reclaimed water from upstream WRPs. By using these sources of supplies, the potable water demand for the Specific Plan would be approximately 8,645 AFY. It should be noted that annual demand is expected to increase by approximately 10 percent during a dry year due to a reduction in local rainfall. This would result in a dry-year water demand of approximately 19,449 AFY. In an average or above average rainfall year, the Specific Plan also requires an additional 4,500 acre-feet to inject into the Saugus Groundwater Banking/ASR Program (described below).

Seasonal Demands. Seasonal demands are important in analyzing whether all of the reclaimed water generated at the Newhall Ranch WRP could be used for irrigation as it is generated, or whether some amounts would need to be released into the Santa Clara River. Knowledge of seasonal water demands is also important in balancing water supplies and demands, and in identifying potential impacts on the potential retail water purveyor (Valencia Water Company) and water wholesale agency (CLWA).

Indoor water demands are relatively constant throughout the year, while exterior demands vary annually and throughout the year mainly due to fluctuations in evapotranspiration, which affects the demand for irrigation water (*See*, **Figure 2.5-21**, Monthly Irrigation Demands). Although total Specific Plan potable demands would vary monthly, they would not exhibit as much variation as irrigation demands due to the dampening effect of the more constant indoor use. As shown in **Figure 2.5-22**, at build-out, maximum-monthly potable demands would be 904 acre-feet, while maximum-monthly non-potable demands would be 1,275 acre-feet. As shown in **Figure 2.5-23**, at build-out, total monthly demands would range from a low of 932 acre-feet per month in January and December to a maximum of 2,179 acre-feet in July.

Table 2.5-25
Summary of Newhall Ranch Water Demands (acre-feet)

Land Use Type	Water Demand (acre-feet/year) Potable	Non-potable	Total
Residential Development			
Estate	417	250	
Low	342	204	
Low-Medium	2,823	675	
Medium	2,571	495	
High	585	70	
Mixed-Use	1,184	185	
Subtotals	**7,922**	**1,879**	**9,801**
Nonresidential Development			
Mixed-Use Commercial			
Retail	11	76	
Office	139	76	
Commercial	115	33	
Business Park	374	82	
Visitor-Serving	2	57	
Water Reclamation Plant	13	12	
Fire Stations	9	2	
Schools	29	201	
Subtotals	**692**	**539**	**1,231**
Open Areas and Parks			
Recreation			
Community Parks	6	212	
Neighborhood Parks	6	231	
Lake – Water	0	57	
Lake - Park Area	0	36	
Golf Course	19	932	
Arterial Highways			
Landscape Area	0	306	
Major Open Areas			
Community Slopes	0	4,843	
Subtotals	**31**	**6,617**	**6,648**
Totals	**8,645**	**9,035**	**17,680**

Source: CH2MHILL, *Water Resources and Wastewater Management for the Newhall Ranch Project,* (Thousand Oaks, California: Revised June 1996), p. 2-5.
Note: Annual demand is expected to increase by approximately 10 percent during a dry year due to a reduction in local rainfall.

Table 2.5-26
Specific Plan Water Demand In Five-Year Increments[a] (acre-feet per year)

Five Year Increment	Demand	
	Potable	Non-Potable
2006-2010	1,729	1,807
2011-2015	3,458	3,614
2016-2020	5,187	5,421
2021-2025	6,916	7,228
2026-2030	8,645	9,035

[a] *Specific Plan build-out is projected to occur by 2030. The first units are assumed to be occupied by the end of 2005.*

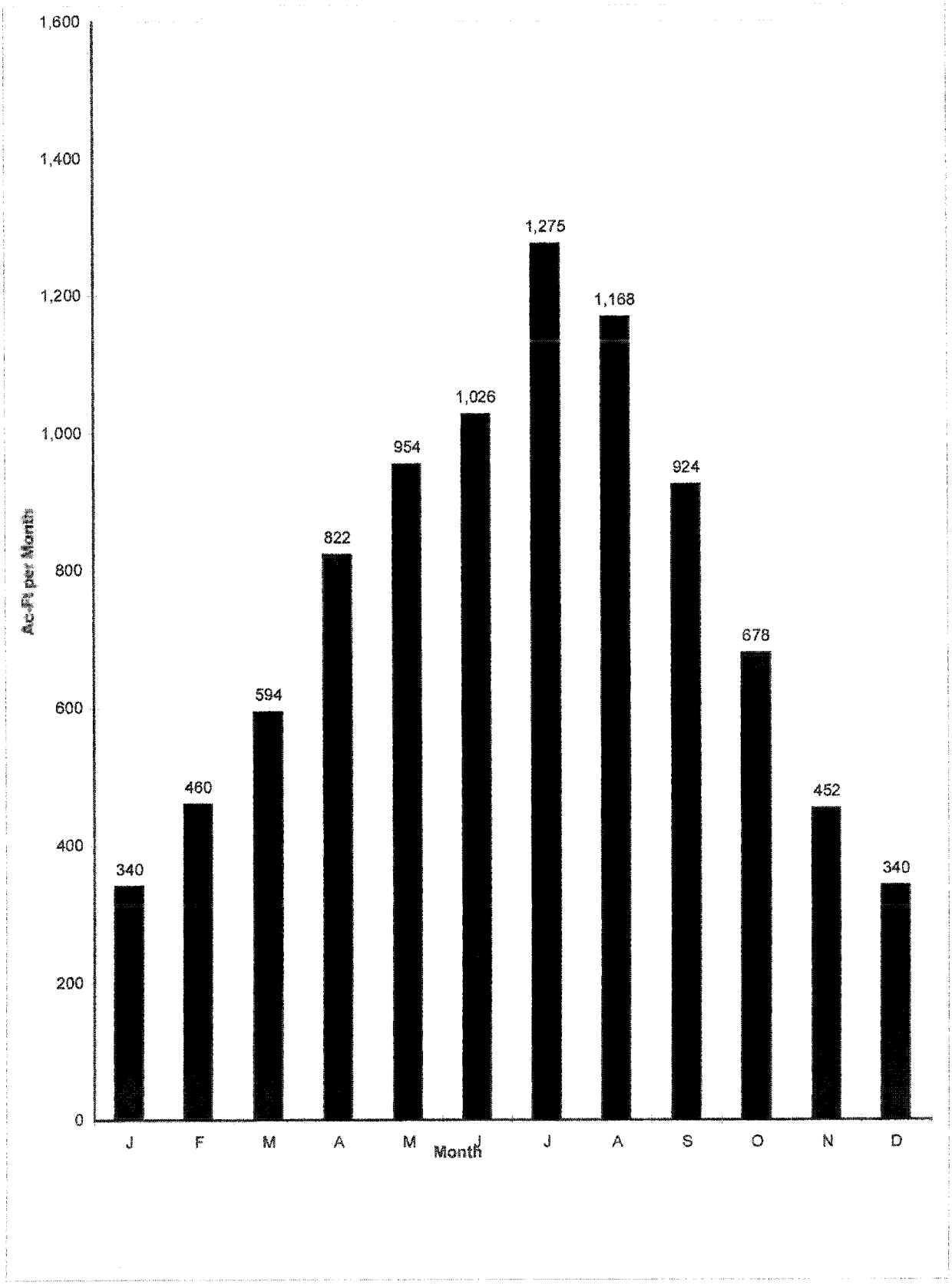

Figure 2.5-21 - Monthly Irrigation Water Demands

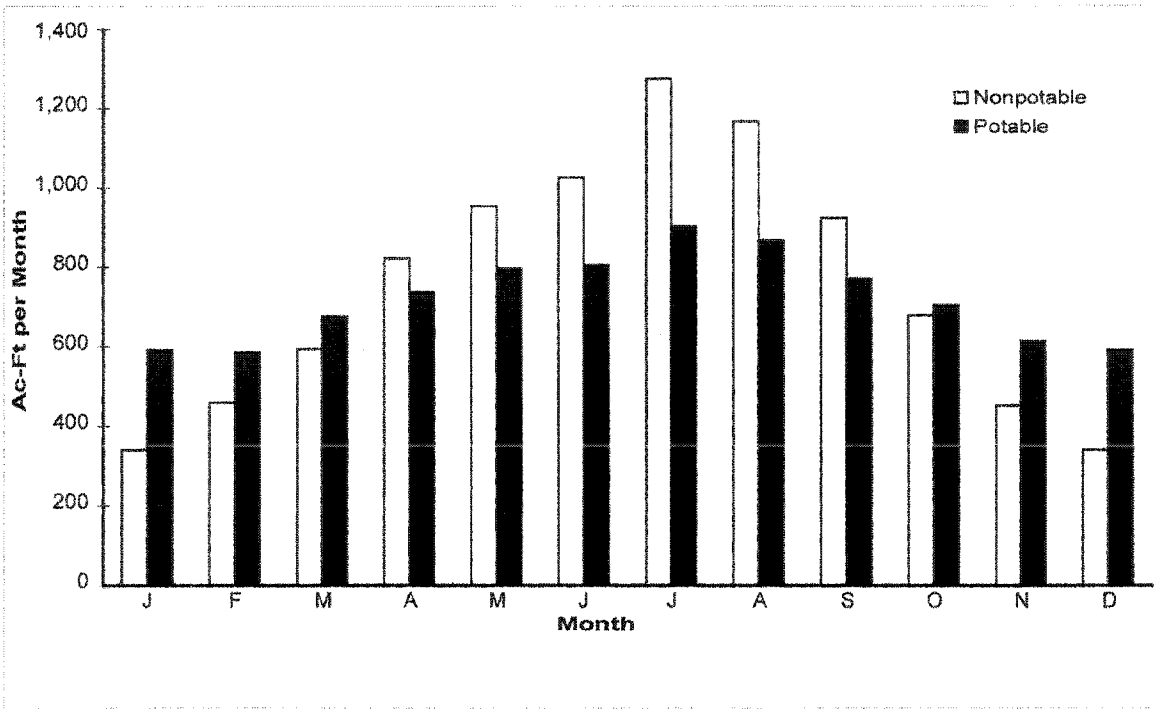

Figure 2.5-22 - Monthly Water Demands

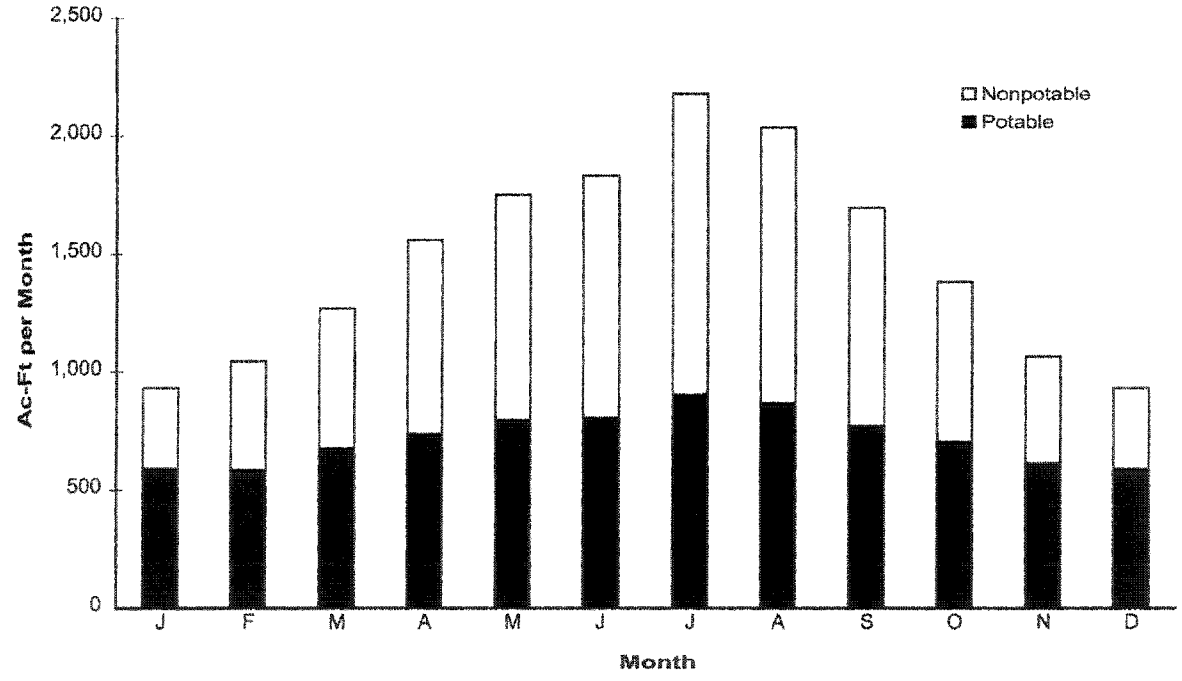

Figure 2.5-23 - Total Monthly Water Demands

(b) Existing Conditions Plus Specific Plan Water Demand

This section describes the existing development in the Santa Clarita Valley, as well as the Specific Plan water demand. **Table 2.5-27, Existing Plus Specific Plan Demand for the Santa Clarita Valley,** illustrates the Specific Plan demand, in conjunction with existing demand in the Santa Clarita Valley.

Table 2.5-27
Existing plus Specific Plan Demand for the Santa Clarita Valley
(acre-feet per year)

	Average Years	Dry Years
Existing Demand [a]	76,769	84,446
Urban Demand	60,678	60,678
Other Demand (including (agricultural)	16,091	16,091
Dry Year 10% Increase in Demand	0	7,677
Specific Plan Demand [b]	17,680	19,449
Potable Demand	8,645	8,645
Non-Potable Demand	9,035	9,035
Dry Year 10% Increase in Demand	0	1,768
Additional Groundwater Banking Programs	4,500	0
Total	**98,949**	**103,895** [c]

a Source: The County of Los Angeles Department of Regional Planning, Inventory Information for Water Service, July, 2002, and the 2001 Santa Clarita Valley Water Report, April 2002.

b This demand would occur starting with the Specific Plan's buildout year of approximately 2030. Newhall Ranch buildout is assumed to occur from 2005 to 2030 at a rate of 864 dwelling units per year, with water demands of 707 AFY average.

c Consistent with the UWMP, December 2000, demand is increased by approximately 10 percent in dry years.

As shown, existing water demand in the Santa Clarita Valley is approximately 76,769 AFY in average years. Of this demand, approximately 60,678 acre-feet is related to urban or developed areas and approximately 16,091 acre-feet is related to other uses in the Valley, including agricultural uses. When combined with the Specific Plan land use water demand of 17,680 AFY and the 4,500 AFY demand for the Saugus Groundwater Banking/ASR program injection, the total water demand in the Valley would be approximately 98,949 acre-feet if Newhall Ranch were completely built out today and the Saugus Groundwater Bank/ASR Program were fully in place. The land use-related water demand would increase by approximately 10 percent in dry years, resulting in a water demand of approximately 103,895 AFY. (Note that in a dry year water is not injected into the Saugus aquifer as part of the Saugus Groundwater Banking/ASR Program.)

(c) Cumulative Water Demand

In order to analyze the cumulative water impacts of the Newhall Ranch Specific Plan in combination with other expected future growth, the amount and location of growth expected to occur in addition to that of the Specific Plan must be predicted. Section 15130(b) of the CEQA *Guidelines* allows two methods of prediction. The two methods are described as follows: "(a) a list of past, present, and reasonably anticipated future projects producing related or cumulative impacts, including those projects outside the control of the agency; or (b) a summary of projections contained in an adopted general plan or related planning document which is designed to evaluate regional or areawide conditions." In response to the CEQA requirements, two separate cumulative development scenarios are analyzed for this water analysis in order to not only meet CEQA requirements, but to also meet the County of Los Angeles requirement that the project under review be assessed under the County's Development Monitoring System (DMS), which is a required component of the County of Los Angeles General Plan. The two cumulative scenarios analyzed are referred to below as the "DMS Build-out Scenario" and the "Santa Clarita Valley Cumulative Build-out Scenario."

The list of cumulative projects used in this water analysis to assess cumulative impacts is not static. From time to time, the list of cumulative projects is increased or decreased as specific development proposals are applied for, withdrawn, approved or denied by lead agencies. As part of this analysis, an attempt has been made to be as current as possible; however, it is possible that the list of projects maintained by the County of Los Angeles or other surrounding jurisdictions will change while this analysis is a subject of public review.

As discussed above, this section provides cumulative water demand data for informational purposes only; it is not required by CEQA because the applicant has secured sufficient water sources (Newhall Agricultural Water, Nickel Water, *etc.*) to serve the Specific Plan through build-out. These water sources, which are independent of the water sources provided by CLWA (*i.e.*, regional/cumulative CLWA/SWP supplies), include either: (a) water already being used by the applicant on an annual basis (*i.e.*, agricultural groundwater); or (b) "new" water purchased by the applicant for the purpose of serving the water needs of the Specific Plan (*i.e.*, Nickel Water, Newhall/SWP Water, *etc.*). Therefore, the use of these available water supplies cannot be said to contribute to a decline in regional water supplies. With regard to the former, the supplies are already in use on an annual basis, resulting in no change in regional supplies. As to the "new" supplies, they would not even exist but for implementation of the Specific Plan.

(1) DMS Build-Out Scenario

The DMS is an important regulatory component of the County's General Plan. The DMS acts as an early warning system to County decision-makers by providing information about the existing capacity of certain infrastructure, facilities and public services at the time a new development is considered in the four major "urban expansion areas" of the County's General Plan, including the Santa Clarita Valley. The goal of DMS is to identify the new infrastructure, facilities and public services that will be required for new development, and to ensure that the appropriate costs of expanding such infrastructure, facilities and services will be paid for by new development and not assumed by taxpayers in existing developments.

In accomplishing the goals stated above, the DMS determines the availability of certain infrastructure, facilities and services, including water services, on an individual and cumulative basis. The DMS utilizes a computer database that incorporates information supplied by service providers and determines capital facility capacity and demand placed on the system by existing, pending, approved and recorded projects for which land divisions have been filed within the four major "urban expansion areas" of the County's General Plan, including Santa Clarita Valley. The DMS is used to quantitatively determine project and cumulative impacts on certain essential infrastructure, facilities and services, including water service. In EIRs prepared for the County, whenever a proposed project would result in an exceedence of applicable infrastructure, facilities or services, a significant impact is identified and recommended mitigation measures are provided.

The "DMS Build-out Scenario" entails build-out of subdivision projects listed in the County's Development Monitoring System (DMS), plus the Newhall Ranch Specific Plan. A DMS analysis is required by the County's General Plan for the cumulative analysis of certain utilities and services, including water service.

The County's DMS database includes all pending, recorded and approved projects for which land divisions have been filed within County unincorporated lands and within the City of Santa Clarita. The City plus County unincorporated area together constitute the County's Santa Clarita Valley Planning Area. A list of the future DMS development activity in the Santa Clarita Valley Planning Area is presented below in **Table 2.5-28**. The listing presented in **Table 2.5-28** does not include General Plan Amendment requests. (General Plan Amendment requests are considered in the Santa Clarita Valley Cumulative Build-out Scenario, which is considered more comprehensive than the DMS Build-out Scenario. The Santa Clarita Valley Cumulative Build-out Scenario is discussed in the section below).

Table 2.5-28
Cumulative Development Activity - DMS Buildout Scenario -
Santa Clarita Valley Planning Area

Land Use Types	Pending Projects[a]	Approved Projects[b]	Recorded Projects	Total
Single Family Units (detached)	7,356 du[d]	8,364 du	7,623 du	23,343 du
Multi-family Units	2,045 du	7,162 du	2,716 du	11,923 du
Mobile Homes	273 du			273 du
Commercial	305 ac[e]	102 ac	60 ac	467 ac
Industrial	195 ac	188 ac	200 ac	583 ac

Source: The County of Los Angeles Service Provider Report, Santa Clarita Valley Water Service Purveyors, October 16, 2002.

[a] *Pending Projects: The County of Los Angeles and City of Santa Clarita subdivisions filed with the County of Los Angeles Department of Regional Planning, which are not yet recorded or expired.*

[b] *Approved: subdivisions approved by the County, which are not yet recorded or expired.*

[c] *Recorded: subdivisions recorded, but not yet built.*

[d] *du = dwelling units.*

[e] *ac = acres.*

Table 2.5-29 illustrates cumulative water demand for the Santa Clarita Valley service area under the DMS Build-out Scenario.

Table 2.5-29
Scenario 1: DMS Buildout Scenario Demand for the Santa Clarita Valley (acre-feet per year)

	Average Years		Dry Years	
Santa Clarita Valley DMS Demand				
- Existing Plus DMS Demand	87,674		98,444	
Existing Demand		60,678		60,678
Pending Demand		6,861		6,861
Approved Demand		7,753		7,753
Recorded Demand		5,282		5,282
Other Demand (including Agriculture)[b]		7,100		7,100
Dry Year 10% Increase in Demand		0		8,767
- Specific Plan Demand	17,680		19,449	
Potable Demand		8645		8,645
Non-Potable Demand		9035		9,035
Dry Year 10% Increase in Demand		0		1,768
Additional Groundwater Banking Demand	4,500		0	
- Less Conservation	(9,825)		(10,808)	
Total [a]	**100,028**		**105,082**	

[a] *Consistent with the UWMP, December 2000, demand is increased by approximately 10 percent in dry years.*

[b] *This demand figure reflects a reduction in agricultural demand that would occur as the projects shown in the County's DMS are built. By comparison, the "Other Demand" figure in Table 2.5-27 (15,320) would reduce to 7,100 AFY at DMS build-out. The UWMP, December 2000, pages 3-8 and 3-9 indicates that water demand in multi-dry years can be expected to decrease by approximately 20 percent through implementation of future water conservation practices in the CLWA service area.*

Without the Newhall Ranch Specific Plan, future DMS water demand plus existing urban and other demand (including reduced agricultural demand) would be in the total amount of approximately 87,674 AFY. With the water demand of the Newhall Ranch Specific Plan added (17,680 AFY in an average year and 19,449 AFY in a dry year) and taking into consideration expected water conservation (9,825 AFY in an average year and 10,808 AFY in a dry year), total cumulative demand under the DMS Build-out Scenario would be approximately 100,028 to 105,082 acre-feet of water per year in an average and dry year, respectively. While no one can precisely predict the year build-out of all projects listed in the DMS would occur, this analysis estimates that DMS build-out would likely occur over the next 10 to 12 years.

(2) Santa Clarita Valley Cumulative Build-Out Scenario

CLWA and the other retail water purveyors in the Santa Clarita Valley have recently completed the UWMP, December 2000. The UWMP includes estimates of future water demand for the CLWA service area to the year 2020. The CLWA service area includes the Santa Clarita Valley and a portion of Ventura County. In all, the service area is approximately 192 square miles in size. The UWMP represents a comprehensive effort by CLWA and the local retail water purveyors to project future water demands and supplies. The UWMP presents several methods used to predict future water demand for the CLWA service area, including the per capita water-use analysis method, the extrapolation—service connection analysis method, and the econometric—land use analysis method. Each method is described in detail in Chapter 3 of the UWMP.

The UWMP indicates that the extrapolation service connection analysis method produces the most accurate predictions of near-term demand (*i.e.*, 10 to 20 years), but does not account well for economic changes over the long-term (*i.e.*, 50 years). However, the Santa Clarita Valley is not expected to reach build-out by the year 2020. Therefore, another method is needed to estimate the water demand for the Santa Clarita Valley at build-out. While no one can precisely predict when build-out of all developable land in Santa Clarita Valley will occur, Valley build-out is estimated to occur in approximately the year 2045. For purposes of this analysis, this timeframe will be used to predict water demand at build-out of the Valley.

In order to obtain the most accurate forecast of long-term water demand, the UWMP *combined* the extrapolation/service connection analysis with the econometric/land-use analysis to project the estimated increase in water demand through 2020. **Table 2.5-30**, below, presents the predicted water demand of the Santa Clarita Valley, including Newhall Ranch, in the year 2020.

As shown in **Table 2.5-30**, partial build-out of the Valley by the year 2020 would create an average year water demand of approximately 105,200 AFY. This water demand figure includes the water demand generated by the portion of the Specific Plan that would be expected to build out by that time (*i.e.*, a land use water demand of approximately 10,608 AFY plus 2,700 AFY required for Saugus ASR injection in an average year). It also includes the water demand of additional urban development that would occur after the build-out of all projects listed in the County's DMS (*i.e.*, approximately 14,818 AFY). In dry years, total demand would increase to approximately 112,750 AFY.

As shown in **Table 2.5-30**, again using this combined projection method, the total water demand in the Santa Clarita Valley by the year 2045, including the Specific Plan and other development over and above DMS, would be approximately 153,500 AFY in average years and approximately 163,900 AFY in dry years.

Table 2.5-30
Scenario 2: Santa Clarita Valley Cumulative Buildout Scenario Water Demand
(acre-feet per year) (Same as Table 2.5-4)

	Partial Buildout (year 2020)		Full Buildout (year 2045)	
	Average	Dry	Average	Dry
Buildout Demand				
- DMS Demand	87,674	87,674	87,674	87,674
Dry Year 10% Increase in Demand	0	8,767	0	8,767
- Newhall Ranch Specific Plan [a]	10,608	11,669	17,680	19,449
Potable Demand	5,187	5,187	8,645	8,645
Non-Potable Demand	5,421	5,421	9,035	9,035
Dry Year 10% Increase in Demand	0	1,061	0	1,768
- Additional Urban Demand	14,818	14,818	58,126	58,126
Dry Year 10% Increase in Demand	0	1,482	0	5,812
- Additional Groundwater Banking Programs	2,700	0	4,500	0
- Less Conservation	(10,600)	(11,660)	(14,480)	(15,928)
Total	**105,200** [c]	**112,750** [b]	**153,500** [d]	**163,900** [b]

[a] *Newhall Ranch buildout is assumed to occur from 2005 to 2030 at a rate of 864 dwelling units per year, with average water demands of 707 AFY.*

[b] *Consistent with the UWMP, December 2000, demand is increased by approximately 10 percent in dry years (102,500 x 1.10 = 112,750 and 149,000 x 1.10 = 163,900). The UWMP, December 2000, pages 3-8 and 3-9 indicates that water demand in multi-dry years can be expected to decrease by approximately 20 percent through implementation of water conservation practices in the CLWA service area.*

[c] *Source: UWMP, December 2000, Table 3-5, plus Saugus Groundwater Banking/ASR Program injection demand of 2,700 AFY in 2020 and 4,500 AFY in 2045.*

[d] *Source: UWMP, December 2000, Table 3-5, using a straight-line projection from 2020 to 2045, plus Saugus Groundwater Banking/ASR Program injection demand.*

Note: It is expected that the existing plus DMS demand would reach its peak in approximately 2012. The Newhall Ranch Specific Plan demand would begin in approximately 2005 and would reach its peak in approximately 2030. The additional urban demand would begin in approximately 2013, after DMS demand peaks, and would reach its peak in approximately 2045.

2.5.5.3 Newhall Ranch Water Supplies

(a) Specific Plan Water Supply Sources

In response to the trial court's decision and Writ, this section identifies the water sources that will be available to meet the water demand generated by build-out of the Specific Plan. This section also discusses Newhall Ranch water supplies in conjunction with existing near-term development and future cumulative long-term development in the Santa Clarita Valley.

As discussed in **Section 2.5.5.2** above, the projected total water demand for the Newhall Ranch Specific Plan is 17,680 AFY in years with average rainfall (an "average year"). Of this total, 8,645 acre-feet per year must be met with potable supplies and 9,035 acre-feet per year could be met from non-potable supplies. Specific Plan land use demand increases by approximately 10 percent in years with lower than average rainfall (a "dry year") to a total of 19,449 acre-feet per year. In an average year, the Specific Plan also requires an additional 4,500 acre-feet per year to inject into the Saugus Groundwater Banking/ASR program. To meet demand, the Newhall Ranch water supply sources are as follows:

(1) Newhall Ranch Water Supplies

The following summary identifies the Newhall Ranch non-potable and potable water supplies needed to serve the Specific Plan site:

Non-Potable Supplies

Newhall Ranch Reclaimed Water. Reclaimed water (also referred to as "recycled water") from the Water Reclamation Plant ("WRP") proposed as part of the Newhall Ranch Specific Plan would be used to partially meet the non-potable water demands (*e.g.*, irrigation) of the Specific Plan. The availability of this source would occur in stages, mirroring the staged construction of the WRP on the Specific Plan site.

CLWA Reclaimed Water. CLWA would serve the Specific Plan site with reclaimed water from existing upstream WRPs, consistent with CLWA's "Reclaimed Water System Master Plan", which is being implemented in stages. This reclaimed water supply would meet the remaining non-potable water demand of the Specific Plan.

Potable Supplies

Newhall Agricultural Water. The project applicant would meet potable water demands of the Specific Plan by using Newhall's historical alluvial groundwater produced in Los Angeles County which is presently committed to agriculture. No additional groundwater would be pumped over historical and present amounts; instead, the water presently used to irrigate crops would be treated and then used to partially meet the potable water needs of the Specific Plan.

Nickel Water. The applicant has secured water under contract with Nickel Family LLC in Kern County. This water is 100 percent reliable on a year-to-year basis, and not subject to the annual fluctuations that can occur in dry year conditions. The water would be delivered through the Kern County Water Agency and the SWP system. Nickel Water would only be needed on the Specific Plan site in years when all of the Newhall Agricultural Water has been used, which is estimated to occur after the 20th year of project construction. Up to that point in time, the unused Nickel Water would be available for storage in groundwater banking programs on an annual basis.

Semitropic Groundwater Banking Project. The project applicant has entered into an agreement to reserve and purchase water storage capacity of up to 55,000 acre-feet in the Semitropic Water Storage District Groundwater Banking Project. Sources of water that can be stored in this banking project include, but are not limited to, Nickel Water, Newhall/SWP supplies, Castaic Creek Flood Flows, when available, CLWA SWP entitlement and other CLWA water supplies. The stored water could be extracted in dry years in amounts of up to 4,950 AFY from the project. This supply will be used as a water source for the Specific Plan in dry years only.

(2) Supplemental Water Supplies

As summarized above, there are sufficient water supplies to meet the Newhall Ranch Specific Plan demand. However, it remains important for the Santa Clarita Valley to hedge against potential regulatory and operational risks that may adversely affect the reliability of water supplies over the years. Although the region has planned and developed water supplies to maintain reliability even with a repeat of the recent statewide droughts, the Santa Clarita Valley water agencies are faced with impacts due to the potential future promulgation of increasingly stringent water quality standards, litigation over water supplies and allocations, environmental constraints and changes in SWP operational criteria. These regulatory and operational uncertainties are many times unanticipated developments and not easily quantifiable. However, these types of uncertainties have occurred throughout the history of California's development of water resources. It is expected that they will continue in the future. A major challenge in water planning is to determine the appropriate measures of insurance to safeguard against these uncertainties to enhance supply reliability. One way of providing supply insurance against such risks is to secure additional or supplemental water supplies. The summary provided below identifies some of the important supplemental water supplies that could be available to serve the Newhall Ranch Specific Plan:

CLWA SWP and Other Supplies. A relatively small portion of CLWA's existing SWP Table A water entitlement could be used, if needed, to supplement a portion of the Specific Plan's potable water need. As a SWP contractor, CLWA may also obtain additional SWP supplies from or through DWR in connection with other programs. The other SWP supplies include the Turnback Water Pool program, the Interruptible water program, Surplus water provisions and Carryover water. These SWP supplies are available in average/normal years as water supply sources for the Saugus Groundwater Banking/ASR program and the Semitropic Groundwater Banking project. However, the CLWA supplies are only considered a supplemental source for Newhall Ranch because the applicant has taken steps to secure its own primary potable water supplies.

Newhall/SWP Water. The project applicant has entered into an agreement to reserve and ultimately purchase 7,648 AFY of additional SWP water entitlement, which would be delivered through SWP facilities to CLWA and be available to serve the Specific Plan. The same SWP reliability parameters discussed above for CLWA SWP water would apply to this source of water.

Castaic Creek Flood Flows. Subject to approval by DWR, Castaic Creek flood flows could be used as a variable supply source in normal/average years, when available, for the Semitropic Groundwater Banking Project (through a water transfer), or for the Saugus Groundwater Banking/ASR program (from CLWA).

Semitropic Groundwater Banking Project. The project applicant has entered into an agreement to reserve and purchase water storage capacity of up to 55,000 acre-feet in the Semitropic Water Storage District Groundwater Banking Project. Sources of water that can be stored in this banking project include, but are not limited to, Nickel Water, Newhall/SWP supplies, and Other CLWA Supplies. The stored water would be extracted in dry years in amounts of up to 4,950 AFY from the project. Up to 865 AFY of this amount would be used as a primary water source during dry years. The remainder (4,085 AFY) would be available as a supplemental source.

Saugus Groundwater Banking/ASR Program. The Groundwater Banking/Aquifer Storage and Recovery (ASR) program, which involves installation of six wells in the Saugus aquifer, would be used to inject or "bank" 4,500 AFY of treated SWP water or other available water when those sources are readily available in normal/average years. During drought periods, when SWP water supplies or other available sources are curtailed, the ASR wells would then be used to recover up to 4,100 AFY to partially meet Specific Plan water demand. In lay terms, the program would operate much like a local bank. Water would be deposited (injected) into the groundwater basin and later withdrawn (recovered), when needed, in dry years.

These water supply sources are compared against the Specific Plan water demand in **Table 2.5-31,** Specific Plan Demand and Supply Comparison, and discussed in further detail below.

Table 2.5-31
Specific Plan Demand and Supply Comparison
(acre-feet per year) (Same as Table 2.5-1)

		Average	Dry
Newhall Ranch Water Demand			
- Potable Demand		8,645	8,645
- Non-Potable Demand		9,035	9,035
	Subtotal	17,680	17,680
- Dry Year 10% Increase in Demand [f]		0	1,768
	Total	**17,680**	**19,449** [f]
Additional Groundwater Bank Programs			
- Saugus Groundwater Banking/ASR Program		**4,500**	**0**
Newhall Ranch Water Supply			
- Non-Potable Supplies			
- Newhall Ranch Reclaimed Water		5,344	5,344
- CLWA Reclaimed Water		3,691	4,595
	Subtotal	9,035	9,939
- Potable Supplies			
- Newhall Ranch Agricultural Water		7,038	7,038
- Nickel Water [a]		1,607	1,607
- Semitropic Groundwater Banking Project		0	865
	Subtotal	8,645	9,510
	Total	**17,680**	**19,449**
Additional Groundwater Programs/Supplemental Supplies			
- CLWA SWP and Other Supplies [b]		4,500	0
- Newhall/SWP Water [b]		4,566	3,044
- Castaic Creek Flood Flows [e]		7,043	0
- Semitropic Groundwater Banking Project		0	4,085 [c]
- Saugus Groundwater Banking/ASR Program		0	4,100[c]
	Total	**16,109**	**11,229**
	Total Supplies	**33,789**	**30,678**
	Total Surplus [d]	**11,609**	**11,229**

[a] *The applicant has secured water under contract with Nickel Family LLC in Kern County. This water is 100 percent reliable on a year-to-year basis, and not subject to the annual fluctuations that can occur in dry year conditions. The water would be delivered through the Kern County Water Agency and the SWP system.*

[b] *Consistent with the DWRSIM model, the figures show SWP entitlement (including the Newhall/SWP water entitlement of 7,648 AF per year) reduced in average years to approximately 59.7 percent of entitlement and in dry years to approximately 39.8 percent of entitlement. In any given year, the actual amount of SWP water deliveries could be above or below these model projections.*

[c] *As these programs are needed in dry years, they could be used up to the amounts indicated (as needed).*

[d] *The surplus shown above is the net water available for injection into banking programs (e.g., Semitropic Groundwater Banking Project, other groundwater banking projects, etc.).*

[e] *See discussion in* ***Section 2.5.5****. Castaic Creek flood flows are a variable source of water that could be used, when available, in wet and average years, for the Semitropic Groundwater Banking Project (through water transfers) or the Saugus Groundwater Banking/ASR Program (from CLWA through Valencia Water Company).*

[f] *In single dry years, demand could increase by 10 percent. In multi-dry years, actual demand is expected to decrease by approximately 20 percent as it did in 1991 due to implementation of voluntary conservation measures.*

(b) Newhall Ranch Non-Potable Supplies

(1) Reclaimed Water Supplies

Newhall Ranch WRP. Water reclamation is defined as the treatment and disinfection of municipal wastewater to provide a water supply suitable for non-potable reuse (*e.g.*, landscape irrigation). As described in the Newhall Ranch Final EIR, Section 5.0, the project applicant proposes to construct the Newhall Ranch WRP as a design component of the Specific Plan.

Based on the IRWD approach to calculating Specific Plan water demand, interior water demand estimates for the Specific Plan would be 5,630 AFY. The proposed Newhall Ranch WRP, however, was not sized based on the total Specific Plan interior water demand. Rather, the WRP was sized by using CSDLAC wastewater generation factors, resulting in a proposed treatment plant capacity of 6.9 mgd, which is equivalent to approximately 7,763 AFY (*See*, Final EIR, Section 4.12, Wastewater Disposal for further discussion). If operated at full capacity, therefore, the proposed 6.9 mgd plant would generate 7,763 AFY of reclaimed water. Therefore, for purposes of this analysis and to acknowledge the differences between interior water demand calculations and wastewater generation calculations for the Specific Plan, the Final EIR estimated that the Specific Plan would generate between 5,630 and 7,763 acre-feet of reclaimed water per year. The variance or range in the amount of reclaimed water is the result of differing estimates of the internal/external distribution of household and business water uses.

The Specific Plan's goal is to facilitate construction of the Newhall Ranch WRP as a near zero-discharge facility. The WRP would be designed to treat approximately 5,630 to 7,763 AFY of tertiary-treated wastewater, which could be reclaimed to help meet the total non-potable water demand of 9,035 AFY for the Specific Plan (*See*, Additional Analysis Section 3.3.2, Overview of Water Reclamation Plant, for a more detailed discussion). In an average rainfall year, all tertiary-treated wastewater from the Newhall Ranch WRP would be reclaimed for irrigation, except in the months of October through March. For these winter months, collectively, about 286 to 1,025 acre-feet of the treated wastewater would not be needed to meet non-potable demand. The reclaimed water exceeding the Specific Plan's non-potable demand would be discharged to the Santa Clara River.

The WRP's reclaimed water supply of 5,630 to 7,763 AFY, however, would not be sufficient to meet all of the Specific Plan's non-potable demand. As a result, the reclaimed water would need to be supplemented with 2,297 to 3,691 AFY (9,035 - 5,630 + 286 = 3,691; 9,035 - 7,763 + 1,025 = 2,297; assumes 286 to 1,025 AFY would be discharged) from other supply sources. Therefore, this analysis relies upon the lower reclaimed water range and projects that 5,344 AFY (5,630 - 286 = 5,344) of reclaimed water would be available from

the WRP, resulting in the need for an additional 3,691 AFY of non-potable water to meet the Specific Plan's non-potable demand of 9,035 AFY.

CLWA Reclaimed Water. As indicated above, the Specific Plan's remaining demand for non-potable water (3,691 AFY) would be met through CLWA by reclaimed water from existing upstream WRPs (*i.e.*, Saugus WRP, located in District 26 and Valencia WRP, in District 32), consistent with CLWA's updated "Reclaimed Water System Master Plan." This additional reclaimed water supply would meet the remaining non-potable demand of the Specific Plan in an average year. In a dry year, the remaining non-potable demand of the Specific Plan would be 4,595 AFY, which would be met by CLWA reclaimed water.

In September 1993, CLWA completed a draft "Reclaimed Water System Master Plan" (Kennedy Jenks Consultants, 1993). The purpose of the plan was to evaluate and plan for the use of reclaimed water as a reliable source to meet a portion of the non-potable water demand in the Santa Clarita Valley. The plan outlined a multi-phase program to deliver a total of 10,000 acre-feet of reclaimed water to the Valley. CLWA's reclaimed water supply is projected to be 1,700 AFY by 2003. This amount is in addition to the reclaimed water originating at the Newhall Ranch WRP.[36] CLWA is currently preparing an updated Master Plan, which projects a total reclaimed water supply of 17,000 acre-feet. CLWA's reclaimed water supplies would be used to meet the Specific Plan's remaining projected non-potable demand of 3,691 AFY in an average year, and 4,595 AFY in a dry year.

(c) Newhall Ranch Potable Supplies

(1) Newhall Agricultural Water

The project applicant would meet the potable water demands of the Specific Plan by using the agricultural water that occurs in the Alluvial aquifer, and historically and presently used by the applicant for agricultural irrigation purposes on its land in Los Angeles County. No additional agricultural water would be pumped under this condition; instead, the water presently used to irrigate crops would be treated as required to meet Title 22 drinking water standards as set by the State Department of Health Services and then used to meet potable demand, as the agricultural areas are taken out of production. The water from this source would be used to partially meet the potable demand of the Specific Plan. The amount of available water is approximately 7,038 AFY in both average and dry years.

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36 UWMP, December 2000, CLWA, page 2-9.

The Newhall Land and Farming Company (Newhall) has been farming the land that includes portions of the Specific Plan area, and has drilled wells on its property and used the water from these wells to conduct its agricultural operations for many decades. Newhall owns and operates 26 wells to supply their agricultural water (*See*, **Figure 2.5-24, Newhall Land and Farming Company Well Locations)**. The total production of these wells are annually reported to the State Water Resources Control Board. Furthermore, the total amount of the agricultural water production by Newhall is reported in the annual Water Reports (*See, 1998, 1999* and *2000 Santa Clarita Valley Water Reports*) which address the years 1980 through 2000. The average annual amount of water that has been pumped and used for agricultural operations in Los Angeles County from 1996 to 2000 is approximately 7,234~~038~~ AFY as shown in Revised **Table 2.5-32, Newhall Land and Farming Company Los Angeles County Agricultural Water Use.**

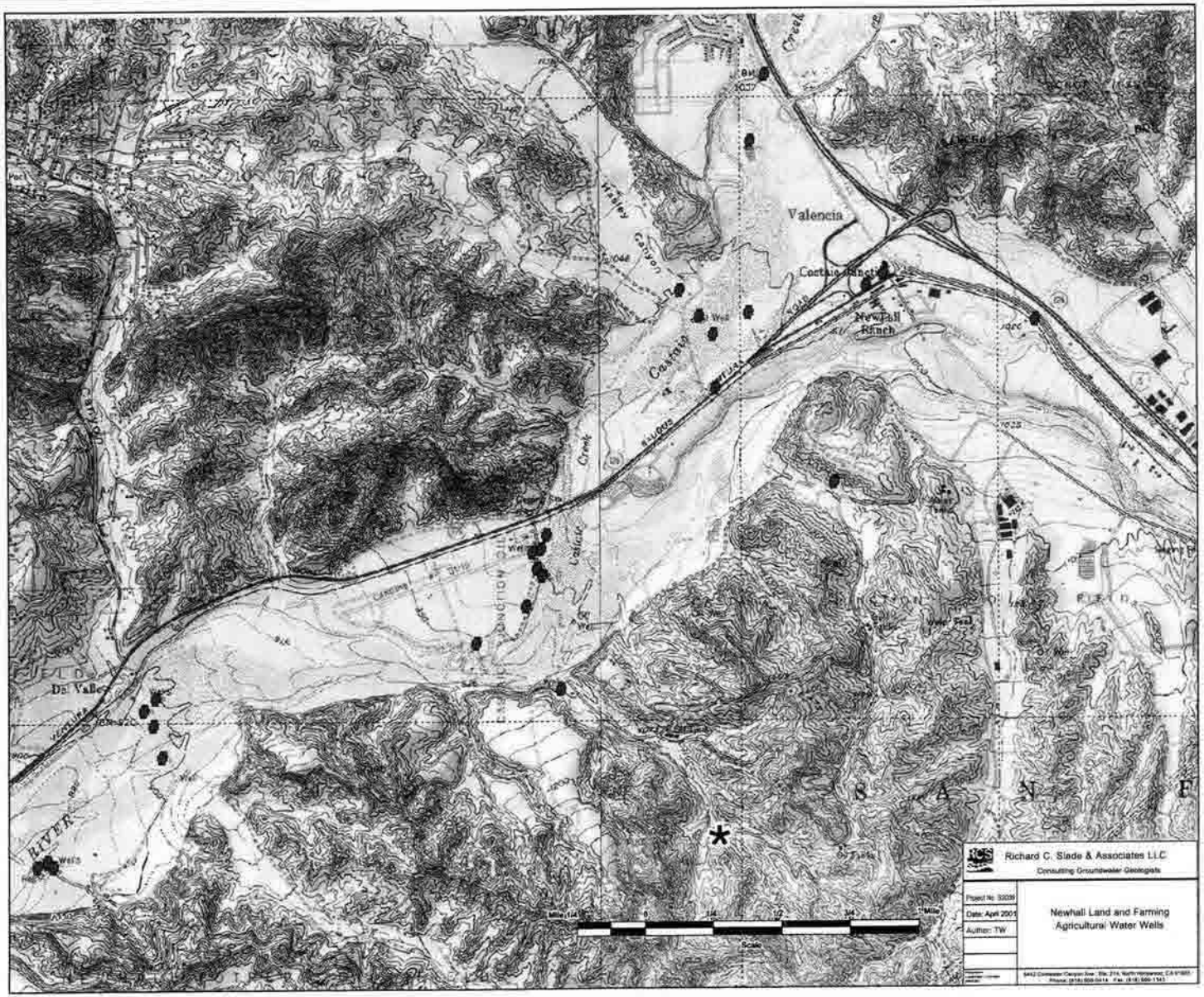
As discussed below, water use on Newhall's agricultural lands is calculated utilizing Southern California Edison (SCE) pump tests to calculate total acre-feet of pumpage. Total acre-feet of pumpage is then allocated to each crop based on crop type and historical use. Budgets are prepared each year for each crop and reconciled at the end of the year based on the actual acre-feet pumped. It is important to understand that there can be significant variations in actual water use each year primarily due to the actual number of acres farmed, the type of crops, the amount and distribution of rainfall, and temperatures. CIMIS (California Irrigation Management Information System) data, which is provided by University of California, is a tool that can be used to compare each crop's demand for water with the estimated water allocation to each crop.

Generally, water use for each crop tends to be significantly higher on Newhall's land in Los Angeles County than on land in Ventura County. The basic reason is that the water demand for crops tends to decline dramatically in cooler coastal areas, and Newhall's operations are the farthest inland in Ventura County and continue into Los Angeles County. In addition to a much warmer climate, Newhall's land in Los Angeles County receive less rainfall than other parts of the County, its soils are sandier and extremely sandy in some cases, and most of its irrigation systems are older and less efficient. In addition, Newhall often uses some water in Los Angeles County on dryland acreage for crop emergence, which increases overall water use, and is reflected in regular irrigated crops and is not shown separately. In addition, vegetables, other row crops, alfalfa and sudan pasture are grown on the Newhall Ranch in Los Angeles County year round with several growing cycles on vegetable acreage, which requires irrigation throughout the entire year. Using the SCE-based pump tests, a total of 7,246 acre-feet of water per year over the past five years (1996 to 2000) was pumped by Newhall to irrigate its farmland in Los Angeles County.

Using CIMIS for a comparison, Newhall has calculated a comparison to its estimated water use by crop in Los Angeles County for the past five years (1996 to 2000) by relying on data from the CIMIS station in Piru (Ventura County) and weather data collected to determine the evapotranspiration (ET) of a base crop, which is usually grass with full ground cover, and is used as the basis to calculate the actual water needs of other crops. The CIMIS program takes into consideration all weather factors, which determine a plant's water demand. The base ET for Piru for the most recent 12 months (prior to February, 2001) is 62.75 inches of water per year, which is the actual consumption of the base crop (*See*, Exhibit 1 in *The Newhall Land and Farming Company's Agricultural Water Use Los Angeles County, California 1996 to 2000,* presented in Appendix 2.5). Annual evapotranspiration has varied from 56.39 inches to 63.08 inches over the past five calendar years. To convert that to the various crops in the area, crop coefficients are applied (again *see*, Exhibit 1 in Appendix 2.5), which are established by the University of California to determine the ET of the specific crop for any given year. The application efficiency of the irrigation system in then considered to determine the acre-feet (or inches) of water required to meet the crop's needs. The application of efficiency is primarily a function of irrigation methods and soil types, which can vary greatly and can have a very large input on the amount of water, which must be pumped in order to deliver and make available to a plant the water it actually needs. Crop coefficients in Newhall's area for citrus are 0.7. Crop coefficients for most vegetables, alfalfa and sudan/pasture are 1.0. Newhall estimates its application efficiencies to be 70 percent for vegetables due primarily to the use of more efficient sprinkler application of water, 60 percent for citrus due to the use of contour furrow irrigation, and 50 percent for alfalfa and sudan/pasture due to strip check surface irrigation and very sandy soils. Given those assumptions, the water demands for Newhall's crops, based on the most recent 12 months of CIMIS data (year 2000), would be 7.41 acre-feet (AF)/acre for vegetables, 6.05 AF/acre for citrus, and 10.37 AF/acre for alfalfa and sudan/pasture.

To compare actual estimated water usage in Los Angeles County by crop as estimated by using the SCE-based pump test information, actual crop acres planted each year can be multiplied by the crop demand based on the CIMIS calculation. As shown below in the revised **Table 2.5-32**, water demand in Los Angeles County based on the CIMIS calculation would have averaged 7,038 AF over the past five years. The lower of the two methods (*i.e.*, the CIMIS method, which is the most conservative method) was selected to estimate the amount of Newhall's agricultural water annually pumped for irrigation, which is 7,038 acre-feet per year.

See, Draft Additional Analysis Appendix 2.5 and Final Additional Analysis Appendix AB for specific information regarding Newhall's past and present use of agricultural water on its land in Los Angeles County.



NEWHALL RANCH
Newhall Ranch Company

L E G E N D

WELL LOCATION

IMPACT SCIENCES INC

NORTH

FIGURE 2.5-24

NEWHALL LAND AND FARMING AGRICULTURAL WATER WELLS

The agricultural land would ultimately be taken out of farming production as it is converted to non-agricultural Specific Plan land uses. Since the water is already used to support Newhall's agricultural uses, there are not expected to be any significant adverse effects resulting from the water being used to partially meet the potable demands of the Specific Plan. The amount of well water that will be used to serve the potable demands of the Specific Plan would not exceed the amount of water historically used for the agricultural uses that are taken out of production. The agricultural water would be used to meet potable water demand of the Specific Plan, in combination with CLWA SWP water supplies.

Table 2.5-32
Newhall Land and Farming Company
Los Angeles County Agricultural Water Use

Year	Acres	Crop Type	Based on CIMIS (a) Water Demand (AF)/acre	Water Use (AF)
2000	55	Alfalfa	10.37	570
	150	Sudan/pasture	10.37	1,556
	722	lsd.vegetables	7.41	5,350
		Subtotal		7,476
1999	55	Alfalfa	10.51	578
	150	Sudan/pasture	10.51	1,577
	709	lsd.vegetables	7.51	5,325
		Subtotal		7,479
1998	115	Alfalfa	9.4	1,081
	100	Sudan/pasture	9.4	940
	590	lsd.vegetables	6.71	3,959
		Subtotal		5,980
1997	160	Alfalfa	10.22	1,635
	103	Sudan/pasture	10.22	1,053
	663	lsd.vegetables	7.3	4,840
		Subtotal		7,528
1996	105	Alfalfa	10.21	1,072
	170	Sudan/pasture	10.21	1,736
	537	lsd.vegetables	7.3	3,920
		Subtotal		6,728
		Average for Period		7,038

a CIMIS = California Irrigation Management Information System. Does not include dryland farming or Christmas tree use.
b AF = acre feet

Revised Table 2.5-32
Los Angeles County Agricultural Water Use
Using Adjusted CIMIS ET Data to Allocate Actual Water Pumped

Year	Crop Type	Total Irrigated Acres	Adjusted CIMIS Water Use (af/ac)	Adjusted CIMIS Water Use (af/yr)	%of Water Use by Crop	Total Pumped Water Based on SCE (af)	Allocation of Total Pumped Water by Crop (af/yr)	Acre Feet/ Year per Acre of Crop	LA Co. Irrigated Crops (acres)	LA Co. Crop Share of Actual Pumped Water (af/yr)	LA Co. Crop Share Using Adjusted CIMIS (af/yr)
2000	Citrus (furrow)	291	6.05	1,761	12.35%	13,798	1,704	5.86			
	Citrus (micro)	811	4.54	3,682	25.83%		3,565	4.40			
	Alfalfa (flood)	55	10.37	570	4.00%		552	10.04	55	552	570
	Sudan/pasture (flood)	150	10.37	1,556	10.91%		1,506	10.04	150	1,506	1,556
	lsd. Vegetables (sprinkler)	902	7.41	6,684	46.90%		6,471	7.17	722	5,180	5,350
					100.00%		**13,798**		**927**	**7,238**	**7,476**
1999	Citrus (furrow)	291	6.13	1,784	12.56%	16,131	2,025	6.96			
	Citrus (micro)	781	4.6	3,593	25.29%		4,079	5.22			
	Alfalfa (flood)	55	10.51	578	4.07%		656	11.93	55	656	578
	Sudan/pasture (flood)	150	10.51	1,577	11.10%		1,790	11.93	150	1,790	1,577
	lsd. Vegetables (sprinkler)	889	7.51	6,676	46.99%		7,580	8.53	709	6,046	5,325
					100.00%		**16,131**		**914**	**8,492**	**7,479**
1998	Citrus (furrow)	291	5.48	1,595	13.47%	11,477	1,546	5.31			
	Citrus (micro)	743	4.11	3,054	25.80%		2,961	3.99			
	Alfalfa (flood)	115	9.4	1,081	9.13%		1,048	9.11	115	1,048	1,081
	Sudan/pasture (flood)	100	9.4	940	7.94%		911	9.11	100	911	940
	lsd. Vegetables (sprinkler)	770	6.71	5,167	43.65%		5,010	6.51	590	3,839	3,959
					100.00%		**11,477**		**805**	**5,798**	**5,980**
1997	Citrus (furrow)	291	5.96	1,734	12.12%	14,862	1,801	6.19			
	Citrus (micro)	803	4.47	3,589	25.08%		3,727	4.64			
	Walnuts (micro)	33	4.47	148	1.03%		153	4.64			
	Alfalfa (flood)	160	10.22	1,635	11.42%		1,698	10.61	160	1,698	1,635
	Sudan/pasture (flood)	103	10.22	1,053	7.35%		1,093	10.61	103	1,093	1,053
	lsd. Vegetables (sprinkler)	843	7.3	6,154	43.00%		6,390	7.58	663	5,026	4,840
					100.00%		**14,862**		**926**	**7,816**	**7,528**
1996	Citrus (furrow)	291	5.96	1,734	12.84%	13,702	1,760	6.05			
	Citrus (micro)	801	4.47	3,580	26.51%		3,633	4.54			
	Walnuts (micro)	33	4.47	148	1.09%		150				
	Alfalfa (flood)	105	10.21	1,072	7.94%		1,088	10.36	105	1,088	1,072
	Sudan/pasture (flood)	170	10.21	1,736	12.85%		1,761	10.36	170	1,761	1,736
	lsd. Vegetables (sprinkler)	717	7.3	5,234	38.76%		5,311	7.41	537	3,978	3,920
					100.00%		**13,702**		**812**	**6,826**	**6,728**
Average						**13,994**	**13,994**		**877**	**7,234**	**7,038**

CIMIS = California Irrigation Management Information System. Does not include dryland farming or Christmas tree use.
af = acre-feet; ac = acres; yr = year.

(2) Nickel Water

The applicant has secured water under contract with Nickel Family LLC in Kern County. This water is 100 percent reliable on a year-to-year basis, and not subject to the annual fluctuations that can occur in dry year conditions. The Nickel water is part of a 10,000 acre-foot quantity of annual water supply that Nickel obtained from Kern County Water Agency ("KCWA") in 2001 pursuant to an agreement between Nickel, KCWA and Olcese Water District ("Olcese"). Under that agreement, Nickel has the right to sell the 10,000 AFY to third parties both within or outside Kern County. *See*, Appendix 2.5 for copies of the applicable agreements and attachments to the agreements. Because it is not subject to reductions in dry years, the Nickel water is an extremely reliable water supply source for the Specific Plan. The water would be delivered through the Kern County Water Agency and the SWP system.[37] A point of delivery agreement between the CLWA and DWR would be required to transmit the water between the KCWA and CLWA service areas.

As shown in **Table 2.5-33**, the Nickel Water would only be needed on the Specific Plan site in years when all of the Newhall Agricultural Water has been used, which is (estimated to occur after the 20th year of project construction. Up to that point in time, the unused Nickel Water would be available for storage in groundwater banking programs on an annual basis.

As indicated above, the Newhall Agricultural Water to be used as a potable water source for the Specific Plan (*i.e.*, 7,038 AFY) would be completely committed to the Specific Plan by the 21st buildout year. At that time, approximately 224 of the 1,607 acre-feet per year of Nickel Water purchased by the applicant would be needed to meet the Specific Plan's potable water demand. By the 25th buildout year, both the Agricultural Water and the Nickel Water would be fully committed to the Specific Plan. When not needed to meet the potable water demand of the Specific Plan (in buildout years 1 through 20), the 1,607 AFY of Nickel Water would be available for storage in groundwater banking programs like the Semitropic Groundwater Bank, in which the applicant has purchased 55,000 AF of storage capacity. At an annual storage rate of 1,607 AF, a total of 35,598 AF of Nickel Water could be stored in groundwater banking facilities by buildout year 24. Thereafter, the stored Nickel Water would be available for use on the Specific Plan site during dry years, thereby avoiding the need for additional primary potable water supplies beyond these sources. At buildout of the Specific Plan, it is expected that approximately 865 AF of water from the Semitropic Groundwater Bank would be needed in a dry year to meet potable demands of the Specific Plan. Dry years are projected to occur once every four years. At this demand rate, the 35,598 AF of Nickel Water in storage would be available to meet this need for over 160 years.

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37 California State Water Code §1810 requires that any available capacity in any water conveyance facility be made available if needed. Specifically, the Code section states "...neither the state, nor any regional or local public agency may deny a bona fide transferor of water the use of a water conveyance facility which has unused capacity, for the period of time for which that capacity is available, if fair compensation is paid for that use..."

Table 2.5-33
Nickel Water Use and Storage

Construction Year	Specific Plan Potable Water Demand (AFY)	Newhall Agricultural Water Supply Available to Specific Plan (AFY)	Potable Water Source Applied to Specific Plan	Amount of Nickel Water in Storage (AF)
0	0	7,038	Newhall Agricultural Water	
1	346	6,692	"	1,607
2	692	6,346	"	3,214
3	1,037	6,001	"	4,821
4	1,383	5,655	"	6,428
5	1,729	5,309	"	8,035
6	2,075	4,963	"	9,642
7	2,421	4,617	"	11,249
8	2,766	4,272	"	12,856
9	3,112	3,926	"	12,856
10	3,458	3,580	"	16,070
11	3,804	3,234	"	17,677
12	4,150	2,888	"	19,284
13	4,495	2,543	"	20,891
14	4,841	2,197	"	22,498
15	5,187	1,851	"	24,105
16	5,533	1,505	"	25,712
17	5,879	1,159	"	27,319
18	6,224	814	"	27,319
19	6,570	468	"	30,533
20	6,916	122	"	32,140
21 [a]	7,262	(224)	Nickel Water	33,523
22	7,608	(570)	"	34,561
23	7,953	(915)	"	35,252
24 [b]	8,299	(1,261)	"	35,598
25	8,645	(1,607)	"	35,598

[a] *Starting in Year 21, the Newhall Agricultural Water will be fully committed to the Specific Plan. Thereafter, Nickel Water will be needed to meet the potable demands of the Specific Plan. By year 25, both the Newhall Agricultural Water and the Nickel Water would be fully committed to the Specific Plan.*

[b] *By year 24, up to 35,598 AF of Nickel Water would be in storage.*

Kern River Restoration Program. Nickel acquired the Nickel water as a result of KCWA's Kern River Restoration and Water Supply Program ("the Restoration Program"). KCWA proposed the Restoration Program for the overall purpose of generating a broad local water supply, environmental and community benefits and drinking water benefits within the metropolitan Bakersfield area. The program included four primary components: (i) acquisition of the high flow Kern River Lower Water Right, including associated storage at Lake Isabella; (ii) construction of enough urban area water wells to achieve a target flow capacity in the Kern River; (iii) construction of water quality exchange facilities; and (iv)

construction and acquisition of local facilities to enhance groundwater recharge and recovery opportunities. In short, the Restoration Program would allow KCWA to acquire the rights to certain Kern River high flow flood waters and create the physical and regulatory infrastructure necessary to capture and store those flood waters during wet years to provide a reliable water source for urban, agricultural, environmental and recreational uses during dry years. KCWA approved the Restoration Program in September 2000. A copy of the Initial Study and Proposed Negative Declaration for the Restoration Program is incorporated by reference and provided in Appendix 2.5.

The key component of the Restoration Program was the acquisition of the high flow Kern River Lower Water Right, also known as the La Hacienda and Garces pre-1914 water right to the Kern River ("the Water Right"). The Water Right water is estimated to be available when the Kern River is at or above 120 percent of normal runoff, or in about one out of every five years. While the Water Right delivery amounts are highly variable, the long-term average annual yield is estimated at 40,000 AFY. *See,* Appendix 2.5 for a copy of the Lower Kern River Water Rights agreement.

When the Restoration Program was proposed, three different entities held an interest in the Water Right: (i) Garces Water Company ("Garces"); (ii) Olcese; and (iii) Nickel.[38] Garces owned an undivided interest in the Water Right. Olcese owned the remaining interest; however, pursuant to a 1981 agreement between Olcese and Nickel's predecessors in interest, Olcese's interest in the Water Right was subject to Nickel's right to use any portion of Olcese's water that was excess to Olcese's needs. Consequently, KCWA's proposal to acquire the Water Right as part of the Restoration Program amounted to a proposal to acquire it from Garces, Olcese and Nickel. Upon approval of the Restoration Program, KCWA acquired all three parties' interests in the Water Right, acquiring Garces' interest first and then Olcese's and Nickel's.

KCWA acquired both Olcese's and Nickel's respective interests in the Water Right pursuant to the "Contract to Transfer the Kern River Lower River Water Rights", made as of January 23, 2001 ("the Water Right Contract").

In return for transferring its interest in the Water Right to KCWA, Nickel received a substantial cash payment as well as certain non-cash consideration, including the 10,000 AFY of KCWA water, which

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38 Garces, Olcese and Nickel were the latest in a long line of legal owners of the Water Right, the original ownership being established in the Miller-Haggin Agreement of July 28, 1888. For a complete discussion of the contractual and ownership history of the Water Right, please see the letter from Kronick, Moskovitz, Tiedemann & Girard to Thomas N. Clark, dated February 22, 2001, provided in Appendix 2.6 to this report.

Nickel was then free to sell to third parties. The provisions of the Water Right Contract are discussed in greater detail below.[39]

Water Right Contract. Pursuant to the Water Right Contract, Nickel and Olcese agreed to transfer to KCWA all of their right, title and interest in the Water Right, as more completely described in Exhibit A-1 of the Water Right Contract (*See*, Appendix 2.5). In return, Nickel and Olcese received cash payments and other consideration. *See*, Water Right Contract, Sections 4.2, 4.3 and 4.4. As discussed above, Nickel's non-cash consideration for the transfer included 10,000 AFY of KCWA water at the Tupman turnout of the California Aqueduct (Reach 13B as illustrated on **Figure 2.5-25, State Water Project Reaches**). The Water Right Contract identifies that water as the "Agency Transfer Water", and defines it as: "10,000 acre-feet of water annually, to be provided by the Agency to Nickel for delivery and sale to third parties from the California Aqueduct." *Id.* at Sections 1.10 and 4.4. Section 2.1 of the Water Right Contract states that Nickel intends to sell the Agency Transfer Water "both within and outside of Kern County."

Pursuant to the terms of the contract, the 10,000 AFY delivered to Nickel must be high quality water, acceptable for delivery into the California aqueduct. *Id.* at Section 4.6. In addition, delivery of the entire 10,000 AFY to Nickel is mandatory, unaffected by annual hydrologic conditions. *Id.* at Section 4.4. Consequently, the 10,000 AFY entitlement is not subject to unpredictable reductions in quality or quantity typical of other water sources. These characteristics make the Nickel water a dependable water supply source.

As shown by the definition of "Agency Transfer Water", the parties to the Water Right Contract understood that Nickel would sell the 10,000 AFY to third parties. Other provisions of the contract indicate that Nickel's right to do so is unconditional. For example, Section 4.9 states: "Any sale of the Agency Transfer Water shall be at the sole discretion and direction of Nickel." The contract also confirms that KCWA had a legal right to the Agency Transfer Water and the legal right to exchange the water as provided in the Water Right Contract. *Id.* at Section 7.2(i). In addition, Section 4.9 of the Water Right Contract, "Agency Transfer Water Sales", states that KCWA may assist Nickel in marketing the Agency Transfer Water and that such assistance may include "entering into contracts for the sale of the Agency Transfer Water and efforts to obtain the approval, cooperation and assistance of DWR and the State

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39 KCWA's funding for the Restoration Program was made available by the California "Safe Drinking Water, Clean Water, Watershed Protection, and Flood Protection Act." The Governor's Budget Act for 2000, Chapter 52, Statutes of 2000, appropriated to the Department of Water Resources local assistance grant funds in the amount of $161,544,000.00, payable from the interim Reliable Water Supply and Water Quality Infrastructure and Management Subaccount. The Restoration Program was selected to receive $23,000,000.00 from the subaccount, and a significant portion of that money went to acquire the Water Right from Garces, Olcese and Nickel.

Water Contractors in obtaining any necessary approvals from regulatory agencies to effect such sales or transfers."

Other provisions of the Water Right Contract further increase the availability and reliability of the Nickel water as a Specific Plan water supply source. Section 4.4 of the contract states that, in delivering the water for Nickel's use, KCWA "shall use its best efforts to obtain and maintain approvals from the DWR for delivery of any Agency Transfer Water into the California Aqueduct, and if such approvals are not obtained after reasonable efforts the parties shall, in good faith, negotiate alternative mechanisms for delivery of Agency Transfer Water." Section 4.7 states: "The ten thousand (10,000) acre-feet of Agency Transfer Water provided to Nickel shall be transported within the California Aqueduct to the full extent of the Agency's right to use [the] Aqueduct." And, pursuant to Section 4.8, KCWA agreed to "schedule all Agency Transfer Water deliveries with the DWR at the same time and in the same manner as the Agency schedules deliveries of SWP Entitlement Water to the Agency's Member Units[.]"[40]

Newhall/Nickel Water Purchase Agreement. The applicant obtained an interest in the Nickel Water pursuant to the "Option and Water Purchase Agreement," executed between the applicant and Nickel in October 2002. A copy of the Water Purchase Agreement is provided in Appendix 2.5~~ to this report~~.

Under the terms of the Water Purchase Agreement, the applicant acquired an option to purchase the use of 1,607 AFY of the 10,000 AFY of water that Nickel obtained from KCWA. The applicant has exclusive use of the 1,607 AFY of water on an annual basis for an initial term of 35 years. After the first 35-year term expires, the applicant may extend the term of the Water Purchase Agreement for another 35 years, provided that certain conditions are met. The applicant is obligated to purchase, and Nickel is obligated to sell, the 1,607 AFY of water each year for a purchase price of $763,245 for the first annual delivery of the Nickel water, with purchase price increases each subsequent year by a set multiplier based on the price in effect the previous year.

The terms of the Water Purchase Agreement also require that Nickel will make the Nickel water available to the applicant at the Tupman turnout, as defined in the KCWA Agreement. Nickel and the applicant have also agreed to jointly request that KCWA and CLWA enter into a "point of delivery" agreement with DWR approving delivery of a portion of KCWA's SWP Table A water entitlement, used as SWP exchange water, to CLWA so that the Nickel water can be delivered to CLWA for the entire 35-year term.

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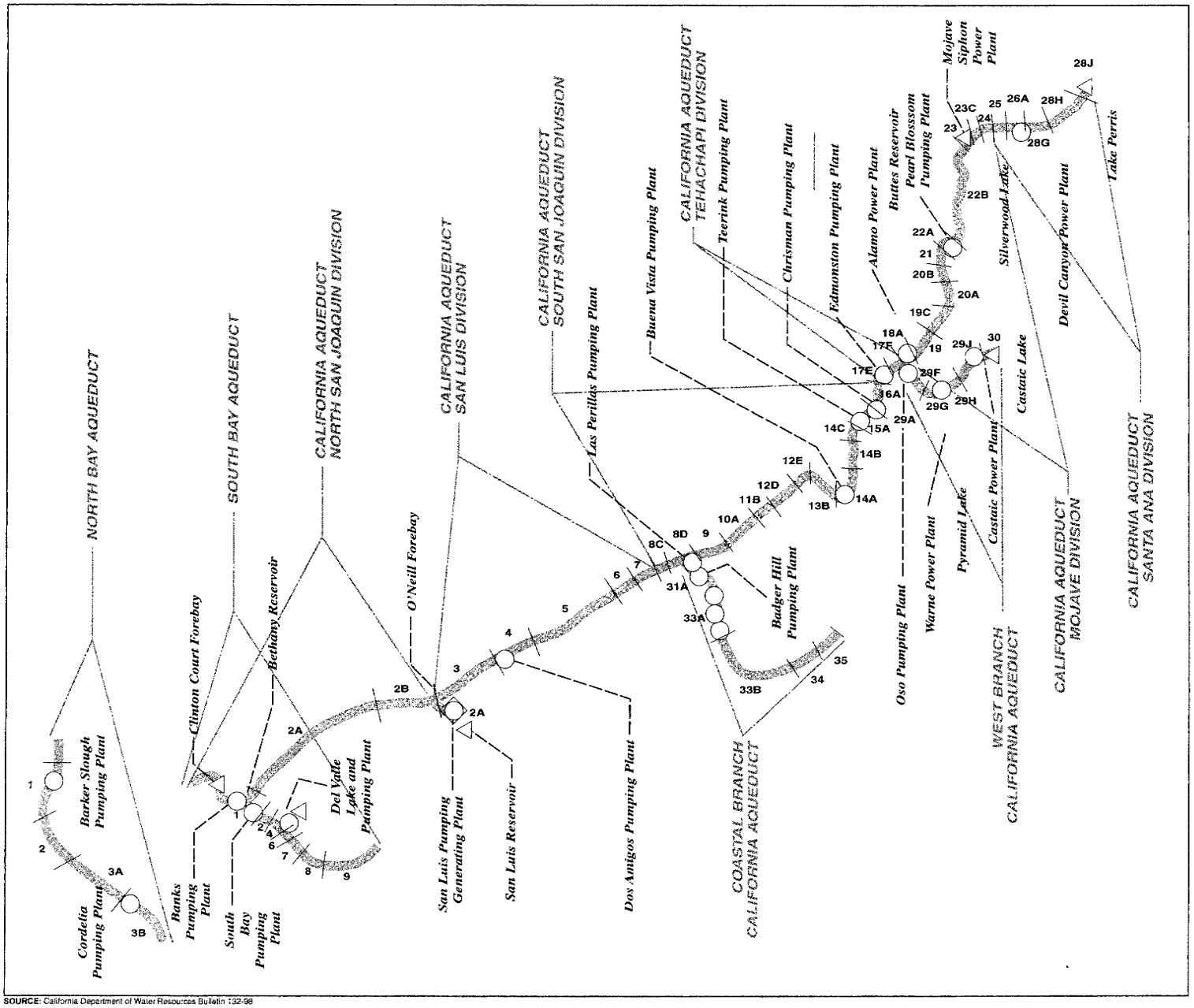
40 Copies of all agreements relating to the Nickel Water are incorporated by reference and provided in Appendix 2.5 to this report.



SOURCE: California Department of Water Resources Bulletin 132-98

NEWHALL RANCH™
Newhall Ranch Company

L E G E N D

NORTH BAY AQUEDUCT
- 1 Barker Slough through Fairfield/Vacaville Turnout
- 2 Fairfield/Vacaville Turnout to Cordelia Forebay
- 3A Cordelia Forebay through Benicia and Vallejo Turnouts
- 3B Cordelia Forebay through Napa Turnout Reservoir

SOUTH BAY AQUEDUCT
- 1 Bethany Reservoir through Altamont Turnout
- 2 Altamont Turnout through Patterson Reservoir
- 4 Patterson Reservoir to Del Valle Junction
- 5 Del Valle Junction through Lake Del Valle
- 6 Del Valle Junction through South Livermore Turnout
- 7 South Livermore Turnout through Vallecitos Turnout
- 8 Vallecitos Turnout through Alameda-Bayside Turnout
- 9 Alameda-Bayside Turnout through Santa Clara Terminal Facilities

CALIFORNIA AQUEDUCT

North San Joaquin Division
- 1 Delta through Bethany Reservoir
- 2A Bethany Reservoir to Orestimba Creek
- 2B Orestimba Creek to O'Neill Forebay

San Luis Division
- 3A San Luis Dam, Reservoir and Pumping-Generating Plant
- 3 O'Neill Forebay to Dos Amigos Pumping Plant
- 4 Dos Amigos Pumping Plant to Panoche Creek
- 5 Panoche Creek to Five Points
- 6 Five Points to Arroyo Pasajero
- 7 Arroyo Pasajero to Kettleman City

South San Joaquin Division
- 8C Kettleman City through Milham Avenue
- 8D Milham Avenue through Avenal Gap
- 9 Avenal Gap through Twisselman Road
- 10A Twisselman Road through Lost Hills
- 11B Lost Hills to 7th Standard Road
- 12D 7th Standard Road through Elk Hills Road
- 12E Elk Hills Road through Tupman Road
- 13B Tupman Road to Buena Vista Pumping Plant
- 14A Buena Vista Pumping Plant through Santiago Creek
- 14B Santiago Creek through Old River Road
- 14C Old River Road to Teerink Pumping Plant
- 15A Teerink Pumping Plant to Chrisman Pumping Plant
- 16A Chrisman Pumping Plant to Edmonston Pumping Plant

CALIFORNIA AQUEDUCT (continued)

Tehachapi Division
- 17E Edmonston Pumping Plant to Porter Tunnel
- 17F Porter Tunnel to Junction, West Branch, California Aqueduct

Mojave Division
- 18A Junction, West Branch, California Aqueduct through Alamo Power Plant
- 19 Alamo Power Plant to Fairmont
- 19C Buttes Junction through Buttes Reservoir
- 20A Fairmont through 70th Street West
- 20B 70th Street West to Palmdale
- 21 Palmdale to Littlerock Creek
- 22A Littlerock Creek to Pearblossom Pumping Plant
- 22B Pearblossom Pumping Plant to West Fork Mojave River
- 23 West Fork Mojave River to Silverwood Lake
- 23C Mojave Siphon Power Plant
- 24 Cedar Springs Dam and Silverwood Lake

Santa Ana Division
- 25 Silverwood Lake to South Portal, San Bernardino Tunnel
- 26A South Portal, San Bernardino Tunnel through Devil Canyon Power Plant
- 28G Devil Canyon Power Plant to Barton Road
- 28H Barton Road to, Lake Perris
- 28J Perris Dam and Lake Perris

West Branch, California Aqueduct
- 29A Junction, West Branch, California Aqueduct through Oso Pumping Plant
- 29F Oso Pumping Plant through Quail Embankment
- 29G Quail Embankment through Warne Power Plant
- 29H Pyramid Dam and Lake
- 29J Pyramid Lake through Castaic Power Plant
- 30 Castaic Dam and Lake

Coastal Branch, California Aqueduct
- 31A Avenal Gap to Devil's Den Pumping Plant
- 33A Devil's Den Pumping Plant through Tank 1
- 33B Tank 1 through Cherro Valley Turnout
- 34 Cherro Valley Turnout through Lopez Turnout
- 35 Lopez Turnout through Guadalupe Turnout

IMPACT SCIENCES INC
NOT TO SCALE
NORTH

FIGURE 2.5-25
STATE WATER PROJECT REACHES

In addition, Nickel has agreed to cooperate with the applicant in obtaining any other necessary approvals for the transfer of the Nickel water for use by the applicant. Nickel has further acknowledged that the applicant intends to use the Nickel water on the applicant's property within the CLWA and/or Valencia Water Company service areas.

(3) Semitropic Groundwater Banking Project

Semitropic Water Storage District (the "District") provides SWP supplies for agricultural irrigation on land located in Kern County immediately east of the California Aqueduct. Using groundwater storage capacity of one million acre-feet, the District has developed a groundwater banking program. The District operates the program by taking additional SWP supplies in wet years and returning the water in dry years. As part of this dry-year return, the District can leave its entitlement in the Aqueduct for use by its banking partners. The District has also constructed facilities so that groundwater can be pumped into the District's canal and, through reverse pumping plants, actually delivered to the California Aqueduct. The District currently has five banking partners. The total amount of storage under contract is approximately one million acre-feet. The stored water may be extracted in annual amounts of up to 90,000 acre-feet for all banking partners.

The District has recently completed environmental documentation to construct new storage and return facilities. These new facilities will provide the District with the additional capability to extract and pump-back to the California Aqueduct approximately 200,000 acre-feet annually. The total return capability of the District in dry years is expected to be approximately 290,000 acre-feet.

The project applicant has entered into an agreement to reserve and purchase water storage capacity of up to 55,000 acre-feet in the Semitropic Water Storage District Groundwater Banking Project (*See*, Appendix 2.5 for a copy of the agreement). Sources of water that can be stored in this banking project include, but are not limited to, Nickel Water, Newhall/SWP supplies, Castaic Creek flood flows, when available, CLWA SWP entitlement and other CLWA supplies. The stored water could be extracted in dry years in amounts of up to 4,950 AFY from the project. This supply will be used as a water source for the Specific Plan in dry years only.

(d) Supplemental Water Supplies

As summarized above, there are sufficient water supplies to meet the Newhall Ranch Specific Plan demand. However, it remains important for the Santa Clarita Valley to hedge against potential regulatory and operational risks that may adversely affect the reliability of water supplies over the years.

Although the region has planned and developed water supplies to maintain reliability even with a repeat of the recent statewide droughts, the Santa Clarita Valley water agencies are faced with impacts due to the potential future promulgation of increasingly stringent water quality standards, litigation over water supplies and allocations, environmental constraints and changes in SWP operational criteria. These regulatory and operational uncertainties are many times unanticipated developments and not easily quantifiable. However, these types of uncertainties have occurred throughout the history of California's development of water resources. It is expected that they will continue in the future. A major challenge in water planning is to determine the appropriate measures of insurance to safeguard against these uncertainties to enhance supply reliability. One way of providing supply insurance against such risks is to secure additional or supplemental water supplies. The following sections identify some of the important supplemental water supplies that could be available to serve the Newhall Ranch Specific Plan.

(1) CLWA SWP and Other Supplies

CLWA is the water wholesaler that provides imported water to the Santa Clarita Valley through the SWP. CLWA currently holds SWP entitlement to 95,200 AFY. The reliability of SWP water is based on the parameters presented in the State Department of Water Resources (DWR) "DWRSIM" model. The model is used by DWR to predict reliability of the SWP. The DWRSIM model indicates that in an average year approximately 59.7 percent of the entitlement to SWP water would be available. In a dry year, the model indicates that approximately 39.8 percent of the SWP entitlement would be available. In any given year, the actual amount of SWP water deliveries could be above or below these model projections. For further information regarding the SWP, CLWA SWP supplies, and SWP deliveries and reliability, please refer to **Subsection 2.5.4.4** of this report.

The Valencia Water Company is one of four retail water purveyors in the Santa Clarita Valley. The Specific Plan site is located within CLWA's service area (*See*, **Figure 2.5-1**, previous), and partially within the current service area of the Valencia Water Company (*See*, **Figure 2.5-3**,previous). Valencia Water Company is an investor-owned water utility regulated by the California Public Utilities Commission ("CPUC").

CLWA's service area includes Newhall Ranch. The Valencia Water Company has stated that it will serve the Specific Plan site, that it is the most logical water retailer to provide water service to the Specific Plan site, and that it would take the steps necessary to add the entire Specific Plan site to its service area in accordance with applicable PUC rules and regulations. Given the combined resources of these two water agencies, one of the supplemental water sources for the Specific Plan could be water delivered by CLWA

through its SWP facilities. The amount of SWP water to be used for the Specific Plan as a supplemental source, if any, would vary annually, depending upon available supplies and need.

As a SWP contractor, CLWA may also obtain additional SWP supplies from or through DWR in connection with other programs. The other SWP supplies include the Turnback Water Pool program, the Interruptible water program, Surplus water provisions and Carryover water. These SWP supplies are available in average/normal years as water supply sources for the Saugus Groundwater Banking/ASR program and the Semitropic Groundwater Banking project. However, the CLWA supplies are only considered a supplemental source for Newhall Ranch, because the applicant has taken steps to secure its own primary potable water supplies. For further information regarding CLWA SWP entitlement and other SWP supplies, please refer to **Section 2.5.4** of this report.

(3) Newhall/SWP Water Supplies

The Newhall Land and Farming Company has entered into two agreements for the Reservation of Water ("Agreement or Agreements") effective March 2001, with two owners of land located within the boundaries of the Berrenda Mesa Water District in Kern County. As landowners within the Berrenda Mesa Water District, the two owners hold rights to water supply from the District that are derived from the SWP through DWR and the Kern County Water Agency ("KCWA"). Copies of the two Agreements are provided in Appendix 2.5 to this report.

The two owners have determined that 7,648 acre-feet of SWP entitlement available to them from the District is surplus to their permanent needs (*i.e.*, "surplus SWP water"). The owners wish to market the surplus SWP water through the District for use by Newhall pursuant to the terms of the Agreements. Under the terms of the Agreements, the parties acknowledge that the Berrenda Mesa Water District will be the party to execute the definitive agreements for the sale of the surplus SWP water from the District to the appropriate SWP contractor for the benefit of Newhall, and that, at such time as the Agreements are consummated, Berrenda Mesa Water District is required to follow its rules, regulations and procedures with respect to the sale of the surplus SWP water.

For purposes of the Agreements, the surplus SWP water includes all rights and costs associated with the surplus SWP water, including without limitation, the associated storage rights in SWP reservoirs and all rights and capacity in the California Aqueduct necessary to convey the surplus SWP water to the District's historic point(s) of diversion on the California Aqueduct.

Pursuant to the terms of the Agreements, Newhall has made arrangements to: (a) reserve the surplus SWP water; (b) compensate the two landowners for reserving the surplus SWP water and for refraining from selling or offering it; and (c) ultimately to purchase the surplus SWP water through an SWP contractor for the benefit of the Newhall Ranch Specific Plan. Newhall's acquisition of the surplus SWP water is intended to be one component in securing water supplies for its property and, in doing so, increasing the availability and reliability of water in the CLWA water service area where the Specific Plan site is located.

As part of the Agreements, the parties further acknowledge that, in order to finalize the intended sale of the surplus SWP water from the Berrenda Mesa Water District to an SWP contractor for the benefit of Newhall, several actions must be taken, including: (a) the execution of an amendment to the existing Agreement between the District and the Kern County Water Agency; (b) the execution of an amendment to the existing water supply agreement between the Kern County Water Agency and DWR; (c) the execution of a purchase and sale agreement for the surplus SWP water between the District and the SWP contractor designated by Newhall; and (d) DWR's approval of the water transfer to the designated SWP contractor. However, the parties further agree to cooperate with each other to accomplish the above-actions, including the sellers' agreement to use their diligent good-faith reasonable efforts to cooperate with and reasonably assist Newhall in consummating the ultimate purchase of the surplus SWP water.

For purposes of this analysis, Newhall's purchase of rights to the 7,648 AFY of surplus SWP water entitlement would be reduced in average/normal years to approximately 59.7 percent of entitlement (or 4,566 AFY) and in dry years to approximately 39.8 percent of entitlement (or 3,044 AFY). This analysis is consistent with DWR's modeling projections using the DWRSIM model. In any given year, the actual amount of SWP water deliveries could be above or below these model projections.

(4) Castaic Creek Flood Flows (Stormwater)

Introduction. This section summarizes the current proposal made by United Water Conservation District, The Newhall Land and Farming Company, the County of Los Angeles and Newhall County Water District (collectively known as the "Downstream Water Users") to DWR for the beneficial use of local flood flows originating from Castaic Creek. This section also provides important background information regarding the conservation, storage and release of the Castaic Creek flood flows for the beneficial use of that water by the Downstream Water Users. The Newhall Land and Farming Company ("Newhall"), one of the named Downstream Water Users, intends to use its contractual rights to a percentage share of the Castaic Creek flood flows in connection with the Newhall Ranch Specific Plan. Consistent with the trial court's decision and Writ, this section includes information showing how

Newhall's contractual rights to the flood flows could be used as a supplemental water supply source for groundwater banking programs.

As mentioned above, subject to approval by DWR, Castaic Creek flood flows could be used in normal/average years, when available, as a water source for the Semitropic Groundwater Banking project (through a water transfer), or for the Saugus Groundwater Banking/ASR program from CLWA through Valencia Water Company. This supply is variable; in some years, the flood flows are not available.

Proposal. The Downstream Water Users have submitted a written proposal to DWR involving the conservation of the Castaic Creek flood flows for use in the Santa Clara River watershed that would otherwise waste to the ocean. As discussed in detail below, the proposal involves an addendum to the existing 1978 Agreement between DWR and the Downstream Water Users. Under the existing 1978 Agreement, the flood flows are stored in Castaic Dam and are capable of being released from the Outlet Works of Castaic Dam into Castaic Creek to flow into the Santa Clara River. The addendum would add two additional locations where stored Castaic Creek flood flows could be delivered. Under the proposed addendum, delivery of the Castaic Creek flood flows would be provided at not only the Castaic Dam Outlet Works, but also at the SWP turnout facilities in Castaic Lake and the Pyramid Dam Outlet Works. The Downstream Water Users have submitted a written proposal, along with the following addendum language, to DWR:

> *"Delivery of flood flows, as defined in Section B.5.b. [1978 Agreement], shall be provided at the following locations pursuant to the instruction and operating procedure described in this Agreement: Castaic Dam Outlet Works, State Water Project turnout facilities in Castaic Lake and Pyramid Dam Outlet Works."*

Based on historical records, stored Castaic Creek flood flows have not been released in most years to Castaic Creek and the Santa Clara River and, therefore, the proposal would not have any significant impact on existing conditions in Castaic Creek or the Santa Clara River. In addition, the proposal would not require modification or construction of any new facilities. The proposal simply acknowledges that the existing 1978 Agreement, which currently requires that the stored flood flows be released into Castaic Creek, should be changed to add two additional points of diversion of the water so that the Downstream Water Users are able to more beneficially use the stored flood flows.

In addition to the proposed addendum, the Downstream Water Users have submitted a letter to the director of DWR (Thomas M. Hannigan) indicating their mutual support for the proposed addendum.

The Downstream Water Users' written proposal to DWR, including exhibits, is included in its entirety in Appendix 2.5 ~~to this Additional Analysis~~.

Background. The Downstream Water Users are parties to the 1978 Agreement with DWR to store natural inflow from storms captured and stored by Castaic Dam. Castaic Dam is a state-owned facility operated by DWR as part of the West Branch of the SWP facilities. In addition to serving as the terminal reservoir for the West Branch, construction of the dam was recognized as impeding the natural flows generated by Castaic Creek from annual storm events occurring in the watershed above Castaic Dam. In the early stages of the SWP, it was apparent that planners of the SWP did not propose to store these flows as part of the SWP. Over the years, discussions were held between DWR and the impacted Downstream Water Users, which culminated in the 1978 Agreement.

The 1978 Agreement provides for the storage, conservation and release of all natural inflow originating in the watershed above Castaic Dam. The 1978 Agreement defines two types of natural inflow: local percolated water ("local water") and local flood flows ("flood flows"). Local water is defined as those flows originating in the watershed above Castaic Dam occurring at a rate below 100 cubic feet per second ("cfs"). Flood flows are defined as those flows occurring at a rate above 100 cfs and are the subject of the proposed addendum with DWR.

1966 Agreement/1967 Agreement. Prior to construction of the Castaic Dam, it was recognized that construction of the dam would capture the natural flow and underflow of Castaic Creek and interfere with the historic use of these waters by Newhall and other Downstream Water Users. Therefore, in 1966, DWR and Newhall entered into an agreement relating to the natural flow of Castaic Creek. The purpose of the 1966 Agreement was to preserve to Newhall and other downstream users the reasonable and beneficial flows of Castaic Creek to the extent their uses existed before construction of the Castaic Dam. The 1966 Agreement sets forth the requirements for the release of natural flow that would preserve and satisfy the alluvial capacity of Castaic Creek. In addition, the United Water Conservation District, one of the Downstream Water Users, entered into an agreement with DWR in 1967. Like the 1966 Agreement, United's agreement with DWR was entered into to allay United's concerns that construction of the SWP facilities may interfere with United's historic use of these waters.

Both of these agreements (1966/1967 agreements) are part of the Downstream Water Users' proposal to DWR (Exhibits 1 and 2) and are included in Appendix 2.5 to this Additional Analysis.

1978 Agreement. In 1978, DWR entered into the agreement with the Downstream Water Users regarding the conservation of flood flows originating in the watershed above Castaic Dam that, without the dam,

would have wasted to the ocean without being beneficially used ("the 1978 Agreement"). The purpose of the 1978 Agreement is to ensure that locally generated waters would be conserved for beneficial use within the Santa Clara River watershed.

The 1978 Agreement contains provisions relating to the release of local waters and flood flows, as defined, from October 1 through October 30 of each year. Local water is released in an amount that approximately equals the amount of water entering Castaic Lake when inflow is less than 100 cfs. However, when the local water entering the reservoir exceeds 100 cfs and sufficient storage capacity exists in Castaic Dam, releases to Castaic Creek are discontinued and all inflow is stored in the reservoir. The 1978 Agreement assumes that 25 percent of the total inflow in excess of 100 cfs would have historically percolated into the groundwater basin and that 75 percent of the total would have wasted to the ocean. This water is defined as flood flows because it is produced during storm events that generate runoff in excess of the ability of that water to percolate into of the groundwater basin and, if not captured, would waste to the ocean.

Local water and flood flows entering Castaic Dam from May 1 through September 30 are also stored, subject to the terms of the 1978 Agreement. Fees and charges are specified in the 1978 Agreement. Any stored natural inflow remaining in Castaic Dam after May 1 of each year becomes the property of DWR.

The 1978 Agreement is part of the Downstream Water Users' proposal to DWR (Exhibit 3) and is included in Appendix 2.5 ~~to this Additional Analysis~~.

October 1978 Agreement. The specific percentage allocation of stored flood flows among the Downstream Water Users is set forth in a separate agreement entered into by the Downstream Water Users, dated October 24, 1978. The allocation is set forth in **Table 2.5-34**.

Table 2.5-34
Castaic Creek Allocation (by percentage)

Downstream Water Use	Allocation (%)
United Water Conservation District	48.000%
The Newhall Land and Farming Company	44.867%
The County of Los Angeles	4.471%
Newhall County Water District	2.662%

Source: October 24, 1978 Agreement among Downstream Water Users (See, Appendix 2.5 [Exhibit 4]).

Under this agreement, if one of the Downstream Water Users elects not to receive its share of the stored water, the others may receive the water on a pro-rata basis. The basic intention of this agreement, again, is to minimize the loss of flood flows to the ocean and to ensure, to the extent possible, the beneficial use of the water within the Santa Clara River watershed.

The State Water Resources Control Board ("SWRCB") has long recognized the rights of the Downstream Water Users as set forth in the October 1978 Agreement and also the rights of the parties to amend the agreement.

Operational Procedures For Implementing Proposal. The Downstream Water Users maintain existing records necessary to carry out the operational requirements of this proposal. When storage capacity exists in Castaic Dam and flood flows are generated, the Downstream Water Users would promptly notify DWR and designate the location for delivery of the stored flood flows. Three of the four Downstream Water Users (the County of Los Angeles, Newhall County Water District and The Newhall Land and Farming Company) desire to have their pro-rata share of the flood flows delivered at SWP turnouts located in Castaic Dam. DWR would account for and credit the delivery of flood flows. The United Water Conservation District, one of the Downstream Water Users, has proposed a method of operation for delivery of their share of the flood flows to the Pyramid Lake Reservoir.

Table 2.5-35, provides information regarding the occurrence of flood flows from 1977 through 2000. For the most part, delivery of flood flows would occur during wet and average year weather cycles when surplus SWP water is expected to be available from the SWP. As a result, the Downstream Water Users' proposal would not adversely impact DWR or increase costs for other SWP contractors, because SWP water supplies would not be limited in wet years when flood flows are generated. As shown on **Table 2.5-35**, Newhall's allocated share of the Castaic Creek flood flows varies from a low of "0" in some years to a high of "30,257" AFY in 1978. **Table 2.5-35** also shows that Newhall's average share of the Castaic Creek flood flows is 7,043 acre-feet in wet years.

Benefits of the Flood Flows. The opportunity for using the Castaic Creek flood flows is consistent with water planning objectives of increased reliability, improved water quality, conjunctive use and voluntary water transfers. In addition, by adding delivery of flood flows at two additional locations, the use of the flood flows will, among other things: (a) conserve flood flows that occur during high run-off periods for use within the Santa Clara River watershed, which prevents the water from being wasted to the ocean; (b) provide opportunities for the Downstream Water Users to implement conjunctive use programs that would store flood flows during wet years in a groundwater basin for later use during dry years; (c) direct delivery of flood flows during wet and average years when a significant quantity of water is present in

the Santa Clara River, and when the Downstream Water Users are experiencing surplus water supplies with respect to SWP contractor requests for SWP supplies; (d) not result in any physical change to Castaic Creek, the Santa Clara River or the environment primarily because flood flows historically have not been released to the Santa Clara River under existing conditions; (e) not increase the costs to other SWP contractors; and (f) resolve long-standing discussions between DWR and the Downstream Water Users over the use of local flood flows. The use of the flood flows, as proposed, is supported by all of the Downstream Water Users, including United Water Conservation District (*See*, Appendix 2.5).

The potential of utilizing Castaic Creek flood flows, when available, was recently demonstrated in March 2001. At or about that time, CLWA and the United Water Conservation District (United) agreed, subject to approval by DWR, that United's share of this year's flood flows could be credited to CLWA, in return for CLWA providing replacement water to United in some future year. (The amount of the flood flows in 2001 was a total of approximately 10,000 acre-feet.) For further information regarding the proposed water transfer involving Castaic Creek flood flows, please refer to Appendix 2.5 ~~of this report~~.

Table 2.5-35
Historical Assessment of Conserved Castaic Creek Flood Flows

Water Year [1]	Natural Inflows [acre-feet]	Flood Flows [acre-feet]	Late [2] Flood Flows [acre-feet]	Total Flood Flows [acre-feet]	Net [3] Flood Flows [acre-feet]	Flood Flow Allocations				Total NLF/LA County/ NCWD Flood Flows [acre-feet]
						UWCD 48% [acre-feet]	NLF 44.86% [acre-feet]	LA County 4.471% [acre-feet]	NCWD 2.662% [acre-feet]	
1977	752	0	0	0	0	0	0	0	0	0
1978	92,780	89,592	325	89,917	67,438	32,370	30,257	3,015	1,795	35,068
1979	31,440	19,641	0	19,641	14,731	7,071	6,609	659	392	7,660
1980	54,158	47,625	101	47,726	35,794	17,181	16,060	1,600	953	18,613
1981	6,186	628	0	628	471	226	211	21	13	245
1982	8,930	3,544	0	3,544	2,658	1,276	1,193	119	71	1,382
1983	78,010	74,287	3,020	77,307	57,981	27,831	26,014	2,592	1,543	30,150
1984	10,582	2,106	0	2,106	1,580	758	709	71	42	822
1985	3,361	0	0	0	0	0	0	0	0	0
1986	20,005	13,867	0	13,867	10,400	4,992	4,666	465	277	5,408
1987	1,212	0	0	0	0	0	0	0	0	0
1988	4,401	807	0	807	605	290	272	27	16	315
1989	919	0	0	0	0	0	0	0	0	0
1990	540	0	0	0	0	0	0	0	0	0
1991	6,719	4,375	0	4,375	3,281	1,575	1,472	147	87	1,706
1992	29,409	22,631	0	22,631	16,973	8,147	7,615	759	452	8,826
1993	81,264	77,722	0	77,722	58,291	27,980	26,154	2,606	1,552	30,312
1994	6,424	502	0	502	377	181	169	17	10	196
1995	57,914	53,363	0	53,363	40,022	19,211	17,957	1,789	1,065	20,812
1996	7,105	1,654	0	1,654	1,241	596	557	55	33	645
1997	9,028	3,918	0	3,918	2,938	1,410	1,318	131	78	1,528
1998	68,846	66,597	11,639	78,236	58,677	28,165	26,327	2,623	1,562	30,512
1999	7,793	238	0	238	179	86	80	8	5	93
2000	7,212	4,118	0	4,118	3,088	1,482	1,386	138	82	1,606
Totals	**594,990**	**487,215**	**15,085**	**502,300**	**376,725**	**180,828**	**169,025**	**16,843**	**10,028**	**195,897**
Averages	**24,791**	**20,301**	**629**	**20,929**	**15,697**	**7,535**	**7,043**	**702**	**418**	**8,162**

[1] *Water year is from October 1 to April 30.*
[2] *Late flood flows are from May 1 through September 30.*
[3] *Net flood flows are 75% of Total Flood Flows.*

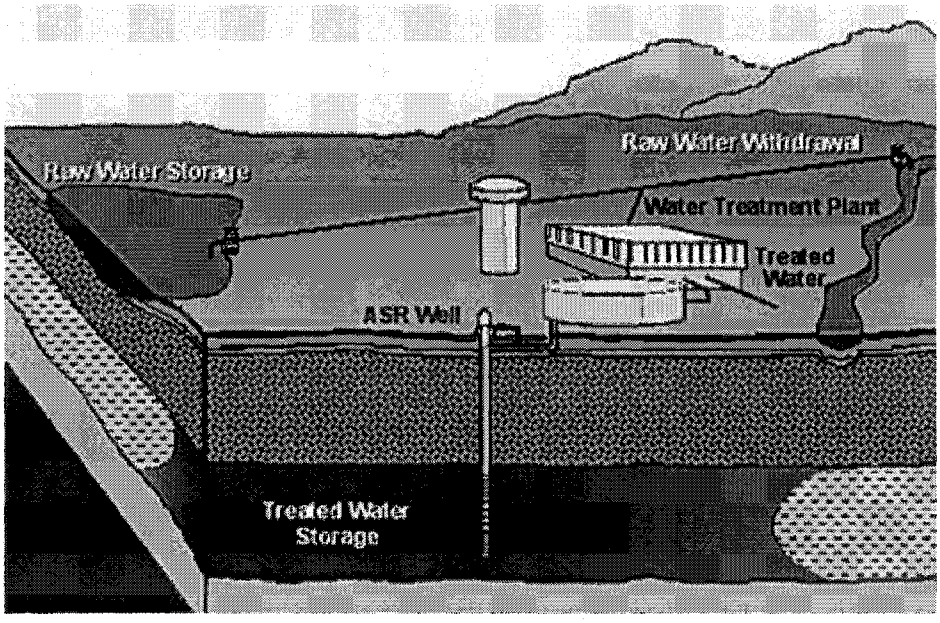
(5) Saugus Groundwater Banking/ASR Program

As discussed above, in ruling that the Newhall Ranch Final EIR did not demonstrate that sufficient water will be available for build-out of the Specific Plan, the trial court found a lack of substantial evidence showing that storage of Newhall Ranch's share of the Castaic Creek flood flows was achievable. The trial court also found a lack of substantial evidence to support a finding that a given volume of water could be stored in the Saugus aquifer pursuant to the proposed Saugus Groundwater Banking/ASR program. This section will generally describe groundwater banking/ASR programs, and show that the use of the Saugus aquifer for a groundwater bank is a feasible and reliable means of ensuring adequate water supplies for build-out of the Specific Plan. The information presented in this section is based on the *Newhall Ranch ASR Impact Evaluation*, dated February 2001, prepared by CH2MHill, and the *Assessment of the Hydrogeologic Feasibility of Injection and Recovery of Water in the Saugus Formation, Santa Clarita Valley, California*, dated February 2001, prepared by Slade, including the Technical Appendix by Slade entitled, *Hydrogeologic Conditions in the Saugus Formation, Santa Clarita Valley, California*, February 2001.

Groundwater Banking/Aquifer Storage And Recovery Programs. An ASR program (also termed a "groundwater bank") involves the seasonal storage of high-quality treated drinking water injected into a suitable aquifer when supplies are plentiful, and then recovering the water for later use during dry seasons or periods of drought. With ASR, the treated water is stored underground via wells during periods of low demand or excess supply. Water is then pumped (*i.e.*, "recovered") from the same well or wells to meet annual peak season demands, or "banked" for later withdrawal, which defers costly supply or treatment system expansions constructed solely to meet peak demands. Groundwater Banking/ASR also provides the ability for treatment plants to supply additional water over extended peak-demand periods. **Figure 2.5-26,** below, illustrates the water storage and treatment system for a Groundwater Banking/ASR program.

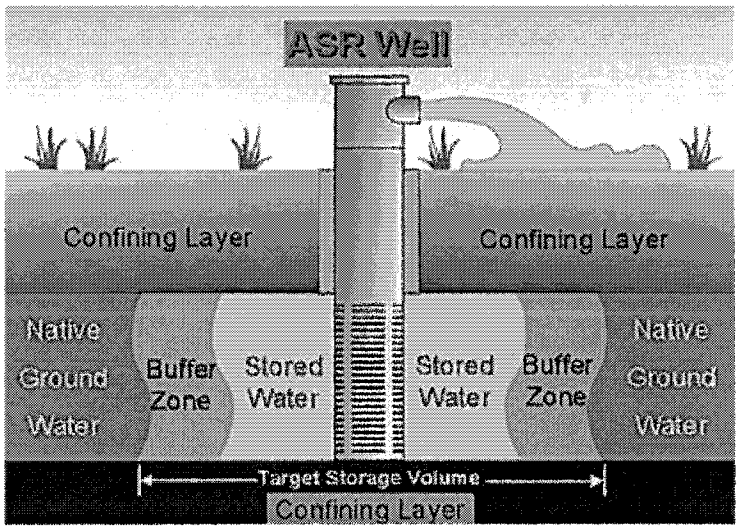
Figure 2.5-26

ASR Water Storage and Treatment System



A Groundwater Banking/ASR program offers significant benefits over traditional methods of water storage, such as surface reservoirs. With Groundwater Banking/ASR, there are no evaporation losses and substantial volumes of water can be stored without the potential environmental impacts often associated with above-ground reservoirs. In addition, the injection of high quality treated water may improve the quality of water extracted by the well because the injected treated water displaces the native groundwater away from the well (CH2MHill, 2001). The injection water must meet the water quality requirements of the State Regional Water Quality Control Board, Los Angeles Region. Over time, a water storage zone is developed around the well, which consists of the injected treated water. The injected water stays relatively close to the well because the water moves very slowly underground. **Figure 2.5-27**, below, illustrates the storage zone of the treated water.

Figure 2.5-27
Storage Zone of Treated Water



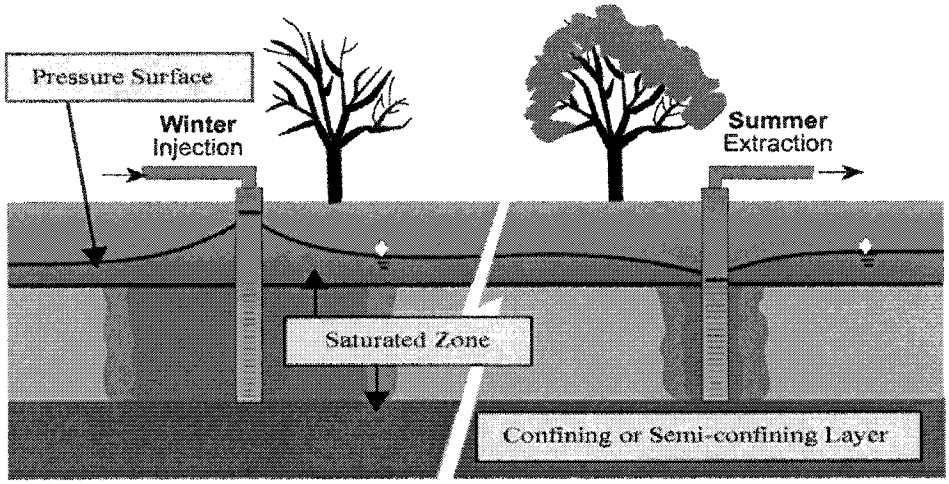
As water is injected into a well, the injected water displaces native groundwater and creates a mound or zone of increased water level around the well. Storage occurs as a result of filling previously unsaturated pore spaces in an unconfined aquifer or as a result of increasing the pressure within a confined aquifer. Most Groundwater Banking/ASR systems around the country are in aquifers that are confined or semi-confined. A confined aquifer is bounded above and below by low permeability layers that limit water movement in the up or down direction. Confined aquifers are by definition under pressure whereby the water level is above the base of the confining unit and the permeable aquifer is always fully saturated (*i.e.*, full of water). Consequently, a well pumping from a confined aquifer produces water by reducing the pressure within the aquifer. **Figure 2.5-28**, below, illustrates that injection into a confined or semi-confined aquifer increases the pressure within the aquifer and causes aquifer expansion.

Injection of water into a confined or semi-confined aquifer will increase the pressure within the aquifer. The pressure is highest at the injection well and gradually decreases away from the well. The water level (pressure) change caused by pumping or injection in such an aquifer typically extends over a relatively large area (greater than 1 mile). It is possible to inject water into a confined or semi-confined aquifer such that the pressure builds up to a level above ground surface (CH2MHill, 2001). As long as nearby wells penetrating this aquifer are sealed and capped, no injected water will reach ground surface or a surface stream.

In reality, most confined aquifers are actually semi-confined because low permeability layers are rarely continuous and they are often interfingered with permeable layers or fractures throughout the aquifer.

(This is the case in the Saugus Formation.) Consequently, injection causes an increase in pressure within portions of the aquifer, which promotes some movement of stored water across low permeability layers into higher permeability layers. In some cases, pore spaces in the upper portion of the aquifer that were previously unsaturated begin to fill as the water level rises during injection. The degree to which this will occur is a function of the vertical permeability of the aquifer. This movement of water has not posed a problem for other ASR projects because this water is available for recovery during the pumping phase of the project.

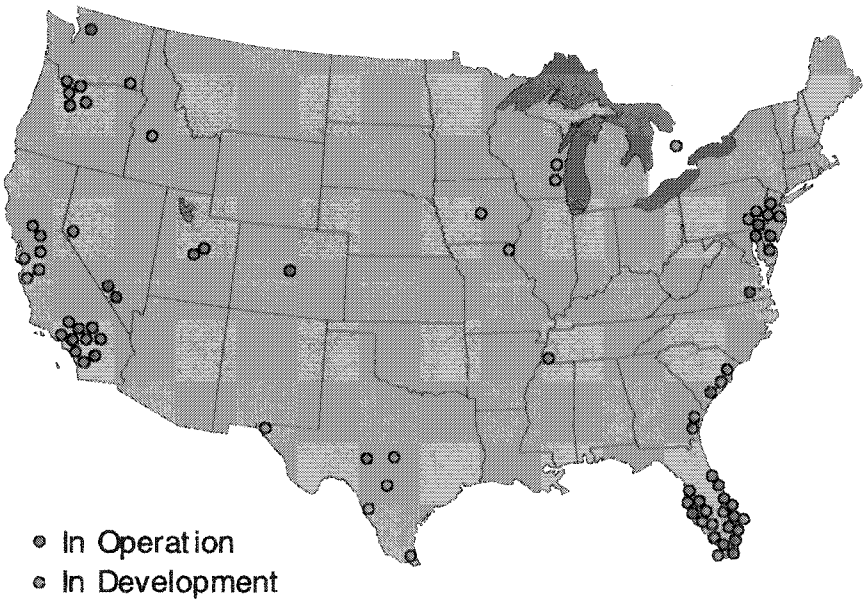
Figure 2.5-28
Pressure in a Confined/Semi-Confined Aquifer



Groundwater banking/ASR programs are not experimental and are well established. Groundwater banking/ASR programs are currently being operated in the United States, United Kingdom, Canada, Australia and Israel. Such programs are currently underway in several other countries, including the Netherlands, New Zealand, Thailand, Taiwan and Kuwait. In the United States, the U.S. Geological Survey conducted small tests of well recharge systems as early as the 1940s; however, none of those test sites were ultimately placed into operation. The first fully functional ASR well began operations in Wildwood, New Jersey in 1969, and this system is still in operation, having been expanded to four wells. Most subsequent ASR wells have been constructed since 1983, when the Manatee County, Florida, ASR system commenced operations.

Currently, in the United States, there are approximately 75 Groundwater Banking/ASR projects under development and about 35 Groundwater Banking/ASR sites in operation, ranging from a single well to 30 wells, with recovery capacities ranging from 0.5 mgd from single wells to 100 mgd from wellfields (*See*, **Figure 2.5-29**).

Figure 2.5-29
Groundwater Banking/ASR In The United States



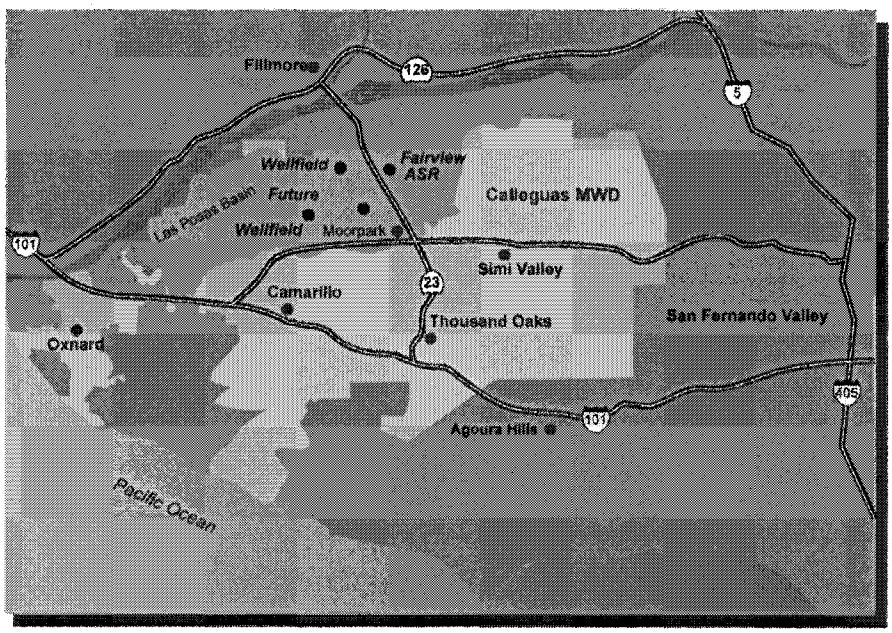
A very large Groundwater Banking/ASR program is in the planning stages for south Florida to restore the Everglades. Upon completion, that program is expected to consist of more than 300 ASR wells storing and recovering water at combined rates of up to 2 billion gallons per day.

The Calleguas Municipal Water District ("Calleguas") Groundwater Banking/ASR site is located within 25 miles of the Newhall Ranch Specific Plan site. Calleguas serves water to 22 purveyors in Ventura County, California, over an area of approximately 300 square miles with a population of about 500,000.

Calleguas' entire water supply is provided by the SWP through a single system connection (pipeline) with the Metropolitan Water District of Southern California ("Metropolitan"). Reliance on a single connection renders the entire Calleguas water supply subject to interruption from a host of external forces, including seismic disruption of pipeline deliveries, drought, water rights determinations, regulatory changes and unforeseen events. As a result, Calleguas is currently developing a 30-well ASR wellfield in the local Las Posas Basin to store SWP water in a semi-confined aquifer similar to the Saugus.

SWP water stored underground will increase reliability by providing a second point of delivery to the current single pipeline connection with Metropolitan. Water will be stored underground in the Lower Aquifer System (LAS) of the Las Posas Basin, a beneficial alternative to traditional aboveground storage reservoirs. Water will be injected and extracted from the LAS by specially designed ASR wells, which will be capable of both injecting and extracting (pumping) water. Once complete, the 30 ASR wells will provide Calleguas with a minimum extraction capacity of approximately 64 mgd (196 AF/day). SWP water will be stored in the LAS when Metropolitan has excess water supplies, and extracted by Calleguas for emergency needs or to meet peak water demands. **Figure 2.5-30**, below, shows the Calleguas ASR wellfield area in the local Las Posas Basin in relation to Newhall Ranch. SWP water is stored underground in the Las Posas Basin within an aquifer similar to the Saugus Formation.

Figure 2.5-30
Las Posas Basin/Calleguas MWD



The first 5 of Calleguas' 30 planned ASR wells have been completed. These 5 wells consist of the Fairview Well and 4 wells at Wellfield No. 1. An additional 12 ASR wells are currently being constructed. The existing wells have an injection capacity ranging from 700 to 1,200 gpm and an extraction capacity ranging from 1,000 to 1,800 gpm.

The Las Posas Basin ASR project and the proposed Saugus Groundwater Banking/ASR program will benefit biological resources in the Sacramento/San Joaquin Delta region because they will reduce demands for SWP water during low flow conditions. To the degree that stored water will be used to

either supplement or supplant imported deliveries, an equivalent amount of water could remain in the Delta to aid in sustaining sensitive species and habitat during critical periods. South-of-the-Delta storage projects, such as the Las Posas Basin ASR project and the Saugus Groundwater Banking/ASR program, have been long recognized by State and regional water officials as fundamental to both ensuring adequate water supplies for southern California and abating conditions adverse to the Delta's ecosystem.

Based on the foregoing information, a Groundwater Banking/ASR is a reliable, environmentally beneficial and widely-used method of storing (or "banking") water via wells in groundwater basins and then recovering that water to meet annual peak season or dry year demands. As discussed below, these advantages apply equally to the proposed Saugus Groundwater Banking/ASR program for the Newhall Ranch Specific Plan.

Saugus Groundwater Banking/ASR Program. This program will be used in the Saugus aquifer to furnish and supplement water for the Newhall Ranch Specific Plan during periods when state-furnished water is unavailable to meet potable water demands.[41] During years when state-furnished water is available to the Specific Plan, the water will be injected into the Saugus aquifer for storage. The injected water will be pumped out of the Saugus aquifer only during years when SWP deliveries to the Santa Clarita Valley are reduced. Consequently, the Saugus Groundwater Banking/ASR program will be used to: (i) Bank water during non-drought years; (ii) Supply water to the Specific Plan during drought years; and (iii) Enhance Saugus aquifer recharge after drought years.

As previously designed, the Saugus Groundwater Banking/ASR program consisted of 19 ASR wells in three areas of the Saugus aquifer. *See,* Revised Draft Newhall Ranch EIR, p. 4.11-20. The ASR wellfield for the Specific Plan was intended to accommodate approximately 8,300 acre-feet of water annually. *Id.* Since initially proposed, however, the Saugus Groundwater Banking/ASR program has been substantially redesigned and reduced in magnitude. Based on detailed analyses of the hydrologic properties of both the Saugus and Alluvial aquifers, as well as regional water supply and demand data, the scope of the Saugus Groundwater Banking/ASR program has been reduced to 6 ASR wells capable of accepting approximately 4,500 AFY. The basis for the revised design parameters of the program is discussed below.

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41 The term "state-furnished water" is used to define the source or sources of water available for use in the Saugus Groundwater Banking/ASR program. These water sources include: (a) SWP Table A entitlements from CLWA, including Newhall/SWP supplies; (b) Interruptible SWP water (*i.e.*, water in excess of Table A entitlements) from CLWA; (c) SWP water from DWR's Turnback Pool program from CLWA; (d) Carryover water from CLWA; and (e) Castaic Creek flood flows (when available).

The design of the Saugus Groundwater Banking/ASR program is governed by regional water availability and Specific Plan water demand. Establishing the program's design parameters first required a determination of water volumes available to the Santa Clarita Valley from the SWP system during average years, wet years and drought years. Based on the results of the water supply model created by DWR (the DWRSIM model), SWP annual water supplies available to the Santa Clarita Valley are estimated to be: (i) 56,800 AFY for average years (59.7 percent of the 95,200 AFY entitlement); (ii) 66,300 AFY for wet years (69.6 percent of the entitlement); and (iii) 37,900 AFY for drought years (39.8 percent of the entitlement). These SWP supply amounts would also be expected under the partial build-out scenario analyzed below (*See*, Cumulative Valley Build-out Scenario: Scenario 2, Year 2020).

Under the full build-out scenario presented below (*See*, Cumulative Valley Build-out Scenario: Scenario 2, Year 2045), this analysis predicts conditions over the long-term (the year 2045), and projects that the CALFED Bay Delta Program would be operational and that the Interim Delta Improvements would be in place as described in **Section 2.5.4**. Under the "Interim Delta Fix," the UWMP (page 2-13) indicates that CLWA's water deliveries from the SWP would range from 73,700 to 82,900 AFY in average/wet years to 40,200 AFY in drought years.

The Specific Plan's total water demand at full build-out is projected to be 17,680 AFY, of which 9,035 AFY would be met by a combination of reclaimed water from the Newhall Ranch WRP, and reclaimed water from CLWA. Therefore, the total amount of potable water supply required for the Specific Plan at full buildout (year 2045) is 8,645 AFY (*i.e.*, 17,680 - 9,035 = 8,645). During average/normal and wet years at full buildout, this demand would be met by Newhall agricultural water and Nickel Water (*See*, **Chart ES-1**) (because of other existing supplies available to the Specific Plan and the actions being taken by the Specific Plan applicant to enhance the reliability of supplies in dry years, Nickel Water would not be needed until after approximately 2025). During dry years under full build-out (year 2045), the potable demand of the Specific Plan would also be met by primary sources, including Newhall Agricultural Water, the Nickel Water, and water stored by the Specific Plan applicant in the Semitropic Groundwater Bank. While not needed to meet the needs of the Specific Plan, approximately 4,100 AFY of Saugus Groundwater Banking/ASR program water would be available to enhance the reliability of Specific Plan supplies.

The design parameters of the Saugus Groundwater Banking/ASR program were determined based on the Specific Plan dry year need of 4,100 AFY. In other words, the program was designed with the capability to inject enough water during average/normal to wet years to yield 4,100 acre-feet during a dry year. Based on data obtained from actual injection tests performed at wells in the Saugus aquifer, the peak injection rate that can be maintained at each Saugus ASR well is assumed to be 800 gallons per

minute. Taking into account downtime for maintenance, the daily injection rate translates into a monthly injection rate of 95.5 AF per month, or 765 AF annually at each well. During years when water is available for injection into the Saugus aquifer, the injection would occur during 8 months of the year (October through May). The modeling analysis assumes that injection would not occur during June, July, August, or September in order to account for the fact that CLWA's water treatment plant system may be operating near full capacity to meet non-project, as well as project, demands during these 4 months. However, if water supplies are available, injection will be performed during these 4 months.

Because the injection process, over time, will increase groundwater discharge from the Saugus aquifer, more water must be injected than will later be recovered to account for the increased discharge. It is estimated that the amount of discharge attributable to operation of the ASR program will be 10 percent or less of the injected volume. CH2MHill has verified this estimate by using a numerical groundwater flow model showing that the increased discharge is less than 10 percent of the injected volume. In order to *recover* the target volume of water (4,100 acre-feet), therefore, it will be necessary to inject 4,500 acre-feet (*i.e.*, 4,100 + 450 [or 4,500 x 10%] = 4,500 rounded up to the nearest 100 acre-feet). The number of ASR wells required to inject the target injection volume is determined by dividing the target injection volume (4,500 acre-feet) by the 8-month well injection rate (765 acre-feet). Based on this calculation, the Saugus Groundwater Banking/ASR program was determined to require approximately 6 wells in order to provide the necessary amount of ASR water (4,100 acre-feet) during a dry year.

The locations of the ASR wells were selected based on considerations such as aquifer transmissivity (permeability), model-predicted depths to groundwater in the Saugus aquifer and the fact that the Saugus aquifer north of the San Gabriel Fault is considered to be much thinner than the Saugus aquifer south of the fault. Based on these criteria, it would be feasible to construct the 6 ASR wells in the following two areas: (i) the upland area south of the Santa Clara River and west of I-5, which includes areas within the boundary of the Newhall Ranch Specific Plan; and (ii) the upland area north of the Santa Clara River and west of Castaic Creek. Both of these areas are west of the area where municipal supply wells are currently present in the Saugus Formation.[42] **Figure 2.5-31** depicts the general locations of the proposed ASR wellfields.

Feasibility Of The Saugus Groundwater Banking/ASR Program. The determination that the Saugus Groundwater Banking/ASR program is feasible is based on the analysis presented above, and the actual injection and pumping tests conducted at wells in the Saugus Formation from July 2000 through October 2000. (*See, Newhall Ranch ASR Impact Evaluation,* CH2MHill; and *Assessment of the Hydrogeologic Feasibility*

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42 It should be noted that existing Saugus Formation wells could be retrofitted for ASR purposes.

of Injection and Recovery of Water in the Saugus Formation, Santa Clarita Valley, California, Slade.) The objectives of the ASR field testing were to: (a) test the feasibility of injecting water into, and recovering water from, the Saugus Formation; (b) evaluate Alluvium/Santa Clara River/Saugus Formation interconnection; and (c) provide field data to be used for calibrating CH2MHill's groundwater flow model.

As part of those tests, tens of millions of gallons of municipal drinking water were injected into, and subsequently pumped out of, the Saugus Formation. (*Id.*) Water levels were monitored continuously in the test wells and in other nearby Saugus Formation and Alluvial aquifer wells. (*Id.*) Water levels were monitored for 22 days prior to the injection period, during the entire injection period, and for 9 days after the injection period ended. (*Id.*) A groundwater flow meter survey was performed at one of the test wells and a series of groundwater samples were collected during the testing. (*Id.*)

The results of the injection and recovery tests demonstrate that implementation of the Saugus Groundwater Banking/ASR program is feasible. The aquifer transmissivity and storativity data acquired during the testing indicates that the Saugus Formation is a semi-confined aquifer. (*Id.*) As discussed above, such aquifer types are appropriate for the ASR method of water storage. The Saugus Formation readily accepted water from the injection well (at rates up to 1,100 gpm), and subsequently yielded a comparable amount of water to a pumping well. (*Id.*) Localized mounding or depressions in water levels due to injection or pumping quickly returned to near pre-test levels after injection or pumping ceased. (*Id.*) Furthermore, the tests showed that there was no discernible effect on Alluvial water levels or the Santa Clara River, from either Saugus Formation well injection or pumping. [43]

2.5.5.4 Cumulative Water Supply Analysis

The Specific Plan applicant has secured all needed primary water sources (*i.e.*, Newhall Agricultural Water, Nickel Water, *etc.*) independent of other cumulative water sources provided by CLWA (*e.g.*, State Water Project supplies). Consequently, the Specific Plan would have no cumulative effect on water availability in the Santa Clarita Valley. In such circumstances (*i.e.*, where the impacts will not result, in part, from the project being evaluated in the EIR), an EIR is not required to discuss them. *See,* CEQA *Guidelines* §15130(a)(1). Consequently, this cumulative water supply analysis is being provided for informational purposes only.

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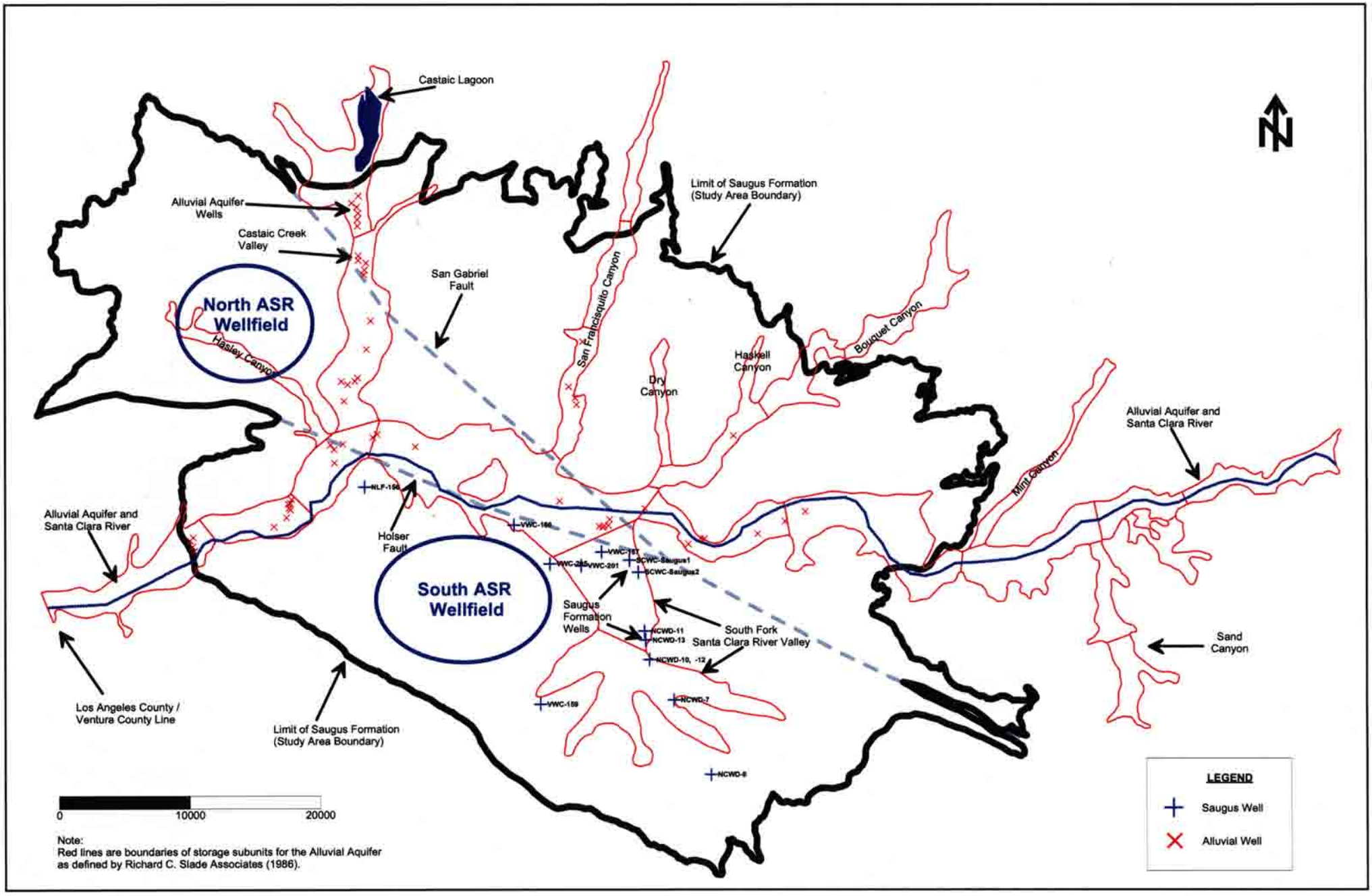
[43] It should be noted that Slade contacted the State Regional Water Quality Control Board to determine if a permit was required for the tests. After consultation with the Regional Board, it was determined that a permit was not required.



NEWHALL RANCH™
Newhall Ranch Company

FIGURE 2.5-31
GENERAL LOCATIONS OF PROPOSED ASR WELLFIELD

The following discussion focuses on the cumulative impacts to water availability for the Santa Clarita Valley. The analysis evaluates cumulative impacts under the following two future water demand and supply scenarios:

Scenario 1: Existing development within the CLWA service area, plus Development Monitoring System ("DMS") projections, plus the Specific Plan (referred to as the "DMS Build-out Scenario"); and

Scenario 2: Build-out within the CLWA service area, plus active pending General Plan Amendment requests, plus the Specific Plan (referred to as the "Santa Clarita Valley Cumulative Build-out Scenario").

Again, because the Specific Plan applicant has secured its own independent primary water sources, this analysis shows that the Specific Plan would have essentially no cumulative effect on water availability in the Santa Clarita Valley.

(a) DMS Build-out Scenario (2010/2012)

The DMS Build-out Scenario entails existing development, build-out of the near-term subdivision projects listed in the County's DMS, plus the Specific Plan. The analysis of this cumulative development scenario is required by the County's General Plan for the cumulative analysis of water service. The County's DMS lists all pending, recorded and approved projects for which land divisions have been filed within County unincorporated lands and within the City of Santa Clarita. The City plus County unincorporated areas together constitute the County's Santa Clarita Valley Planning area.

Table 2.5-36, below, illustrates both the cumulative water demand (existing plus DMS) and supply for the Santa Clarita Valley. This cumulative water demand is compared to the near-term projected Santa Clarita Valley water supplies and the additional Newhall Ranch Specific Plan water supplies. As shown, there is adequate independently-sourced water for the Specific Plan in both average years and dry years and no cumulative water supply impacts would occur. In fact, the table shows a water surplus for the Specific Plan and for the DMS development scenario.

(1) DMS General Plan Consistency

The purpose of this subsection is to assess the Newhall Ranch Specific Plan's consistency with the County's General Plan DMS policies as they relate to water supply. As indicated previously in this section, the County's General Plan includes provisions known as the DMS to give decision makers information about the existing capacity of available public services at the time a new development proposal is considered in the four major Urban Expansion Areas of the County of Los Angeles General Plan (Antelope Valley, Santa Clarita Valley, Malibu/Santa Monica Mountains, and East San Gabriel Valley).[44] The goal of DMS is to identify what new public facilities will be required for the new development, and to ensure that the appropriate cost of any expansion of facilities will be paid for by that new development, and not assumed by the taxpayers.

In accomplishing the goal stated above, the DMS determines the availability of school, fire, sewerage, library, water and road services and facilities on an individual and cumulative basis. The DMS data used for this analysis includes:

(a) Inventory information reports for water, sewer and library services in the Santa Clarita Valley;

(b) Service Provider Reports for the water wholesaler (Castaic Lake Water Agency) and water retailers in Santa Clarita Valley and County Sanitation Districts Nos. 26 and 32; and

(c) A list of all pending, approved and recorded projects where land divisions have been filed within both the unincorporated area of the County and the City of Santa Clarita.

The DMS also works toward ensuring that the expansion costs of new development are paid for by that development.

To ensure new development is located in close proximity to services and existing development, DMS states that in no event is the proposed development to be located beyond one mile of an existing development or service. Also, DMS states that new development is to be located within, generally, five miles of commercial services and job opportunities.

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44 Resolution of the County of Los Angeles Board of Supervisors, Plan Amendment Case No. S.P. 86-173.

Table 2.5-36
Scenario 1: DMS Buildout Scenario Demand and Supply for the Santa Clarita Valley
(acre-feet per year)

	Average Years	Dry Years
Santa Clarita Valley Demand		
- DMS Demand [a]	87,674	87,674
- Dry Year 10% Increase in Demand	0	8,767
- Specific Plan Demand [b]	17,680	19,449
Potable Demand	8,645	8,645
Non-Potable Demand	9,035	9,035
Dry Year 10% Increase in Demand	0	1,768
- Additional Groundwater Banking Program	4,500	0
- Less Conservation [j]	(9,825)	(10,808)
Total	**100,028**	**105,082**
Santa Clarita Valley Supply [c]		
- Local Supply		
a. Groundwater		
Alluvial Aquifer	30,000 to 40,000	30,000 to 35,000
- Less Newhall Ranch Agricultural Water	(7,038)	(7,038)
Saugus Aquifer	7,500 to 15,000	11,000 to 15,000
Saugus Aquifer (new)	0 0	10,000 to 20,000
b. Reclaimed Water	1,700 10,737	1,700 10,737
Less CLWA Reclaimed Water Supply for Newhall Ranch	(1,033)	(1,033)
- Imported Supplies		
a. SWP Supplies [d]	56,800	37,900
b. Water Banking/Conjunctive Use		10,000 to 52,500
c. Desalination	2,000 to 3,000	2,000 to 3,000
Total	**89,963 to 117,500**	**94,518 to 166,055**
Specific Plan Supplies		
- Non-Potable Supplies		
WRP Reclaimed Water	5,344	5,344
CLWA Reclaimed Water Supply for Newhall Ranch	1,033	1,033
Subtotal	6,377	6,377
- Potable Supplies		
Newhall Ranch Agricultural Water	7,038	7,038
Nickel Water [k]	1,607	1,607
Newhall/SW P Water (Average Years); Semitropic Groundwater Banking Project [e] (Dry Years)	2,658	4,427
Subtotal	11,303	13,072
Total	**17,680**	**19,449**
Additional Groundwater Programs/Supplemental Supplies		
Newhall/SWP Water [h]	1,908	3,044
Castaic Creek Flood Flows [i]	7,043	0
Semitropic Groundwater Banking Project [e]	0	523
Saugus Groundwater Banking/ASR Program [e]	0	4,100
Total	**8,951**	**7,667**
Total Supplies	**116,594 to 144,131**	**121,635 to 193,172**
Total Surplus [g]	**16,566 to 44,103**	**16,552 to 88,089**

a Complete buildout of DMS land uses is estimated to occur in 2012.
b This demand would occur starting with the Specific Plan's buildout year of approximately 2030. Newhall Ranch buildout is assumed to occur from 2005 to 2030 at a rate of 864 dwelling units per year, with water
c demands of 707 AFY average.
d Source: UWMP, December 2000, Tables 2-6 and 4-1.
Consistent with the DWRSIM model, the figures show SWP entitlement reduced in average years to approximately 59.7 percent of entitlement and in dry years to approximately 39.8 percent of entitlement. In any given year, the actual amount of SWP water deliveries could be above or below these model projections. Deliveries of water associated with the Agency's SWP entitlement of 95,200 acre-feet per year are affected by a number of
e factors, including hydrologic conditions, the status of SWP facilities' construction, environmental requirements and evolving policies for the Bay-Delta. Programs are in place that have the potential to improve the
f reliability of imported water (See, UWMP, December 2000, page 2-10).
g As these programs are needed in dry years, they could be used up to the amounts indicated (as needed).
h Consists of surplus SWP water available in normal/average years from CLWA water transfers, Interruptible SWP water, SWP Turnback Pool program, SWP Surplus water provisions and SWP Carryover Water
i program.
The surplus shown above is the net water available for injection into banking programs (e.g., Semitropic Groundwater Banking Project, other groundwater banking projects, etc.), not including Castaic Creek Flood Flows.
j Newhall/SWP water consists of 7,648 AF of surplus Table A entitlement water reduced in average years to approximately 59.7 percent of entitlement and in dry years to approximately 39.8 percent of entitlement.
k See discussion in **Section 2.5.5**. Castaic Creek flood flows are a variable source of water that, when available in average and wet years, could be used for the Semitropic Groundwater Banking Project and/or Saugus Groundwater Banking/ASR Program.
The UWMP (pages 3-8 and 3-9) indicates that water demand can be expected to decrease through implementation of water conservation practices in the CLWA service area.
Nickel Water consists of 1,607 AF of water purchased by Newhall Land and delivered via the Kern County Water Agency. This water is 100 percent reliable and is not affected by same factors that reduce the reliability of SWP water.

The DMS includes a computerized database that incorporates information supplied by service providers and determines capital facility capacity and demand placed on the system by existing, pending, approved and recorded projects for which land divisions have been filed within the four major Urban Expansion Areas. The DMS is used to quantitatively determine project and cumulative impacts on many County and other public services. In EIRs, wherever a proposed development project would result in an exceedence of applicable County infrastructure or facilities (such as water supply), a significant impact is identified and mitigation is recommended as appropriate.

The General Plan DMS requirements apply to "subdivisions" proposed within the Santa Clarita Valley. Because County approvals associated with the Newhall Ranch Specific Plan do not include any subdivisions at this time, the Specific Plan is not subject to the General Plan DMS requirements. (At the time a request is made by an applicant for the County to approve a subdivision map, that subdivision must be consistent with the General Plan DMS requirements.) Even though not required at this time, the DMS consistency analysis has been completed to determine if enough water is available for the Specific Plan under the General Plan DMS requirements.

This analysis addresses water supply requirements resulting from buildout of all pending, recorded, and approved projects listed in the County's DMS, plus the Newhall Ranch Specific Plan. As indicated in **Table 2.5-36, Scenario 1: DMS Buildout Scenario Demand and Supply for the Santa Clarita Valley,** under the DMS analysis there is sufficient water supply for the entire demand of the Newhall Ranch Specific Plan and all pending approved and recorded projects in DMS. In fact, a water surplus of approximately 16,566 to 44,103 AFY would occur in an average year and a surplus of approximately 16,552 to 88,089 AFY would occur in a dry year. Because the applicant has secured independent primary Specific Plan water supplies, the Specific Plan would have no contribution to cumulative water availability effects in the Santa Clarita Valley. While not expected, even if a water deficit were to occur in the future due to a reduction in the availability of SWP water, the Specific Plan would have no contribution to such a deficit. Therefore, the Specific Plan is not expected to create any significant cumulative water availability impacts.

In addition to ensuring that an adequate supply of water is available for a project, DMS requirements also indicate that the project in question must be located within one mile of an existing development or service and that the development be located within generally five miles of commercial services and job opportunities. The Newhall Ranch Specific Plan site is located immediately adjacent to existing development and the retail water service area of the Valencia Water Company. It is also within the wholesale service area of the Castaic Lake Water Agency. In addition to providing approximately 19,000 jobs, the Specific Plan site is located approximately one-eighth of one mile from the Magic Mountain

Theme Park, Castaic Junction, and the Valencia Commerce Center, and approximately three quarters of one mile from the Valencia Industrial Park. All of these existing development areas are served by County or other public services, and provide commercial services and job opportunities.

Based on the information provided in this analysis, the Newhall Ranch Specific Plan is consistent with the General Plan DMS policies as they relate to water supplies.

(b) Santa Clarita Valley Buildout Scenario (2020/2045)

The Santa Clarita Valley cumulative build-out scenario entails build-out of all lands under the current land-use designations indicated in the County's Area Plan and the City of Santa Clarita's General Plan, plus the proposed Specific Plan, plus all known active pending General Plan Amendment requests for additional urban development in the County unincorporated area and the City of Santa Clarita.

Table 37, Scenario 2: Santa Clarita Valley Cumulative Buildout Scenario Water Supplies, and **Table 38, Scenario 2: Santa Clarita Valley Cumulative Buildout Scenario Water Demand and Supply**, summarize the cumulative water demand and supply for this build-out scenario. As shown, at partial build-out by the year 2020, there are adequate water supplies for the Specific Plan, and those supplies are independent of other water supplies for the Santa Clarita Valley. As a result, the Specific Plan is not expected to create any significant cumulative water availability impacts in either average/normal or dry years. In addition, as shown, at full build-out by the year 2045, there are adequate water supplies for the Specific Plan, and those supplies, again, are independent, stand-alone water supplies, with no significant cumulative water supply impacts occurring in either average/normal or dry years. In fact, the two tables show a water surplus under this scenario in average and dry years in both 2020 and 2045 (the low range of the projected average year surplus in 2045 is approximately 11,510 AFY). This figure was conservatively projected assuming that the mid-range amount of water is available from Valley-wide groundwater sources, and the minimum amount of water is available from CLWA's SWP supplies. In average years, it is expected that up to 40,000 AFY would be available from the Alluvial aquifer (with 35,000 AFY as the mid-range amount) and up to 15,000 AFY would be available from the Saugus aquifer (with 11,250 AFY as the mid-range amount).

Table 2.5-37 shows that, for long-term planning purposes, the mid-range of the Alluvial and Saugus groundwater supplies were assumed, and the mid-range of the water banking/conjunctive use sources, as indicated in the UWMP 2000, were assumed. For critical dry years, when reliability of the SWP could be reduced, CLWA would utilize both dry year supplies available from the Saugus Aquifer, and water banking and conjunctive use projects as indicated in **Table 2.5-37** below.

As depicted in **Table 2.5-37**, a surplus of water would be available during dry conditions (*i.e.*, **Table 2.5-38** indicates that a dry year surplus of approximately 30,345 AFY would occur), leaving an adequate amount of water available from various sources to offset critical dry year reductions in SWP supplies. For example, if a critical dry year allocation of SWP Table A water delivery were reduced to 20 percent of entitlement in 2045 (in CLWA's case, this would equal a delivery of approximately 19,040 AF (*i.e.*, 95,200 AF entitlement x 0.20 = 19,040 AF)), an additional 21,160 AF of water would be needed from sources other than SWP supplies (*i.e.*, dry year delivery of 40,200 AF – 19,040 AF = 21,160 AF of additional water need). The water represented by the 2045 dry year surplus of 30,345 AFY shown in **Table 2.5-38** would adequately supply the added critical dry year need of 21,160 AF. In relation to the Specific Plan's potential cumulative impact under this scenario, because the applicant has secured independent primary water sources to completely meet the demands of the Specific Plan, the Specific Plan would have no effect on cumulative water availability in the Santa Clarita Valley. While not expected, even if a water deficit were to occur in the future due to a reduction in the availability of SWP water, the Specific Plan would have no contribution to such a deficit. Therefore, no cumulatively significant water availability impacts would occur due to buildout of the Specific Plan.

(c) Conclusion – Cumulative Impacts

Because the applicant has secured its own primary water sources to meet the demands of the Specific Plan, the Specific Plan would not contribute to any significant cumulative water availability impacts in the Santa Clarita Valley. In addition, because cumulative water supplies exceed demand, cumulative development (including the proposed Newhall Ranch Specific Plan) would not result in unavoidable significant cumulative impacts on Santa Clarita Valley water resources. Therefore, cumulative mitigation measures are not required. However, to ensure sufficient long-term water supplies for all cumulative development (including the proposed Specific Plan), the County's General Plan Development Monitoring System (DMS) requires tentative map applications to show that water supplies are adequate to meet demand.

Table 2.5-37
Scenario 2: Santa Clarita Valley Cumulative Buildout Scenario Water Supplies
(acre-feet per year) (Same as Table 2.5-5)

	Partial Buildout (year 2020)		Full Buildout (year 2045)	
	Average Years	Dry Years	Average Years	Dry Years
Santa Clarita Valley Water Supplies [a]				
Local Supply				
a. Groundwater				
Alluvial Aquifer	30,000 to 40,000	30,000 to 35,000	35,000	32,500
Less Newhall Ranch Agricultural Water	(7, 038)	(7,038)	(7,038)	(7,038)
Saugus Aquifer	7,500 to 15,000	11,000 to 15,000	11,250	13,000
Saugus Aquifer (new wells)	0	10,000 to 20,000	0	15,000
b. Reclaimed Water	17,000	17,000	17,000	17,000
Less CLWA Reclaimed Water Supply for Newhall Ranch	(2,215)	(2,215)	(3,691)	(4,595)
Imported Supplies				
a. CLWA SWP Table A Water [b]	56,800 to 66,300	37,900	73,700 to 82,900	40,200
b. Water Banking/Conjunctive Use	0	10,000 to 52,500	0	52,500
c. Desalination	2,000 to 5,000	2,000 to 5,000	5,000	5,000
Total	**104,047 To 134,047**	**108,647 to 173,147**	**131,221 to 140,421**	**163,567**
Newhall Ranch Specific Plan Supplies				
- Non-Potable Supplies				
Newhall Ranch Reclaimed Water	3,206	3,206	5,344	5,344
CLWA Reclaimed Water	2,215	2,215	3,691	4,595
Subtotal	5,421	5,421	9,035	9,939
- Potable Supplies				
Newhall Ranch Agricultural Water	7,038	7,038	7,038	7,038
Nickel Water	1,607	1,607	1,607	1,607
Semitropic Groundwater Banking Project [c]	0	0	0	865
Subtotal	8,645	8,645	8,645	9,510
Total	**14,066**	**14,066**	**17,680**	**19,449**
Additional Groundwater Programs/Supplemental Supplies				
CLWA SWP and Other Supplies	0	0	4,500	0
Newhall/SWP Water [f]	4,566	3,044	4,566	3,044
Castaic Creek Flood Flows [e]	7,043	0	7,043	0
Semitropic Groundwater Banking Project [c]	0	4,950	0	4,085
Saugus Groundwater Banking/ASR Program [c]	0	4,100	0	4,100
Total	**11,609**	**10,454**	**16,109**	**11,229**
Total Supply	**129,722 to 159,722**	**133,167 to 197,667**	**165,010 to 174,210**	**194,245**

a Source: UWMP, December 2000, Tables 2-2, 2-6 and 4-1.
b Assumes that by year 2045 the Interim Delta Improvements have been implemented.
c As these programs are needed in dry years, they could be used up to the amounts indicated (as needed).
d Consists of surplus SWP water available in normal/average years from CLWA water transfers, Interruptible SWP water, SWP Turnback Pool program, SWP Surplus water provisions and SWP Carryover Water program.
e See discussion in Section 2.5.5. Castaic Creek flood flows are a variable source of water that could be used, when available, in average and wet years, for the Semitropic
f Groundwater Banking Project (through water transfers) or the Saugus Groundwater Banking/ASR Program (from CLWA through Valencia Water Company). SWP entitlement reduced in average years to approximately 59.7 percent of entitlement and in dry years to approximately 39.8 percent of entitlement. In any given year, the actual amount of SWP water deliveries could be above or below these model projections.
g In dry years under full buildout, amount of SWP water delivered to Newhall Ranch is assumed to be approximately 66 percent of SWP water delivered in average years. Actual future conditions possibly may result in Newhall Ranch using Nickel Water, CLWA SWP Water and Newhall/SWP water.

Table 2.5-38
Scenario 2: Santa Clarita Valley Cumulative Buildout Scenario Water Demand and Supply (acre-feet per year) (Same as Table 2.5-6)

	Partial Buildout (year 2020)		Full Buildout (year 2045)	
	Average Years	Dry Years	Average Years	Dry Years
Total Buildout Demand [b]	**105,200** [a]	**112,750**	**153,500** [c]	**163,900**
Santa Clarita Valley Water Supplies [d]	104,047 to 134,047	108,647 to 173,147	131,221 to 140,421	163,567
Newhall Ranch Specific Plan Supplies	14,066	14,066	17,680	19,449
Additional Groundwater Programs/Supplemental Supplies	11,609	10,454	16,109	11,229
Total Supply	**129,722 to 159,722**	**133,167 to 197,667**	**165,010 to 174,210**	**194,245**
Total Surplus [e]	**24,522 to 54,522**	**20,417 to 84,917**	**11,510 to 20,710**	**30,345**

[a] *Source: 2000 UWMP, December 2000, Table 3-5, plus Saugus Groundwater Banking/ASR Program injection demand.*
[b] *Consistent with the UWMP, December 2000, demand is increased by approximately 10 percent in dry years.*
[c] *Source: UWMP, December 2000, Table 3-5, using a straight-line projection from 2020 to 2045, plus Saugus Groundwater Banking/ASR Program injection demand.*
[d] *Source: UWMP, December 2000, Tables 2-2, 2-6 and 4-1.*
[e] *The surplus shown above is the net water available for injection into banking programs (e.g., Semitropic Groundwater Banking Project, other groundwater banking projects, etc.).*

2.5.6 WATER IMPACTS ANALYSIS

2.5.6.1 Preface

As directed by the trial court's decision and Writ, this section assesses the environmental impacts associated with providing the identified water supplies to the Specific Plan, including impacts of the Saugus Groundwater Banking/ASR program. The environmental impacts are also assessed against specified "significance thresholds" identified in this section. The issues addressed in this section include impacts associated with:

- Newhall Ranch Reclaimed Water Use
- CLWA Reclaimed Water Use
- Newhall Agricultural Water Use
- CLWA State Water Project (SWP) Water Use
- Newhall/SWP Water Use
- Nickel Water Use
- Semitropic Groundwater Banking
- Specific Plan Full Build-Out (Including Saugus Groundwater Banking/ASR Program, Impacts on Groundwater and Surface Water Levels and Flows Locally and Downstream)
- Impacts of Newhall/SWP and Nickel Water on Delivery and Treatment Capacity
- Biological Effects in River Corridor of the Specific Plan (including the Saugus Groundwater Banking/ASR Program)
- Water Quality Impacts, including chloride, nutrients and perchlorate
- Liquefaction Impacts
- Castaic Creek Flood Flows Use
- Land Surface Elevation Changes

Based on the analysis in this section, the issues presented above did not result in the identification of any unmitigated significant environmental impacts resulting from the provision of water to the Newhall Ranch Specific Plan site.

2.5.6.2 Hydrologic Relationship Between the Santa Clarita Valley and Ventura County

Issues have been raised regarding the Specific Plan's impact on the flow of water from the Santa Clarita Valley downstream into Ventura County. The relationship between the hydrologic setting of the Santa Clarita Valley and areas downstream in Ventura County must be understood and placed in context. Specific impact topics that are potentially influenced by this relationship include the impact of the proposed Saugus Groundwater Banking/ASR program on groundwater and surface water flows into

Ventura County, changes in the land use and conversion of irrigation wells to public water supply wells, and potential impacts of additional water importation to the Santa Clarita Valley.

As described below, a relatively small percentage of the surface and subsurface flows downstream in Ventura County actually originate upstream in Los Angeles County. As shown on **Table 2.5-39, Major Inflows to Santa Clara River**, approximately 26 percent of the surface and subsurface flows downstream in Ventura County come from the portion of the Santa Clara River watershed located upstream in Los Angeles County. The vast majority of the surface and subsurface flows (approximately 74 percent) enter the Santa Clara River in Ventura County (*e.g.*, from the Piru Creek watershed (approximately 19 percent), Sespe Creek watershed (approximately 39 percent), Santa Paula Creek watershed (approximately 7 percent)). These watersheds are located in Ventura County and are not affected by the Specific Plan, including the Saugus Groundwater Banking/ASR program. Some comments have inferred that virtually all of Ventura County's water supply originates in Los Angeles County and would be threatened by the proposed Newhall Ranch Specific Plan and WRP, including the proposed Saugus Groundwater Banking/ASR program. This analysis, however, does not concur with those comments.

Table 2.5-39
Major Inflows to the Santa Clara River

County	Inflow Location	Average Annual Flow (acre-feet)	Percent of Total Inflow
Los Angeles	County Line (Blue Cut)	57,000	26 %
	Subtotal	**57,000**	**26 %**
Ventura	Piru Creek	43,000	19 %
	Hopper Creek	4,000	2 %
	Sespe Creek	85,000	39 %
	Santa Paula Creek	17,000	7 %
	- POTW	4,000	2 %
	POTW	10,000	5 %
	Subtotal	**163,000**	**74 %**
	Total	**220,000**	**100%**

The fact that surface and subsurface flows originating in Los Angeles County have a relatively minor influence on the hydrologic environment in Ventura County is supported by other studies as well. For example, DWR updated the Ventura County groundwater basin plan in a report entitled, *Final Project Report, Update of Basin Plan for Piru, Sespe, and Santa Paula Hydrologic Areas*, June 1989. This *Basin Plan* covers the Piru Hydrologic Area, Santa Felicia Hydrologic Subarea, which comprises the portion of the

Ventura County groundwater basin just downstream of the Santa Clarita Valley. According to the *Basin Plan* (page 19), the Piru Hydrologic Area is approximately 318,880 acres and it encompasses four subareas, including the Santa Felicia Hydrologic Subarea, located primarily in Ventura County. This hydrologic area contains the main stream of the Santa Clara River and its tributary, Piru Creek. Piru Creek drains an extensive mountain area and contributes a substantial part of the surface water supply of the Santa Clara River in Ventura County. The Santa Felicia Subarea includes the Santa Clara River and its major tributary, Piru Creek (from the upper inlet of Lake Piru), plus Hopper Creek and other tributaries. (*Id.*) As to groundwater conditions, the *Basin Plan* reports that the upstream Santa Clara groundwater basin in Los Angeles County contributes very little to the recharge of the Santa Felicia groundwater basin. On page 24 of the *Basin Plan*, DWR summarized its findings with respect to the recharge of the basin in Ventura County:

> "Natural recharge of the [Piru] basin occurs intermittently and is largely from percolation of surface flows of the Santa Clara River, Piru and Hopper Creeks, and smaller tributaries (about 75 percent of the total recharge). About 10 percent of recharge comes from percolation of precipitation. Although steady, subsurface inflow from [the] Eastern Basin, the basin upstream [in Los Angeles County] on the Santa Clara River, *is essentially negligible* (estimated at about 240 acre-feet per year) because of the thin alluvial deposits." (*Emphasis added.*)

Although subsurface flows from Los Angeles County are essentially negligible, the surface flows from Los Angeles County downstream into Ventura County have increased over time due to the importation of SWP water by CLWA in the Santa Clarita Valley. Running averages of rainfall and river flow document that these flows have increased at the Los Angeles County/Ventura County line even without significant increases in rainfall. The result of the importation of SWP water in the Santa Clarita Valley has resulted in, and is projected to be, a significant beneficial impact on the amount of surface water flows to Ventura County from the Santa Clarita Valley.

2.5.6.3 Criteria for Determining Impact Significance

Significance threshold criteria are established and presented in **Subsections (a)** through **(k)** below.

(a) Significance Threshold Criteria for Water Availability

Significance criteria for water availability are defined by CEQA and the County of Los Angeles. The CEQA *Guidelines*[45] state that a project would normally have a significant effect on the environment if the project would "[s]ubstantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)." The CEQA *Guidelines*[46] also raise the question of whether or not a project would "[h]ave sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed." Under this criteria, a project that does not have sufficient water supplies available to serve the site from existing entitlements and resources, or if new or expanded entitlements would be needed, and these conditions would give rise to a significant effect on the environment, then, they are considered significant impacts.

According to the County of Los Angeles Environmental Document Reporting Procedures and *Guidelines*,[47] the County also requires an analysis of adverse impacts on water availability when a project cannot be served by the existing area water system facilities due to inadequate water supplies to meet the domestic demands, and/or fire flows for fire protection.

(b) Significance Threshold Criteria for Use of Castaic Creek Flood Flows

CEQA and the Regional Water Quality Control Board (RWQCB) define significance criteria that are applicable to the use of Castaic Creek flood flows.

The CEQA *Guidelines*[48] state that a project would normally have a significant effect on the environment if it would "[s]ubstantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not

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45 *Guidelines for California Environmental Quality Act* (Sections 15000-15387, California Code of Regulations, Title 14, Chapter 3), (Sacramento, California: Amended January 1, 2000), Appendix G, Environmental Checklist Form, Section VIII.

46 *Guidelines for California Environmental Quality Act*, Appendix G, Environmental Checklist Form, Section XVI.

47 County of Los Angeles Department of Regional Planning, *Environmental Document Reporting Procedures and Guidelines*, (Los Angeles, California: Adopted by the County Board of Supervisors 17 November 1987), Appendix D.

48 *Guidelines for California Environmental Quality Act*, Appendix G, Section VIII.

support existing land uses or planned uses for which permits have been granted)," "[v]iolate any water quality standards," or "[o]therwise substantially degrade water quality."

For purposes of this analysis, Castaic Creek flood flows would be used in wet years and average/normal years when flows occur in conjunction with the possible injection of treated flood flows in the Saugus ASR program or the Semitropic Groundwater Banking Program. A significant environmental impact would arise from the use of the flood flows if such use would deplete groundwater supplies, reduce water flows to Downstream Water Users or violate or otherwise substantially degrade the quality of the groundwater, such that the quality would fall below the water quality objectives for the Upper Santa Clara River Hydrologic Area (described below).

The RWQCB requires that projects meet the surface water and groundwater objectives, which are contained in the Water Quality Control Plan (also called the *Basin Plan*) for the region. Newhall Ranch is located within the Upper Santa Clara River Hydrologic Area, which is a part of the *Basin Plan* for the Los Angeles Region.

(c) Significance Threshold Criteria for Specific Plan (Including Saugus Groundwater Banking/ASR Program)

CEQA, Regional Water Quality Control Board criteria, and other criteria identified by CH2MHill, are used to define the thresholds of significance for the environmental effects of the Saugus Groundwater Banking/ASR Program on the Alluvial and Saugus aquifers, the Santa Clara River and the Downstream Water Users.

The CEQA *Guidelines*[49] state that a project would normally have a significant effect on the environment if it would "[s]ubstantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)," "[v]iolate any water quality standards," or "[o]therwise substantially degrade water quality."

The RWQCB requires that project water quality impacts be assessed against the objectives defined in the Water Quality Control Plan (*Basin Plan*) for the Los Angeles Region. Therefore, if the proposed Specific

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49 *Guidelines for California Environmental Quality Act*, Appendix G.

Plan degrades water quality to below the water quality objectives for the Upper Santa Clara River Hydrologic Area (specified below), the Specific Plan would result in a significant water quality impact.

(d) Significance Threshold Criteria for Perchlorate Impacts

A concern has been raised regarding potential significant impacts that could be created by the Saugus Groundwater Banking/ASR program if it results in spreading of the ammonium perchlorate ("perchlorate") that has been detected in the Saugus Formation on the east side of the basin. The CEQA *Guidelines* do not provide criteria that could be used to determine the significance of the perchlorate impacts. Lacking such criteria, Los Angeles County will consider a significant impact to arise if there is any spreading of perchlorate within the Saugus Formation due to the Saugus Groundwater Banking/ASR program, which affects existing municipal-supply wells through the detection of perchlorate at concentrations at or above the action level of4.0 parts per billion (ppb).

(e) Significance Threshold Criteria for Water Levels

The Saugus Groundwater Banking/ASR program was assessed for impacts to water levels in the Alluvial and Saugus aquifers. It was determined that "significant impact" would be realized if implementation of the program would substantially deplete existing groundwater supplies or interfere substantially with groundwater recharge in the two aquifers such that there would be a net deficit in aquifer volume or a lowering of the groundwater levels in the aquifers. For the Saugus aquifer, a substantial depletion in supplies, volume or levels would include an ASR-induced groundwater level decline that results in an increase in pumping costs of more than 10 percent per kilowatt-hour per acre-foot of water. For the Alluvial aquifer, substantial depletion in long-term supplies, volume and levels caused by ASR would be considered significant.

Water levels in the Santa Clara River have fluctuated dramatically in the past as a result of drought and discharges from the existing upstream WRPs. The vegetation and sensitive riparian animal species adapt to a long-term average fluctuation. Regarding potential impacts to riparian vegetation and associated sensitive plant and animal species within the river corridor, the proposed Saugus Groundwater Banking/ASR program would cause a significant impact to biological resources in the river corridor if the change in groundwater levels and/or hydraulic conditions in the Santa Clara River would cause: (1) scouring of the channel bed to the point of removing a significant amount of aquatic, wetland, and riparian habitats from the river channel; (2) substantial modification of the relative amounts of these different habitats in the river, essentially altering the nature and quality of the riverine environment; (3) direct removal of sensitive habitat; and/or (4) substantial adverse effects to rare, endangered, or

sensitive species. In contrast, less than substantial increases in groundwater levels and/or river flow would be considered a beneficial impact to the sensitive biological resources along the river corridor by enhancing the growth of sensitive riparian plants and providing additional habitat for sensitive animal species. In addition, Saugus Groundwater Banking/ASR program impact on the aquifers will be considered beneficial if the program is shown to stabilize or increase water levels in existing wells, which continue to pump for at least one month per year.

(f) Significance Threshold Criteria for Groundwater Quality

The Saugus Groundwater Banking/ASR Program and the Newhall Ranch reclaimed water use program would be subject to the RWQCB water quality objectives for the Alluvial and Saugus aquifers contained in the *Basin Plan*.

Numerical objectives have been set by the RWQCB for various water quality parameters to protect local beneficial uses of groundwater (and surface water). Exceedance of these objectives as a result of the Specific Plan, including ASR and reclaimed water use, would be considered a significant impact. These objectives have been established for selected inorganic parameters, which are summarized in **Table 2.5-40, Groundwater Quality Objectives - Eastern Hydrologic Subarea.** The objectives have been established for each hydrologic subdivision within the Eastern Hydrologic Subarea of the Upper Santa Clara River Hydrologic Area.

Table 2.5-40
Groundwater Quality Objectives
Eastern Hydrologic Subarea

Parameter	Area[1]	
	Project Area	Downstream
Boron	1.0	1.5
Chloride	150	200
Sulfate	350	1,200
TDS[2]	1,000	2,500

Source: Water Quality Objectives, Basin Plan, June 13, 1994, California Regional Water Quality Control Board. Downstream values from Table 3-10 "Santa Clara-Piru Creek, lower area east of Piru Creek"

1 *All values are in milligrams per liter (mg/L).*

2 *TDS = Total Dissolved Solids.*

Typical concentrations of several water-quality parameters in the Saugus and Alluvial aquifers are listed in **Table 2.5-41, Typical Saugus and Alluvial Aquifer Water Quality**. RWQCB basin standards will

serve as the water quality threshold of significance. Therefore, the project would result in a significant water quality impact if it would introduce constituents at concentrations that would degrade water quality in either the Saugus or Alluvial aquifer pursuant to RWQCB policy.

Table 2.5-41
Typical Saugus and Alluvial Aquifer Water Quality

Parameter	Concentration[1]	
	Saugus Aquifer[2]	Alluvial Aquifer[3]
Boron	0.1	0.4 to 0.6
Chloride	35	46 to 80
Nitrate (NO_3)	15	3 to 14
Sodium	74	86 to 128
Sulfate	35	280 to 394
TDS[4]	619	730 to 1,053

[1] *All values are in milligrams per liter (mg/L), except where indicated. Concentrations are averages of detected values for 1989 to 1994,*

[2] *Source: Table 3-10 in CH2MHill,* Water Resources and Wastewater Management for the Newhall Ranch Project, *(Thousand Oaks, California: Revised June 1996), p. 3-37.*

[3] *Source: Table 3-16 in CH2MHill,* Water Resources and Wastewater Management for the Newhall Ranch Project, *(Thousand Oaks, California: Revised June 1996), p. 3-50. Values are concentration ranges measured in July and August 1989 at three wells owned by the Newhall Land and Farming Company.*

[4] *TDS = Total Dissolved Solids.*

Any improvement in the quality of groundwater (*i.e.*, a decrease below background level in the concentration of dissolved constituents) as a result of the Saugus Groundwater Banking/ASR program would be considered a beneficial impact.

(g) Significance Threshold Criteria for Groundwater Recharge

Any significant change to groundwater recharge as a result of an increase in impervious area from development of the Specific Plan was addressed in the Newhall Ranch Final EIR certified by Los Angeles County and upheld by the trial court. Consequently, this issue will not be addressed further.

(h) Significance Threshold Criteria for Land Surface Elevation

Any significant change in the elevation of the ground surface (subsidence or mounding) as a result of implementing the Saugus Groundwater Banking/ASR program will be considered a significant impact.

(i) Significance Threshold Criteria for Surface Water

Potential Specific Plan impacts on surface water would involve both significant changes in the flow rate and water quality of the Santa Clara River. An evaluation of the consequences of Specific Plan site activities and Specific Plan storm water drainage designs that may influence the surface-water runoff characteristics from the development is not within the scope of this additional impact analysis (*see*, Final EIR Section 4.2, Flood). This issue is also not one of the six issues identified by the trial court and, therefore, will not be addressed further.

Concerning flow in the Santa Clara River, significant impacts of the Specific Plan are those that would cause substantial decreases in surface water flow. A reduction in surface water flow could occur from a reduction in the amount of groundwater discharging to the Santa Clara River. This reduction could occur as a result of groundwater pumping from the Saugus Formation during the ASR recovery phase, which may reduce the amount of Saugus groundwater discharge to the Alluvial aquifer and, consequently, to the river. Reduction in surface water flow could also result from conversion of Newhall irrigation wells to municipal and industrial (M&I) use. Significance threshold (j), above, addresses this impact. Increases in surface water flow may also occur as a result of discharge from the Newhall Ranch water reclamation plant and importation of additional SWP supplies into the basin to meet potable and non-potable demands. For purposes of this evaluation, a reduction in surface water flow resulting from the project is considered a significant impact if the annual surface water flow is reduced by more than 10 percent in any given year.

Numerical objectives have been set by the RWQCB for various water quality parameters to protect local beneficial uses of surface water. Exceedance of these objectives due to the Newhall Ranch Specific Plan would be considered a significant impact. These objectives have been established for selected inorganic parameters, which are summarized in **Table 2.5-42, Surface Water Quality Objectives - Eastern Hydrologic Subarea**. These objectives have been established for each hydrologic subdivision within the Eastern Hydrologic Subarea of the Upper Santa Clara River Hydrologic Area.

Table 2.5-42
Surface Water Quality Objectives
Eastern Hydrologic Subarea

Parameter	Area[1]	
	Project Area	Downstream
Boron	1.5	1.5
Chloride	100	100
Nitrogen[2]	5	5
Sulfate	400	600
SAR[3]	10.0	5
TDS[4]	1,000	1,300

Source: Water Quality Objectives, Basin Plan, June 13, 1994, California Regional Water Quality Control Board.
1 *All values are in milligrams per liter (mg/L), except for SAR.*
2 *Nitrogen = nitrate and nitrite as nitrogen.*
3 *SAR = Sodium Adsorption Ratio (Na/(0.5(Ca+Mg))*
4 *TDS = Total dissolved solids.*

(j) Significance Threshold Criteria for Agricultural Water Use on the Specific Plan Site

The applicant's historical and existing practice of using agricultural water to irrigate land in Los Angeles County is proposed as a water source to partially meet the Specific Plan's potable water demand. The agricultural water is used to irrigate crops cultivated on Newhall Land and Farming Company land in Los Angeles County. As agricultural activities are discontinued, the water historically and presently used to irrigate crops would now be used to serve the Specific Plan land uses. The amount of agricultural water used to meet potable demand of the Specific Plan would not increase over that amount used historically. This water would be distributed to areas on the Specific Plan site through potable water pipelines. Given that the water would be used in the same geographic area, the use of this water supply source would not create significant impacts in the watershed (the same amount of water would be used in the same area and there would be no significant net change in the amount pumped). Nevertheless, the applicant's use of existing agricultural water to satisfy a portion of the Specific Plan's potable demand will be assessed against the significance criteria of whether the use of that water would "[s]ubstantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (*e.g.*, the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)."

(k) Significance Threshold Criteria for Use of Reclaimed Water

A portion of the surface flows in the Santa Clara River are comprised of tertiary treated effluent (reclaimed water) discharged from the existing Valencia and Saugus water reclamation plants. For purposes of this analysis, a substantial decrease in the amount of reclaimed water flowing downstream to Ventura County will be considered a significant impact.

2.5.6.4 Impacts Analysis

(a) Newhall Ranch Reclaimed Water Use

The Specific Plan proposes the use of reclaimed (also referred to as "recycled") water from the Newhall Ranch WRP on the Specific Plan site as a source of irrigation water. The State of California has made the use of reclaimed water a priority by enacting legislation encouraging and governing its use to offset demand for potable water. California Water Code §13576 presents the following findings:

> "(c) There is a need for a reliable source of water for uses not related to the supply of potable water to protect investments in agriculture, greenbelts, and recreation and to replenish groundwater basins, and protect and enhance fisheries, wildlife habitat, and riparian areas.
>
> (d) The environmental benefits of recycled water include a reduced demand for water in the Sacramento-San Joaquin Delta which is otherwise needed to maintain water quality, reduced discharge of waste into the ocean, and the enhancement of groundwater basins, recreation, fisheries, and wetlands.
>
> (f) The use of recycled water is a cost-effective, reliable method of helping to meet California's water supply needs.
>
> (h) Retail water suppliers and recycled water producers and wholesalers should promote the substitution of recycled water for potable water and imported water in order to maximize the appropriate cost-effective use of recycled water in California."

Consistent with these findings, California Water Code §13577 "establishes a statewide goal to recycle a total of 700,000 acre-feet of water per year by the year 2000 and 1,000,000 acre-feet of water per year by the year 2010." California Water Code §13579 further states that:

> "(a) In order to achieve the goals established in Section 13577, retail water suppliers shall identify potential uses for recycled water within their service areas, potential customers for recycled water service within their service areas, and, within a reasonable time, potential sources of recycled water."

The Specific Plan's goal is to facilitate construction of the Newhall Ranch WRP as a near zero-discharge facility, partially offsetting the demand for potable water. The WRP would generate 5,630 to 7,763 AFY of tertiary-treated wastewater, which could be reclaimed to help meet the total non-potable water demand of 9,035 AFY for the Specific Plan. For additional detail regarding the proposed use of reclaimed water on the Specific Plan site (please *see*, Final EIR Section 1.0, Project Description, Section 5.0, Subsection 3, Description of the Water Reclamation Plant, and Section 5.12, Wastewater Disposal).

As indicated in the Newhall Ranch Final EIR, in an average rainfall year, all tertiary-treated wastewater from the Newhall Ranch WRP would be reclaimed for irrigation, except in the months of October through March. For these winter months, collectively, about 286 to 1,025 acre-feet of the treated wastewater would not be needed to meet non-potable demand. The reclaimed water exceeding the Specific Plan's non-potable demand would be discharged to the Santa Clara River. The water quality impacts associated with the discharge of reclaimed water to the Santa Clara River was previously analyzed in the Newhall Ranch Specific Plan and Water Reclamation Plant Final EIR. The trial court upheld the adequacy of that analysis. As indicated in the Final EIR, discharges of reclaimed water from the Newhall Ranch WRP to the Santa Clara River must conform to the limits specified in the Regional Water Quality Control Board's *Basin Plan* (discharge limits were identified previously in the Final EIR, Table 5.0-2). As previously discussed, the WRP would meet the design criteria of the County Sanitation Districts of Los Angeles County (CSDLAC) for tertiary reclamation plants (as do the existing CSDLAC facilities in Saugus and Valencia), and would meet *Basin Plan* objectives and waste discharge requirements for the Santa Clara River. The Newhall Ranch WRP discharges, by meeting *Basin Plan* requirements, would also meet state and federal requirements for the water quality of discharges to a river.

Reclaimed water from the proposed Newhall Ranch WRP would be used for irrigating multi-family residential common areas, community open areas, the golf course, major road and parkway landscaping, school yard, park landscaping, and landscaping around commercial/office/community facilities. It could also be the water source for the Community Lake (the Specific Plan areas which can be served with potable versus non-potable water are shown in Final EIR Table 4.11-2).[50]

Two water distribution systems are proposed for the Specific Plan: a potable water system and a non-potable water system (*See*, Final EIR Figure 4.11-8, Conceptual Backbone Water Plan). Other permitted

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50 Under the Water Reclamation Requirements program, treated wastewater may be used for groundwater recharge, recreational impoundments, industrial processing and supply, and landscape irrigation. California Regional Water Quality Control Board, Los Angeles Region. *Draft Water Quality Control Plan (Basin Plan) [for the] Los Angeles Region*, (Monterey Park, California: 13 June 1994), p. 1-23.

uses of reclaimed water under Title 22 of the California Code of Regulations, Division 4, Chapter 3, Article 3 include the irrigation of playgrounds, school yards and similar areas; non-restricted recreational impoundment (with no limitations on body-contact sports and activities); and surface and spray irrigation of food crops. These Title 22 requirements incorporate the requirements of the California Department of Health Services (*See*, Title 22 for complete listing of permitted uses of reclaimed water). The use of reclaimed water on the Specific Plan site is considered a benefit to the environment because it reduces demand for potable water supplies, enhances groundwater recharge in the Santa Clarita Valley and protects and enhances wildlife habitat and riparian areas along the Santa Clara River. Furthermore, the State of California has made the finding that the use of reclaimed water for irrigation purposes, as proposed by the Newhall Ranch Specific Plan, is environmentally safe. California Water Code §13576 (e) states:

> "The use of recycled water has proven to be safe from a public health standpoint, and the State Department of Health Services is updating regulations for the use of recycled water."

Based on this information, along with the mitigation measures adopted by Los Angeles County as part of the partial certification of the Final EIR for the Newhall Ranch Specific Plan and Water Reclamation Plant relating to the use and discharge of reclaimed water, no significant water-related impacts would occur with respect to the use or discharge of reclaimed water on the Specific Plan site from the Newhall Ranch WRP.

(b) Impacts of CLWA Reclaimed Water Use

It has been suggested that the projected implementation of a reclaimed water program to increase the availability of reclaimed water in the Santa Clarita Valley will be "at the expense of the downstream users." In comments submitted on the Notice of Preparation, Ventura County claims that downstream users rely on reclaimed water discharged into the Santa Clara River as a significant source of surface water flowing into Ventura County and into the service area of UWCD. (In light of the information presented in **Section 2.5.6.2**, above, regarding the amount of water flowing into Ventura County originating in Los Angeles County, it does not appear that reclaimed water is a "significant" source of water for Ventura County. As indicated, only 26 percent of *all* water flowing in the portion of the Santa Clara River in Ventura County originates in Los Angeles County. Reclaimed water makes up only a small portion of the 26 percent.) For purpose of this analysis, a substantial decrease in the amount of reclaimed water flowing to Ventura County will be considered a significant impact.

As indicated in the UWMP (2000), reclaimed water is available from two existing WRPs, the Saugus and Valencia plants. In 1993, CLWA prepared a draft Reclaimed Water System Master Plan that outlined a multi-phase program to deliver reclaimed water in the Santa Clarita Valley. CLWA completed environmental review of Phase 1 of that Master Plan and is constructing Phase 1 of the project, which will deliver approximately 1,700 AF of water. Surveys conducted by CLWA indicate a high interest in using reclaimed water among existing users as well as future developments, replacing non-potable demands with reclaimed water instead of potable water. Overall, the 1993 program expected to reclaim up to 10,000 AF of highly (tertiary) treated wastewater suitable for use on golf courses, landscaping, and other non-potable uses.[51] An updated plan is in preparation stages, which would provide up to 17,000 AFY to meet a larger demand. An additional amount will be made available by the Newhall Ranch WRP.[52] For additional information regarding the planned use of reclaimed water in the Santa Clarita Valley, please refer to UWMP (2000), Chapter 7.0, Water Recycling.

DMS reports that the present amount of reclaimed water discharged into the Santa Clara River and contributing to the flow of water into Ventura County totals approximately 18,000 acre-feet per year. Approved buildout of the existing WRPs (Plants 26 and 32) would result in the generation of approximately 38,000 acre-feet of reclaimed water flow.[53] Subtracting the existing generation of 18,000 acre-feet from the total expected future generation of reclaimed water flows of 38,000 acre-feet, a total of approximately 20,000 acre-feet of additional reclaimed water supply would be available for use as part of CLWA's updated Reclaimed Water System Master Plan. Given that the CLWA program is proposing the ultimate use of approximately 17,000 acre-feet of reclaimed water, use of the reclaimed water as proposed would not result in a decrease in reclaimed water flow downstream (20,000 acre-feet of new supply minus 17,000 acre-feet of demand indicates that enough new reclaimed water is available and the use of existing reclaimed water supplies would not be required). Regarding potential water quality impacts associated with this water's use on the Specific Plan site, as indicated above for the Newhall Ranch WRP reclaimed water use, the use of CLWA reclaimed water on the Specific Plan site is considered a benefit to the environment because it reduces demand for potable water supplies, enhances groundwater recharge in the Santa Clarita Valley and protects and enhances wildlife habitat and riparian areas along the Santa Clara River. Furthermore, as proposed by the Newhall Ranch Specific Plan, the State of California has made the finding that the use of reclaimed water for irrigation purposes is environmentally safe. Consequently, no significant impacts are expected to occur on site or downstream.

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51 UWMP, December 2000, page 7-1.

52 Ibid., page 2-9.

53 Ibid., page 7-3.

(c) *Newhall Agricultural Water Use*

After maximizing the use of reclaimed water, the project applicant would meet the potable water demands of the Specific Plan by using the agricultural water historically and presently used by the applicant for agricultural irrigation purposes on its land in Los Angeles County. No additional agricultural water would be pumped under this condition; instead, the water presently used to irrigate crops would be used to serve urban land uses, as the agricultural areas are taken out of production.

The Newhall Land and Farming Company has been farming the land that includes portions of the Specific Plan area and elsewhere in Los Angeles County for many decades. In addition, Newhall owns private wells and uses the water provided by these wells to conduct its agricultural operations. The average annual amount of agricultural water that has been pumped from wells and used for agricultural operations in Los Angeles County from 1996 to 2000 is approximately 7,038 AFY.

The land would ultimately be taken out of agricultural production as it is converted to non-agricultural uses. The uses include residential and commercial land uses. Since the water is already used to support Newhall's agricultural uses, there are not expected to be significant adverse effects resulting from the water being used to partially meet the potable demand of the Specific Plan. The amount of water that will be used to serve the potable demand of the Specific Plan would not exceed the amount of water that was used for the agricultural uses that are taken out of production. The agricultural water would be used to meet potable water demand of the Specific Plan, in conjunction with imported water supplies. Prior to use on the Specific Plan site, the agricultural water would also be disinfected through the use of chlorination systems at each well location in order to meet Title 22 drinking water standards. The only potential impact associated with the use of Newhall's agricultural water is the conversion of that water to municipal water uses. Provided below is a discussion of this potential impact.

As stated, Newhall pumps approximately 7,038 AFY from wells located in Los Angeles County and irrigates its agricultural land in Los Angeles County. Most of this irrigation occurs on the valley floor using sprinklers or furrow irrigation methods. The crops transpire a portion of this water, a portion evaporates and a portion percolates below the root zone to groundwater present within the Alluvium. It is estimated that about 30 percent of the irrigation water recharges the underlying Alluvial aquifer annually (CH2MHill, 2002). Because the Alluvial aquifer has a connection with the Santa Clara River, deep percolation of irrigation water also contributes to surface water base flow in the valley.

In the future, it is anticipated that this irrigated farmland will be developed as the Newhall Ranch Specific Plan is developed and the rest of the Santa Clarita Valley continues to urbanize. Consequently,

the water that has been historically utilized for irrigated agriculture will be made available to serve various municipal water demands for the Specific Plan, including drinking water, outdoor irrigation and recreation. Water used for outdoor irrigation will be utilized by the plants and transpired and a portion (10 to 30 percent) will percolate below the root zone to the underlying Alluvial aquifer. The water that is not used for outdoor irrigation will ultimately be consumed and conveyed to water reclamation plants for treatment. At the present time, most of the reclaimed water is discharged to the Santa Clara River; however, the County Sanitation Districts of Los Angeles County (CSDLAC) 2015 Plan and the Newhall Ranch Specific Plan call for the Specific Plan wastewater to be reclaimed and used for irrigation of landscaping and golf courses, and other non-drinking water uses.

The conversion of land and water uses within the Newhall Ranch footprint, including the conversion of 7,038 AFY of water now used for irrigated agriculture to municipal uses, will not result in a substantial change in the amount of water recharging the hydrologic system in the river valley upstream of the County jurisdictional line. Under the Newhall Ranch Specific Plan, most of the water will either be used directly for outdoor irrigation or will be consumed, treated and reclaimed for irrigating landscaping, parks and golf courses. Thus, as the water is converted from agriculture to municipal uses, most of the water continues to be used for irrigation purposes. CH2MHill evaluated the effects of the land use conversion, and the associated change in the locations and rates of water use, on total recharge to the river valley. The CH2MHill analysis is presented in Table 1 of Appendix 2.5. The analysis indicates that the land and water use conversions would eliminate an estimated 2,393 AFY of agricultural return flows to the river/Alluvial aquifer system, but would increase urban return flows to this system by a nearly equal amount. The urban return flows would be approximately 2,330 AFY and would arise from irrigating portions of the development directly overlying the Alluvial aquifer and the Saugus Formation (467 AFY of deep percolation to groundwater); surface return flows of water used to irrigate the portions of the development that directly overlie the bedrock of the Pico Formation (1,577 AFY of return flow); and direct discharges of treated effluent from the Newhall WRP (286 AFY). Consequently, there will be no appreciable change in the contribution of groundwater to the Santa Clara River, and no appreciable change in river flows, due to conversion of land and water uses. In addition, as indicated previously in this report, the Alluvial aquifer is not in an overdraft condition. Based on this information, potential impacts associated with conversion of agricultural water to municipal water are less than significant.

(d) CLWA State Water Project (SWP) Water Use

As discussed above, CLWA purchased an additional 41,000 AFY of SWP Table A entitlement in 1999 from water agencies in Kern County (Kern County Water Agency and Wheeler Ridge-Maricopa Water Storage District ["WRMWSD"]). The CLWA/WRMWSD water transfer constituted a separate project

with the potential to result in a significant impact on the environment; therefore, an EIR was required pursuant to CEQA. Accordingly, CLWA, as lead agency, prepared a Final EIR entitled, Supplemental Water Project Environmental Impact Report, dated February 1999 (SCH No. 98041127) ("the CLWA Final EIR"). CLWA's Board of Directors certified the CLWA Final EIR as adequate in March 1999.

In April 1999, a lawsuit was brought challenging the adequacy of the CLWA Final EIR under CEQA. The trial court ruled in favor of CLWA, finding that the EIR fully complied with CEQA, and the plaintiffs appealed. The appellate court reversed the trial court's judgment and ordered the EIR decertified, but not on any of the grounds urged by the plaintiffs. Instead, the appellate court found that the CLWA Final EIR had "tiered" off of an EIR for a separate project ("the Monterey Agreement EIR") that had subsequently been decertified. The appellate court expressly found that, had it not been for the decertification of the Monterey Agreement EIR, it would have affirmed the trial court's ruling that the CLWA Final EIR complied with CEQA.

In September 2002, on remand from the appellate court, the trial court ordered the CLWA Final EIR decertified. However, the court allowed the water transfer itself to remain intact while CLWA prepares a new EIR. CLWA has already hired environmental consultants to prepare the new EIR and work on the EIR is well underway. Importantly, Specific Plan reliance on any of CLWA's additional SWP supplies would not occur, if at all, until late in the Specific Plan's 25- to 30-year buildout period. It is reasonable to expect that, by that time, CLWA will have completed the new EIR for the water transfer.

The water transfer does not require the construction of any new SWP or CLWA water delivery facilities, nor does it require the improvement of any existing facilities. Consequently, the water transfer is not expected to result in direct significant impacts to the physical environment. However, the water transfer has the potential to result in indirect impacts to the physical environment due to growth and development that may be served by the additional water supplies. The water transfer's potential indirect impacts will be addressed in the new EIR being prepared by CLWA. In addition, as stated above, the prior CLWA Final EIR was decertified based on a technical tiering issue only. Although decertified, therefore, the CLWA Final EIR still contains useful background information and impact analysis regarding CLWA water supplies.

CLWA water supplies no longer constitute any portion of the Specific Plan's primary water supplies. However, over time, CLWA water supplies could be used to supplement the Specific Plan's primary water supplies and, thus, facilitate development of the Specific Plan. In this way, CLWA water supplies could indirectly result in the environmental effects previously assessed in the partially certified Newhall Ranch Final EIR (SCH No. 95011015). This EIR is incorporated by reference and can be reviewed at the Los Angeles County Department of Regional Planning, located at 320 West Temple Street, Los Angeles, California 90012.

Prior to application and use in the Santa Clarita Valley, SWP water would be treated in water treatment plants operated by CLWA in order to meet or exceed local and regional water quality standards. Consistent with the information presented in the **Subsection** entitled, **Potential for Degradation of Water Quality in the Alluvial Aquifer, Saugus Formation, or Santa Clara River**, no significant water quality impacts would occur.

(e) Newhall/SWP Water Use

As stated above, the project applicant has entered into agreements to reserve and ultimately purchase 7,648 AFY of additional SWP Table A water entitlement, which would be delivered to CLWA through existing SWP facilities.

As stated in **Section 2.5.5.3** above, the Newhall SWP water will require purchase and sales agreements between the Berrenda Mesa Water District in Kern County and a designated SWP contractor. The proposed agreement constitutes a separate project, which may have a significant effect on the environment and, therefore, an EIR will be prepared in accordance with CEQA. Although not yet designated as such, CLWA is the likely SWP contractor that would enter into the proposed agreements. In that capacity, CLWA would act as the "lead agency" under CEQA and prepare the EIR for the proposed transfer of the surplus SWP water. This water would be used on the Specific Plan site, which is located in the CLWA service area within Los Angeles County.

The environmental impacts of the proposed transfer from Kern County to Santa Clarita Valley would have to be addressed in both the CLWA service area and the Berrenda Mesa service area. The EIR prepared by CLWA is expected to address the significant environmental effects of the proposed transfer in the CLWA service area, along with an assessment of significant cumulative impacts. CLWA has already circulated a Notice of Preparation ("NOP") of the EIR for the proposed transfer of SWP water supplies for use in connection with the Specific Plan. Although CLWA anticipates revising and recirculating the NOP to reflect a revised project description, both the prior and revised NOP provide information regarding anticipated environmental impacts and are incorporated by this reference. The NOPs can be reviewed by contacting Castaic Lake Water Agency, c/o Science Applications International Corporation, 816 State Street, Suite 500, Santa Barbara, CA 93101, or the Los Angeles County Department of Regional Planning, located at 320 W. Temple Street, Los Angeles, California 90012.

From an environmental perspective, the proposed transfer of additional SWP Table A entitlement to the CLWA service area would not require any new SWP facilities, or construction of any new water facilities, infrastructure or any other type of construction or land development. In addition, the proposed transfer

would not involve the conversion of any land uses within the CLWA service area. The increased supply of imported SWP water would also reduce future impacts to local groundwater supplies in Santa Clarita Valley. However, the water delivered to CLWA as a result of the proposed water transfer would be used to support development of the Newhall Ranch Specific Plan. Therefore, the proposed water transfer would facilitate the phased development of the Specific Plan, which would result in the environmental effects previously assessed in the partially certified Newhall Ranch Final EIR (SCH No. 95011015).

Like CLWA's SWP Table A water entitlement, prior to application and use in the Santa Clarita Valley, the Newhall/SWP water would be treated in water treatment plants operated by CLWA in order to meet or exceed local and regional water quality standards. Consistent with the information presented in the **Subsection** entitled, **Potential for Degradation of Water Quality in the Alluvial Aquifer, Saugus Formation, or Santa Clara River**, no significant water quality impacts would occur.

The environmental impacts of the proposed transfer within the Berrenda Mesa service area already have been evaluated in a separate certified Final EIR prepared by Berrenda Mesa entitled, Final Environmental Impact Report, Transfer of Water Entitlements from Berrenda Mesa Water District for Use in the Dougherty Valley Area, dated February 1996 (SCH No. 95033045) ("Berrenda Mesa Final EIR"). An Addendum to the Berrenda Mesa Final EIR is underway.

The Berrenda Mesa Final EIR evaluates the impacts of two related actions: (a) program-level evaluation of transferring up to 75,000 acre-feet of SWP water entitlements currently assigned to Berrenda Mesa; and (b) an evaluation of transferring 7,000 acre-feet of the 75,000 acre-feet of water entitlement transferred from Berrenda Mesa for use in the Dougherty Valley area of Contra Costa County. The program-level evaluation of the transfer of 75,000 acre-feet of SWP entitlement from Berrenda Mesa includes an assessment of impacts in Kern County and in portions of the SWP. The objectives of the 75,000 acre-feet transfer of SWP entitlement included the transfer of under-utilized water entitlements from Berrenda Mesa, provision for the beneficial use of the under-utilized water entitlement and reduction in water supply costs to the remaining irrigated acreage in Berrenda Mesa.

The lead agency for the Berrenda Mesa Final EIR was Berrenda Mesa because the main action considered in the document was the transfer of a portion of the SWP water entitlement from Berrenda Mesa for use in other areas of the state, including the transfer of up to 7,000 acre-feet of Berrenda Mesa's entitlement for use in the Dougherty Valley area. The Berrenda Mesa Final EIR was specifically prepared so that it could be used by Berrenda Mesa and other interested public agencies as the environmental documentation for the transfer of up to 75,000 acre-feet of SWP entitlement.

The Berrenda Mesa EIR was not challenged and, therefore, is conclusively presumed to comply with CEQA. *See*, CEQA *Guidelines* §21167.2. The Berrenda Mesa EIR is incorporated by reference and can be reviewed at the Berrenda Mesa Water District, located at 2100 F Street, Suite 100, Bakersfield, California 93301 or the Los Angeles County Department of Regional Planning, located at 320 W. Temple Street, Los Angeles, California 90012. CLWA must make the determination of whether any further environmental analysis is required for the Berrenda Mesa "side" of the proposed transfer.

(f) Nickel Water Use

As stated above, The Newhall Land and Farming Company has entered into an agreement to purchase 1,607 acre-feet of annual water entitlement ("Nickel Water") from Nickel Family LLC ("Nickel"), a property owner in Kern County. The Nickel Water would be delivered through the Kern County Water Agency (KCWA) to CLWA through the existing California Aqueduct and associated facilities. Because it is not subject to reductions in dry years, the Nickel Water is an extremely reliable water supply source for the Specific Plan.

Nickel acquired the Nickel Water as a result of KCWA's Kern River Restoration and Water Supply Program ("the Restoration Program"). KCWA approved the Restoration Program in September 2000. As part of the approved Restoration Program and the supporting contractual documents: (a) Nickel can sell its water to third parties; (b) that the water will be transported in the California Aqueduct to the full extent of the KCWA's right to use the Aqueduct; and (c) KCWA agreed to schedule deliveries with DWR at the same time and in the same manner as KCWA schedules deliveries of its SWP water to KCWA's Member Units. A copy of the Initial Study and Negative Declaration prepared for the Kern River Restoration and Water Supply Program, dated July 27, 2000, as well as the subsequent Negative Declaration addressing the transfer of water to Nickel, are incorporated by this reference, and are available for review at the Los Angeles County Department of Regional Planning, located at 320 W. Temple Street, Los Angeles, California 90012.

From an environmental perspective, the proposed transfer of 1,607 AFY of Nickel Water to the CLWA service area would not require the construction of any new SWP facilities, or the construction or improvement of any other new or existing water facilities or infrastructure. As a result, the use of the Nickel Water is not expected to cause any potential significant impacts to the physical environment. However, the use of the Nickel Water will facilitate the phased development of the Newhall Ranch Specific Plan. The growth associated with the Specific Plan has been addressed in the partially certified Newhall Ranch Final EIR (SCH No. 95011015). Other environmental issues associated with the use of

Nickel Water are the capability to deliver the water to Santa Clarita Valley, the quality of the water, and impacts to sensitive biological resources. These issues are discussed further below.

A report entitled, *Evaluation of Available Capacity in the California Aqueduct from Reach 10A to Reach 30* (November 23, 2002), has been prepared by Provost & Pritchard Engineering Group, Inc. to evaluate the ability of the existing California Aqueduct and associated facilities to convey the 1,607 AFY from areas in Kern County (Aqueduct Reach 10A) to CLWA at Castaic Lake (Aqueduct Reach 30) through the year 2035. As stated in the report, sufficient capacity in the Aqueduct is available to convey an additional 1,607 AFY of water from Kern County (Reach 10A) to Castaic Lake (Reach 30).

In perspective, 1,607 AFY equates to 8.8 cfs flowing for 3 months per year (or 2.2 cfs flowing throughout the year), assuming an Aqueduct conveyance system with an operational capacity range of 1,680 to 6,350 cfs and a storage capacity of 540,520 AF [54] within these two reaches. The needed 2.2 cfs of capacity represents just 0.13 percent of the total capacity at the low end of the range and 0.03 percent at the high end of the range. Because this water is a stable source, a very small amount, and could be transferred at anytime during the year, the needed capacity would be available during off-peak periods when the full capacity of the SWP system is not in use. A copy of the Provost & Pritchard report is provided in Appendix 2.5.

The proposed use of Nickel Water would not involve the conversion of any land uses within the CLWA service area. The increased supply of water would also reduce future potential impacts to local groundwater supplies in Santa Clarita Valley. However, the use of Nickel Water in the CLWA service area would be utilized to support phased development of the Newhall Ranch Specific Plan. Therefore, the proposed use of the Nickel Water would facilitate development of the Specific Plan, which would result in the environmental effects previously assessed in the partially certified Newhall Ranch Final EIR (SCH No. 95011015).

Like CLWA's SWP Table A water entitlement, prior to application and use in the Santa Clarita Valley, the Nickel Water would be treated in water treatment plants operated by CLWA in order to meet or exceed local and regional water quality standards. CLWA is presently in the process of completing the environmental documentation necessary to expand their treatment facilities. Consistent with the information presented below in the **Subsection** entitled, **Potential for Degradation of Water Quality in the Alluvial Aquifer, Saugus Formation, or Santa Clara River**, no significant water quality impacts

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54 Combined storage of Quail Lake, Pyramid Lake, Elderberry Forebay, Castaic Lake and Castaic Lake Lagoon (*See*, DWR, Data Handbook-State Water Project, 1997).)

would occur. Furthermore, because the Nickel Water would be transmitted through the existing California Aqueduct and associated facilities (*i.e.*, Aqueduct), the water would take on the same water quality characteristics of SWP water.

With respect to potential impacts to riparian vegetation and sensitive species, which are riparian habitat dependent, the use of the Nickel Water would be considered a beneficial impact given that the water would, after use on Newhall Ranch, slightly increase the quantity of flows in the Santa Clara River (the 1,607 AFY of water represents a small 1.7 percent increase in water importation to the Santa Clarita Valley when compared with CLWA's 95,200 AFY entitlement). This increase in river flow would enhance the ability of the river system to support sensitive habitats and species. Such increases in river flow would also beneficially impact downstream water users in Ventura County by providing downstream water basins with added surface/groundwater supplies. Based on this information, no significant environmental impacts are expected in the Santa Clarita Valley and in areas downstream of the Valley due to the use of the Nickel Water.

(g) Semitropic Groundwater Banking

As discussed above, the applicant has entered into an agreement to reserve and purchase permanent water storage capacity of up to 55,000 acre-feet in the Semitropic Water Storage District Groundwater Banking Program, making the applicant one of the District's partners in the Groundwater Banking Program. The water banked pursuant the applicant's agreement with the District would be extracted in dry years in amounts of up to 4,950 AFY. This supply would serve as a Specific Plan water source in dry years only.

The Semitropic Water Storage District is located in north-central Kern County in the San Joaquin Valley, approximately 20 miles northwest of the City of Bakersfield. The District provides SWP supplies for agricultural irrigation on land located in Kern County, immediately east of the California Aqueduct. Using its groundwater storage capacity of one million acre-feet, the District began implementation of the Groundwater Banking Program in 1995. The District operates the Program by accepting surplus SWP water supplies from its banking partners in wet years and returning the water in dry years. The Program is a long-term water storage program designed to recharge groundwater and reduce overdraft, increase operational reliability and flexibility, and optimize the distribution and use of available water resources between the District and its banking partners.

As part of the Program's dry-year water return process, the District can leave its own SWP entitlement supplies in the Aqueduct for use by its banking partners. The District has also constructed facilities so that banked groundwater can be pumped into the District's canal and, through reverse pumping plants, delivered to the Aqueduct for use by the District's banking partners.

To assess the potential environmental impacts of implementing the Groundwater Banking Program, the District and Metropolitan Water District of Southern California prepared the *Semitropic Groundwater Banking Project Draft Environmental Impact Report*, dated March 1994 (SCH No. 93072024), the *Semitropic Groundwater Banking Project Final Environmental Impact Report*, dated July 1994 (SCH No. 93072024), CEQA findings and a mitigation monitoring plan. Those environmental documents evaluated the potential impacts related to the District's proposed construction, upgrade and conjunctive use of various water conveyance facilities. The Draft and Final EIRs for the Semitropic Groundwater Banking Program are incorporated by this reference and can be reviewed at the Semitropic Water Storage District, located at 1101 Central Avenue, Wasco, California 93280, or the Los Angeles County Department of Regional Planning, located at 320 W. Temple Street, Los Angeles, California 90012.

The applicant's agreement to participate in the Groundwater Banking Program would not require the construction of any new groundwater storage, pumping or conveyance facilities or the improvement of existing facilities. Therefore, use of the stored water supplies to serve the Specific Plan during dry years would not result in a direct impact to the physical environment.

The applicant's agreement to participate in the Groundwater Banking Program would not adversely affect the quality of the District's groundwater supplies or the quality of water in the California Aqueduct, nor would it violate any water quality standards. The eventual withdrawal of groundwater from the District (up to 4,950 AF) is within the normal limits for the District's existing operations. Both the District and DWR monitor water quality before allowing water into the California Aqueduct, and DWR monitors water quality in the Aqueduct. Like SWP Table A water imported under CLWA's entitlement, prior to application and use in the Santa Clarita Valley, water from the District's Groundwater Banking Program would be treated in water treatment plants operated by CLWA in order to meet or exceed local and regional water quality standards. Consistent with the information presented below in the **Subsection** entitled, **Potential for Degradation of Water Quality in the Alluvial Aquifer, Saugus Formation, or Santa Clara River**, no significant water quality impacts would occur.

(h) Specific Plan Impacts (Including Saugus Groundwater Banking/ASR Program)

A groundwater modeling analysis was performed by CH2MHill to assess the potential impacts of the Saugus Groundwater Banking/ASR program and the Newhall Ranch Specific Plan as a whole (including ASR). The results of this assessment are provided below *(See*, Newhall Ranch Updated Water Resources Impact Evaluation, prepared by CH2MHill, November 2002, in Appendix 2.5 for the complete analysis.) **Section 2.5.5**, above, provides a description of the Saugus Groundwater Banking/ASR program, where similar programs are in use, information establishing that the program is feasible, and that water injected during average and wet years would be available when needed during dry years. This analysis will

identify the impacts of the Saugus Groundwater Banking/ASR program and the Newhall Ranch Specific Plan as a whole (including ASR), and assess whether the impacts, if any, are significant when measured against the thresholds of significance described above.

The Santa Clarita Valley water purveyors have prepared the UWMP, which includes groundwater as a local supply source for satisfying the existing and projected future water demand in the Santa Clarita Valley. Although the source(s) of potable water identified for the Specific Plan would not result in the net use of groundwater over that which is planned for the Santa Clarita Valley in the UWMP, this section will address the impacts, if any, of full build-out of the Specific Plan and implementation of the Saugus Groundwater Banking/ASR program while the purveyors' groundwater production plans are in operation, and the significance of those impacts, if any. This subsection also presents an analysis of impacts associated with full build-out of the Specific Plan and implementation of the Saugus Groundwater Banking/ASR program under existing conditions. However, it should be noted that this scenario would not actually occur because it assumes that the use of groundwater as depicted in the UWMP (in order to meet the demands of additional approved and projected development other than Newhall Ranch) would not occur, and that the only change to the management of the groundwater basin that would occur in the future is implementation of the Saugus Groundwater Banking/ASR program. Although not a realistic scenario, the analysis of impacts under existing conditions is provided for CEQA purposes.

(1) Design of Model Simulations for Evaluating Impacts of ASR Operations and Specific Plan

It has been suggested that the proposed Saugus Groundwater Banking/ASR program and the Specific Plan could reduce groundwater levels in the Alluvial and Saugus aquifers, and adversely impact beneficial water users in the Santa Clarita Valley and downstream into Ventura County. As indicated above, the CEQA *Guidelines* state that a project would normally have a significant effect on the environment if it would substantially deplete groundwater supplies such that there would be a lowering of the local groundwater table level (*e.g.*, the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).

In order to evaluate impacts resulting from the Specific Plan and the proposed Saugus Groundwater Banking/ASR program, two pumping scenarios were developed. The scenario for evaluating impacts under existing conditions considered existing pumping volumes from the Alluvium and Saugus based on 1994-1999 pumping records. The scenario for evaluating impacts under future conditions was based on operational plans for the Alluvial aquifer and the Saugus Formation in the Santa Clarita Valley through

the year 2020, as described in the UWMP. Simulated project ASR operations and Specific Plan land use and water use patterns were superimposed on both pumping scenarios, so that potential impacts to existing and future conditions could be evaluated. This was done because the Specific Plan and the Saugus Groundwater Banking/ASR program will be developed over many years as the non-project pumping volumes also increase gradually over time from existing conditions.

1. Non-project groundwater pumping[55] for the existing baseline condition as described in the UWMP is represented as follows:

   a. Alluvial aquifer pumping is simulated as 37,500 AFY during normal/average years and as 32,500 AFY during dry years.

   b. Saugus Formation pumping is simulated as 7,500 AFY during normal and wet years.

   c. Saugus Formation pumping consists of 11,500 AFY during the simulated 3-year drought.

   d. Non-project pumping from each aquifer is simulated as occurring at existing well sites.

   e. Non-project pumping follows the monthly demand curve observed by water purveyors in the basin.

2. Non-project groundwater pumping for the future condition as described in the UWMP is represented as follows:

   a. Alluvial aquifer pumping is simulated as 35,000 AFY during normal/average years and as 32,500 AFY during dry years.

   b. Saugus Formation pumping is simulated as 11,000 AFY during normal and wet years.

   c. Saugus Formation pumping during a drought consists of:

      1. First year: 15,000 AFY

      2. Second year: 25,000 AFY

      3. Third year: 35,000 AFY

   d. Non-project pumping from each aquifer is simulated as occurring at existing well sites and at up to eight new Saugus well sites.

   e. Non-project pumping follows the monthly demand curve observed by water purveyors in the basin.

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[55] "Non-Project Groundwater Pumping" is defined as the groundwater pumping that would be conducted by the Valley water purveyors to meet existing and future water demands excluding the Newhall Ranch Specific Plan.

Local hydrology (precipitation and recharge conditions) for wet, normal, and dry years were simulated using historical data for the past 19 years (1982 – 2000) and this same pattern was projected into the future. Following are the results of the modeling analyses with respect to the issues raised.

(2) Influence of ASR Operations on Groundwater Elevations

Figures 5-15 and 5-16 in Appendix 2.5 to the original Draft Additional Analysis (2001) (*Newhall Ranch ASR Impact Evaluation*, prepared by CH2MHill, February 2001) show simulated Saugus groundwater elevations in the western portion of the Santa Clarita Valley just before the simulated 3-year drought of 1990-1992. Figure 5-15 shows these elevations without the ASR wellfield, and Figure 5-16 shows these elevations with the ASR wellfield in operation (both figures use the UWMP pumping scenario for non-project pumping). In Figure 5-16, the groundwater elevations reflect conditions at the end of a 3-year injection period (May 1989).[56] The figures show groundwater flow in the Saugus Formation towards the western limit of the Saugus beneath the Santa Clara River. As shown in the figures, the area between roughly the I-5 crossing and the western limit of the Saugus (approximately 2.5 miles upstream of the county line) is simulated by the model as a regional groundwater discharge area for the Saugus Formation. In Figure 5-16, superimposed on the regional flow pattern are localized mounds (areas of high groundwater elevations) where injection is occurring at wells in the north and south ASR wellfields.

Figures 5-17 and 5-18 in Appendix 2.5 to the original Draft Additional Analysis (2001) (*Newhall Ranch ASR Impact Evaluation*, prepared by CH2MHill, February 2001) show the simulated Saugus groundwater elevations near the end of the 3-year drought (without and with operation of the ASR wellfield, respectively). (Both figures use the UWMP pumping scenario for non-project pumping.) The figures show the same general regional flow pattern as for May 1989. However, unlike the May 1989 maps, the map in August 1992 under ASR operations shows a drawdown cone in the north wellfield arising from the pumping of north wellfield ASR wells to meet peak-season water supply needs for the Newhall Ranch Specific Plan.

Figure 2.5-32 contains hydrographs showing the effects of ASR on simulated groundwater elevations under the future (UWMP) pumping scenario for the rest of the Valley. The upper hydrograph diagram shows groundwater elevations without the ASR wellfield in operation (*i.e.*, with no ASR injection and pumping occurring), while the lower hydrograph diagram shows groundwater elevations with the ASR wellfield in operation. The figure shows hydrographs for Saugus groundwater elevations in the north ASR wellfield and Alluvial groundwater elevations at three locations in the western portion of the Valley

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56 As explained in Section 5.3.4 (Appendix 2.5 to the original Draft Additional Analysis (2001), *Newhall Ranch ASR Impact Evaluation*, prepared by CH2MHill, February 2001), injection during non-drought years was simulated during the period October through May, and the ASR wells were not simulated as operating during the period June through September.

(including the area where the Saugus Formation discharges to the Alluvium near the western-most limit of the Saugus Formation). As shown in the figure, the Saugus groundwater elevations at the ASR wells and the Alluvial groundwater elevations in the western portion of the Valley each show about 5 feet of seasonal fluctuation and no long-term water level declines before the 3-year drought. (The simulated seasonal fluctuations are largely caused by annual variations in precipitation and by annual and seasonal variations in pumping.) During the 3-year drought, a decline in groundwater elevations is evident in the Saugus Formation, but little or no decline is evident in the Alluvial aquifer. Water levels in the Saugus Formation begin to rise after the drought period ends (particularly after the last drought in water year 1994).

Figure 2.5-33 shows groundwater elevation changes in the Alluvial aquifer and in the Saugus Formation that are induced by ASR operations.[57] The figure shows that ASR injection induces about a 45- to 50-foot increase in Saugus Formation groundwater elevations in the North ASR Wellfield, and up to a 1-foot increase in Alluvial aquifer groundwater elevations. During ASR pumping cycles, as much as 120 feet of drawdown is induced in the North ASR Wellfield (Saugus Formation), but the maximum drawdown in the Alluvial aquifer is about 0.6 foot. Because the drawdown in the Alluvial aquifer during ASR pumping cycles will be small and short lived, ASR pumping cycles will not cause long-term groundwater elevation declines in the Alluvial aquifer, where riparian habitat is present along the river.

Based on the limited degree of drawdown both in terms of elevation and distance from the ASR wells, as well as the short-term nature of the drawdown, the Saugus Groundwater Banking/ASR program will not substantially deplete groundwater supplies such that there would be a lowering of the local groundwater table level (*e.g.*, the production rate of pre-existing nearby wells would not drop to an unacceptable level). The Saugus Groundwater Banking/ASR program will also not result in the depletion (a substantial decline in groundwater levels) of the current available supply from either the Saugus or Alluvial aquifers. Consequently, no significant adverse impacts to groundwater levels are anticipated within the basin or downstream in Ventura County.

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57 The simulated groundwater elevation changes for the Saugus Formation that are shown in **Figure 2.5-32** are for the North ASR Wellfield. The North ASR Wellfield operates during the peak demand months (June through September), and the South ASR Wellfield is inactive during these months. During the remaining 8 months of a drought year ((October through May, which are lower-demand months), the south ASR wellfield is pumping, while the North ASR Wellfield is inactive. During each month of a drought year, only two ASR wells are pumping. Modeling results indicated that the groundwater elevation changes that would be induced by ASR operations under present-day pumping conditions would be similar to the ASR-induced changes shown in Figure 2.5-32 for the future (UWMP) pumping scenario.

(3) Influence of ASR Operations on Groundwater Storage and River Flows

It has been suggested that the proposed Saugus Groundwater Banking/ASR program would significantly reduce the storage capability of the local groundwater basins, which, in turn, would adversely affect beneficial downstream water users ultimately through a substantial reduction in flow downstream. The CEQA *Guidelines*[58] state that a project would normally have a significant effect on the environment if it will interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume.

Figure 2.5-34 shows the changes in the groundwater budget (including groundwater storage) that would occur over time due to ASR operations. The plot shows the changes in groundwater storage, evapotranspiration rates (by phreatophytes[59] withdrawing water from the water table), and river flows due to ASR operations.[60] The plot also compares these groundwater budget terms with the net injection, which is the difference between the injection volume and the pumping volume for the ASR system. All water budget terms shown in **Figure 2.5-34** are plotted as the cumulative increase (or decrease) in the water budget terms. For each curve, an ascending slope means that the volume is increasing, whereas a descending slope means the volume is decreasing. The curves show the following:

a. The cumulative change in the stored volume is always positive (greater than zero). This indicates that the single-year and 3-year drought periods do not extract more groundwater than was stored during the preceding years when injection was occurring.

b. A measurable long-term increase in river flows occurs as a result of ASR operations. The change in river flow consists of changes in groundwater discharge rates to the river, plus rejected groundwater recharge that arises from the increase in the amount of water stored in the groundwater system during ASR injection cycles. Rejected recharge is defined as an increase in streamflow caused by the ASR-induced long-term increase in groundwater storage and groundwater elevations. During drought years (when the ASR system is pumping groundwater from the Saugus Formation), the curve in **Figure 2.5-34** for the change in river flow is flat, indicating that little or no rejected recharge occurs during drought years. However, during non-drought years (when the ASR system is injecting water into the Saugus Formation), the curve for the change in river flows has a positive slope, which indicates that ASR injection is reducing the volume of unfilled pore space that is available in the groundwater system for receiving infiltration from the river during storm events. Over the 19-year simulated period, the total change in river flow due to the combined effects of (1) rejected recharge and (2) increases in direct groundwater discharges to the river is approximately 20,000 to 21,000 AF, which is equivalent to a long-term increase in river flows that averages about 1,050 to 1,100 AFY during the 19-year period.

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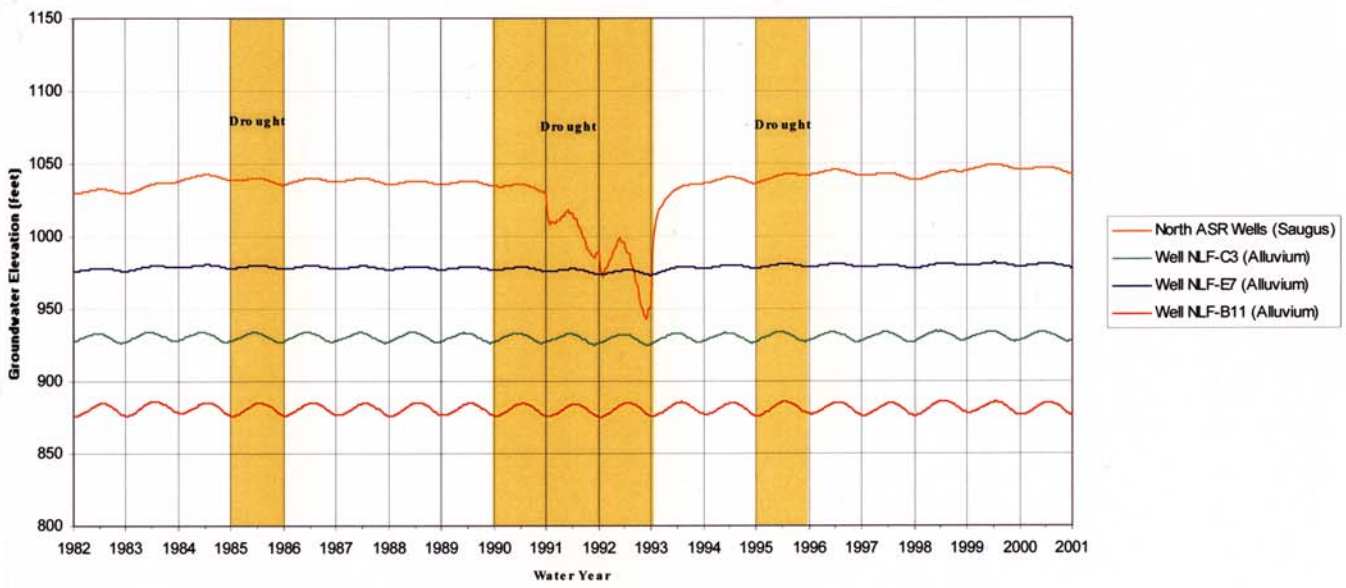
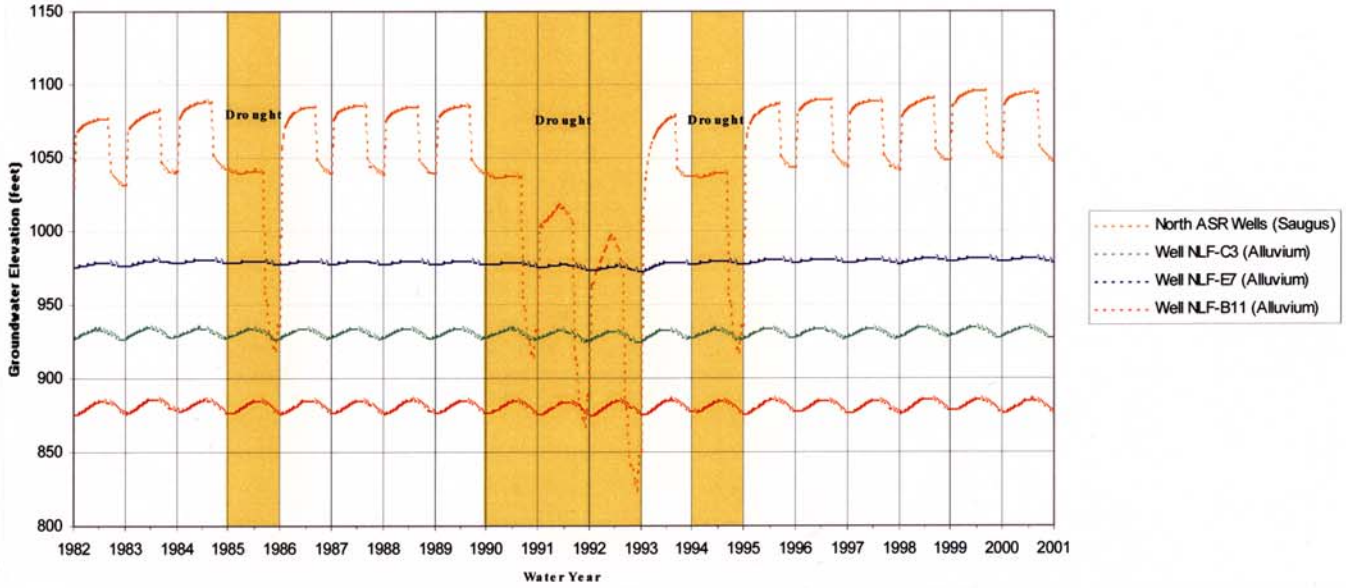
58 *Guidelines for California Environmental Quality Act*, Appendix G.

59 A phreatophyte is a deep-rooted plant that obtains its water from the water table or the layer of soil just above it.

60 Evapotranspiration is defined as withdrawal of groundwater directly from the water table by phreatophytes (vegetation with roots extending down to the water table). Evapotranspiration occurs primarily from the Alluvial aquifer west of Round Mountain, where groundwater is close to the ground surface and is discharging directly into the river.





SOURCE: CH2MHill, November 2002

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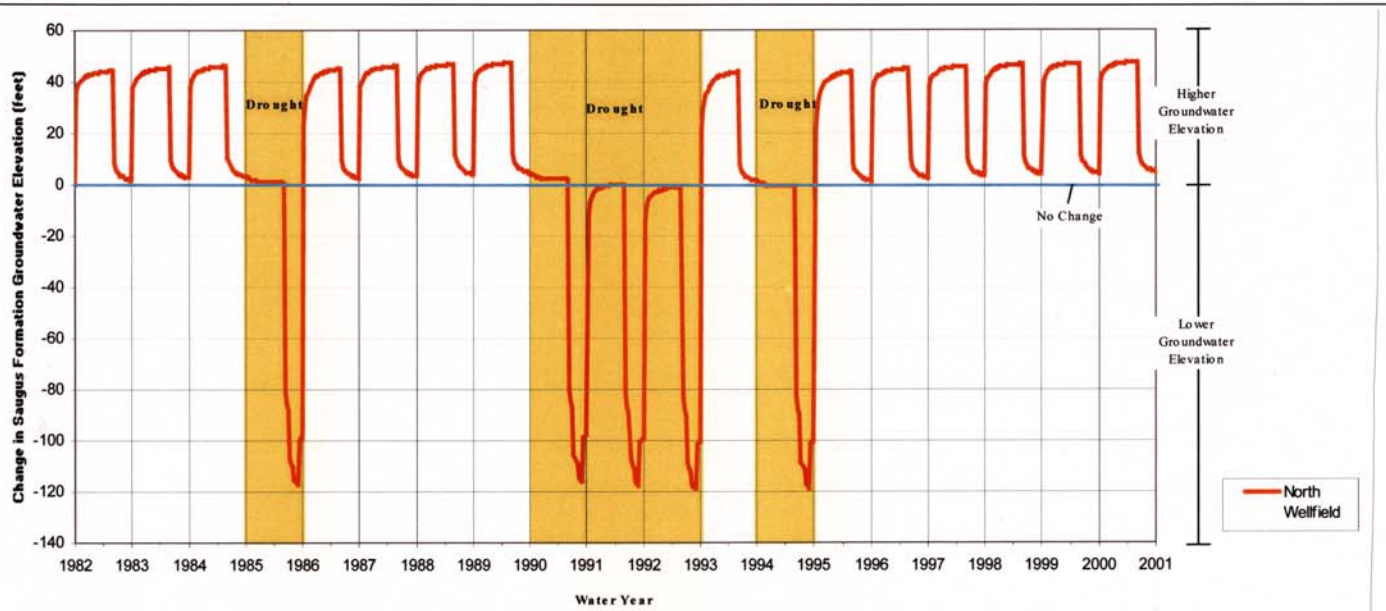
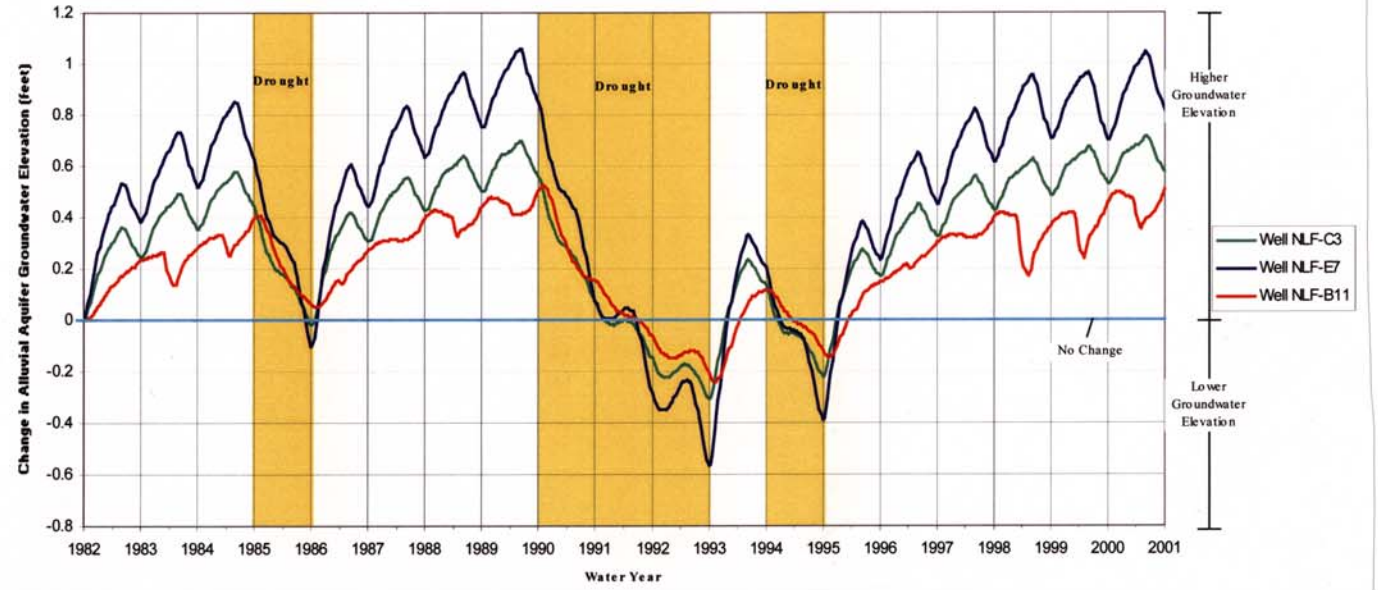
Key Points

1. Without ASR operations, Saugus groundwater elevations in the location of the North ASR Wellfield show only minor fluctuations in non-drought years. During a 3-year drought, water levels decline temporarily when pumping at other wells temporarily increases. The Saugus water levels recover fully and quickly at the end of the 3-year drought. Seasonal water level fluctuations in the Alluvial Aquifer are small and are very similar in drought years and non-drought years.
2. With ASR operations, Saugus groundwater elevations in the North ASR Wellfield show seasonal and year-to-year fluctuations due to injection and pumping cycles. Saugus groundwater elevations decline notably in the wellfield during pumping cycles. However, the Saugus groundwater elevations recover once pumping cycles end and injection cycles resume. Meanwhile, little change in groundwater elevations is visible in the Alluvial Aquifer in response to Saugus water level fluctuations.

FIGURE 2.5-32

SIMULATED GROUNDWATER ELEVATIONS OF THE NORTH ASR WELLFIELD AND ALLUVIAL AQUIFER DOWNSTREAM OF CASTAIC CREEK





SOURCE: CH2MHill, November 2002

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Key Points

1. ASR operations cause Saugus groundwater elevations in the North ASR Wellfield to rise by as much as 50 feet during injection cycles and to decline by as much as 120 feet during pumping cycles.
2. For the Alluvial Aquifer, ASR operations induce one foot or less of change in groundwater elevations in the western portion of the valley (closest to the North and South ASR wellfields). The greatest decrease in Alluvial Aquifer elevations occurs at the end of the 3-year drought, but is only 0.6 feet. This indicates that riparian vegetation that is present in the alluvial sediments along the Santa Clara River corridor will not be adversely affected by the ASR program.

FIGURE 2.5-33

SIMULATED CHANGES IN GROUNDWATER ELEVATIONS DUE TO THE NEWHALL RANCH ASR PROGRAM

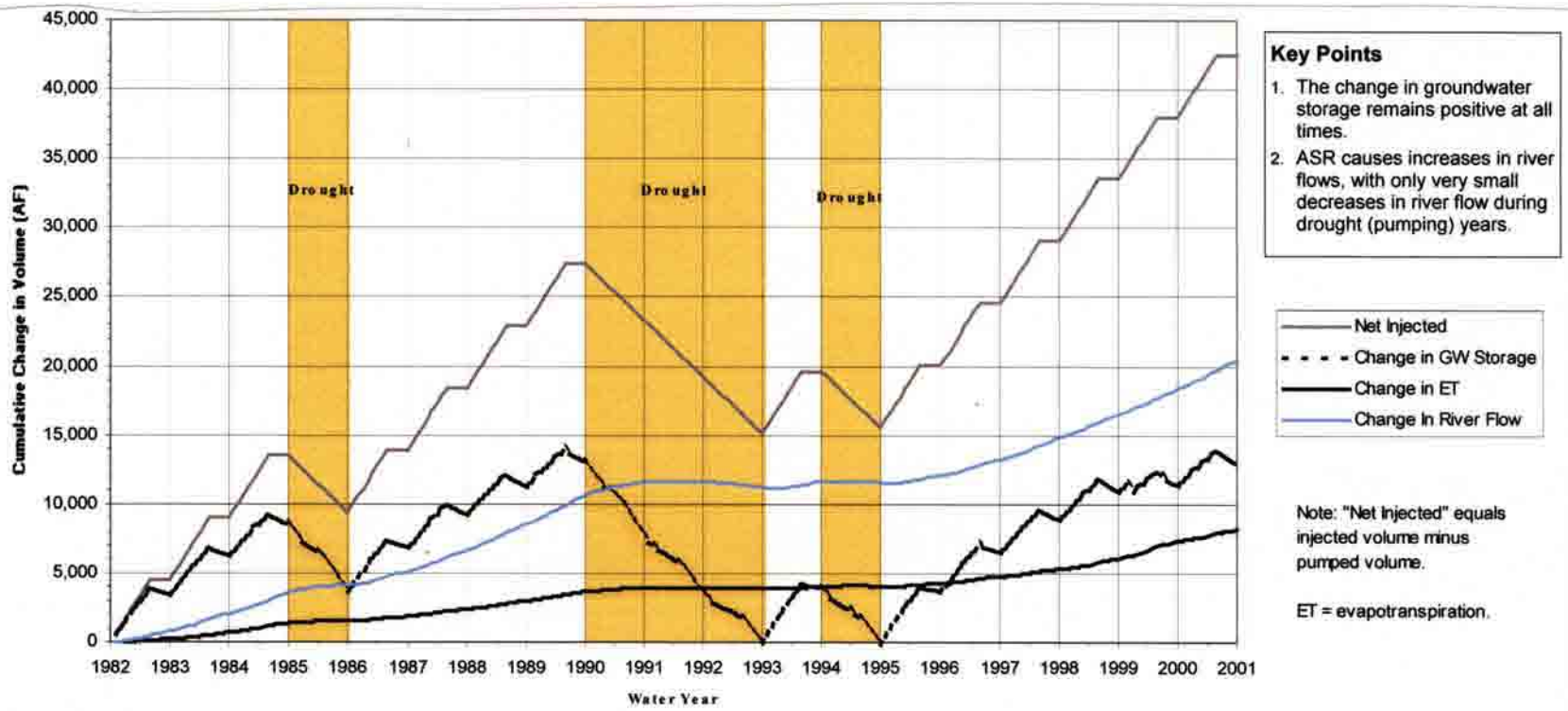

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FIGURE 2.5-34

CUMULATIVE NET INJECTION VOLUME, CUMULATIVE CHANGE IN DISCHARGE TO VENTURA COUNTY, AND CUMULATIVE CHANGE IN GROUNDWATER STORAGE DUE TO NEWHALL RANCH ASR PROGRAM

Based on this information, the proposed Saugus Groundwater Banking/ASR Program would not cause a net deficit in the amount of groundwater stored in the aquifer or the amount of flow in the river. In fact, the ASR program would have a beneficial long-term influence on the river and on the groundwater system, as groundwater elevations, groundwater storage volumes, and river flows would all increase.

The proposed Saugus Groundwater Banking/ASR Program is only one aspect of the Specific Plan that will have an influence on the hydrology of the Santa Clarita Valley. The effect of full build-out of the Specific Plan (including, but not limited to, ASR operations) on river flows (the primary concern of downstream water users) is addressed in the next section.

a) Influence of the Specific Plan on River Flows

The focus of the water resources impact analysis was on the change in Santa Clara River flows at the County line with and without full build-out of the Newhall Ranch Specific Plan (including the Saugus Groundwater Banking/ASR operations). The change in river flows is the key indicator of the Specific Plan's impacts on the hydrologic system, because the river is the lone hydrologic connection between the water resources of the Santa Clarita Valley and the water resources downstream in Ventura County. Little if any groundwater flow occurs in the County jurisdictional line/Blue Cut area, because of the presence of bedrock near the ground surface and the absence of substantially thick deposits of alluvium in this area. Hence, water flow across the County line occurs primarily in the river, not in the subsurface. Consequently, changes in water flows to Ventura County will occur as changes in river flow across the County line. Natural groundwater discharge from the Santa Clarita Valley occurs primarily as seepage from the Alluvial aquifer to the river between Round Mountain (which lies just east of I-5) and Blue Cut. The amount of seepage is governed by the groundwater elevations in the Alluvial aquifer. Hence, any predicted adverse impacts on river flows would arise from reduced groundwater elevations in the Alluvial aquifer, which could arise from changes in groundwater elevations within the Saugus Formation.

Changes in river flows due to the Specific Plan would arise from ASR operations (described previously), direct discharges to the river from the Newhall Ranch WRP (a total volume of 286 AF during the winter months), and the effects of the Specific Plan's conversion of land use and water use on surface and subsurface irrigation return flows to the river. Significant impacts are those that would substantially decrease river flow due to full build-out of the Specific Plan (including implementation of the Saugus Groundwater Banking/ASR program). In the discussions below, the potential for significant impacts is evaluated by comparing total river flows with and without the Specific Plan; calculating the differences in river flows caused by the Specific Plan; calculating the percentage change in flow caused by the Specific

Plan[61] and calculating the cumulative change in river flow caused by the Specific Plan. The calculations were performed by taking the numerical model simulations described previously for the ASR evaluation, and simulating the changes in irrigation patterns arising from changes in land use and water use under full build-out of the Specific Plan. The total impact on river flows was then calculated by adding together: (1) the modeling results; (2) separate calculations of irrigation return flows from portions of the Specific Plan overlying the non-water-bearing Pico Formation bedrock (areas that were outside the model boundaries); and (3) separate calculations of changes in direct discharges to the river from the Newhall and LACSD WRPs. Details of the calculation methodology and assumptions are presented in Appendix 2.5 *(Newhall Ranch Updated Water Resources Impact Evaluation,* prepared by CH2MHill, November 2002).

b) Comparisons of Total River Flows With and Without the Specific Plan

Figure 2.5-35 shows historical monthly river flows and equivalent flows for future (full Valley build-out) conditions, with and without Newhall Ranch. **Figure 2.5-36** shows similar plots of annual river flow. **Figure 2.5-35** shows modest differences in monthly flows for most of the time period when comparing the historical record with full valley build-out excluding Newhall Ranch. **Figure 2.5-36** shows that, on an annual basis, the annual flows predicted for future Valley build-out are greater than the historical river flows, whether or not Newhall Ranch is developed. **Figure 2.5-36** also shows that the monthly and annual river flows for combined full build-out of the Newhall Ranch Specific Plan and the rest of the Valley are barely discernible from the flows for full Valley build-out without the Newhall Ranch Specific Plan.

c) Volumetric Changes in River Flow Induced by the Specific Plan

Figure 2.5-37 shows monthly and annual plots of potential impacts on river flow volumes arising from the development of Newhall Ranch, as measured against current (year 2000) conditions. During single drought years, the Specific Plan could have a small positive influence or some small negative influence on river flows, depending on conditions prior to the drought. The modeling analysis indicates that the Specific Plan will reduce river flows during the second and third years of a 3-year drought. During the third year of the drought, the Specific Plan would reduce river flows by up to 100 AF/month (1.7 cubic feet per second [cfs]) in the driest month, and the total flow reduction would be about 840 AFY for that year (1.2 cfs). **Figure 2.5-37** also shows that the Specific Plan would increase river flows in more

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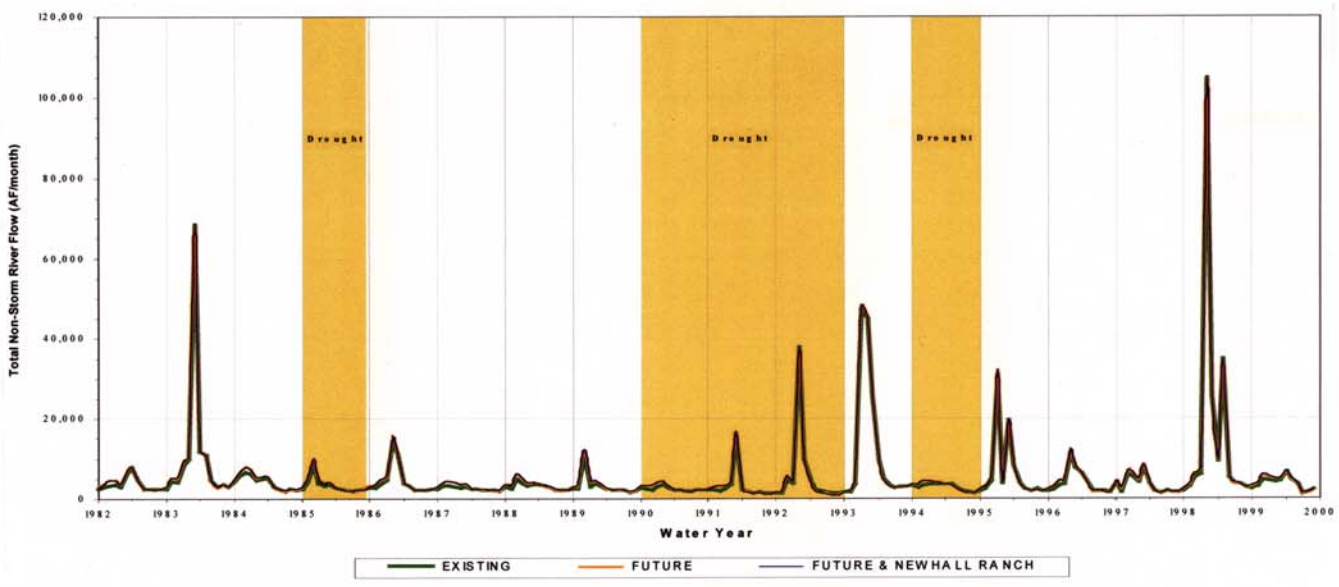
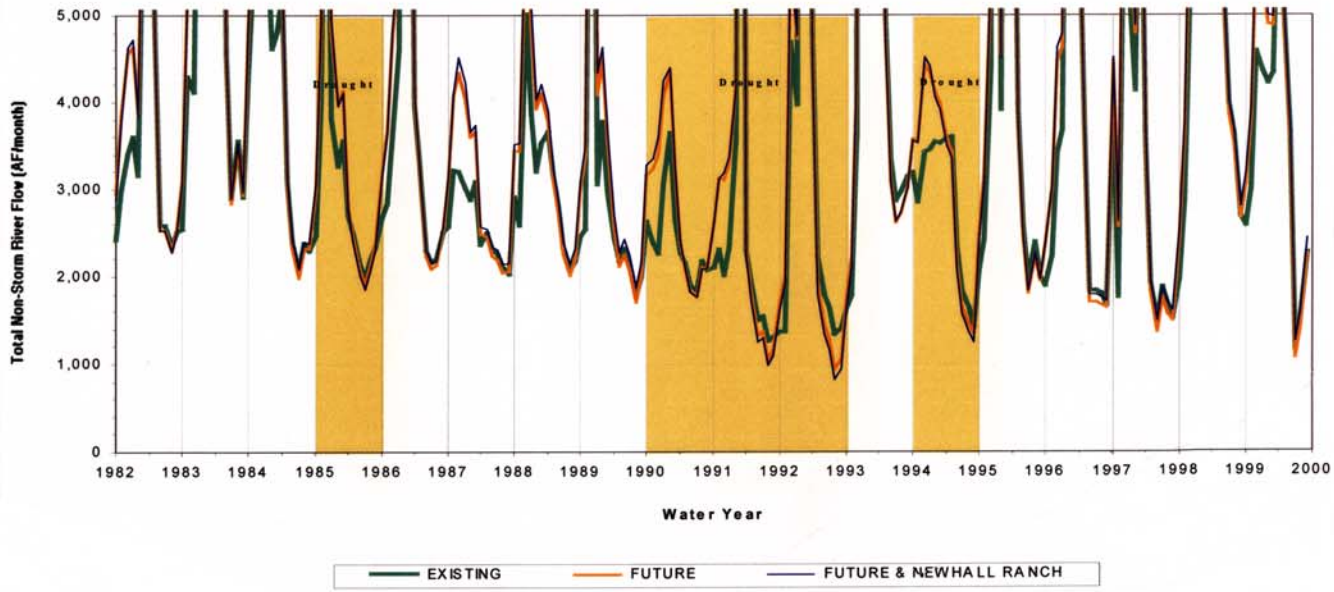
61 The percentage change is defined as the change in flow divided by the magnitude of flow that would occur without full build-out of the Specific Plan. The percentage change is calculated monthly and annually, and separate analyses of the percentage change are calculated using present-day conditions as the baseline scenario and using future (UWMP) conditions as the baseline scenario.





SOURCE: CH2MHill, November 2002

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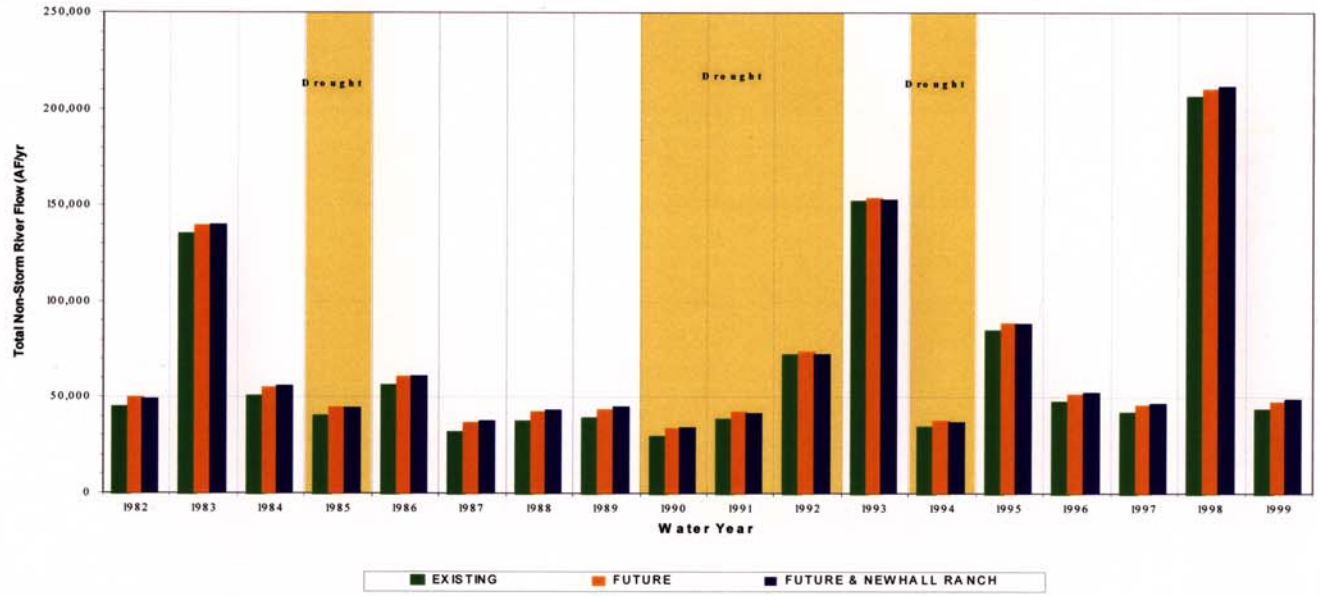
Key Points

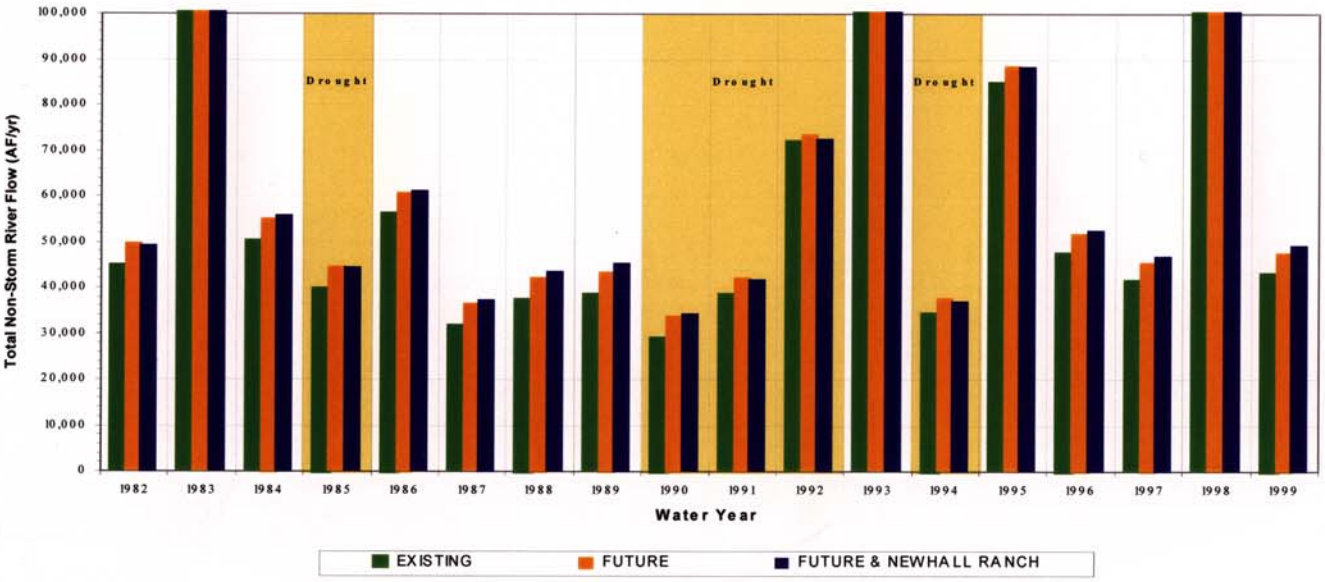
1. Considering total river flows, including storm flows, no discernible difference is visible between historical monthly river flows and those predicted for full valley build-out conditions, with or without Newhall Ranch. (See the upper plot.)
2. Focusing on monthly flows below 5,000 AF/month (lower plot), modest differences are visible between existing conditions and future conditions without Newhall Ranch. During seasonal low-flow periods, the future monthly flows are predicted to be less than historical monthly flows. However, this reduction is smaller in magnitude than the increase in flows that occurs during other months, as shown by the higher line for future conditions during early 1987 and early 1994.
3. When Newhall Ranch is included in the future conditions analysis, the river flows are very similar to those that would occur in the future without Newhall Ranch.

Note: The existing condition is defined as historical gaged flows at the County Line, adjusted upwards to include existing (year 2000) discharges from the Saugus and Valencia water reclamation plants (WRPs).

FIGURE 2.5-35

MONTHLY SANTA CLARA RIVER FLOWS AT COUNTY LINE





SOURCE: CH2MHill, November 2002

NEWHALL RANCH™
Newhall Ranch Company

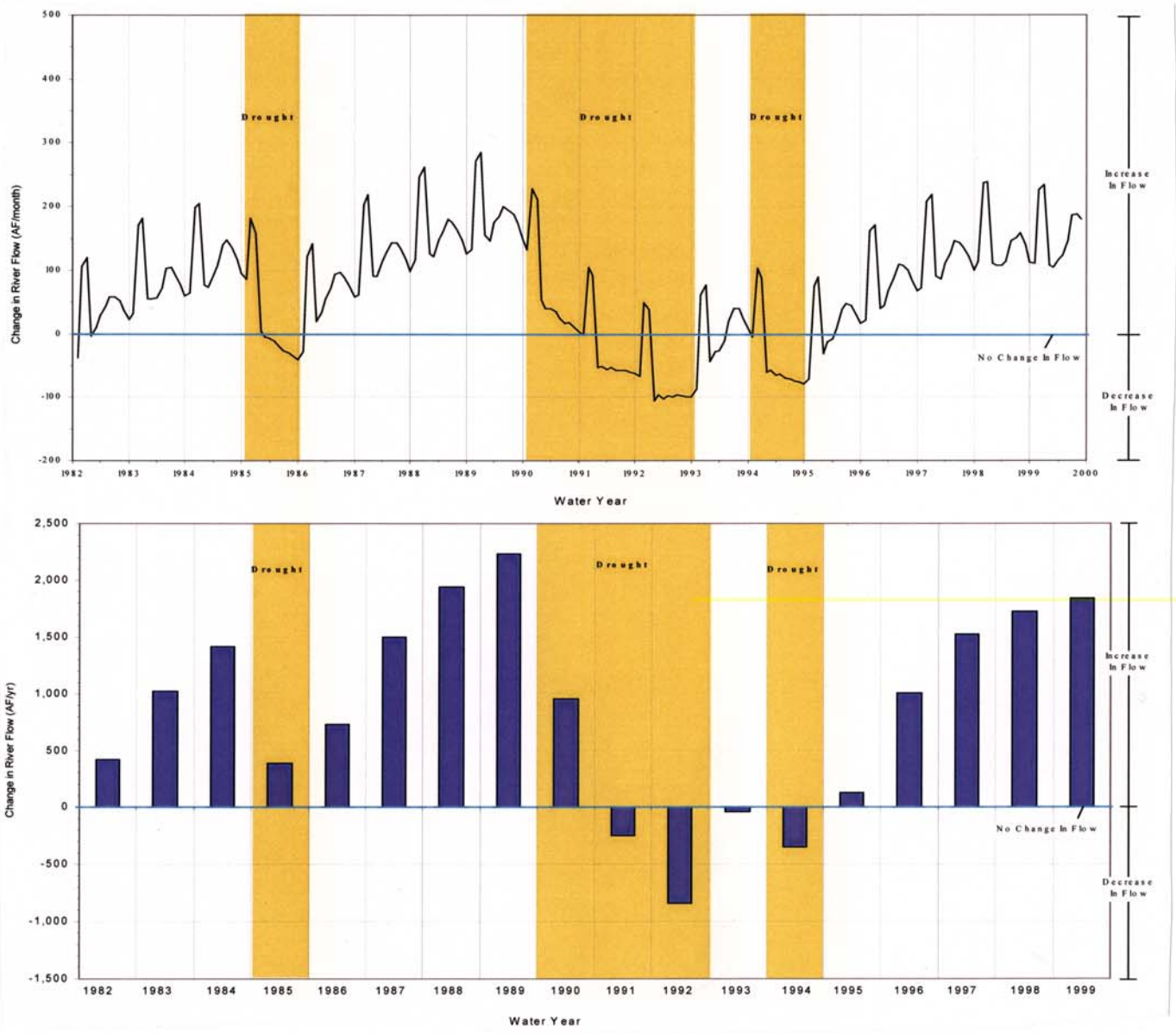
Key Points

1. Considering total river flows, including storm flows, differences due to future conditions (full valley build-out) are visible, unlike the monthly plots shown at the top of Figure 12. Future annual river flows are greater than the historical annual flows, regardless of the status of Newhall Ranch. (See the upper plot.)
2. Focusing on annual flows below 100,000 AF/year (lower plot), differences are even more visible between existing conditions and future conditions without Newhall Ranch.
3. When Newhall Ranch is included in the future conditions analysis, the annual river flows are very similar to those that would occur in the future without Newhall Ranch.

Note: The existing condition is defined as historical gaged flows at the County Line, adjusted upwards to include existing (year 2000) discharges from the Saugus and Valencia water reclamation plants (WRPs).

FIGURE 2.5-36

ANNUAL SANTA CLARA RIVER FLOWS AT COUNTY LINE



SOURCE: CH2MHill, November 2002

NEWHALL RANCH™
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Key Points

1. These plots show the change in Santa Clara River flows that would occur if Newhall Ranch were fully built out under present-day conditions in the valley.
2. The changes in flow are induced by ASR operations; conversion of groundwater pumping from agricultural use to municipal use, which affects the locations and magnitudes of irrigation demands; and operation of the Newhall Ranch Water Reclamation Plant (WRP), which will discharge 286 AF/yr to the river during the winter months (December and January).
3. Monthly flows will increase by as much as 285 AF/month (4.8 cfs) during non-drought years.
4. During the second and third years of a 3-year drought, monthly flows will still be greater than present-day flows during December and January because of direct discharges from the Newhall Ranch WRP during those months. During the other months in years 2 and 3 of the drought, flows will be less than present-day flows, with the reduction as much as 100 AF during the driest month (which is equivalent to 1.7 cfs during that month).
5. During the last year of a 3-year drought, the annual river flow for that year could be 840 AF/yr (1.2 cfs) lower than would occur under present-day conditions in the valley. The effect of Newhall Ranch on annual river flow would be positive in the second year after a 3-year drought ends, unless another drought occurs at that time.

FIGURE 2.5-37

EFFECT OF NEWHALL RANCH PROJECT ON CURRENT-CONDITION SANTA CLARA RIVER FLOWS

months and years than it would decrease the river flows. This is consistent with **Figure 2.5-34** (discussed previously), which shows 20,000 to 21,000 AF of long-term total increase in river flows arising from the project ASR operations alone over the 19-year simulation period. **Figure 2.5-37** shows that river flows would increase by as much as 285 AF/month (4.8 cfs) and 2,200 AFY (3.0 cfs) during non-drought years, depending on antecedent conditions and the exact timing of drought years.

Figure 2.5-38 shows similar plots as **Figure 2.5-37**, but for future full build-out (UWMP) conditions in the Valley. Results are generally similar to those obtained using existing conditions as the baseline. However, the differences in flow are less positive during non-drought years and more negative during drought years than for the impact analysis that uses present-day (year 2000) conditions as the baseline for evaluating the impacts of the Specific Plan. Under full Valley build-out (UWMP) conditions, **Figure 2.5-38** shows the Specific Plan would reduce river flows during the third year of a 3-year drought by up to 125 AF/month (2.1 cfs) in the driest month, and the total flow reduction would be about 1,050 AFY for that year (1.5 cfs). Under full Valley build-out (UWMP) conditions, the Specific Plan would increase river flows by as much as 265 AF/month (4.4 cfs) and 1,900 AFY (2.6 cfs) during non-drought years, depending on antecedent conditions and the exact timing of drought years.

d) Percentage Changes in River Flow Caused by the Specific Plan

Figures 2.5-39 and **2.5-40** show monthly and annual plots of potential impacts of the Specific Plan on river flows, expressed as the percentage increase or decrease in flow induced by the Specific Plan. **Figure 2.5-39** shows the impact under present-day (year 2000) conditions, and **Figure 2.5-40** shows the impact using future full Valley build-out (UWMP) conditions as the baseline condition. The worst-month impact is a 7.5 percent reduction in river flows under present-day conditions (**Figure 2.5-39**) and a 12.5 percent reduction using future full Valley build-out (UWMP) conditions as the baseline condition (**Figure 2.5-40**). However, on an annual basis, the Specific Plan has only a 1.5 percent adverse impact on river flows under present-day conditions (**Figure 2.5-39**) and a 1.8 percent adverse impact on river flows under future full Valley build-out (UWMP) conditions (**Figure 2.5-40**). Moreover, during non-drought years, the Specific Plan increases monthly river flows by as much as 15 percent during the wettest months, and the Specific Plan increases annual flows by as much as 6 percent under present-day conditions (**Figure 2.5-39**) and 4.5 percent under future full valley build-out (UWMP) conditions (**Figure 2.5-40**).

e) Cumulative Changes in River Flow Caused by the Specific Plan

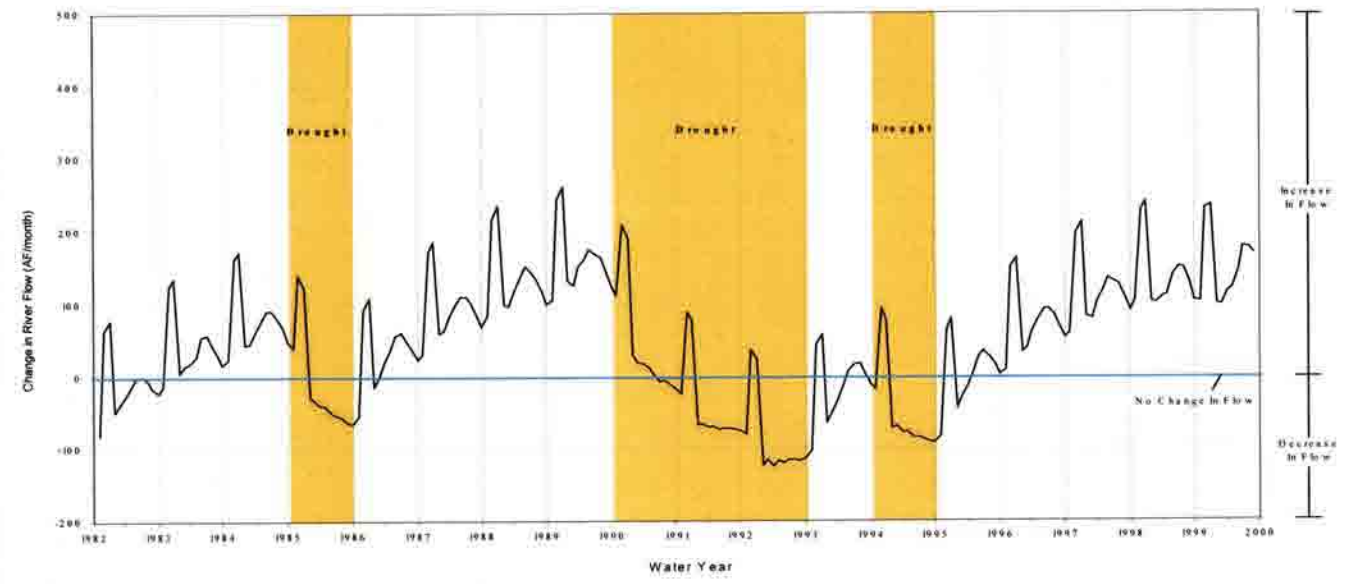
The overall improvement in river flows arising from full build-out of the Specific Plan is further illustrated by **Figures 2.5-41** and **2.5-42**, which are plots of monthly and annual cumulative changes in

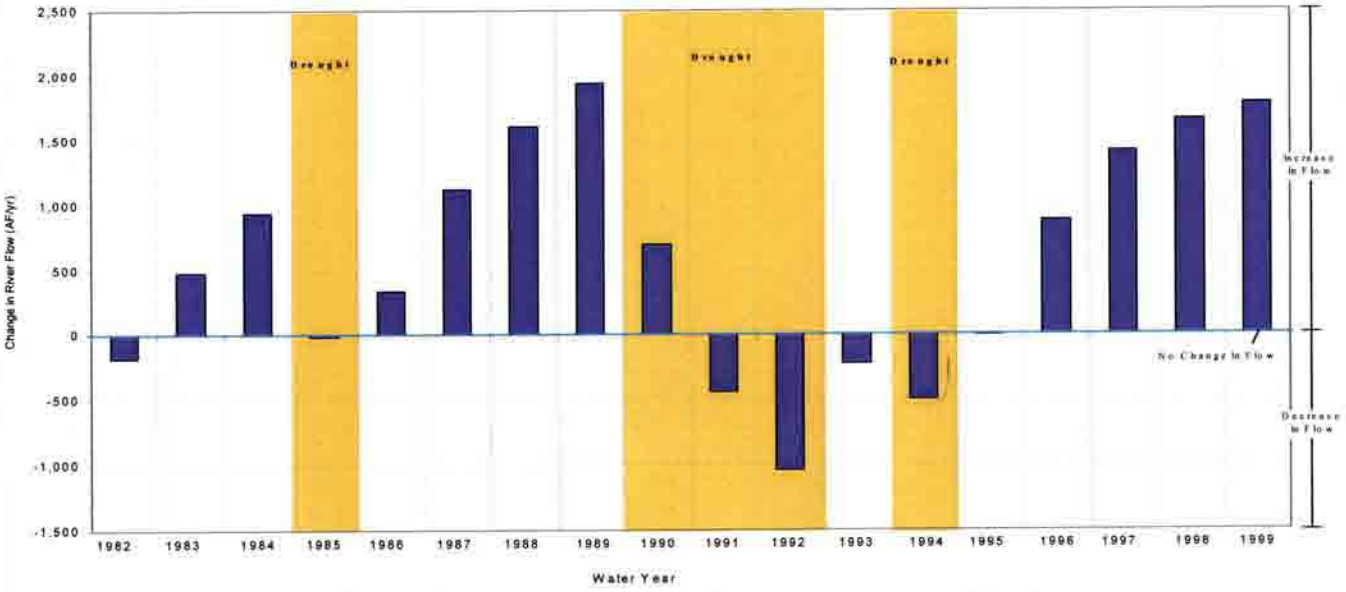
river flows resulting from the Specific Plan under, respectively, present-day conditions and future full Valley build-out (UWMP) conditions. **Figure 2.5-41** indicates that the cumulative change in the flow volume of the river over the 19-year simulation period will be an increase of about 15,000 AF when evaluating the effects of the Specific Plan on present-day conditions in the Valley. **Figure 2.5-42** indicates that the cumulative change in the flow volume of the river over the 19-year simulation period will be an increase of about 10,500 AF when evaluating the effects of the Specific Plan on future full build-out (UWMP) conditions in the Valley.

In summary, the banking of water during non-drought years increases groundwater discharge from the Saugus Formation to the Alluvial aquifer, and from the Alluvial aquifer to the Santa Clara River. Therefore, the Saugus Groundwater Banking/ASR program and the Specific Plan as a whole have a long-term positive effect (increase) on the contribution of groundwater to the Santa Clara River baseflow. Only during portions of drought years is it possible that pumping from the ASR wellfields to meet water supply demands would result in a decrease in river flows due to the Specific Plan. However, the decrease in flow is insignificant compared to increased contributions to total flow in the Santa Clara River that will occur as a result of existing and future discharges from the WRPs. This is illustrated in **Figure 2.5-43**, which shows the combined impacts of the Specific Plan and future Valley growth compared with present-day conditions. **Figure 2.5-43** shows that a net increase in annual river flow occurs in all years during the 19-year simulated period, even despite short-lived periods of reduced flows during the summer months. Hence, any reductions in river flows arising from full build-out of the Valley and of the Specific Plan are short-lived, do not result in annual reductions in river flows (even during an extreme drought period), and are insignificant when compared to groundwater production from the downstream groundwater basins in Ventura County (192,200 AF, as reported for water year 1999 [United Water Conservation District, 2000]).

(4) Impacts on Groundwater Supplies, Interference with Groundwater Recharge, or Impacts on Groundwater Levels

Model simulations indicate that full build-out of the Specific Plan, including operation of the Saugus Groundwater Banking/ASR program, will not deplete groundwater supplies or interfere with natural groundwater recharge that normally occurs in the Santa Clarita Valley. The simulations show that the ASR program results in an increase in the volume of water that is in storage in the Saugus Formation and the Alluvial aquifer at most times during the simulated 19-year historical period (1982 through 2000). This occurs in part because the pumping volume during an individual drought year is less than the injection volume during a non-drought year. In addition, over the course of several years, there will be more non-drought years (*i.e.*, combination of wet and normal years) than drought years, resulting in more water remaining in storage than is pumped.





SOURCE: CH2MHill, November 2002

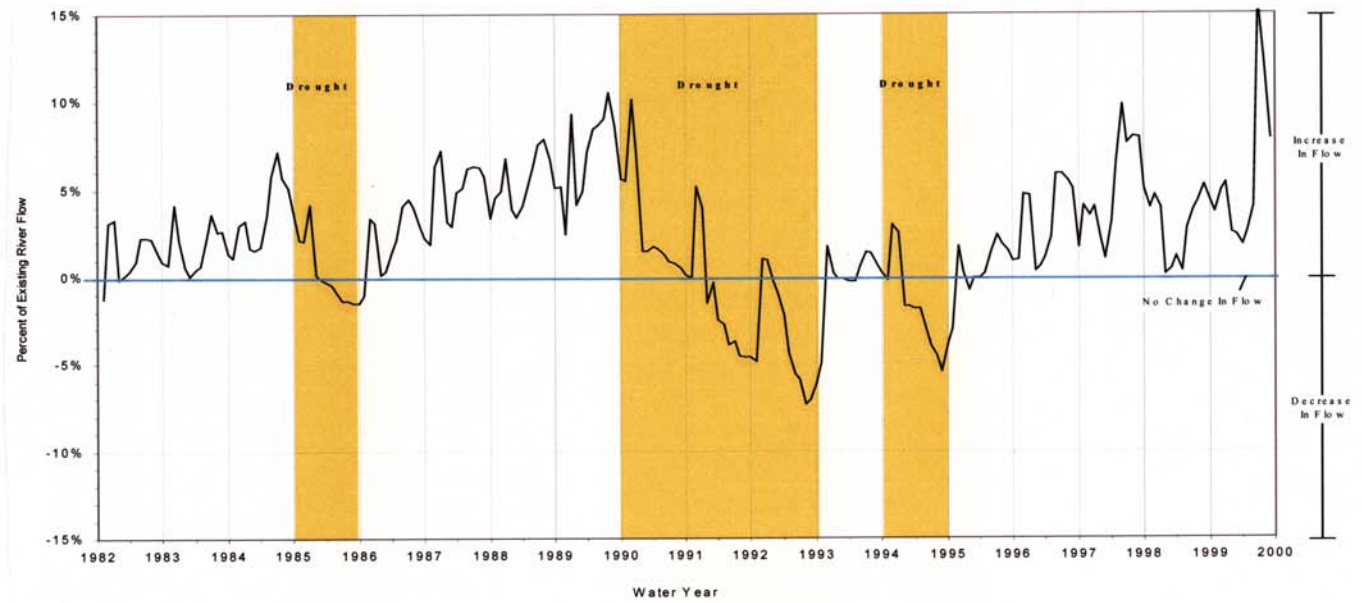
NEWHALL RANCH
Newhall Ranch Company

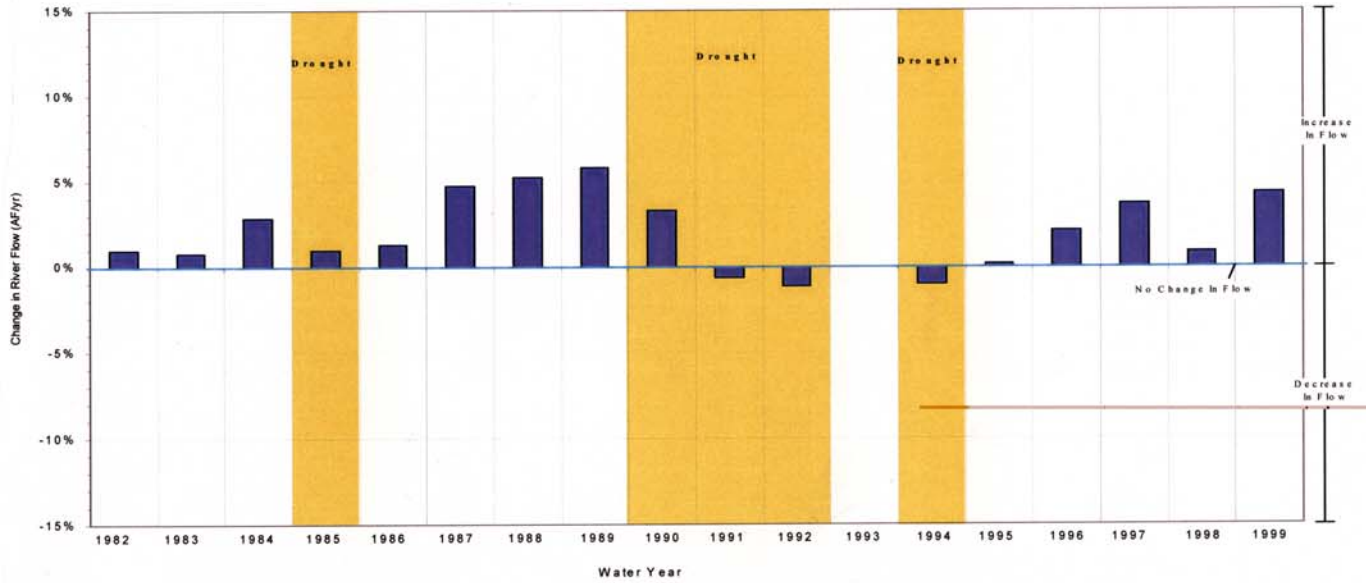
Key Points

1. These plots show the change in Santa Clara River flows that would occur if Newhall Ranch were fully built out under future (full build-out) conditions in the rest of the valley.
2. The changes in flow are induced by ASR operations; conversion of groundwater pumping from agricultural use to municipal use, which affects the locations and magnitudes of irrigation demands; and operation of the Newhall Ranch Water Reclamation Plant (WRP), which will discharge 286 AF/yr to the river during the winter months (December and January).
3. The effects of Newhall Ranch on river flows using future conditions as the baseline condition for the rest of the valley (Figure 15) are similar to those using present-day conditions as the baseline condition for the rest of the valley (Figure 14).
4. During the second and third years of a 3-year drought, monthly flows will still be greater than present-day flows during December and January because of direct discharges from the Newhall Ranch WRP during those months. During the other months in years 2 and 3 of the drought, flows will be less than the flows that would occur without Newhall Ranch, with the reduction as much as 125 AF during the driest month (which is equivalent to 2.1 cfs during that month).
5. During the last year of a 3-year drought, the annual river flow for that year could be 1,050 AF/yr (1.5 cfs) lower than would occur under future conditions in the valley. The effect of Newhall Ranch on annual river flow would be positive in the second year after a 3-year drought ends, unless another drought occurs at that time.

FIGURE 2.5-38

EFFECT OF NEWHALL RANCH PROJECT ON FUTURE-CONDITION SANTA CLARA RIVER FLOWS





SOURCE: CH2MHill, November 2002

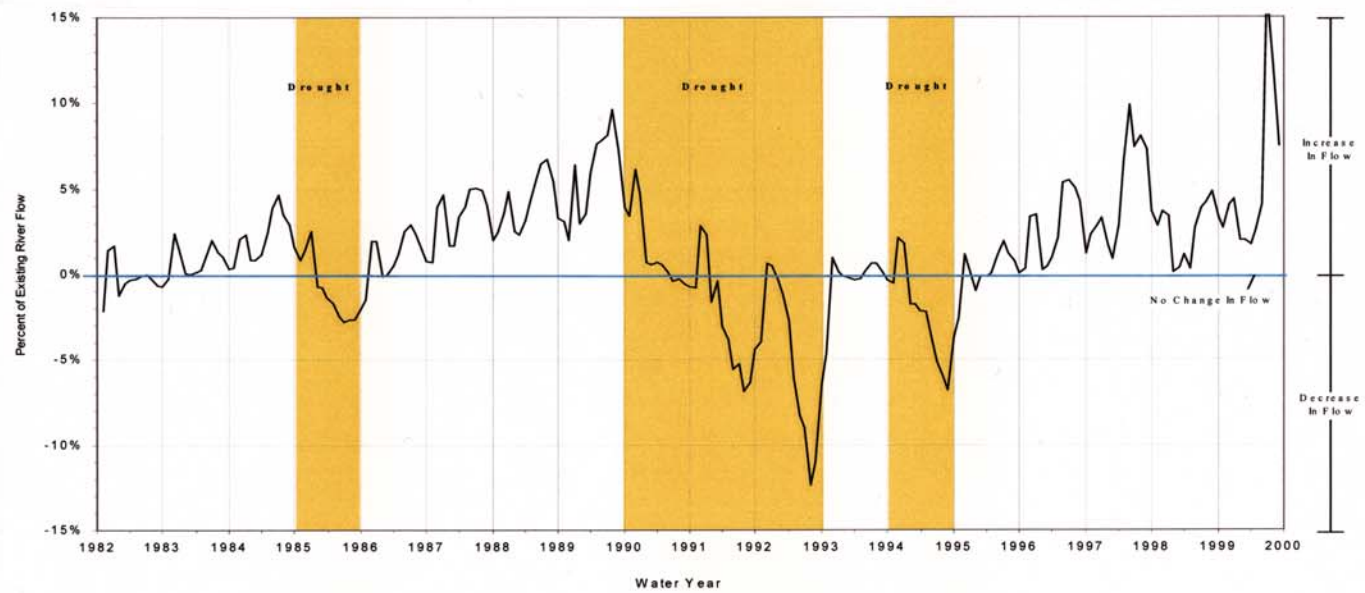
NEWHALL RANCH™
Newhall Ranch Company

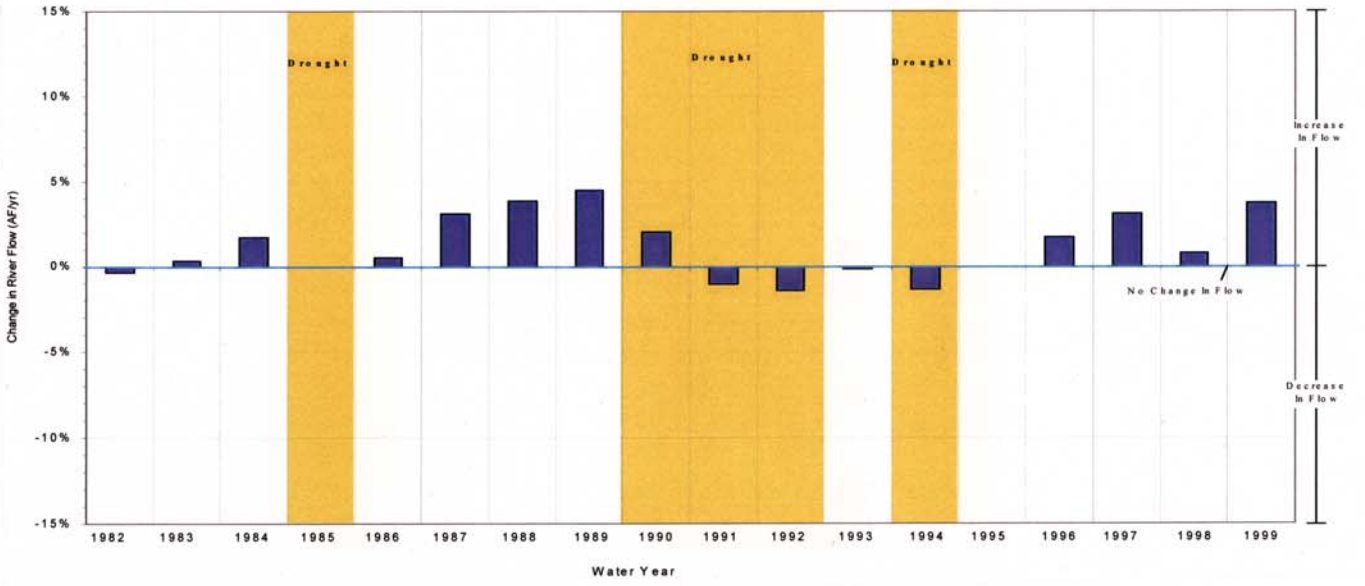
Key Points

1. These plots express the Newhall Ranch impacts as a percentage of the historical flow record.
2. During non-drought years, the increase in river flows is as much as 15 percent on a monthly basis (upper plot) and 6 percent on an annual basis (lower plot).
3. For the 3-year drought, the worst decrease in river flows is about 7.5 percent for the worst month and 1.5 percent for the worst (third) year.

FIGURE 2.5-39

PERCENT CHANGES IN CURRENT-CONDITION SANTA CLARA RIVER FLOWS CAUSED BY THE NEWHALL RANCH PROJECT





SOURCE: CH2MHill, November 2002

NEWHALL RANCH™
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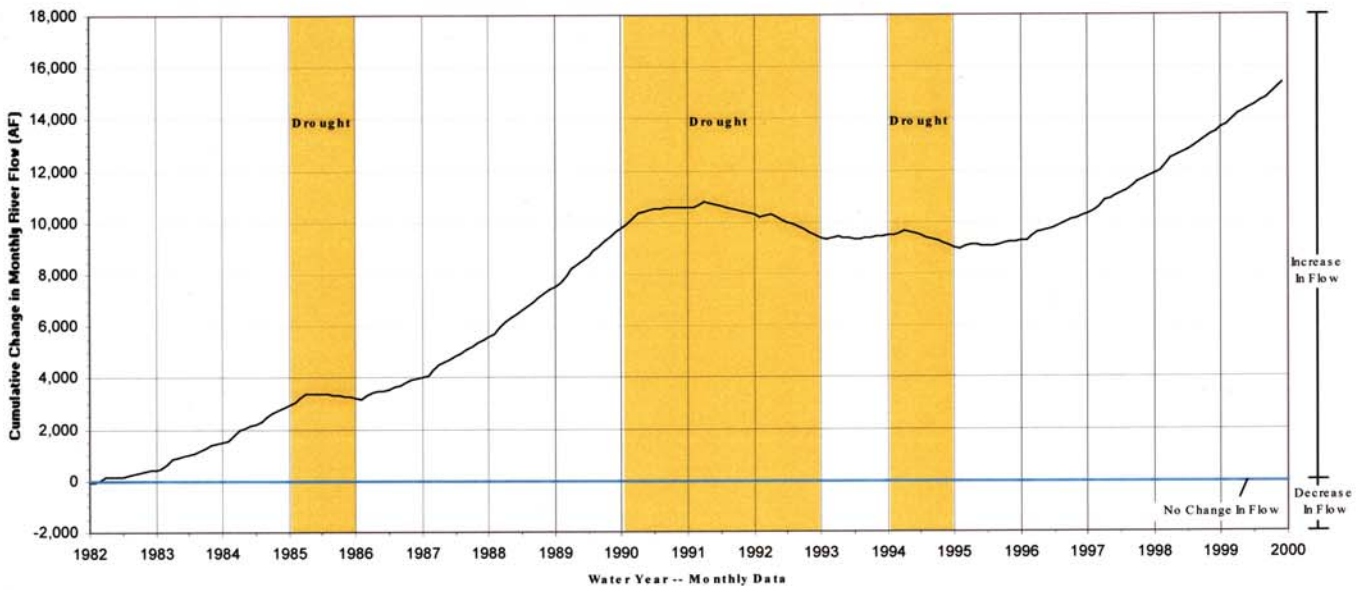
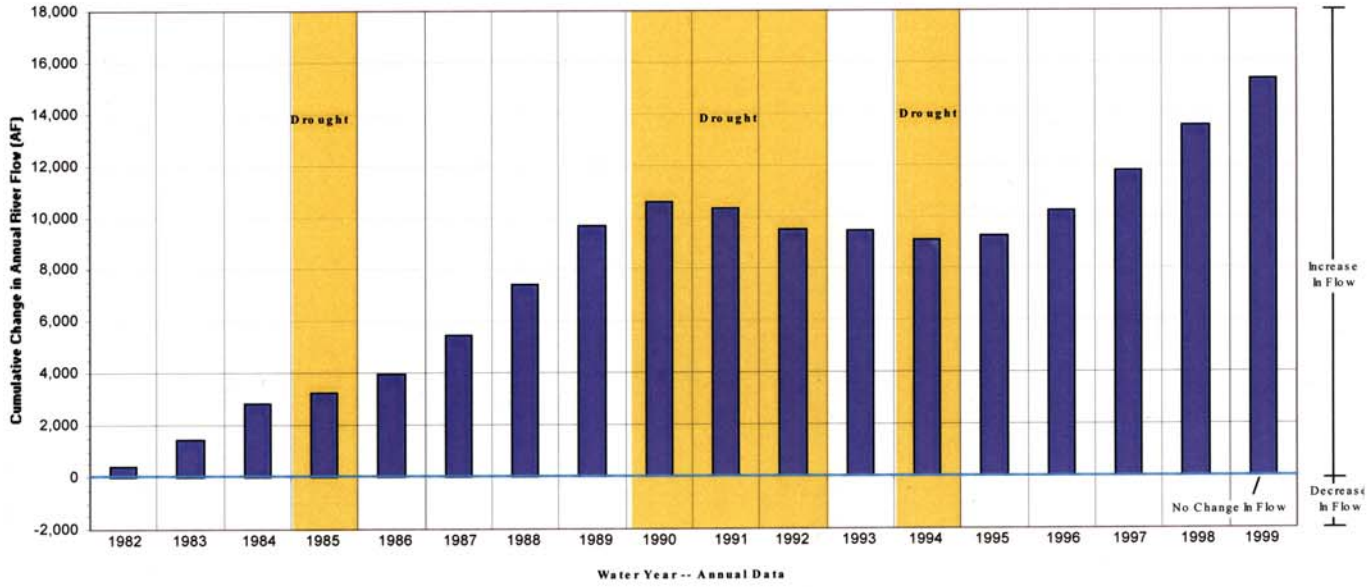
Key Points

1. These plots express the Newhall Ranch impacts as a percentage of the flows that would occur in the future if Newhall Ranch were not present.
2. During non-drought years, the increase in river flows is as much as 15 percent on a monthly basis (upper plot) and 4.5 percent on an annual basis (lower plot).
3. For the 3-year drought, the worst decrease in river flows is 12.5 percent for the worst month and 1.8 percent for the worst (third) year.

FIGURE 2.5-40

PERCENT CHANGES IN FUTURE-CONDITION SANTA CLARA RIVER FLOWS CAUSED BY THE NEWHALL RANCH PROJECT





SOURCE: CH2MHill, November 2002

NEWHALL RANCH™
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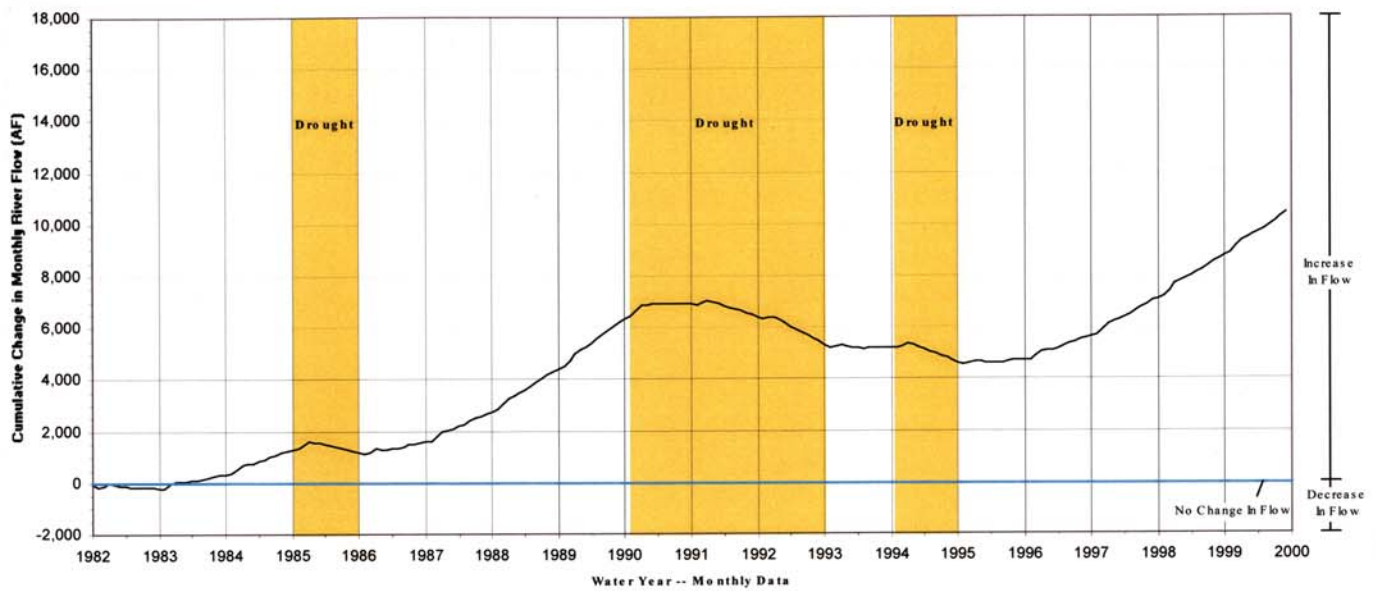
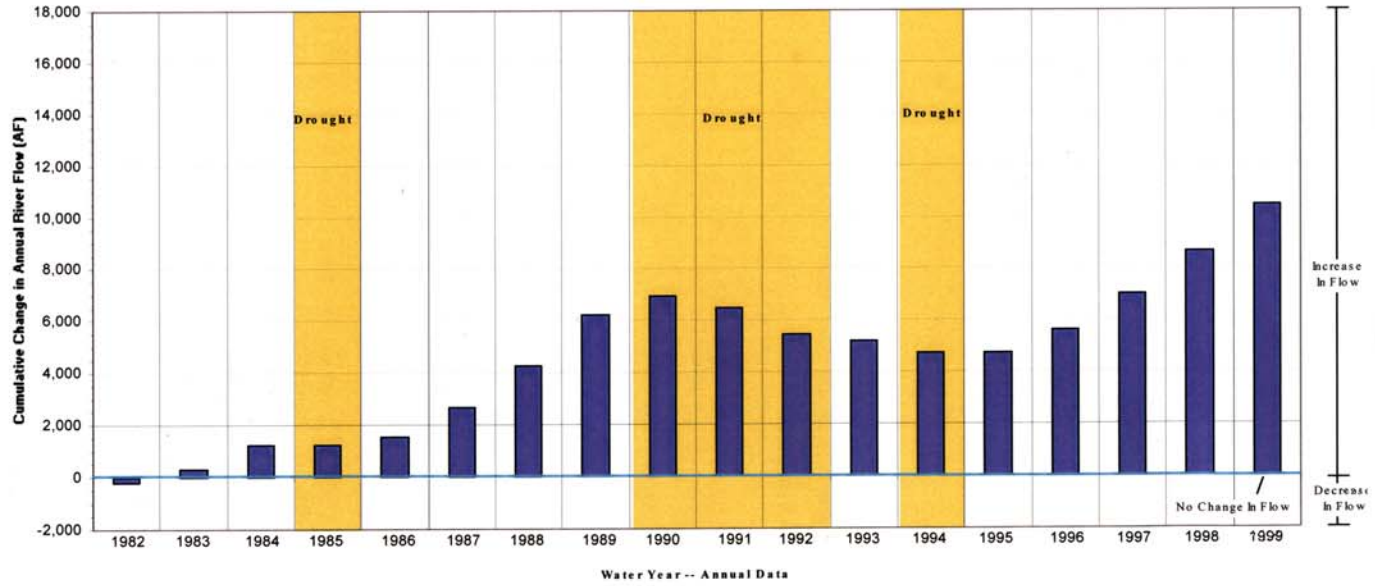
Key Points

1. These plots show the cumulative impacts of the Newhall Ranch project on a monthly basis (upper plot) and annual basis (lower plot). These plots use present-day conditions as the baseline for evaluating project impacts.
2. Monthly cumulative impacts will be positive on a long-term basis. The project may have a small negative cumulative impact prior to the first discharges from the Newhall Ranch WRP. However, this negative impact will be eliminated by the combined effects of ASR injection and the occasional discharges from the Newhall Ranch WRP.
3. Annual cumulative impacts will be positive on a long-term basis, including during the first year of the project (if it is not a drought year).

FIGURE 2.5-41

CUMULATIVE EFFECT OF PROJECT ON CURRENT-CONDITION SANTA CLARA RIVER FLOWS





SOURCE: CH2MHill, November 2002

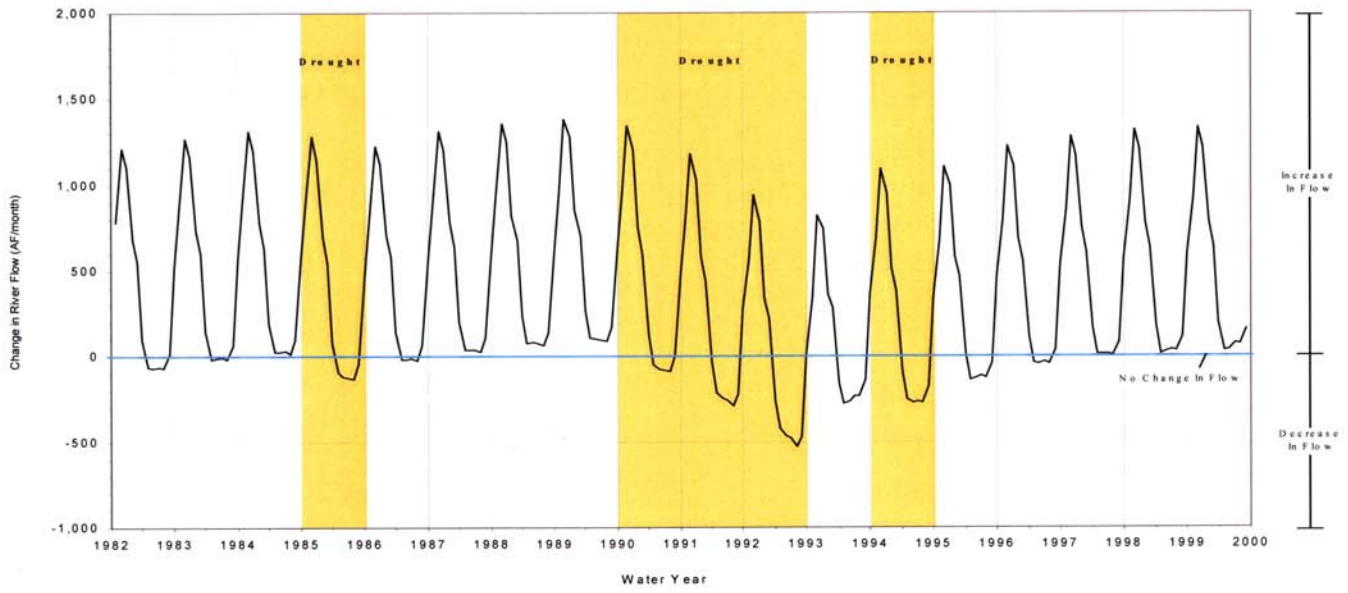
NEWHALL RANCH™
Newhall Ranch Company

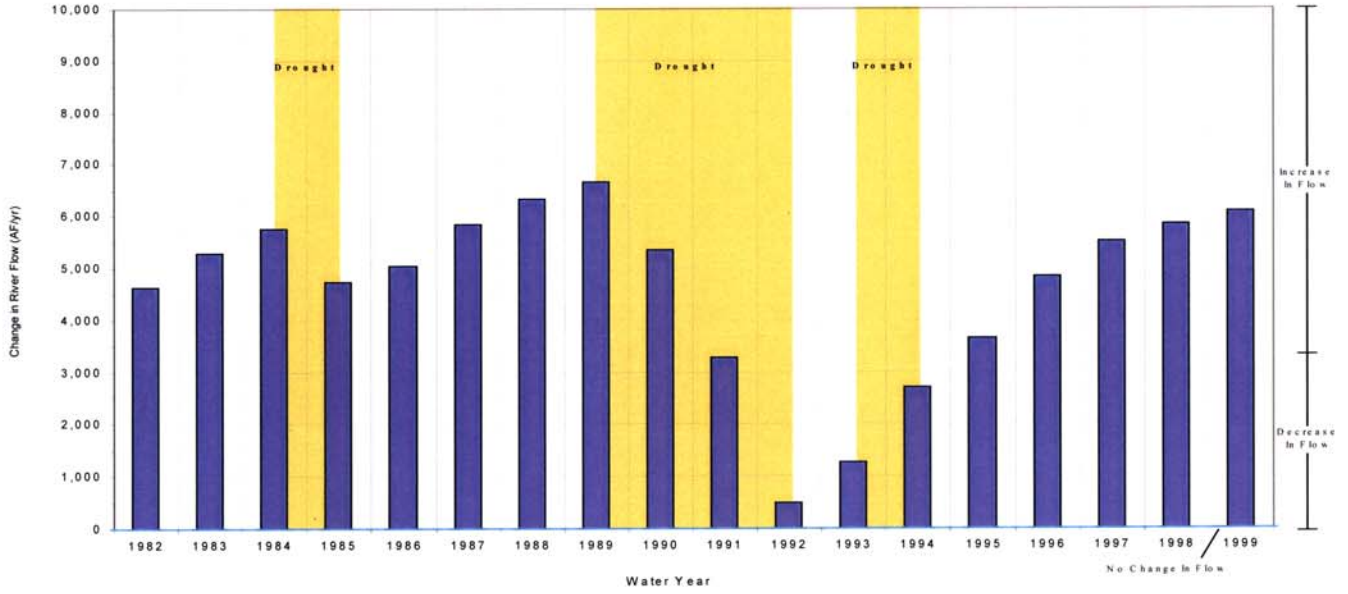
Key Points

1. These plots show the cumulative impacts of the Newhall Ranch project on a monthly basis (upper plot) and annual basis (lower plot). These plots use future conditions (full valley build-out) as the baseline for evaluating project impacts.
2. Monthly cumulative impacts will be positive on a long-term basis. The project may have a small negative cumulative impact prior to the first discharges from the Newhall Ranch WRP. However, this negative impact will be eliminated by the combined effects of ASR injection and the occasional discharges from the Newhall Ranch WRP.
3. Annual cumulative impacts will be positive on a long-term basis, including during the first year of the project (if it is not a drought year).

FIGURE 2.5-42

CUMULATIVE EFFECT OF PROJECT ON FUTURE-CONDITION SANTA CLARA RIVER FLOWS





SOURCE: CH2MHill, November 2002

NEWHALL RANCH™
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Key Points

1. This plot shows the combined effect of growth inside and outside Newhall Ranch on present-day river flows.
2. Monthly flows are generally greater than under present-day conditions, except in the summer months during and immediately after a 3-year drought.
3. On an annual basis, the flows are greater than under present-day conditions, even during a 3-year drought.

FIGURE 2.5-43

EFFECT OF NEWHALL RANCH PROJECT AND OTHER EXPECTED FUTURE GROWTH ON CURRENT-CONDITION SANTA CLARA RIVER FLOWS

Groundwater levels in the Saugus Formation near ASR wells will rise during injection and fall during pumping. At the ASR wells, the model indicates that the amount of water level increase in the Saugus Formation will be on the order of 45 to 50 feet, and the drawdown will be no more than about 120 feet. ASR wells can and will be spaced so that adjacent non-project wells will not lose pumping capacity as a result of drawdown during pumping of the ASR wells. In fact, non-project wells in the area will benefit from the increase in groundwater levels resulting from injection of SWP or other water because of higher pumping levels (less energy required to pump) and long-term stable water levels.

(5) Biological Effects of Saugus ASR Program-Related Changes in Groundwater Levels and River Flow

It has been suggested that if the proposed Saugus Groundwater Banking/ASR program leads to a decline in groundwater levels in the Alluvial aquifer or flow levels in the Santa Clara River, sensitive plants and animals residing in the river corridor in Los Angeles County and Ventura County would be significantly impacted as the water source necessary for their survival would be diminished. If the ASR program results in an increase in groundwater levels or river flow levels of such a magnitude as to significantly increase flooding, erosion and sedimentation downstream, impacts could also be significant.

The significance thresholds used in this analysis indicate that the proposed Saugus Groundwater Banking/ASR program would cause a significant impact to biological resources in the river corridor if the change in groundwater levels and/or hydraulic conditions in the Santa Clara River caused: (1) scouring of the channel bed that would remove a significant amount of aquatic, wetland, and riparian habitats from the river channel; (2) substantial modification of the relative amounts of these different habitats in the river, essentially altering the nature and quality of the riverine environment; (3) direct removal of sensitive habitat; and/or (4) substantial effects to rare, endangered, or sensitive species. Conversely, less than substantial increases in groundwater levels and/or river flow would be considered beneficial impacts to the biological resource environmental along the river corridor, as the project would enhance the growth of sensitive riparian plants and provide additional habitat for sensitive animal species.

The focus of the assessment is on impacts to habitat and sensitive species in the river corridor on the Specific Plan site or downstream. Three distinct habitat types are found in the river corridor including: (1) aquatic habitats, consisting of flowing or ponded water; (2) wetland habitats, consisting of emergent herbs rooted in ponded water or saturated soils along the margins of the flowing water; and (3) riparian habitat, consisting of woody vegetation along the margins of the active channel and on the floodplain. Wildlife species associated with these habitat include: (1) the endangered unarmored three-spine stickleback (known to be present), least Bell's vireo (known to be present), southwestern arroyo toad (not

known to be present), southwestern willow flycatcher (known to be present), and California red-legged frog (not known to be present); and (2) other sensitive, but not endangered species known to be present, such as the arroyo chub, Santa Ana sucker, Two-striped garter snake, southwestern spadefoot toad, and southwestern pond turtle.

The impact assessment is based on the relationship between hydrogeologic and hydraulic conditions and aquatic/riparian habitats in the Santa Clara River on the Specific Plan site, and the determination of whether the predicted changes in groundwater and surface water conditions would significantly affect those habitats. The assessment is focused on habitats of sensitive species rather than individuals or populations, which are highly variable over time and space along the river corridor.

In order to address the potential impact both in Los Angeles County and downstream of the County line in Ventura County, groundwater modeling was completed, as described above. As previously indicated, increases in Alluvial aquifer groundwater elevations that may occur as a result of ASR injection are predicted to be as much as 1 foot in the western portion of the Valley. ASR pumping is expected to cause up to 0.6 feet of water level decline in the Alluvial aquifer, including along the riparian corridor lying along the Santa Clara River. This magnitude of fluctuation is less than the presently observed monthly or seasonal water level fluctuation in the Alluvial aquifer and indicates that riparian vegetation and habitats for sensitive species will not be adversely impacted by the ASR program (*i.e.*, riparian vegetation thrives under present fluctuating conditions). Because such conditions would not appreciably change, riparian vegetation would continue to thrive under post-ASR conditions. The habitats of sensitive animal species that occur along the river under the presently fluctuating conditions also would not appreciably change and the species themselves would not be affected. This indicates that no appreciable increase or decrease in river flow levels in Los Angeles County would be expected as a result of the ASR program or the Newhall Ranch Specific Plan.

Regarding the downstream portion of the river corridor in Ventura County, the information above indicates that an overall increase in the amount of flow in the Santa Clara River occurs as a result of the Newhall Ranch Specific Plan (including ASR injection). Only during portions of drought years is it possible that pumping from the ASR wellfields to meet water supply demands would decrease river flows. However, the drought-year decrease in flow (1,050 AFY, which is equivalent to an average annual flow of 1.5 cfs) is short-lived and small compared with the average annual flow level 57,000 AFY that occurred from 1975 through 1999 (1,050 AF/57,000 AF = 0.018; a reduction in flow of 1,050 AF equals a reduction in average annual flow at the County line of approximately 1.8 percent). It is also small compared with the groundwater production from the downstream groundwater basins in Ventura County (192,200 AF, as reported for water year 1999 [United Water Conservation District, 2000]).

Based on this information, the expected change in groundwater levels and/or hydraulic conditions in the Santa Clara River caused by the proposed ASR program would not cause (1) scouring of the channel bed that would remove a significant amount of aquatic, wetland, and riparian habitats from the river channel; (2) substantial modification of the relative amounts of these different habitats in the river, essentially altering the nature and quality of the riverine environment; (3) direct removal of sensitive habitat; and/or (4) substantial effects to rare, endangered, or sensitive species. The distinct habitat types and sensitive species that occur in the river corridor would not be significantly impacted because the degree of groundwater and/or river flow fluctuations (both up and down) would not be of a substantial magnitude to cause adverse effects.

(6) Potential for Degradation of Water Quality in the Alluvial Aquifer, Saugus Formation or Santa Clara River

The suggestion has been made that the Saugus Groundwater Banking/ASR program could adversely impact water quality in the local aquifers in the Santa Clarita Valley and aquifers in Ventura County, as well as surface water flows in the Santa Clara River downstream of the proposed Specific Plan. Numerical objectives have been set by the RWQCB for various water quality parameters to protect local beneficial uses of groundwater and surface water, including human consumption and habitat uses (*i.e.*, sensitive plants and animals) (LARWQCB *Basin Plan* 1994). Exceedence of these objectives as a result of ASR or the Specific Plan as whole would be considered a significant impact to such beneficial uses.

a) Chloride

Since circulation of the Draft Additional Analysis, the RWQCB has adopted a TMDL (Total Maximum Daily Load) to address the chloride impairment in the Upper Santa Clara River (October 28, 2002). Due to excessive chloride, the agricultural supply designated beneficial use is not supported. The Clean Water Act requires that a TMDL be established to restore the Santa Clara River and implement the established water quality objective for chloride. The Newhall Ranch Specific Plan is located within one of the impaired reaches, Reach 5, which is addressed by the TMDL.

The TMDL components include problem identification, development of numeric targets, source assessment, linkage analysis, allocations, critical conditions and seasonality, margin of safety and future growth. With respect to growth (Section 2.5.2 ~~Draft~~ TMDL Staff Report August 21,2002):

> "the [chloride] concentration-based target accommodates future growth by allowing increased mass as long as it is accompanied by additional flow .... Regional Board staff understands that an additional water reclamation plant [Newhall Ranch WRP] is planned to accommodate future growth in the Santa Clarita Valley..."

The TMDL also contains a detailed Implementation Plan. The following are the components of the Implementation Plan:

Task 1. Evaluate providing alternate water supplies by CSD for agricultural users of surface waters, evaluate necessary facilities, and report results.

Task 2. Development and calibration of a groundwater/surface water interaction model by County Sanitation Districts (CSD), in cooperation with the Regional Board, to determine the assimilative capacity of chloride, impact of changes in groundwater levels and concentrations, and to determine the impact of reclaimed water application in the watershed.

Task 3. Development and implementation of a chloride source identification/reduction, pollution prevention and public outreach plan by CSD to determine appropriate source reduction measures that can be taken to reduce chloride loading and to implement the most effective measures.

Task 4. Evaluate recent field studies performed to understand the linkage between chloride concentrations and their effect on avocado crop yields and endangered species, form a technical advisory committee, and calculate a revised water quality objective based on the information if appropriate.

Task 5. Development of a site specific objective (SSO) for chloride for sensitive agriculture after considering the results of Task 4 and the assimilative capacity of the watershed with respect to chloride from Task 1.

Task 6. Development and preparation of an anti-degradation analysis if the SSO from Task 5 is recommended.

Task 7. Preparation and consideration by the RWQCB of a *Basin Plan* amendment revised the chloride objective.

Task 8. Reconsideration of the chloride TMDL based upon the approval of the *Basin Plan* amendment in Task 7 by RWQCB, and revision of the NPDES permits for the WRPs.

Task 9. Analysis of all feasible implementation actions to meet revised chloride objective after Task 7.

Task 10. Planning, design and construction of microfiltration and reverse osmosis (RO) facilities as well as a 43-mile brine line and ocean outfall by CSD to meet final effluent permit limits for chloride. This is estimated to be complete 13 years from the effective date of the TMDL if necessary.

During the TMDL implementation period, the effluent concentration for the Valencia and Saugus WRPs cannot exceed maximum daily interim limits of 218 mg/L and 196 mg/L chloride, respectively, and average monthly interim limits of 200 mg/L and 187 mg/L, respectively. In addition, the EPA chronic chloride concentration for protection of aquatic life (230 mg/L) shall not be exceeded more than two times in a three year period. Furthermore, should the monthly average in-river concentration at Blue Cut exceed the water quality objective of 100 mg/L, measured as a rolling twelve month average, for three months of any 12 months, then an alternative water supply shall be provided for agricultural surface water diversions.

The ~~Draft~~ RWQCB TMDL Staff Report identifies source reduction programs as an effective method of meeting the TMDL requirements. Since WRP discharge is the largest contributor of chloride in the watershed, options for reducing the WRP contribution include alternative disinfection methods, reducing the urban waste load, and reducing the load in the source water. According to the ~~Draft~~ TMDL Staff Report, "These remedies may be sufficient to eliminate 50 mg/L in non-drought and over 100 mg/L during drought conditions. If source reduction methods are effective, they may eliminate the necessity of WRP treatment to meet the numeric target for chloride."

(7) Newhall Ranch Specific Plan Compliance with Adopted Chloride TMDL

a) Newhall Ranch WRP

A new county sanitation district (NRCSD) is proposed to be formed to provide wastewater disposal services for the Newhall Ranch Specific Plan area, and to operate the Newhall Ranch WRP. In order for the Newhall Ranch WRP to safely discharge effluent to the river, a National Pollutant Discharge Elimination System (NPDES) permit must be obtained from RWQCB in accordance with the Federal Clean Water Act. The NPDES permit would set effluent discharge limits for the Newhall Ranch WRP in accordance with the water quality objectives contained in the *Basin Plan* and chloride TMDL. At a minimum, the Newhall Ranch WRP would have to meet the interim chloride limits as set forth in the ~~Draft~~ Adopted TMDL.

b) Newhall Ranch Reclaimed Water Use

In order to safely utilize reclaimed water for non-potable irrigation uses, the Newhall Ranch WRP must comply with Title 22, California Code of Regulations, Division 4, Chapter 3 Water Reclamation Requirements. The policy of the State Water Resources Control Board (SWRCB Resolution 77-1) directs the Regional Boards to encourage reclamation of wastewaters, and to promote water reclamation projects that preserve, restore or enhance in-stream beneficial uses and lessen the demand for higher quality fresh waters. Permitted uses of reclaimed water include irrigation of parks, schools and other landscape areas, agricultural irrigation, recreational impoundments, and to recharge ground water. In addition, California Water Code Section 13523.5 states: "A regional board may not deny issuance of water reclamation requirements to a project which violates only a salinity standard in the basin plan."

c) Newhall Ranch ASR Operations

As identified in the ~~Draft~~ adopted Chloride TMDL, chloride concentrations in the Santa Clara River and any changes to the assimilative capacity of the river with respect to chloride are a concern in the region. As described in **Section 2.5.5** above, the proposed ASR program would inject/bank SWP water supplies in the Saugus Formation during wet years, and extract/pump water during drought years. Chloride concentrations in SWP water at Castaic Lake are typically 60 mg/L. Concentrations can be as high as 105 mg/L or higher (144 mg/L is maximum recorded value) if there is an extended drought in northern California, which has occurred in the past. However, under the ASR program, injection would not occur during drought periods because SWP deliveries could be curtailed. Thus, the ASR wells will be used for extracting or pumping water. It is possible that there will be a slight increase in chloride concentrations near the ASR injection well compared with native Saugus Formation groundwater quality because the injected SWP may, at times, have higher chloride concentrations. However, this increase will not impair the quality of Saugus Formation groundwater, particularly because the concentrations of other constituents present in SWP water, including total dissolved solids (a measure of all salts), are lower than native Saugus Formation groundwater. As shown in **Table 2.5-43**, treated SWP water (one of the primary ASR injection water sources) has lower concentrations of most dissolved constituents than native Saugus Formation groundwater, Alluvial aquifer groundwater, and Santa Clara River water.

Table 2.5-43
Comparison of Selected Water Quality Parameters
(mg/L)

Constituent	Injection Water[a]	Saugus Aquifer Groundwater[b]	Alluvial Aquifer Groundwater[c]	Surface Water Quality Objective[d]	Groundwater Quality Objective[e]
Chloride	60	35	68	100	150
Sulfate	81	35	286	400	350
Total Dissolved Solids	325	619	764	1,000	1,000
PH	8.1	7.8	7.5	--	--
Nitrate (as Nitrogen)	2.0	3.3	2	5	--

[a] Castaic Lake Water Agency, 1999 Imported SWP Water Quality.
[b] Final EIR for the Newhall Ranch Specific Plan and Water Reclamation Plant, Appendix 4.11, CH2MHill, Table 3-10, p. 3-37.
[c] Average values for Alluvial aquifer wells E, E-9, C, B-6, and B-11 located west of I-5; sampled by NLF on 5/17/2000
[d] Surface water quality objective for Santa Clara River West Pier 99 to Blue Cut as set by the RWQCB.
[e] Groundwater Quality Objectives for Santa Clara-Castaic Valley area as set by the RWQCB.

A reduction in discharge to Ventura County (approximately 125 acre feet [2.1 cfs] in the driest month and 1,050 acre feet [1.5 cfs] in the driest year) is predicted with continued ASR pumping near the end of an

extended drought. This volume is considered insignificant, and is substantially less than the observed fluctuation in Santa Clara River flows on a year-to-year basis.

Because water delivered through the SWP system would be available for recharge in most years, the ASR program would show an overall positive impact on Santa Clara River water quality. Based on the observations from the modeling analyses, injecting 4,500 AFY of water into the Saugus Formation during 14 years out of every 19 or 20 years will result in improved water quality in the Saugus Formation, Alluvial aquifer, and Santa Clara River. Model simulations indicate that the Saugus Groundwater Banking/ASR program would result in an average increase of about 1,050 to 1,100 AFY in the amount of groundwater discharge to the Santa Clara River because the ASR program will bank more SWP water than it will pump. An increase in the discharge of Saugus Formation groundwater to the Alluvial aquifer and, hence, the River, as a result of the ASR program, would increase the assimilative capacity of the river because the increased rate of groundwater discharge would result in dilution of chloride concentrations in the River.

d) Newhall Ranch Non-Point Sources

Development of the Newhall Ranch Specific Plan will result in the conversion of agricultural fields and open grazing land to urban uses. The RWQCB ~~draft~~ adopted chloride TMDL does not make any non-point load allocations for urban runoff in the Upper Santa Clara River watershed because "tributary, groundwater and other non-point sources contribute 2.8%" of the chloride load in the watershed. Therefore no significant adverse effects to water quality due to chlorides in urban runoff from the Newhall Ranch Specific Plan are expected.

e) Nitrogen Compounds

The RWQCB has determined that several reaches of the Upper Santa Clara River are impaired for ammonia and nitrate/nitrite (collectively referred to as nutrients). Due to the ammonia and nitrate/nitrite impairments, aquatic life and municipal drinking water supply designated beneficial uses are not supported. The Newhall Ranch Specific Plan is located within one of the impaired reaches, Reach 5.

The RWQCB has begun the process of preparing a draft nutrient TMDL in coordination with various interested stakeholders. A watershed model is being prepared to simulate the physical and chemical processes that affect river hydrology and water quality for the entire Santa Clara River watershed with input from various stakeholders. The model will be used to assess the sources of pollutant loads, link

those loads to numerical water quality targets for the impaired segments, and then assist in development of implementation plans for restoring the surface water quality in the impaired reaches.

Preliminary work from the nutrient TMDL modeling suggests that the majority of nutrient loading is from point sources, namely the existing upstream water reclamation plants. Non point sources contribute loadings to a far lesser extent.

f) Newhall Ranch Specific Plan Compliance with Draft Nutrient TMDL

Since a TMDL and implementation plan have not yet been developed by the stakeholder group or RWQCB staff, it is not possible to determine the exact point and non-point loading allocations that would apply to the Newhall Ranch Specific Plan. However, a draft TMDL and Implementation Plan for nutrients has been prepared by RWQCB for the Calleguas Creek watershed (August 30, 2002) and is used below for comparison purposes, since the impaired beneficial uses and loading sources are substantially the same or similar to those on the Santa Clara River.

The Draft Calleguas Nutrient TMDL contains the following components: problem identification, development of numeric targets, source assessment, linkage analysis, allocations, critical conditions and seasonality, margin of safety and future growth. The ammonia numeric targets are based on the criteria developed by the EPA in the "1999 Update of Ambient Water Quality Criteria for Ammonia" (December 1999) and adopted by RWQCB in 2002. The RWQCB has indicated that these targets will be the same numeric targets for the Santa Clara River and are based on pH and temperature. The nitrate and nitrite targets were set at 10mg/L and 1mg/L, respectively. Future population growth is addressed by acknowledging that impairments are based on instream nitrogen concentrations, and increased loads will not add to the impairment as long as they are contained in discharges with sufficient flow and as long as nitrogen compounds do not accumulate in the watershed. As a result, population growth is not expected to exacerbate the impairment.

g) Newhall Ranch WRP

A new county sanitation district (NRCSD) is proposed to be formed to provide wastewater disposal services for the Newhall Ranch Specific Plan area and operate the Newhall Ranch WRP. In order for the Newhall Ranch WRP to safely discharge effluent to the river, a National Pollutant Discharge Elimination System (NPDES) permit must be obtained from RWQCB in accordance with the Federal Clean Water Act. The NPDES permit would set effluent discharge limits for the Newhall Ranch WRP in accordance with the water quality objectives contained in the *Basin Plan* and nutrient TMDL. For reference purposes, the

nitrate and nitrite effluent concentration limits for the Calleguas Creek WRPs were established at 9mg/L and 0.9mg/L respectively; ammonia effluent concentration limits ranged between 1.35 – 3.4mg/L. Compliance with the NPDES effluent limits issued by RWQCB would not result in any significant adverse affects to water quality.

h) Newhall Ranch Reclaimed Water Use

In order to safely utilize reclaimed water for non-potable irrigation uses, the Newhall Ranch WRP must comply with Title 22, California Code of Regulations, Division 4, Chapter 3 Water Reclamation Requirements. The Newhall Ranch WRP would have to obtain a Water Reclamation Requirement (WRR) from the RWQCB prior to use of reclaimed water. The policy of the State Water Resources Control Board (SWRCB Resolution 77-1) directs the Regional Boards to encourage reclamation of wastewaters, and to promote water reclamation projects that preserve, restore or enhance in-stream beneficial uses and lessen the demand for higher quality fresh waters. Permitted uses of reclaimed water include irrigation of parks, schools and other landscape areas, agricultural irrigation, recreational impoundments, and to recharge ground water.

The RWQCB has issued a WRR (Order No. 87-48) to CSD for the use of reclaimed water from the Valencia WRP that did not include any limits for nutrients. Typically, higher levels of nutrients in irrigation water are desired because it promotes plant growth while at the same time reducing the need to apply fertilizers, either mechanically or through injection into the irrigation system. Preliminary modeling results indicate that point sources make up the vast majority of nutrient loading in the Upper Santa Clara. Non-point sources are a small share of the overall nutrient load, and applied irrigation water is an even smaller share of non-point sources. Therefore, reclaimed water use will not cause any significant adverse impacts to water quality from nutrients.

i) Newhall Ranch ASR Operations

As described in **Section 2.5-5**, the proposed ASR program would inject/bank water delivered through the State Water Project into the Saugus Formation during wet years, and extract/pump water during drought years. Nitrate concentrations in SWP water at Castaic Lake are typically 2 mg/L or less. As shown in **Table 2.5-43**, treated SWP water (one of the primary ASR injection water sources) has lower concentrations of most dissolved constituents than native Saugus Formation groundwater, Alluvial aquifer groundwater, and Santa Clara River water.

A reduction in discharge to Ventura County (approximately 125 acre feet [2.1 cfs] in the driest month and 1,050 acre feet [1.5 cfs] in the driest year) is predicted with continued ASR pumping under buildout near the end of an extended drought. This volume is considered insignificant, and is substantially less than the observed fluctuation in Santa Clara River flows on a year-to-year basis.

Because water delivered through the SWP system would be available for recharge in most years, the ASR program would show an overall positive impact on Santa Clara River water quality. Based on the observations from the modeling analyses, injecting 4,500 AF/yr of water into the Saugus Formation during 14 years out of every 19 or 20 years will result in improved water quality in the Saugus Formation, Alluvial aquifer, and Santa Clara River. Model simulations indicate that the Saugus Groundwater Banking/ASR program would result in an average increase of about 1,050 to 1,100 AFY in the amount of groundwater discharge to the Santa Clara River because the ASR program will bank more SWP water than it will pump. An increase in the discharge of Saugus Formation groundwater to the Alluvial aquifer and, hence, the River, as a result of the ASR program, would increase the assimilative capacity of the river because the increased rate of groundwater discharge would result in dilution of nitrate concentrations in the River.

j) Newhall Ranch Non-Point Sources

Development of the Newhall Ranch Specific Plan will result in the conversion of agricultural fields and open grazing land to urban uses. Using the Draft Calleguas Nutrient TMDL as a comparison, no non-point load allocations were made by RWQCB for urban runoff in that watershed. Based upon preliminary modeling results of the linkage analysis from the Upper Santa Clara River nutrient TMDL, only a small portion of the watershed is urbanized and urban development contributes a comparatively small contribution to nutrient concentrations compared to agriculture (the only non-point source for which load allocations are proposed in Calleguas). No loadings due to urban non-point sources are assumed for the Santa Clara River TMDL and, therefore, the Newhall Ranch Specific Plan would not be subject to TMDL load allocations.

It is important to note, however, that although potentially not subject to TMDL load allocations for nutrients, nutrients are a component of urban runoff. All new development (non-point sources) in Newhall Ranch would nevertheless be guided by Section 402 of the Clean Water Act, as amended, which includes the NPDES program. The law requires NPDES permits for storm water discharges from storm

drain systems[62] to waters of the United States. Section 402(p)(3)(B) requires that permits for storm drain systems "(i) may be issued on a system- or jurisdiction-wide basis; (ii) shall include a requirement to effectively prohibit non-stormwater discharges into the storm sewers; and (iii) shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants." The U.S. EPA is responsible for implementing the NPDES program at the federal level.[63] The SWQCB is responsible for implementing the federal NPDES requirements in California. In 1992, the SWQCB issued two statewide NPDES General Permits: one for stormwater from industrial sites (NPDES No. CAS000001) and the other for storm water from construction sites (CAS000002). Industrial and construction activities with a disturbed area of 5 acres or more are required to obtain individual NPDES permits for stormwater discharges, or be covered by the above statewide General Permits.

A NPDES Municipal Permit No. CAS614001 was issued to Los Angeles County on July 31, 1996, and expired on July 30, 2001, but is still active until a new permit is adopted by RWQCBLAR. (This permit is included in the Newhall Ranch Final EIR Appendix to Responses to Comments.) Under the existing permit, Los Angeles County is divided into 6 watersheds, including the Santa Clara River watershed. The existing NPDES Municipal Permit No. CAS614001 incorporates 12 of the 13 baseline Best Management Practices (BMPs), which have been approved by the RWQCB. Several additional water quality permits and plans are required (*e.g.*, Municipal Permit No. CAS614001, a Countywide Storm Water Management Plan (CSWMP), a Watershed Management Area Plan (WMAP)).

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62 Storm drain systems are described as Municipal Separate Storm Sewer Systems (MS4s) and include streets, gutters, conduits, natural or artificial drains, channels and water courses or other facilities that are owned, operated, maintained or controlled by any Permittee (cities and counties) and used for the purpose of collecting, storing, transporting or disposing of storm water.

63 On November 16, 1990, pursuant to Section 402(p) of the Clean Water Act, the EPA promulgated federal regulations (40 CFR Part 122.26) establishing requirements for storm water discharges under the NPDES program. The regulations recognize that certain categories of non-storm water discharges may not need to be prohibited if they have been determined not to be significant sources of pollutants.

Applicants for development projects have two major responsibilities under the NPDES Municipal Permit No. CAS614001. The first is to submit and then implement a Standard Urban Storm Water Mitigation Plan ("SUSMP") containing design features and BMPs appropriate and applicable to the project.[64] The purpose of the SUSMP is to reduce post-construction pollutants in storm water discharges. Prior to issuance of any grading or building permit, the County must approve the SUSMP. The Los Angeles County Municipal Permit, at pages 34-35, contains a discussion of the requirements for SUSMPs.

The second responsibility is to prepare a Storm Water Pollution Prevention Plan (SWPPP) for all construction projects with disturbed areas of 2 to 5 acres. Alternatively, the applicant may conform to the State Construction Activity Storm Water Permit for projects greater than 5 acres. The applicant must ensure that a SWPPP is approved, or file a Notice of Intent to comply with the State Permit prior to issuance of a grading permit.

Specific mitigation measures have been incorporated into the SUSMPs and the SWPPPs for development projects under NPDES Municipal Permit No. CAS614001. As NPDES requirements are updated over the coming years, the specific requirements would become part of the SUSMPs and SWPPPs prepared for individual subdivisions.

The Specific Plan contains a conceptual NPDES Water Quality Plan. This plan is discussed in the Newhall Ranch Final EIR, Section 4.2, page 4.2-31. In addition, the Newhall Ranch Final EIR includes the *Drainage Report for Newhall Ranch*, Appendix 4.2. Until actual project design occurs, specific BMPs that would be employed cannot be determined. *See*, Final EIR, pages 4.2-31 to 4.2-33, for examples of "source control" and "treatment control" BMPs that are relevant to the Specific Plan. The Final EIR, Section 4.2, includes mitigation measures that address the NPDES regulations. Given the substantial amount of regulation in place and the fact that the Specific Plan and WRP must, like all other development, meet the standards resulting from the regulation, the Final EIR concludes that no significant adverse water quality impacts would occur. Based on the new regulations relating to SUSMP requirements, County staff

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64 The RWQCB, Los Angeles Region, approved the SUSMP that requires new construction and development projects to implement BMPs on March 8, 2000. The SUSMP requires that new developments and re-development projects employ a variety of general and land use specification measures to reduce the post-project discharge of pollutants from stormwater conveyance systems to the "maximum extent practicable." In May 2000, the County of Los Angeles finalized its "Manual for the Standard Urban Storm Water Mitigation Plan," which details the requirements of the SUSMP. Projects that fall into any of the seven SUSMP development categories (including home subdivisions with 100 or more housing units) are required to incorporate appropriate SUSMP requirements into project plans as part of the development plan approval process for building and grading permits.

The County's Manual for the SUSMP is incorporated by this reference and is available for public review by contacting either the Los Angeles County Department of Regional Planning (Lee Stark) or Impact Sciences, Inc. (Tom Worthington).

recommends that the Newhall Ranch Final EIR mitigation measures be revised to add the following new measure:

4.2-8. The applicant for any subdivision map permitting construction shall comply with all appropriate requirements of the County of Los Angeles Standard Urban Stormwater Mitigation Plan ("SUSMP") requirements or demonstrate equivalency to these requirements.

k) Perchlorate

Another concern that has been raised is whether the Specific Plan (including the Saugus Groundwater Banking/ASR program) would adversely impact the perchlorate identified in the Saugus Formation on the east side of the basin near Saugus wells 1 and 2 (owned by the Santa Clarita Water Division of CLWA). This issue was investigated by using the groundwater flow model. On the basis of the model simulations discussed previously, the model predicts that the Specific Plan (including the Saugus Groundwater Banking/ASR program) would not cause spreading of perchlorate in the Santa Clarita Valley under the purveyor/CLWA groundwater pumping program described in the UWMP. This finding is based, in part, on the fact that the ASR wells are located several miles to the west and the modeling analyses indicate that groundwater gradients in the vicinity of the perchlorate are controlled primarily by local groundwater conditions and pumping, and are not affected by the ASR well pumping. The finding is also based on the fact that the suspected source for the perchlorate contamination has been identified (the former Whittaker-Bermite facility) and that the facility is no longer in operation and, therefore, the activities that caused the perchlorate contamination are not continuing. These factual determinations support the conclusion that, through dilution, perchlorate concentration levels away from the source would be expected to be significantly less. The testing performed by the Santa Clarita Valley water purveyors shows that dilution has had a beneficial effect on perchlorate concentrations.

Since preparation of the Newhall Ranch Draft Additional Analysis and Final Additional Analysis, studies of the nature and extent of the perchlorate in the Alluvial and Saugus aquifer have been conducted and the local purveyors have conducted routine sampling of existing wells. Studies are being conducted by the Santa Clarita, LLC (former owners of the Whittaker-Bermite site), the state Department of Toxic Substances Control, and the U.S. Army Corps of Engineers. While these studies are still in their initial stages, the results of the studies conducted thus far have not shown that perchlorate has impacted more than the original four Saugus water supply wells. Concentrations of perchlorate have been detected in alluvial monitoring wells near the Whittaker-Bermite site boundary, but it has not been shown that these detections have the potential to impact Alluvial or Saugus water supply wells. The problem is being studied and monitored and plans are being developed by the local water purveyors and the U.S Army Corps of Engineers to determine the best way to control movement of the perchlorate. The local water

supply agencies also have been formulating strategies that involve containment and treatment that will restore Saugus groundwater capacity at the impacted wells.

Although the Specific Plan (including the Saugus Groundwater Banking/ASR program) would not impact the perchlorate detected in specified wells in the Saugus aquifer, treatment options for the removal of perchlorate are also available and proven to be feasible. The treatment technology is discussed in detail in **Subsection 2.5.4.2** of this report. However, by way of example, perchlorate treatment has occurred successfully through the use of the patented "Ion Separation/Ion Separation Plus" (ISEP/ISEP+) process (sometimes referred to as "ion exchange"), a process that removes perchlorate with very low or zero brine (waste) levels. Calgon Carbon Corporation has successfully applied the ISEP/ISEP+ process at over 160 locations worldwide, including several sites in California. ISEP/ISEP+ has been used to successfully remediate a site at NASA's Jet Propulsion Laboratory in Pasadena, and is being used to remediate a site operated by Aerojet in San Gabriel and a site in La Puente, California (La Puente Valley County Water District). Calgon also operates 10 ISEP/ISEP+ drinking water plants worldwide, including two in California. The ISEP/ISEP+ process is a DHS-accepted technology for perchlorate treatment.[65] As indicated by DHS in its letter to Calgon Carbon Corporation:[66]

> "[Y]our ion exchange technology has been reviewed and accepted by the Department's Surface Water Treatment Rule Committee.... [I]t is the opinion of the [C]ommittee that your technology has demonstrated its ability to remove perchlorate from source waters."

As indicated above, the ISEP/ISEP+ process produces waste (also referred to as "brine") as a by-product. This waste will require either further treatment or disposal. While the design of the ultimate treatment process for the eastern portion of the Saugus aquifer affected by perchlorate has not yet been finalized, options for the disposal and/or treatment of the waste include: (1) a pipe (brine line) to carry the waste to an receiving location acceptable to DHS (*e.g.*, a treatment facility); (2) deep injection into an abandoned or active oil well; and (3) installation of a catalytic conversion unit (successfully tested at the Jet Propulsion Laboratory) that destroys the perchlorate, leaving harmless by-products, such as chlorides. It also reduces the total volume of brine to less than 10 percent. For example, a typical 2,000 gallon per minute (gpm) well using the Calgon Ion Exchange treatment system produces about 1 percent brine. The remaining 20 gpm would again be treated with the catalytic conversion unit, which further reduces the volume of brine to less than 10 percent, or 2 gpm, using the above example. The remaining brine could be stored on site and disposed elsewhere, discharged to the sanitary sewer or possibly returned to the beginning of the ion exchange unit resulting in no discharge from the treatment system.

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65 Calgon Carbon Corporation, November 28, 2000.

66 Letter from California Department of Health Services to Calgon Carbon Corporation, dated December 29, 1999.

Appendix 2.5 to the original Draft Additional Analysis (2001) contains a copy of the December 29, 1999 letter from DHS, as well as background information regarding the use of the ISEP/ISEP+ process as a feasible treatment method for the removal of perchlorate. The Santa Clarita Valley water purveyors are moving forward with implementation of perchlorate treatment options.

l) Perchlorate-Ecological Effects

Perchlorate salts are soluble in water and, like most contaminants, perchlorate is mobile and can persist for many decades under typical groundwater conditions. The mobility and persistence of perchlorate can create direct and indirect environmental effects on mammal and amphibian functioning and plants at high perchlorate concentration levels; however, a search of available literature has revealed very little data on the ecological effects of perchlorate. A good source of information summarizing the available data is found in the U.S. Environmental Protection Agency (EPA) website (Perchlorate) at http://www.epa.gov/ogwdw000/ccl/perchlor/perchlo.html. The following is a summary of the known available information. However, because the information is limited, and because the Specific Plan does not impact or result in a significant effect on the perchlorate detected in certain specified wells in the Saugus Formation, this analysis finds, that after a thorough literature investigation and review of known available information, the ecological effects of perchlorate are too speculative for any further evaluation, consistent with CEQA *Guidelines* §15145.

Based on information provided by EPA, minimal information is available on the ecological effects of perchlorate or any of its other salts. The EPA found that there is essentially no reliable data in existence that assesses perchlorate's effects on various soil, sediment or aquatic receptors, including aquatic vertebrates, aquatic or sediment invertebrates, bacteria or plants. The EPA further noted that approaches for the evaluation of perchlorate effects on ecological receptors is complicated by the lack of data with respect to perchlorate transport and transformation processes. This includes data on the effects of soil chemistry, movement characteristics and various media, absorption to soils of high and low cation and anion exchange capacity, and the effect of ammonia. In conjunction with the EPA, the U.S. Air Force has begun to assess the transport and transformation of perchlorate in the environment. At this stage, however, the work is based primarily on literature review, with recommendations for additional work in the future. The intent of the additional work is to help develop models to predict and describe the transport and transformation of perchlorate in groundwater basins. For a detailed description of the current status of this work effort, please review to the EPA website (Perchlorate), cited above.

m) Chlorine and Disinfection Byproducts

Chlorine and disinfection byproducts (DBPs) will be present in the recharge water as a result of the disinfection process used by local water purveyors to treat water for drinking purposes. DBPs are formed when disinfectants used in water treatment react with natural organic matter present in the source water. Similarly, introduction of source water containing disinfectants into the aquifer during ASR will react with naturally occurring organic carbon to produce DBPs. DBPs include trihalomethanes (THMs), and haloacetic acids (HAAs). The maximum contaminant levels (MCLs) for THMs and HAAs are 80 mg/L and 60 mg/L, respectively. Valencia Water Company, the purveyor who would provide the injection source water for the Newhall Ranch Specific Plan, produces water that does not exceed these limits.

Chlorine and DBPs are not naturally occurring in the Saugus Formation and so there could be a concern that these compounds, present in the recharge water, would degrade the native groundwater quality. Likewise, there could be a concern that recovered water could have unacceptable levels of DBPs. Studies conducted for a number of ASR projects in the United States and abroad have shown that chlorine and DBPs do not travel beyond the zone of injection around the ASR well and are naturally degraded within a relatively short time (during a few weeks of storage). Recovered water typically does not contain chlorine and has substantially reduced concentrations of DBPs. While still the subject of on-going research, there are several potential mechanisms that contribute to the observed reductions in DBP concentrations subsequent to ASR storage, including the following (Pyne, 1995):

- Mixing and dilution between the recharge and surrounding groundwater;
- Biological mechanisms whereby some classes of DBPs will be removed more favorably in aerobic conditions while others tend to be removed only after the onset of anoxic conditions in the aquifer; and
- A reduction in DBP precursors and formation potential during ASR storage as evidenced by declining total organic carbon (TOC) concentrations.

Because chlorine and DBPs readily degrade (within a few weeks of storage) and will not travel beyond the injection zone around the ASR wells, they are not expected to impair the quality of native groundwater. Because the native groundwater is naturally low in TOC, increases in DBP concentrations are not expected when the water is recovered and subsequently re-disinfected. Consequently, no related significant water quality impacts would occur.

n) Conclusion

Potential impacts associated with the Specific Plan and the Saugus Groundwater Banking/ASR program (reductions in flows to downstream water users, riparian vegetation and sensitive animal species and water quality) are less than significant. In fact, the banking of 4,500 AFY of SWP water, or other water sources, during a non-drought year will increase groundwater discharge from the Saugus formation to the Alluvial aquifer, and from the Alluvial aquifer to the Santa Clara River. The results of the technical analysis described in this report indicate that there would be a net positive benefit from the ASR program. As stated, the ASR program would increase the amount of water discharging to the Santa Clara River, maintain stable groundwater levels in the Saugus Formation, and potentially improve the assimilative capacity of the Santa Clara River with respect to chloride as a result of increased groundwater discharges. This improvement in conditions along the Santa Clara River should also act to improve conditions for riparian vegetation and sensitive species inhabiting the river corridor.

(8) The Potential for Liquefaction Impacts Resulting from the Saugus Groundwater Banking/ASR Program

Liquefaction is the process in which water-saturated, usually loose-to-moderately dense, fine-to-medium sands temporarily lose strength due to strong ground motion and behave as a viscous fluid. The loose sand grains rearrange into a more stable orientation, which transfers the overburden pressure from the grain-to-grain contacts to the fluid. Because liquids cannot support shear stresses, the sediment/water mixture loses strength and may flow like a viscous fluid if a gradient is present. As water escapes from the collapsing void space between the grains, the sediment settles and water escapes to the surface. When a buried sand zone is liquefied, the overburden pressure forces the excess water to the surface, commonly causing sand boils and sand volcanoes. If water were to be injected into such soils, the potential for liquefaction can be increased.

According to R.T. Frankian & Associates, the Santa Clara River area sands and adjacent sandy areas are generally dense and have a low potential for liquefaction, even when assuming a conservative value for the bedrock acceleration of 0.6g. Shallow liquefaction features occurred on Newhall Ranch during the Northridge Earthquake, primarily in recent shallow sand deposits in and around the Santa Clara River area. These features are the result of shallow liquefaction that produced relatively small sand boils. Local liquefaction features, such as sand boils/blows were observed in Potrero Canyon by Allan E. Seward Engineering Geology, Inc., and by the U.S. Geological Survey following the Northridge

Earthquake.[67] More importantly, water to be injected as part of the Saugus Groundwater Banking/ASR program would be injected into the deeper Saugus Formation, not the sands and adjacent sandy areas associated with the Santa Clara River. The Saugus Formation consists of unconsolidated to semi-consolidated sandstone and conglomerate materials. Because the proposed Saugus Groundwater Banking/ASR program would not result in an significant increase in water within the recent shallow sand deposits in and around the Santa Clara River area, no significant liquefaction impacts would occur.

(i) Downstream Effects of Castaic Creek Flood Flow Use

Two issues have been raised regarding potential downstream impacts associated with the use of the Castaic Creek flood flows as a supplemental water supply for Newhall Ranch. For the purposes of this analysis, use of Castaic Creek flood flows would result in a significant environmental impact if such use would reduce water flows to downstream water users when compared with existing conditions.

First, it has been suggested that "diverting" the flood flows away from Castaic Creek and to Newhall Ranch would result in a decrease in the amount of water that flows downstream in the creek and eventually in the Santa Clara River. This suggestion also means that less water would be available to beneficial downstream water users, including sensitive riparian habitats and sensitive animal species. Second, it has been suggested that the injection of Castaic Creek flood flows into the Saugus aquifer would result in a decline in the water quality of local aquifers and the Santa Clara River. However, available information refutes these suggestions.

Regarding the potential to reduce the amount of water available for downstream users, DWR records delineating natural inflow appropriations to Castaic Lake do not show a past or current tangible benefit to the downstream water users. Records for the years of 1977 through 2000 show that in excess of 300,000 AF of stored flood flows have reverted to state ownership and have, in fact, not been released into Castaic Creek downstream of Castaic Lake. During the same time period, based on historical records, stored Castaic Creek flood flows have not been released in most years to Castaic Creek and the Santa Clara River and, therefore, the use of the flood flows would not have any significant impact on existing conditions in Castaic Creek or the Santa Clara River (it is expected that during extreme runoff conditions, DWR could release natural flows (local water) to Castaic Creek because of limited storage space in Castaic Lake Reservoir). Because, in most years, the Castaic Creek flood flows are not released to Castaic Creek and the Santa Clara River under existing conditions, the water would not be "diverted" away from the Creek

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[67] Brian Swanson, Allan E. Seward Engineering Geology, Inc., correspondence to Impact Sciences, Inc., 13 April 1995.

or the river and, therefore, no significant impacts could occur through the use of the flows on Newhall Ranch.

In fact, beneficial impacts could occur if the flows are injected into the Saugus aquifer as part of the Saugus Groundwater Banking/ASR program and later used on Newhall Ranch during dry years. Under this scenario, the flows would actually remain entirely in the watershed and available for use by beneficial water users rather than being used by the State both within and outside the watershed. This beneficial impact would be compounded by virtue of the increase in groundwater discharge that results from the ASR program (*See,* **Subsection** above entitled, **Effects of Groundwater Pumping Associated with the Saugus ASR Program**). If flood flows are a source of the water to be stored and later withdrawn during dry years, then injection of the flood flows would directly benefit all downstream water users.

Regarding the potential for injected flood flows to result in a decline in the water quality of local aquifers and the Santa Clara River, when the flood flows are collected behind Castaic Dam, they are mixed with imported SWP water supplies. Prior to injection, the flood flows (and any other water source that might be injected) would be treated to Regional Water Quality Control Board *Basin Plan* standards in the water treatment facilities of CLWA. Because this water would then be a higher quality when compared to the native waters, no decline in water quality would occur. In fact, the quality of local native waters would be enhanced by the injection of treated flood flows.

(j) Land Surface Elevation

Under certain geologic conditions, groundwater withdrawals can result in subsidence of the land surface. Specifically, subsidence can occur when extensive groundwater withdrawals are made from aquifer systems that consist of thick sequences of unconsolidated or poorly consolidated sediments containing a large percentage of highly compressible clays.

Any change in the elevation of the ground surface (subsidence or mounding) as a result of Specific Plan uses of the Saugus aquifer will be considered a significant impact. The Saugus aquifer is composed of consolidated sediments; therefore, land subsidence is not anticipated to result from ASR pumping from this aquifer. Subsidence is also not anticipated to occur as a result of conditions in the Alluvial aquifer, primarily because the potential ASR-induced water-level declines are not considered significant. This conclusion is further supported by the following:

- Additional groundwater is not proposed to be pumped from the Alluvial aquifer for use by the Specific Plan;

- The Alluvial aquifer is not characterized by thick layers of clay that are likely to compress significantly; and
- The Alluvial aquifer is currently extensively developed, and the resulting fluctuations in groundwater levels have not resulted in known occurrences of subsidence.

As indicated in the Newhall Ranch Final EIR and confirmed by the analysis presented above, because the ASR program would not lead to a permanent reduction in groundwater levels, no changes in land surface elevation would occur due to implementation of the Specific Plan or Newhall Ranch WRP. Consequently, such impacts would be less than significant.

(k) Impacts of the Newhall/SWP Water and the Nickel Water on Delivery and Treatment Capacity

The project applicant has entered into an agreements to reserve and ultimately purchase 7,648 AFY of additional SWP Table A water entitlement and 1,607 AFY of Nickel Water, which would be delivered through SWP facilities to CLWA and be available to serve the Specific Plan. The same SWP reliability parameters discussed in **Subsection 2.5.4.4(h)**, entitled, **SWP Reliability** above for CLWA SWP Table A water would apply to the Newhall/SWP water; however, the Nickel Water is not affected by those reliability parameters (as indicated above, the Nickel Water is 100 percent reliable). The following information presents a general overview of the potential environmental impacts on water delivery and treatment capacity through the use of the Newhall/SWP water and the Nickel Water.

(1) Water Delivery/Capacity – Newhall/SWP Water

As part of a water purchase to be approved by DWR, CLWA would acquire associated transportation and capacity rights to SWP facilities necessary to deliver this water to CLWA, including capacity in the Aqueduct and pumping plants. Under existing conditions, Article 12 of CLWA's long-term contract with DWR provides for a maximum monthly delivery of 11 percent (or in some cases 8.33 percent) of the annual entitlement and an instantaneous maximum delivery rate. Therefore, CLWA can deliver under their existing contract with DWR 9,038 AF per month. At the present time, CLWA's peak month to date has been 3,754 AF, which occurred in August 1999.

CLWA capacity to deliver water will increase if additional SWP entitlement, such as the Newhall/SWP water, is acquired. In addition, the CLWA contract has provisions for storage of up to 4,684 AF behind the Castaic Dam that could be used if needed in any given year. Based on CLWA's demand projections and seasonal demand pattern, additional monthly peaking capacity is not needed to accommodate additional SWP entitlement. Any future agreements transferring SWP entitlement to CLWA would also

set forth specific facilities along the Aqueduct where CLWA would be entitled to receive water. CLWA's contract with DWR would also be amended to approve the transfer of entitlement, and to establish the additional capacity, if any, required by DWR as a result of the transfer in SWP entitlement. However, based on prior transfers of SWP entitlement to CLWA, additional capacity has not been required by DWR. Therefore, it is not likely that DWR would require additional capacity for the Newhall/SWP entitlement.

Finally, in a broader context, there is annually unused capacity in the California Aqueduct. In addition, there is increased ability through the Monterey Agreement for CLWA to utilize storage facilities outside of its service area. Under the Monterey Agreement, CLWA may also now exercise greater control over the operations of Castaic Lake. These factors enhance CLWA's transportation and storage capacity for the transfer of any additional SWP entitlement.

(2) Water Delivery/Capacity – Nickel Water

As stated above, the project applicant has acquired 1,607 AFY of water from Nickel Water Family LLC. Prior to acquiring the Nickel Water, a report was prepared by Provost & Pritchard Engineering Group, Inc. (*see*, Appendix 2.5) to evaluate the ability of the existing California Aqueduct and associated facilities to convey the 1,607 AFY from areas in Kern County (Aqueduct Reach 10A) to CLWA at Castaic Lake (Aqueduct Reach 30) through the year 2035. As stated in the report, sufficient capacity exists in the California Aqueduct to convey an additional 1,607 AFY of water from Kern County (Reach 10A) to Castaic Lake (Reach 30). For further information regarding this capacity issue, please refer to Appendix 2.5.

(3) Water Treatment – Newhall/SWP Water and Nickel Water

Imported SWP water is treated at two water treatment plants owned and operated by CLWA, including the Earl Schmidt Filtration Plant, with a current water capacity of 28 million gallons per day ("mgd"), and the Rio Vista Water Treatment Plant, with a water capacity of 30 mgd. The two plants have a current capacity to treat a total of 58 mgd. These plants were designed to accommodate expansion as required. CLWA is currently in the process of expanding the Earl Schmidt plant to increase the plant's treatment capacity from 28 mgd to a total of 50 mgd. The expanded Schmidt plant is scheduled to be available for use by late-2003. As part of CLWA's Capital Improvement Plan ("CIP", herein incorporated by reference), the treatment plants are planned to treat approximately 180 mgd at Valley buildout. CLWA treats the SWP water at its two water filtration plants and then distributes the water to the local retail water purveyors in the Santa Clarita Valley. From CLWA's two existing plants, the treated SWP water is

delivered by gravity to the retail water purveyors through CLWA's distribution network of pipelines and turnouts.

Based on CLWA's capabilities, there are no expected significant impacts associated with the delivery and treatment of the Newhall/SWP water or the Nickel Water.

2.5.7 MITIGATION MEASURES

2.5.7.1 Preface

The trial court directed the County to "shall consider this analysis and adopt such mitigation measures, alternatives, and/or additional or revised findings as may be necessary to comply with CEQA and this writ." In compliance with the court's writ and decision, this section presents the measures proposed by the County to mitigate potential significant water-related impacts to less than significant levels.

This section presents the water-related mitigation measures previously adopted by the County for the Newhall Ranch Specific Plan (termed "Existing EIR Mitigation Measures"). Also presented are proposed revisions to the previously adopted mitigation measures as well as new additional mitigation measures proposed in response to the analysis presented above. For consistency, the numbering used for each mitigation measure is the same as the numbering used in the partially certified Newhall Ranch Specific Plan and Water Reclamation Plant Final EIR.

2.5.7.2 Existing EIR Specific Plan Mitigation Measures

4.11-1. The proposed Specific Plan shall implement a water reclamation system in order to reduce the Specific Plan's demand for imported potable water. The Specific Plan shall install a distribution system to deliver non-potable reclaimed water to irrigate land uses suitable to accept reclaimed water, pursuant to Los Angeles County Department of Health Standards.

4.11-2. Landscape concept plans shall include a palette rich in drought-tolerant and native plants.

4.11-3. Major manufactured slopes shall be landscaped with materials that will eventually naturalize, requiring minimal irrigation.

4.11-4. Water conservation measures as required by the State of California shall be incorporated into all irrigation systems.

4.11-5. The area within each future subdivision within Newhall Ranch shall be annexed to the Valencia Water Company prior to issuance of building permits.

4.11-7. Prior to commencement of use, all uses of recycled water shall be reviewed and approved by the State of California Health and Welfare Agency, Department of Health Services.

4.11-8. Prior to the issuance of building permits that allow construction, the applicant of the subdivision shall finance the expansion costs of water service extension to the subdivision through the payment of connection fees to the appropriate water agency(ies).

2.5.7.3 Revised EIR Specific Plan Mitigation Measures

4.11-6. In conjunction with the submittal of applications for tentative tract maps or parcel maps which permit construction, and prior to approval of any such tentative maps, ~~Prior to recordation of any final subdivision map that allows construction,~~ and in accordance with the requirements of the Los Angeles County General Plan Development Monitoring System (DMS), as amended, Los Angeles County shall require the applicant of the map ~~subdivision~~ to obtain written confirmation from the retail water agency ~~that a~~ identifying the source(s) of water ~~source is~~ available to ~~supply~~ serve the map ~~subdivision~~ concurrent with need. If the applicant of such map ~~the subdivision~~ cannot obtain confirmation that a water source(s) is available for buildout of the ~~subdivision~~ map, the ~~subdivision~~ map shall be phased with the timing of an available water source(s), consistent with the County's DMS requirements.

4.11-9. Pursuant to Public Resources Code §21081(a)(2), the County shall recommend that the Upper Santa Clara Water Committee (or Santa Clarita Valley Water Purveyors), made up of the Castaic Lake Water Agency, Los Angeles County Waterworks District No. 36, Newhall County Water District, Santa Clarita Water ~~Company~~ Division of CLWA and the Valencia Water Company, prepare an annual water report that will discuss the status of groundwater ~~levels~~ within the Alluvial and Saugus Aquifers, and State Water Project water supplies as they relate to the Santa Clarita Valley. The report will also include an annual update of the actions taken by CLWA to enhance the quality and reliability of existing and planned water supplies for the Santa Clarita Valley. In those years when the Committee or purveyors ~~does~~ not prepare such a report, the applicant at ~~his~~its expense shall cause the preparation of such a report that is acceptable to the County to address these issues. This annual report shall be provided to Los Angeles County who ~~may~~will ~~use~~ consider the report as part of ~~the~~ its local land use decision-making process. (To date, four such water reports have been prepared (1998, 1999, 2000 and 2001) and provided to both the County of Los Angeles and the City of Santa Clarita.)

4.11-10. Pursuant to Public Resources Code §21081(a)(2), the County shall recommend that Castaic Lake Water Agency (CLWA), in cooperation with other Santa Clarita Valley retail water providers, continue to update the Urban Water Management Plan (UWMP) for Santa Clarita Valley once every five years (on or before December 31) to ensure that the County receives up-to-date information about the existing and planned water supplies in the Santa Clarita Valley. The County will consider the information contained in the updated UWMP in connection with the County's future local land use decision-making process. The County will also consider the information contained in the updated UWMP in connection with the County's future consideration of any Newhall Ranch tentative subdivision maps allowing construction.

~~4.11-10 In conjunction with the submittal of applications for and prior to approval of tentative tract and parcel maps which permit construction, a letter from the retail water provider will be submitted to the County identifying the source(s) of supply of water for the land uses within that tentative tract or parcel map. The source(s) of water identified shall not result in the net use of groundwater over that which is planned for the Santa Clarita water basin, which is identified as the "annual safe perennial yield" of the Alluvial Aquifer and the "annual recharge rate" of the Saugus Aquifer in the Final EIR for the Newhall Ranch Specific Plan or subsequent environmental documentation.~~ (*See*, Mitigation Measure 4.11-15, below.)

2.5.7.4 Additional Specific Plan Mitigation Measures

4.11-11. With implementation of the proposed Saugus ASR program, ASR wells shall be spaced so that adjacent non-project wells will not lose pumping capacity as a result of drawdown occurring during pumping of the ASR wells.

4.11-12. With implementation of the proposed Saugus ASR program, the ultimate number of ASR wells to be constructed shall be sufficient to inject the ultimate target injection volume of 4,500 acre-feet per year and withdraw the ultimate target withdraw volume of 4,100 acre-feet per year.

4.11-13. With implementation of the proposed Saugus ASR program, ASR wells shall be constructed in the following two general areas:

(a) South of the Santa Clara River and west of Interstate 5. This location includes areas within the Newhall Ranch Specific Plan boundary. (This area is referred to as the "south ASR well field."); and

(b) North of the Santa Clara River and west of Castaic Creek. (This location is referred to as the "north ASR well field.")

4.11-14. The Saugus Groundwater Banking/ASR program injection water must meet the water quality requirements of the State Regional Water Quality Control Board, Los Angeles Region. The water extracted for use on the Specific Plan site shall meet the Title 22 drinking water standards of the State Department of Health Services.

4.11-15. Groundwater historically and presently used for crop irrigation on the Newhall Ranch Specific Plan site and elsewhere in Los Angeles County shall be made available by the Newhall Land and Farming Company, or its assignee, to partially meet the potable water demands of the Newhall Ranch Specific Plan. The amount of groundwater pumped for this purpose shall not exceed 7,038 AFY. This is the amount of groundwater pumped historically and presently by the Newhall Land and Farming Company in Los Angeles County to support its agricultural operations. Pumping this amount will not result in a net increase in groundwater use in the Santa Clarita Valley. To monitor groundwater use, the Newhall Land and Farming Company, or its assignee, shall provide the County an annual report indicating the amount of groundwater used in Los Angeles County and the specific land upon which that groundwater was historically used for irrigation. For agricultural land located off the Newhall Ranch Specific Plan site in Los Angeles County, at the time agricultural groundwater is transferred from agricultural uses on that land to Specific Plan uses, The Newhall Land and Farming Company, or its assignee, shall provide a verified statement to the County's Department of Regional Planning that Alluvial aquifer water rights on that land will now be used to meet Specific Plan demand.

4.11-16. The agricultural groundwater used to meet the needs of the Specific Plan shall meet the drinking water quality standards required under Title 22 prior to use.

4.11-17. In conjunction with each project-specific subdivision map for the Newhall Ranch Specific Plan, the County shall require the applicant of that map to cause to be prepared a supplemental or subsequent Environmental Impact Report, as appropriate, pursuant to CEQA requirements. By imposing this EIR requirement on each Newhall Ranch tentative subdivision map application allowing construction, the County will ensure that, among other things, the water needed for each proposed subdivision is confirmed as part of the County's subdivision map application process. This mitigation requirement shall be read and applied in combination with the requirements set forth in revised Mitigation Measure 4.11-6, above, and in Senate Bills 221 and 610, as applicable, regardless of the number of lots in a subdivision map.

4.11-18. The storage capacity purchased in the Semitropic Groundwater Banking Project by the Newhall Ranch Specific Plan applicant shall be used in conjunction with the provision of water to the Newhall Ranch Specific Plan. The applicant, or entity responsible for storing Newhall Ranch water in this groundwater bank, shall prepare an annual status report indicating the amount of water placed in storage in the groundwater bank. This report shall be made available annually and used by Los Angeles County in its decision-making processes relating to build-out of the Newhall Ranch Specific Plan.

4.11-19. A Memorandum of Understanding (MOU) and Water Resource Monitoring Program has been entered into between United Water Conservation District and the Upper Basin Water Purveyors, effective August 20, 2001.[68] The MOU/Water Resource Monitoring Program, when executed, will put in place a joint water resource monitoring program that will be an effective regional water management tool for both the Upper and Lower Santa Clara River areas as further information is developed, consistent with the MOU. This monitoring program will result in a database addressing water usage in the Saugus and Alluvium aquifers over various representative water cycles. The parties to the MOU intend to utilize this database to further identify surface water and groundwater impacts on the Santa Clara River Valley. The applicant, or its designee, shall cooperate in good faith with the continuing efforts to implement the MOU and Water Resource Monitoring Program.

As part of the MOU process, the United Water Conservation District and the applicant have also entered into a "Settlement and Mutual Release" agreement, which is intended to continue to develop data as part of an on-going process for providing information about surface and groundwater resources in the Santa Clara River Valley. In that agreement, the County and the applicant have agreed to the following:

> "4.3 Los Angeles County and Newhall will each in good faith cooperate with the parties to the MOU and will assist them as requested in the development of the database calibrating water usage in the Saugus and Alluvium aquifers over multi-year water cycles. Such cooperation will include, but not be limited to, providing the parties to the MOU with historical well data and other data concerning surface water and groundwater in the Santa Clara River and, in the case of Newhall, providing Valencia Water Company with access to wells for the collection of well data for the MOU.
>
> 4.4 Los Angeles County and Newhall further agree that the County of Los Angeles will be provided with, and consider, the then-existing data produced by the MOU's monitoring program in connection with, and prior to, all future Newhall Ranch subdivision approvals or any other future land use entitlements implementing the Newhall Ranch Specific Plan. If the then-existing data produced by the MOU's monitoring program identifies significant impacts to surface water or groundwater resources in the Santa Clara River Valley, Los Angeles County will identify those impacts and adopt feasible mitigation measures in accordance with the California Environmental Quality Act."

4.11-20 The Specific Plan applicant, or its successors, shall assign its acquired Nickel Water rights to the Valencia Water Company or Castaic Lake Water Agency (CLWA), and, in consultation with the Valencia Water Company, CLWA or their designee(s), the applicant shall ensure that the Nickel Water is delivered to the appropriate place of use necessary to serve the Newhall Ranch Specific Plan at the time of need, as determined by the County of Los Angeles through required SB221 and/or SB610 analyses for future subdivision map applications. Upon approval of the Specific Plan, the applicant, Valencia Water Company, CLWA or a designee, will take delivery of the Nickel Water, so that such water will be used, or stored for use, for the Specific Plan in future years.

To ensure that an adequate supply of water is available for the Specific Plan over the long-term, the decision of whether or not the Nickel Water agreement should be extended or otherwise canceled cannot occur without first obtaining CLWA's concurrence. If the applicant, or its designee, seeks to not extend the Nickel Water agreement beyond its initial 35-year term, or seeks to cancel said agreement prior to the expiration of its initial 35-year period, or the expiration of the 35-year option period, if exercised, then the applicant, or its

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68 *See*, Appendix F to Final Additional Analysis (Memorandum of Understanding Between the Santa Clara River Valley Upper Basin Water Purveyors and United Water Conservation District, dated August 2001).

designee, must obtain CLWA's written concurrence and that concurrence must include findings to the effect that other equivalent water supplies are available at a comparable cost and that non-extension or cancellation of the agreement will not impact the water supplies of Newhall Ranch and the rest of the Santa Clarita Valley.

4.11-21. Beginning with the filing of the first subdivision map allowing construction on the Specific Plan site and with the filing of each subsequent subdivision map allowing construction, the Specific Plan applicant, or its designee, shall provide documentation to the County of Los Angeles identifying the specific portion(s) of irrigated farmland in the County of Los Angeles proposed to be retired from irrigated production to make agricultural water available to serve the subdivision. As a condition of subdivision approval, the applicant or its designee, shall provide proof to the County that the agricultural land has been retired prior to issuance of building permits for the subdivision.

2.5.8 UNAVOIDABLE SIGNIFICANT IMPACTS

This analysis indicates that adequate water supplies are available for build-out of the Newhall Ranch Specific Plan and that the proposed Saugus Groundwater Banking/ASR program is feasible. In addition, the Specific Plan can be provided with water supplies without creating significant water-related impacts onsite, in the Santa Clarita Valley and downstream in Ventura County. As a result of the above information and the mitigation measures identified above, the magnitude of all water-related impacts are considered to be less than significant. Based on these findings and the information presented above, the Newhall Ranch Specific Plan is also consistent with the County's General Plan DMS requirements.

Because the Specific Plan applicant has secured water supplies that more than meet the water demands of the Specific Plan, implementation of the Specific Plan will not contribute to a decline in regional water supplies; therefore, implementation of the Specific Plan will not result in a significant cumulative water availability impact. In addition, cumulative water supplies exceed cumulative water demand; therefore, cumulative development (including the proposed Newhall Ranch Specific Plan) would not result in unavoidable significant cumulative impacts on Santa Clarita Valley water resources. As a result, cumulative mitigation measures are not required. However, to ensure sufficient long-term water supplies for all cumulative development (including the proposed Specific Plan), the County's General Plan Development Monitoring System (DMS) requires tentative map applications to show that water supplies are adequate to meet demand.

2.6 Spineflower and Other Sensitive Plant Species

2.6.1 INTRODUCTION

This section summarizes the pertinent history and background relating to an endangered plant called the San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*; "spineflower") and other sensitive plant species on Newhall Ranch, including surveys conducted by the applicant and the California Department of Fish and Game (CDFG). Based on this information, the County determined that the Newhall Ranch Draft Additional Analysis should be revised and recirculated with respect to the spineflower and other issues.

In addition, this section identifies the applicable significance criteria that is used in assessing project impacts on the spineflower and other sensitive plant species, consistent with CEQA. The section includes an analysis of direct, indirect and cumulative impacts on the spineflower and other sensitive plant species due to development of the Newhall Ranch Specific Plan and WRP. While such an analysis is typically completed at the time subdivision maps allowing construction are proposed, this document addresses potential impacts to spineflower and other sensitive plants at the program level. The section also sets forth a comprehensive set of mitigation measures as part of a program to, in combination with the mitigation measures already presented in the Revised Draft EIR for the Newhall Ranch Specific Plan and WRP, avoid or minimize impacts to the spineflower and other sensitive plant species that may be found on the site. Environmental documents to be prepared for future subdivision maps will also present measures and/or programs necessary to mitigate potential impacts to spineflower and other sensitive plants.

2.6.2 BACKGROUND

2.6.2.1 Prior Newhall Ranch EIR and Board Approval

The Revised Draft EIR for the Newhall Ranch Specific Plan and WRP (March 8, 1999) (Final EIR) described the sensitive biological resources present, or likely to be present, on the 11,963-acre Newhall Ranch Specific Plan site. On March 23, 1999, the County's Board of Supervisors certified the Final EIR and approved the Newhall Ranch Specific Plan and WRP.

The Final EIR determined that the proposed Specific Plan would preserve approximately 6,831 acres (or 57 percent) of the Newhall Ranch site; however, portions of the development areas would occur in sensitive upland and riparian habitats. The Final EIR also identified unavoidable, significant impacts to

sensitive biological resources that would occur as a result of development of the Specific Plan and WRP. Issues of particular concern in the EIR included the conversion of approximately 5,132 acres of habitat for fish, wildlife and plants with implementation of the Specific Plan and WRP.

The spineflower was not observed onsite when biological field surveys were completed for Newhall Ranch in 1995 and 1996. However, the Final EIR identified the habitat, local distribution and the on-site occurrence potential of the spineflower. *See*, Final EIR, Table 4.6-2, pp. 4.6-15 (this table is also presented in Appendix 2.6 ~~of this document~~). The EIR also stated that spineflower habitat consists of coastal sage scrub and other sandy places and that the historic distribution of the spineflower included the Specific Plan area. The EIR found that the spineflower had low potential for occurrence on the Specific Plan site because it had not been found, and because it was a plant presumed to be extinct.

The Final EIR described the Specific Plan's impact on the spineflower as the potential loss of individual spineflower (if present). *See*, Final EIR, pp. 4.6-58. The EIR concluded that the Specific Plan's potential impacts on the spineflower would be significant, absent the identified mitigation measures. With implementation of the mitigation measures, however, the EIR found that the impact potential on the spineflower would not be significant.

The Final EIR also addressed other sensitive plant species, including, Peirson's morning glory, slender mariposa lily, many-stemmed dudleya, and short-leaved beavertail cactus. *See*, Final EIR, pp. 4.6-50, 56, 60, 61. The Final EIR concluded that impacts to these species would not be significant assuming implementation of mitigation measures 4.6-27, 4.6-34, 4.6-35 and 4.6-53 identified in the EIR. These and other sensitive plant species are addressed in further detail below.

The mitigation measures in the Final EIR (*See*, Mitigation Measures 4.6-53 and 4.6-59) require updated sensitive plant and animal surveys to be conducted on site at the time Newhall Ranch subdivision maps are filed. As discussed below, by requiring focused surveys at the subdivision map submittal stage, the monitoring and mitigation for sensitive plant and animal species continues as the buildout of Newhall Ranch proceeds. It also continues with current, up-to-date survey data. With the listing of sensitive plant and animal species in a continual state of flux (*i.e.*, with the number of plant and animal listings increasing in recent years), the most accurate surveys will be those prepared in conjunction with the processing of each Newhall Ranch subdivision map. This approach will also allow for further formulation of mitigation measures at the project level.

2.6.2.2 The Newhall Ranch Litigation

In April 1999, project opponents filed lawsuits challenging both the Specific Plan and the adequacy of the Final EIR under CEQA, including claims that the EIR improperly deferred both the analysis and mitigation of the Specific Plan's impacts on sensitive biological resources.

The lawsuits challenging the Specific Plan and EIR were transferred to a neutral county at the request of the parties, and were heard by the Kern County Superior Court (the Honorable Roger D. Randall, presiding). After the hearing in March 2000, the Court took the matter under consideration.

On May 31, 2000, the Court issued a tentative decision. Thereafter, in August 2000, the Court issued a final Statement of Decision, Writ of Mandate and Judgment in the Newhall Ranch litigation. In the writ, the Court determined that the vast majority of the County's environmental determinations on Newhall Ranch had been lawfully made and declined to set aside the entire EIR and the entire project approvals.[1] With respect to the six issues described in the writ, the Court ordered the County's Board of Supervisors to partially set aside the Newhall Ranch project approvals, and to partially decertify the Final EIR.

The Court found that the Final EIR's analysis of the Specific Plan's biological impacts, including potential impacts to sensitive plant species, was adequate under CEQA with the exception of potential impacts to the Santa Clara River floodway.[2] In addition, the Court rejected challenges to the adequacy of the EIR's biological mitigation program, by finding that the mitigation measures were adequate under CEQA, in that the County had "meaningful information that justified an expectation of compliance" and the EIR included "performance standards that can be utilized to hold the Respondents to compliance with the EIR."[3]

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1 For further information regarding the Newhall Ranch litigation, please refer to the Newhall Ranch Draft Additional Analysis (Draft Additional Analysis), Volume II, Appendix 1.0(a) and the Final Additional Analysis (FAA), Volume II, Appendix A.

2 *See*, Newhall Ranch FAA, Volume II, Appendix A [Court's Statement of Decision, pp. 16-17].

3 *See*, Newhall Ranch FAA, Volume II, Appendix A [Court's Statement of Decision, pp. 16].

2.6.2.3 Newhall Ranch Draft Additional Analysis

(a) Scope of the DAA

The Newhall Ranch Draft Additional Analysis (DAA; April 2001) was prepared to address the six specific issues raised by the Court in the Newhall Ranch litigation. For further information regarding the analysis of the six issues, please refer to the Draft Additional Analysis, Executive Summary and Section 1.0.

(b) DAA Analysis Of Spineflower And Approach To Surveys

One of the six issues to be addressed in the DAA was an additional analysis of the WRP alternatives, including an alternative of siting the Specific Plan's WRP off-river. This analysis also assessed the biological impacts of that siting.

A project-specific analysis was conducted for the WRP alternatives in response to the Court's direction, and because the applicant was seeking construction-level approvals for the WRP portion of the Specific Plan. The DAA included biological survey data on the WRP site and based on the survey data, it was determined that neither the spineflower nor any other sensitive species were present on the WRP site.

In addition, the DAA discussed the spineflower on the Newhall Ranch Specific Plan site. Specifically, the DAA described the spineflower's historical range and habitat requirements, and confirmed the presence of spineflower on the Grapevine Mesa location of Newhall Ranch. *See*, DAA, Section 3.4, pp. 3.0-13-3.0-14. The DAA's appendix materials also included the petition to list the spineflower as an endangered plant species under the California Endangered Species Act. A copy of the petition, dated December 1, 1999, was provided in the DAA, Appendix 3.0(e).

After public circulation of the Newhall Ranch DAA in April 2001, the DAA's responses to comments were prepared. The responses noted the Fish and Game Commission's August 23, 2001, determination that the listing of the spineflower as an endangered species was warranted. Thereafter, the Commission published a proposed rule change on November 13, 2001. This rule change was finalized, and the regulations regarding the listing of spineflower under the California Endangered Species Act became effective, as of September 8, 2002.

As to the presence of the spineflower found on the Specific Plan site, both the Newhall Ranch Final EIR and the DAA state that site-specific surveys would be conducted within the Specific Plan areas where the spineflower, and other sensitive plant species, have the potential to occur (*See*, attached Appendix Table

2). These surveys were to be completed in conjunction with the filing of a subdivision map with the County (Final EIR Mitigation Measures 4.6-53 and 4.6-59). The purpose of the Newhall Ranch mitigation program for sensitive plant and animal species (*e.g.*, EIR Mitigation Measures 4.6-53, 4.6-59) is to require site-specific surveys at the subdivision map filing level, which is the time when project-specific impacts can be identified, since the precise location of the residential lots, the specific internal street alignments within each tract, open area lots and other facilities and infrastructure is known at that time.

In contrast to the subdivision map level, the DAA found that, at the Specific Plan and program EIR level, for long-term development plans that do not allow for construction, it was too early in the land use planning process for detailed, project-level biological surveys, and, even if performed, the surveys would be out-dated by the time subdivision maps were submitted for processing. Therefore, as stated in the DAA, the "better practice" is to require site-specific plant and animal surveys at the subdivision map submittal phase, so that current, up-to-date data regarding the species is obtained prior to subdivision project approvals and actual disturbance of the species or its habitat.

(c) The DAA's Mitigation Relating To Spineflower/Sensitive Species

As previously stated in the Final EIR, potential project impacts to the spineflower include the potential loss of individual spineflower due to development. This impact was considered significant, absent implementation of the identified mitigation measures. However, with appropriate mitigation in place (*e.g.*, Mitigation Measure 4.6-53, 4.6-59), these impacts were considered to be reduced to below a level of significance.[4] Two of the applicable mitigation measures were then revised to further strengthen the overall mitigation program for the spineflower and other sensitive animal or plant species. The revised measures are found in the DAA, Mitigation Measures 4.6-53 and 4.6-59, which are discussed further below.

With implementation of the two revised mitigation measures, the Newhall Ranch DAA found that potential impacts to sensitive, threatened ~~and~~ or endangered plant or animal species occurring, or likely to occur, on Newhall Ranch were reduced to below a level of significance.

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4 *See*, Newhall Ranch Revised Draft Additional Analysis, pp. 3.0-14, for the revised text regarding the spineflower.

2.6.3 PROJECT-LEVEL PLANNING ACTIVITIES AND PLANT SURVEYS

2.6.3.1 Background Regarding Post-EIR Approval/Initial Plant Surveys

After the County's certification of the Final EIR and project approvals in March 1999, the applicant began to implement the Newhall Ranch tentative map process, and to coordinate the preparation of a "river management plan" with CDFG and other agencies. The proposed River Management Plan was intended to address project-specific activities on Newhall Ranch, which require federal and state permitting.

As part of these project-level planning activities, the applicant hired URS Corporation in spring 2000 to conduct rare plant surveys on the Newhall Ranch site to support the River Management Plan and future Newhall Ranch tentative map submittals. In late April 2000, URS began conducting sensitive plant surveys over portions of Newhall Ranch. In May 2000, URS botanists identified the presence of what they believed to be the spineflower one-half mile south of the Santa Clara River near Grapevine Mesa (the Grapevine Mesa location). To verify the species as spineflower, Impact Sciences, Inc. submitted a specimen to the University of California, Berkeley (UCB). In late May 2000, UCB provided verification that the specimen was the San Fernando Valley spineflower. Thereafter, the applicant notified CDFG and other agencies of the presence of spineflower at the Grapevine Mesa location, and erected posts to protect the plant species. URS botanists continued to survey other portions of Newhall Ranch for sensitive plants through the end of May 2000, and the botanists noted unconfirmed spineflower locations on other portions of Newhall Ranch.

On May 31, 2000, the Court issued its ruling in the Newhall Ranch litigation. The Court's ruling upheld approval of the EIR and the project in most respects; however, the Court ordered the County to provide additional environmental analysis relating to the six specific issues. In light of the Court's ruling, the applicant suspended plant surveys and a number of other project-specific planning activities relating to Newhall Ranch. The applicant then focused on the steps required to comply with the six issues raised in the Court's decision. Thereafter, the applicant also advised CDFG and other agencies of its decision to withdraw from consideration the proposed River Management Plan until the Court's six issues were addressed in an additional environmental analysis.

In connection with preparation of this Revised DAA, in November 2002, the applicant requested that URS prepare a memorandum documenting its prior 2000 field surveys. Attached to the URS memorandum are maps, also prepared in 2002, which reflect where URS observed sensitive plant species in the spring of 2000. The URS memorandum, and mapping, are included in Appendix 2.6 ~~of this document.~~

2.6.3.2 Other Plant Surveys

(a) On-Site Surveys

After circulation of the Newhall Ranch DAA, the applicant reinitiated sensitive plant surveys on portions of Newhall Ranch in May 2001, in order to support processing of future Newhall Ranch tentative map submittals. Those field surveys were completed on Newhall Ranch in May and June 2001 by the consulting firm FLx. The surveys took place on Newhall Ranch in River Village, Long Canyon, San Martinez, and Salt Canyon. As part of those surveys, spineflower was observed at the San Martinez location, but not found in any of the other surveyed areas (FLx 2002; Appendix 2.6). In early May 2002, the applicant hired FLx to conduct sensitive plant surveys on a portion of the Airport Mesa. FLx observed spineflower at the Airport Mesa location (FLx 2002). The FLx report identifies the specific survey locations within the Newhall Ranch site, including mapping of the spineflower locations, and provides estimates of spineflower population sizes.

The FLx report (Appendix 2.6) also documents the presence of other sensitive plant species within the survey areas, including characterization of the other sensitive plant species, the mapping of their locations, and plant estimates. The other sensitive plant species noted in the FLx report are Peirson's morning glory (*Calystegia peirsonii*), southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*), and southern California black walnut (*Juglans californica* var. *californica*), all CNPS List 4 species.

In May 2002, the applicant hired Dudek & Associates (DUDEK) to begin sensitive plant surveys on the Mesas Village portion of Newhall Ranch. In late May 2002, CDFG obtained a warrant and conducted spineflower surveys covering approximately 800 acres of Newhall Ranch. The warrant alleged a possible "take" of the spineflower. The CDFG surveys took place in agricultural activity areas on Newhall Ranch. In its surveys, CDFG confirmed the presence of spineflower in locations on the Grapevine Mesa and Airport Mesa portions of Newhall Ranch.

DUDEK's survey efforts were temporarily stopped in late May 2002, due to CDFG's spineflower surveys. At that time, the applicant requested that DUDEK document the CDFG areas that were surveyed and

flagged. The County also directed that the applicant have DUDEK expand its survey work to include all developable areas on the Specific Plan site (DUDEK 2002; Appendix 2.6).

The DUDEK surveys were conducted from May through early September 2002. The DUDEK surveys confirmed the presence of spineflower at Grapevine and Airport Mesas and identified spineflower at the San Martinez Canyon location (DUDEK 2002). The DUDEK report identifies where the spineflower was observed, includes mapping of the spineflower locations, and provides estimates of spineflower population sizes.

The DUDEK surveys also confirm the presence of other sensitive plant species within the areas surveyed. Species characterizations and locations are documented in the DUDEK report (Appendix 2.6). The other sensitive plant species documented by DUDEK include *Dudleya* spp. (possibly *D. cymosa* ssp. *marcescens*); island mountain mahogany (*Cercocarpus betuloides* var. *blancheae*); short-joint beavertail (*Opuntia basilaris* var. *brachyclada*); possibly the Los Angeles sunflower (*Helianthus nuttallii* ssp. *Parishii)*; as documented in the DUDEK report, further taxonomic work on this observation is on going; club-haired mariposa lily (*Calochortus clavatus* var. undetermined); and Southern California black walnut (*Juglans californica* var. *californica*).

Based on the surveys discussed above, **Figure 2.6-1** illustrates the locations of where the spineflower was observed on the Newhall Ranch Specific Plan site. **Figure 2.6-2** depicts the names and locations of sensitive plant species observed on the Specific Plan site. Appendix 2.6 contains a list of all plants observed on Newhall Ranch since circulation of the original Draft Additional Analysis. This table is entitled "Plants Observed, May 2000 to Present, Newhall Ranch."

Table 2.6-1 presents the population estimates for the spineflower, based on surveys conducted on the Newhall Ranch Specific Plan site.

Table 2.6-1
Population Estimates for the Spineflower

Survey Area	Survey/Plant Year	Total Plants
Airport Mesa		
- FL*x*	2001	14,750
- Dudek	Pre-2002	19,716
- Dudek	2002	31,856
Grapevine Mesa		
- Dudek	Pre-2002	503,870
- Dudek	2002	12,082
San Martinez Grande Canyon		
- FL*x*	2001	769
- Dudek	Pre-2002	2,350,700
- Dudek	2002	125

NEWHALL RANCH

L E G E N D

- LOS ANGELES SUNFLOWER
- SPINEFLOWER LOCATION

LAND USE CATEGORIES

- E — ESTATE RESIDENTIAL
- L — LOW DENSITY RESIDENTIAL
- LM — LOW-MEDIUM DENSITY RESIDENTIAL
- M — MEDIUM DENSITY RESIDENTIAL
- H — HIGH DENSITY RESIDENTIAL
- C — COMMERCIAL
- BP — BUSINESS PARK
- MU — MIXED USE
- VS — VISITOR SERVING
- OA — OPEN AREA
- RC — RIVER CORRIDOR
- HC — HIGH COUNTRY
- ROADS

FORMA

NORTH

100 ACRES 400 ACRES

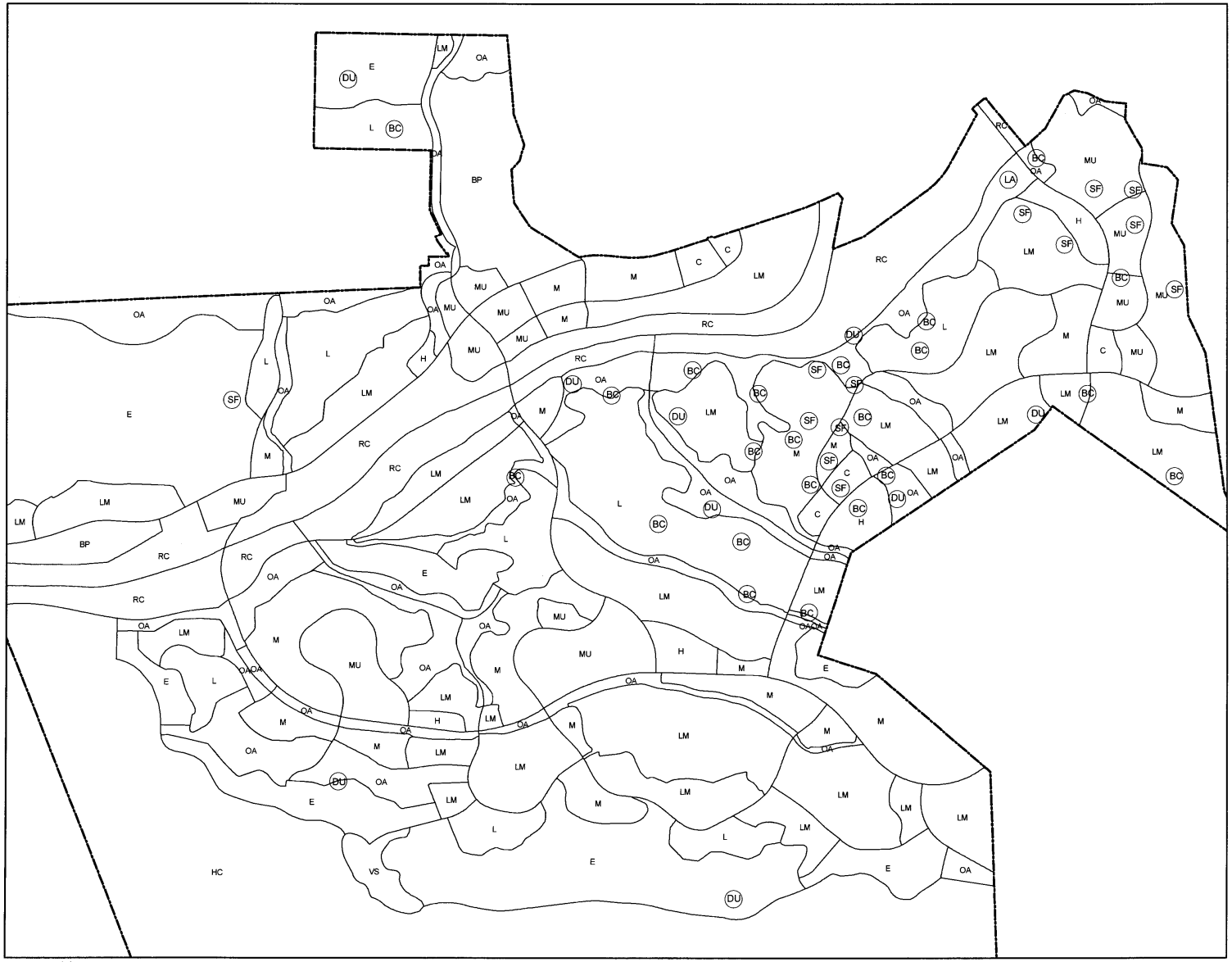
Feet 0 375 750 1,500

Meters 0 150 300 600

Figure 2.6-1

SAN FERNANDO VALLEY SPINEFLOWER LOCATIONS

SOURCE: URS Corporation (2000), FLX (2001 and 2002), Dudek & Associates (2002).



NEWHALL RANCH

L E G E N D

- (BC) Short-Joint Beavertail Cactus (List 1b)
- (DU) Dudleya (List 1b)
- (LA) Los Angeles Sunflower (1A)
- (SF) San Fernando Spineflower (CE)

See Appendix for detailed mapping of rare plants.

FORMA

NORTH

100 ACRES 400 ACRES

Feet 0 550 1,100 2,200

Meters 0 150 300 600

Figure 2.6-2

SENSITIVE PLANT LOCATIONS

SOURCE: URS Corporation (2000), FLX (2001 and 2002), Dudek & Associates (2002).

As indicated above, rare plant surveys were completed by FLx in 2001 and Dudek & Associates in 2002. Both firms used specific methods to estimate the size of plant populations, and to determine which plant populations were placed into separate polygons. Dudek used a 4-meter (13.1 feet) rule to separate polygons. It chose this distance based on the topography, vegetation, detectability of the plants, and general accuracy of the global positioning system (GPS) that was used. To obtain plant estimates, Dudek either directly counted all individuals in a polygon or conducted a clumped counting and extrapolation method, which involved counting individual plants in small areas of a polygon, then extrapolating over other areas of the polygon, until a total was obtained. Most of the polygon estimates were conducted by two botanists, independently, then compared for consistency. The survey methods used by DUDEK in 2002 will be used in subsequent surveys for purposes of consistency.

Regarding the surveys completed by FLx, when sensitive plants were observed, their locations were mapped and population sizes were estimated. Single plants of a species or small populations were marked on the map with a point; larger populations were indicated with a polygon representing the spatial extent of the plants. The determination of which individual plants were included in a given polygon was based on their distribution or spatial clustering. Each population composed of more than one plant represents a cluster of plants. Clusters were mapped either separately or combined into larger clusters based on applied field judgment regarding the degree of continuity of species cover as well as the scale of the maps used in the field. For example, at the scale of a USGS 7.5 minute quadrangle, the smallest area that can be mapped with a polygon is about 1 acre; on maps at scales of 1 inch=200 feet, or 1 inch=400 feet, such as those used in the field by FLx for the project sites, much smaller areas can be mapped. The population size, when small, was based on counting individual plants. For larger populations, plants were counted in a small representative area, and then an estimate for the entire population was made based on visual extrapolation over the larger area.

(b) Off-Site Surveys

During the 2000 surveys, URS found what was thought to be spineflower at one off-site location in the vicinity of Newhall Ranch. This location, shown generally on **Figure 2.6-3, On and Off-Site San Fernando Valley Spineflower Locations**, is south of the Magic Mountain Theme Park and Magic Mountain Parkway near existing Southern California Edison electrical towers (*i.e.*, "Magic Mountain" location). The applicant also hired FLx in June 2001 to conduct rare plant surveys at another off-site location near the Newhall Ranch Specific Plan site. This off-site location, also shown on **Figure 2.6-3**, is within the Valencia Commerce Center site (*i.e.*, "Commerce Center" location). **Figures 2.6-4** and **2.6-5** depict where the spineflower was specifically observed on both the Commerce Center and Magic Mountain locations.

(c) Additional Spineflower Surveys

Spineflower was found on the Ahmanson Ranch project site, located in Ventura County, in 1999. The proposed development of the Ahmanson Ranch project would result in the direct loss of spineflower and existing spineflower habitat. The impacts to spineflower were considered significant, but mitigated to below levels of significance, if the recommended Ahmanson Ranch mitigation program is adopted. For further information regarding Ahmanson Ranch, please refer to the Draft Supplemental Environmental Impact Report for Ahmanson Ranch Project (SCH No. 89041908), February 2002, which is available for public review at County of Ventura Resource Management Agency, 800 S. Victoria Avenue, Ventura, California 93009, Dennis Hawkins, Senior Planner (805) 654-2492. It is not known at this time if mitigation proposed by Ahmanson will fully mitigate impacts to the spineflower. A 2081 permit has not yet been issued for this project.

In 1999, environmental studies prepared for the Ahmanson Ranch project report that spineflower surveys were conducted at three historic site localities (Chatsworth Park, Little Tujunga Wash, and Lake Elizabeth) and at a larger number of sites that were adjacent to historic localities or that supported potentially suitable spineflower habitat, and that no additional spineflower populations were found as a result of these surveys (Sapphos 2001; GLA 1999).[5] The California Department of Fish and Game also reviewed ~~91~~120 plant surveys undertaken in Southern California in the process of designating spineflower as a candidate for state listing as endangered, and each of the reviewed reports concluded that spineflower was not present (CDFG 2001).

In 2000, environmental studies prepared for the Ahmanson Ranch project also report that historic spineflower sites that were accessible and/or extant were visited to determine the presence or potential occurrence of spineflower in these locations; the remaining historic sites were assessed through the use of aerial photographs or other mapping aids (Sapphos 2001). Based on this work, it has been determined that agricultural, residential, flood control, and recreational development have occurred within or in proximity to all of the known historic sites. However, potentially suitable habitat for spineflower remains in the vicinity of seven of the ten historic sites listed by the CNDDB (CDFG 1999). The status of historic spineflower locations is presented in further detail in the Sapphos 2001 report (*See*, Appendix 2.6 ~~of this document~~).

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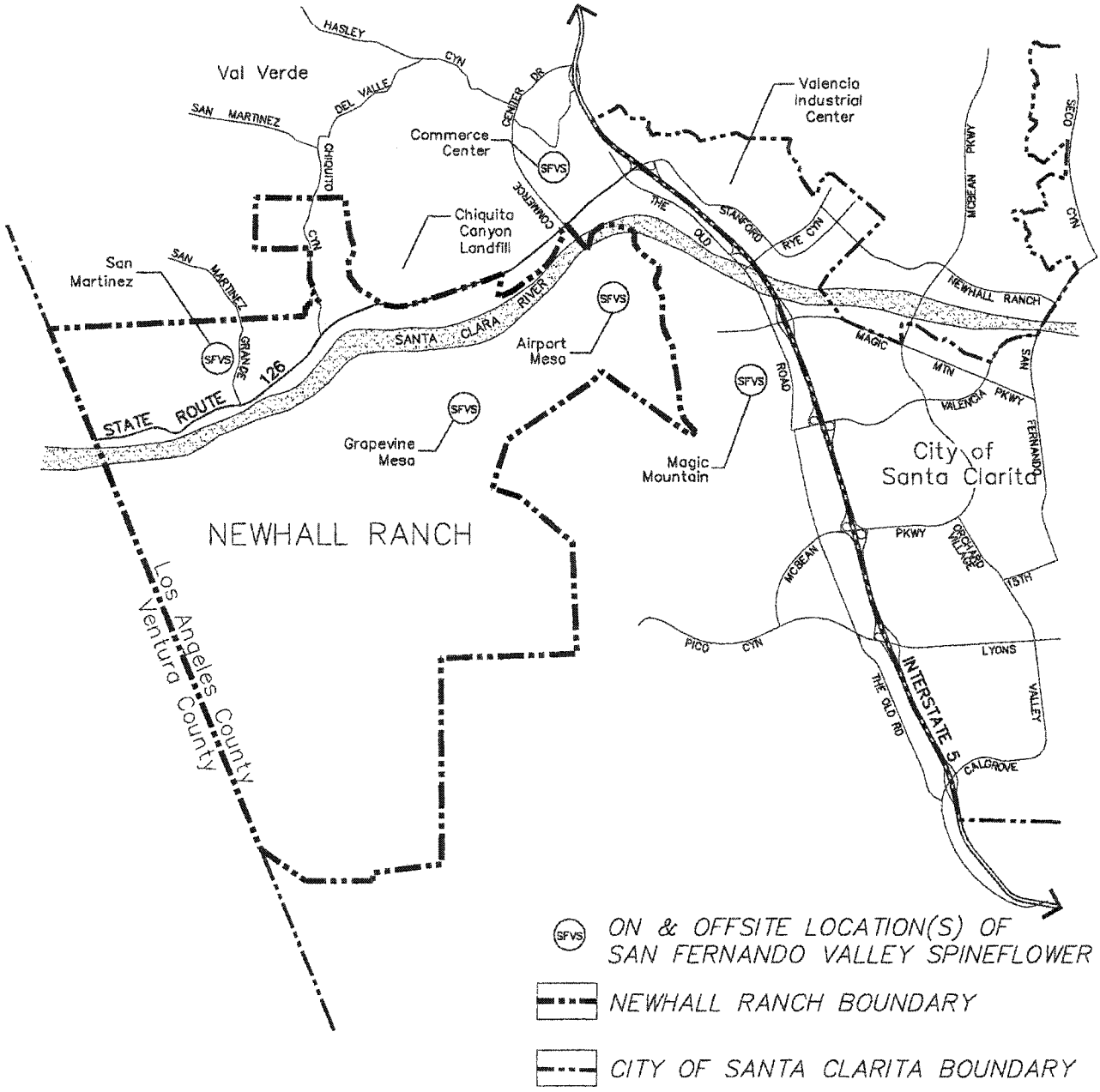
5 A copy of the report entitled, *An Investigation Of The San Fernando Valley Spineflower For The Ahmanson Land Company*, prepared by Sapphos Environmental, Inc., dated February 27, 2001, is included in Appendix 2.6 of this document.



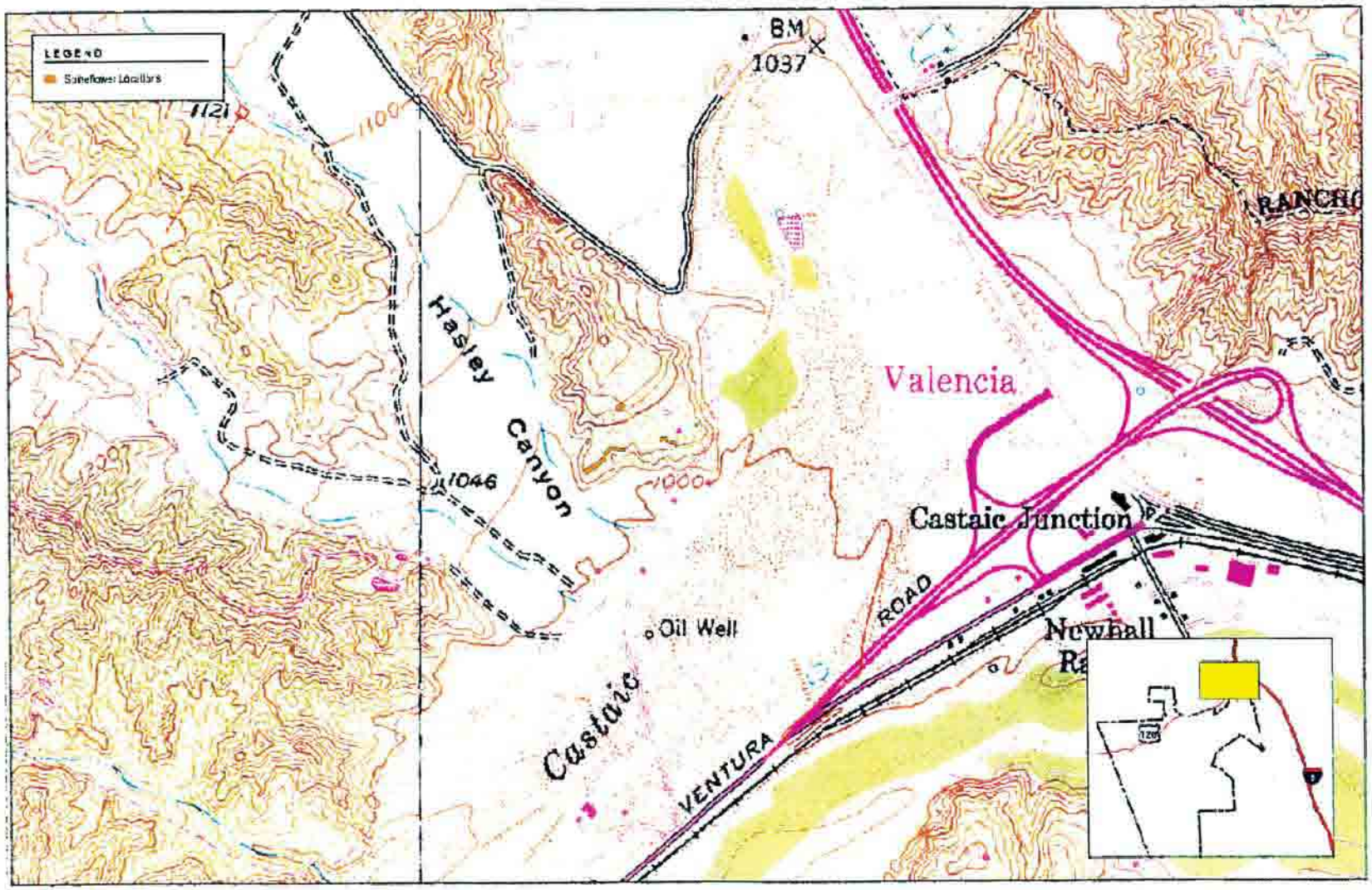
NEWHALL RANCH™
SPECIFIC PLAN

Prepared For: Newhall Ranch Company

Figure 2.6-3
ON & OFFSITE SAN FERNANDO VALLEY SPINEFLOWER LOCATIONS

Computer Mapping by FORMA Systems

OCTOBER 2002
m:\forma3\newhall\arcdata\spineflower\acad\vlcmap.dwg

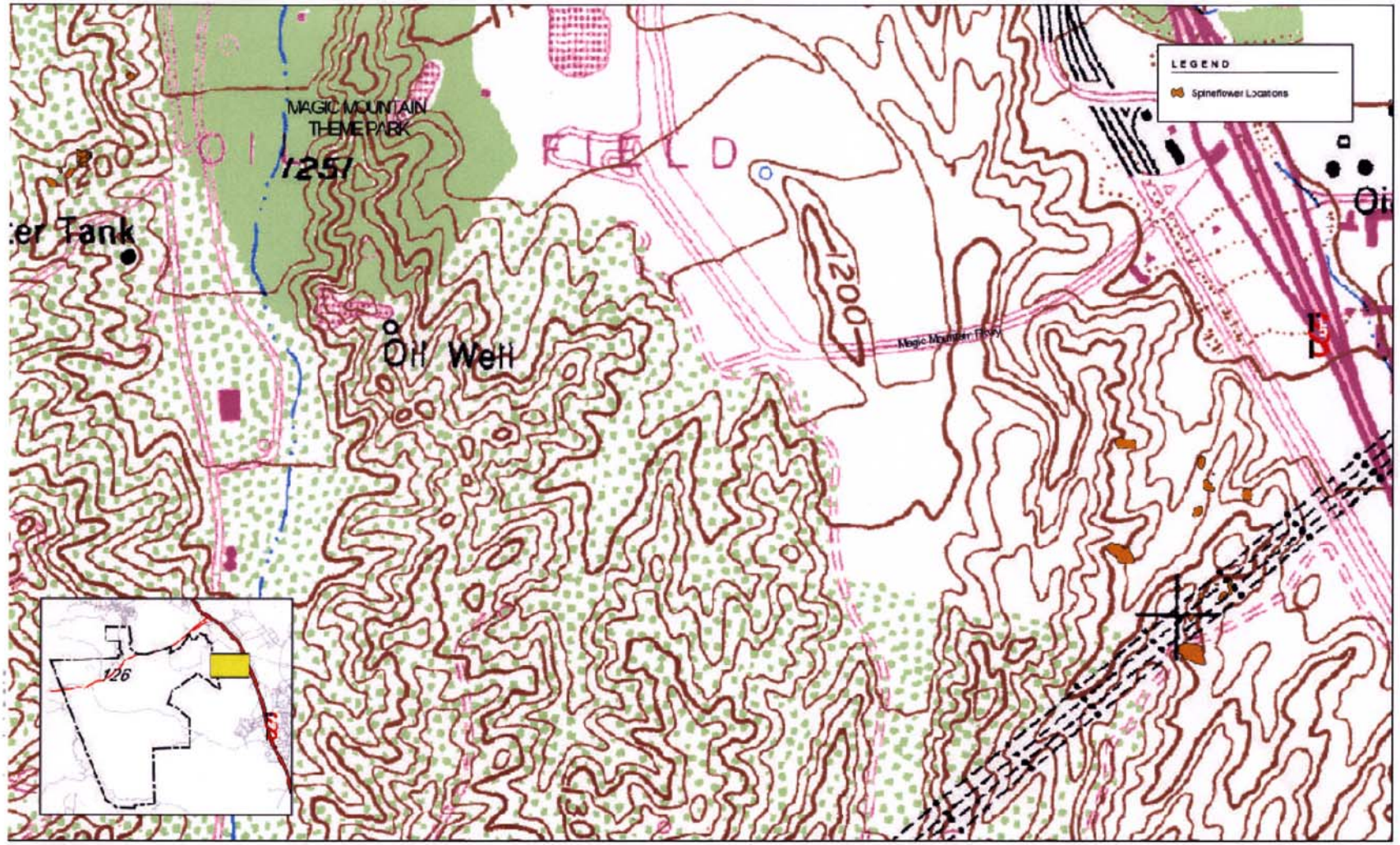


SOURCE: FLX (2001) and Dudek & Associates (2002)

Figure 2.6-4
COMMERCE CENTER SPINEFLOWER LOCATIONS ON USGS TOPOGRAPHY

NEWHALL RANCH

FORMA



SOURCE: URS Corporation (2000) and Dudek & Associates (2002).

Figure 2.6-5
MAGIC MOUNTAIN SPINEFLOWER LOCATIONS ON USGS TOPOGRAPHY

NEWHALL RANCH

0 225 450 Feet
FORMA Nov 2002

2.6.4 EXISTING SETTING

2.6.4.1 Regional Setting

The 11,963-acre Newhall Ranch is an irregularly shaped site located in an unincorporated portion of the Santa Clara River Valley in northwestern Los Angeles County. The proposed Specific Plan site is within the County's Santa Clarita Valley Planning Area. For further information regarding the Specific Plan's regional setting, please refer to the Final EIR (March 8, 1999), Section 2.2(a) and Figures 1.0-1 and 1.0-2.

2.6.4.2 Local Setting

The Newhall Ranch site is generally located between the Magic Mountain Theme Park on the east and the Los Angeles County/Ventura County line on the west. The site is one-half mile west of the I-5 and the City of Santa Clarita, and is largely southwest of the junction of I-5 and State Route 126 (SR-126). Both the Santa Clara River and SR-126 transect the northern portion of the site. For further information on the local setting of the Newhall Ranch site, please refer to the Final EIR (March 8, 1999), Section 2.2(b).

2.6.4.3 On-Going Uses and Operations

Historically, the Newhall Ranch property has represented a majority of the farmland in the Santa Clarita Valley. In fact, much of the Newhall Ranch site is zoned for Heavy Agriculture (A-2), with a small portion of the site zoned for Manufacturing (M-1.5). The permitted uses in the A-2 zone include, among others, dog kennels, feed mills, hogs, livestock sales yards, mushroom farms, riding and hiking trails, oil wells, crops, dairies, greenhouses, the raising of horses, cattle, sheep, goats and other similar animals, and fruit and vegetable packaging plants. *See,* Final EIR, Section 8.0, Table 8.0-2.

The Newhall Ranch site has been cultivated by the applicant with row crops, alfalfa, pasture, dryland crops and walnuts. In addition, the land has been leased over the years for the cultivation of corn, mixed vegetable crops (onions, parsley, cilantro, turnips, herbs, spinach, kale, red beets, radish and cucumber), alfalfa and barley. In 2001, approximately 1,825 acres of the Newhall Ranch site were under cultivation, with approximately 800 acres irrigated and the remaining acres dry farmed. The irrigated land was used for the production of carrots, spinach, cilantro, turnips, red beets, onion, sudan grass, and other crops. The remaining acres were dry farmed for the production of crops, such as barley.

In that same year, the remaining acreage on the Newhall Ranch site was under agricultural production as cattle grazing land (*i.e.*, over 10,000 acres), consistent with historic uses. Although the amount of acreage

that is grazed varies from year-to-year depending upon the lease agreement(s) between the applicant and its tenant(s), the agricultural acreage used for grazing on Newhall Ranch is part of the County's rangeland.

Portions of the Newhall Ranch site are also leased for oil and natural gas production operations and for filmmaking. Medallion is an oil company with oil and natural gas operations on leased Newhall Ranch sites totaling approximately 1,270 acres. Several other oil companies lease smaller areas of land for oil and natural gas operations along the northern edge of the Newhall Ranch site. However, the oil and gas operations are slowly phasing out due to decreases in production.

The motion picture and television industries also use Newhall Ranch for purposes of filming movies and television productions.

2.6.4.4 Geology, Soils and Topography Characteristics

The Newhall Ranch site is part of the Ventura Basin of southern California, which is a westerly-plunging depositional basin produced by tectonic downwarping initiated during the early Miocene period (thirteen to twenty-five million years before the present). East-west and northwest trending primary ridges, and generally north and south trending secondary ridges dominate the site's topography. Slope gradients vary from moderate to steep in the hills, and very gentle in the Santa Clara floodplains, tributary canyons, and on the uplifted terrace (mesa) surfaces above the river. For further information regarding the geologic, soil and topographic characteristics of the Newhall Ranch site, please refer to the Final EIR (March 8, 1999), Section 4.1.3.

A geologic evaluation has been prepared by Allan E. Seward Engineering Geology, Inc., a geological and geotechnical consulting firm. The evaluation summarized the results of research and field observations that were conducted to assess the geologic and geomorphic conditions of the three general locations where spineflower is known to occur on Newhall Ranch. The three locations are generally referred to as Airport Mesa, Grapevine Mesa and San Martinez.

The evaluation described the pertinent geologic conditions at the three on-site spineflower locations. Based on this data, there are a number of similar geologic and geomorphic conditions at each site. The similarities are summarized below.

1. Nearly all of the spineflower plants at Grapevine Mesa and Airport Mesa occur on granular, nonmarine terrace deposits or lithologically similar portions of the upper member of the Saugus Formation. A few spineflower plants germinated on artificial fill or alluvium derived from adjacent

terrace deposits. The spineflower plants at the San Martinez location occur primarily on old landslide debris.

2. Nearly all of the spineflower plants at the three sites occur on soils mapped by the USDA (1969) as slightly eroded to eroded Castaic-Balcom silty clay loam (30 to 50 percent slopes) or Terrace escarpments. Most of the spineflower plants at Grapevine Mesa and some at Airport Mesa are down slope of terrace surfaces capped by Zamora clay loam (2 to 9 percent slopes).

3. The vast majority of observed spineflower are growing on silty sand surface soils (SM per USCS classification). The percentage of sand ranges from approximately 40 to 80 percent, with the remaining percentage being primarily silt with minor clay and variable concentrations of gravel.

4. The dry Munsell color of the surface soils is typically brown, but it varies from dark grayish-brown to pale brown at the three site locations.

5. With rare exceptions, the spineflower is generally observed on south-facing slopes with bearings ranging from S89W to S78E at Grapevine Mesa and Airport Mesa, and extending to N78E on ridgelines at the San Martinez location.

6. With rare exceptions, the overall (macro) slope gradients range from 5° to 38°. Local (micro) slope gradients at individual plant locations are typically shallower (1° to 28°), but sometimes occur on steeper slope segments. The spineflower plants observed on north-facing slopes at the Airport Mesa location were on disturbed areas with slope gradients of less than 3°.

7. All of the observed spineflower occur within an elevation range between 1,040 feet and 1,290 feet above sea level.

8. Spineflower was observed on both undisturbed and recently disturbed ground. However, the 2002 plants were most common and robust in the disturbed areas at the Airport Mesa location (subareas 2 and 3).

9. In undisturbed areas, the spineflower consistently occurs in sparsely vegetated areas consisting of barren ground, small annual grasses, and scattered bushes of buckwheat and sage with essentially no organic (O) soil horizon.

For further information, please refer to the Seward report, dated October 2002, which is included in Appendix 2.6 ~~of this document~~.

2.6.4.5 Regulatory Setting

As stated, the spineflower was recently listed as endangered by the state Fish and Game Commission. Although not listed under the federal Endangered Species Act (ESA), it is designated as a candidate species at the federal level. The state and federal Endangered Species Acts have their own specific requirements regarding listed plant species.

(a) California ESA/Native Plant Protection Act

The California ESA provides for the establishment of lists of threatened and endangered species, including plants.[6] Section 2080 prohibits the "take" of threatened and endangered plant species within the state, and identifies exceptions to the take prohibitions. Section 2080 provides in part: "No person shall...take...any species, or any part or product thereof, that the commission determines to be an endangered species or a threatened species, or attempt any of those acts, except as otherwise provided in this chapter [and] the Native Plant Protection Act...."

The Native Plant Protection Act, Section 1913(c), exempts "agricultural operations or management practices, including the clearing of land for agricultural practices or fire control measures."[7] Fish and Game regulations (Title 14, Section 786.1) broadly define agricultural activities to include: "all activities undertaken on a farm or ranch for the purpose of producing or marketing any plant or animal product for commercial purposes, including any such activities recognized as *compatible uses* pursuant to the Williamson Act (Govt. Code Sections 51200, et seq.) provided the activities are consistent with the economics of agricultural operations...." (*Emphasis added.*) Government Code Section 51201(b) and (c) (from the Williamson Act) broadly defines the term "compatible use" to include "agricultural use." "Agricultural use" is defined to mean "use of land for the purpose of producing an agricultural commodity for commercial purposes."

The protection afforded to listed plants under the agricultural exemption provided by the Native Plant Protection Act (Section 1913(a)) is a 10-day notice requirement to enable CDFG to "salvage" plants if CDFG has notified the landowner that a listed plant is growing on the property. During the 10-day advance notice period, CDFG may enter the property and "salvage" the plant.

Under existing conditions, the applicant may continue with its farming and cattle grazing operations. Those agricultural operations could legally intensify over significant portions of Newhall Ranch. For example, the occupied spineflower habitat on Newhall Ranch could be converted legally to row crops or dry farming. Similarly, the occupied spineflower habitat could continue to be subject to on going cattle grazing. On Newhall Ranch, the known spineflower populations occur in agricultural production areas, including farming and cattle grazing.

The California ESA contains applicable regulations relating to the "incidental take" of listed plant species. Fish and Game Code Section 2081 discusses these incidental take requirements. CDFG Code of

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6 The California ESA is found in the Fish and Game Code, beginning at Fish and Game Code Section 2050. The listing provisions referenced above are found in Fish and Game Code Section 2070, and Title 14, California Code of Regulations, Section 670.2.

7 The Native Plant Protection Act is found in the Fish and Game Code, Section 1900-1913.

Regulations, Section 783.4, also address the take requirements. In summary, the incidental take provisions require the following:

1. The take is incidental to an otherwise lawful activity.
2. The applicant will minimize and fully mitigate the impacts of the authorized take. Measures to meet this obligation are to be roughly proportional to the extent of the authorized take. Where various measures are available, measures shall maintain the applicant's objectives to the greatest extent possible. All required measures shall be capable of successful implementation.
3. The applicant is to ensure adequate funding to implement the measures and to monitor compliance with, and effectiveness of, the measures.
4. No incidental take permit shall be issued if such issuance would jeopardize the continued existence of the species.

Implementation of the Newhall Ranch Specific Plan would involve an "incidental take" of the San Fernando Valley spineflower. CDFG would serve as a responsible agency for the "incidental take" permit that would be required under Fish and Game Code Section 2081.

(b) Federal ESA

The federal government does not list spineflower as an endangered species; however, it is designated a federal candidate species. Section 9(a)(2) of the federal ESA contains the prohibitions against the take of listed plant species. Nevertheless, the restrictions that would apply if spineflower were a federally listed species are limited. For example, Section 9(a)(2) states that federal control over a change in habitat for plants extends only to areas within federal jurisdiction, or where plants are removed in knowing violation of state law. Because the occupied spineflower habitat on Newhall Ranch is not within federal jurisdiction, agricultural changes to land uses would be allowed under federal law.

2.6.5 SETTING REGARDING SENSITIVE PLANT SPECIES

2.6.5.1 Sensitive Flora

The Final EIR (March 8, 1999) listed the sensitive plant species occurring, or with a potential for occurring, on Newhall Ranch. The sensitive plant species were included in EIR Table 4.6-2 (Sensitive Plant Species Observed or with the Potential for Occurrence on Newhall Ranch). This table is presented again in Appendix 2.6 of this document. Maps illustrating the location of sensitive plants on Newhall Ranch were provided in Appendix N of the EIR Biota Report. The Biota Report was provided in Appendix 4.6 of the EIR.

Appendix 2.6 ~~of this document~~ also contains a list of all plants observed on Newhall Ranch since circulation of the original Draft Additional Analysis. This table is entitled "Plants Observed, May 2000 to Present, Newhall Ranch." A list of sensitive plants observed on Newhall Ranch during this period is provided below in **Table 2.6-2, Sensitive Plants Observed, May 2000 to Present, Newhall Ranch.**

A total of 10 sensitive plants have been observed on the Newhall Ranch site. Of those10, four are unconfirmed at the time of this writing due to seasonal limitations or on-going discussion among botanical experts. The six confirmed sensitive plants include: Peirson's morning-glory, Island mountain-mahogany, San Fernando Valley spineflower, Southern California black walnut, Southwestern spiny rush, and Short-joint beavertail. Of these, the only plant on the state's endangered species list is the spineflower. The four unconfirmed sensitive plants include: Club-haired mariposa lily, Slender mariposa lily, Marcescent dudleya (*Dudleya cymosa* ssp. *marcescens*) or Santa Monica Mountains dudleya (*Dudleya cymosa* ssp. *ovatifolia*), and Los Angeles sunflower. Three unconfirmed plants will require current year flowers to positively identify. Because of the similarity of morphological characteristics between several species and subspecies of sunflower potentially occurring in this region, the specific taxonomic identify of observed sunflower has not been confirmed at this time. If confirmed, it is a plant that was thought to be extinct. The listing status of each of the plants is identified in **Table 2.6-2.**

Table 2.6-2
Sensitive Plants Observed, May 2000 to Present, Newhall Ranch,

Scientific Name	Common Name	Family	Status* Federal/State/CNPS
Calochortus clavatus var. *clavatus* ??	Club-haired mariposa lily	Liliaceae	-/-/4
Calochortus clavatus var. *gracilis* ??	Slender mariposa lily	Liliaceae	FSC/-/1B
Calystegia peirsonii	Peirson's morning-glory	Convolvulaceae	FSC/-/4
Cercocarpus betuloides var. *blancheae*	Island mountain-mahogany	Rosaceae	-/-/4
Chorizanthe parryi var. *fernandina*	San Fernando Valley spineflower	Polygonaceae	FC/SE/1B
Dudleya cymosa ssp. *marcescens* ?? or ssp. *ovatifolia* ??	Marcescent dudleya or Santa Monica Mountains dudleya	Crassulaceae	FT/SR/1B or FT/-/1B
Helianthus nuttallii ssp. *parishii* ??	Los Angeles sunflower	Asteraceae	-/-/1A
Juglans californica var. *californica*	Southern California black walnut	Juglandaceae	-/-/4
Juncus acutus ssp. *leopoldii*	Southwestern spiny rush	Juncaceae	-/-/4
Opuntia basilaris var. *brachyclada*	Short-joint beavertail	Cactaceae	FSC/-/1B

*Key: FE = Federal endangered; FC = Federal candidate; FSC = Federal species of concern (unofficial designation); SE = State/California endangered; SR = State/California rare; 1A = CNPS List 1A, plants presumed to be extinct in California and elsewhere; 1B = CNPS List 1B, rare or endangered in California and elsewhere; 2 = CNPS List 2, rare or endangered in California, more common elsewhere; 4 = CNPS List 4, plants of limited distribution.
?? = Unconfirmed, need current year flowers or additional analysis to determine.

2.6.5.2 San Fernando Valley Spineflower/Description and Taxonomy

The San Fernando Valley spineflower is a small, prostrate annual plant in the buckwheat family (Polygonaceae). It grows low to the ground, with several stems branching out from the base and spreading horizontally, reaching a height of up to 12 inches (30 cm) and measuring 2-16 inches (5-40 cm) across. The basal leaves are oblanceolate to oblong, 0.2 to 1.6 inches (5-40 mm) long, alternate, entire, and covered with stiff, straight, appressed hairs. Lower bracts are entire and leaf-like, while upper bracts are reduced (CDFG 2001, pp. 2; Sapphos 2001, pp. 3-1).[8]

Spineflower typically blooms from April to June. The flowers are white, six-parted, 0.1 to 0.12 inches (2.5 to 3 cm) long, have unequal sepals and are subtended by spine-tipped involucres. The six, straight involucre teeth are unequal; there are three long outer ones and three inner, shorter ones. The involucre teeth are never hooked, thus distinguishing it from its closest relative, Parry's spineflower (*Chorizanthe parryi* var. *parryi*) (CDFG 2001, pp. 2; Sapphos 2001, pp. 3-1). **Figure 2.6-6, San Fernando Valley Spineflower Illustration and Photograph**, shows a diagram of the spineflower, taken from *The Jepson Manual: Higher Plants of California*, and a photograph depicting the spineflower found on Newhall Ranch.

The spineflower belongs to the genus *Chorizanthe*, and was first described as *Chorizanthe fernandina* in 1880, based on a specimen collected in 1879, from the San Fernando Cañon in Los Angeles County. It was reclassified as *Chorizanthe parryi* var. *fernandina* in 1925, and has been recognized as a distinct taxon since that time (CDFG 2001, pp. 3-4; Sapphos 2001, pp. 3-1, Figure 3.1-1, 3-2).

2.6.5.3 Spineflower Ecological Requirements

(a) Historic Habitat Requirements

Historically, spineflower was documented as occurring in washes, riverbeds and upland sites in the San Fernando Valley around the base of the San Gabriel Mountains, Santa Susanna Mountains and the Simi Hills, in the Santa Clarita Valley and surrounding hillsides. However, little habitat condition information was documented with these historic collections. It appears that these spineflower collections were found in "sandy" locations, possibly in deep, low nutrient soils, amongst coastal sage scrub or native grasslands (CDFG 2001, pp. 4, 5; CBI 2000, pp. 2; Sapphos 2001, pp. 3-2, Figure 3.3-1, 3-3 - 3-5).

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8 Copies of the "Report to the Fish and Game Commission on the Status of San Fernando Valley Spineflower (*Chorizanthe parryi* var. *fernandina*)," prepared by CDFG, Status Report 2001-1, and the report entitled, "*An Investigation Of The San Fernando Valley Spineflower For The Ahmanson Land Company*," prepared by Sapphos Environmental, Inc., dated February 27, 2001, are included in Appendix 2.6.

(b) Existing Habitat

Spineflower was presumed to be extinct for 70 years, since it had not been documented since April 27, 1929, near Castaic in Los Angeles County. However, it was rediscovered on May 1, 1999, in southeastern Ventura County, on the Ahmanson Ranch project site. A second location was confirmed in the spring of 2000, in Los Angeles County, on the Newhall Ranch Specific Plan site (CDFG 2001, pp. 2).

(c) Phenology, Seed Production and Seed Bank Dynamics

Spineflower is typical of many winter-spring native annuals that occur in the Mediterranean climate of California. The seeds germinate following fall and winter rains, forming a small basal rosette of leaves, and then mature, bolt and produce multiple branches. The spineflower blooms between April and May/June, and then dies during the dry summer months. The spineflower produces a single, one-seeded flower within each involucre; but it is estimated that an individual plant can produce between 60 and 300 involucres. Its seeds remain within the spiny involucres after flowering, but unlike other native California annuals, the spineflowers do not break up and the involucres do not fall to the ground right away, instead the central branches and involucral clusters remain intact for many months after flowering (CDFG 2001, pp. 8; Sapphos 2001, pp. 3-5 - 3-7).

The spineflower most likely forms a persistent seed bank in the soil, as is characteristic of ephemeral plants in unpredictable environments. The spineflower's seed bank is believed to consist of multiple genotypes (the genetic make-up of an individual), which are potentially capable of germinating under specific suitable climactic conditions (CDFG 2001, pp. 10; CBI 2000, 2). For further information regarding the soil seed bank, please refer to Sapphos 2001 (Appendix 2.6).

(d) Plant Size and Vigor

An individual spineflower plant can range in size from about the size of a dime, to a larger, more vigorous plant several inches or more in diameter. Plants growing in thin or compacted soil appear to be smaller than those that grow in deep or loose soil. Smaller plants tend to produce more empty involucres and thus fewer viable seeds. Based on the field observations of spineflowers on Ahmanson Ranch, plant size seems to vary depending on the growing season (CDFG 2001, pp. 11).

NEWHALL RANCH™
SPECIFIC PLAN

Prepared For: Newhall Ranch Company

FIGURE 2.6-6
SAN FERNANDO VALLEY SPINEFLOWER
ILLUSTRATION AND PHOTOGRAPH

OCTOBER 2002

(e) Breeding Systems and Pollination

The spineflower appears to be protandrous, which means that the stamens of an individual's flowers ripen before the stigma is receptive. This tends to reduce the chances of self-fertilization, however, the spineflower does exhibit some characteristics common to plants able to both cross-pollinate, and self-fertilize. A wide variety of insects were seen on spineflowers during field surveys on Ahmanson Ranch. Specifically, high densities of ants were observed, leading to the conclusion that ants play a role, although likely incidental (secondary), in pollination of the spineflower (CDFG 2000, pp. 11; CBI 2000, pp. 2, 3). For further information regarding the reproductive biology of the spineflower, please refer to Sapphos 2001, pp. 3-5 - 3-6 (Appendix 2.6).

(f) Seed Dispersal, Germination and Viability

The spineflower's involucre is believed to play a role in seed dispersal. Each involucre carries one seed, about 2-3 mm in length. The straight spines of the involucre may assist in seed dispersal. The involucre is believed to remain intact and protect the seed, even after falling to the ground. Fall rains likely soften the involucre, causing it to loosen and release its seed. Insects have been observed chewing off the spineflower's involucres and carrying them to their nests, often dropping some along the way, aiding in the dispersal of the spineflower (CDFG 2001, pp. 11, 12).

Seed germination and viability data are available for other, related plants, and is being developed for the spineflower based on the Ahmanson Ranch samples. The results of these tests suggest that the spineflower may produce two types of seeds, those that germinate readily and those that remain dormant until the proper conditions are reached and then germinate (Sapphos 2000, pp. 22, 23; CBI 2000, pp. 3; CDFG 2001, pp. 12). For further information regarding seed dispersal, dispersal agents, germination and viability of the spineflower, please refer to Sapphos 2001, pp. 3-5 - 3-7 and 4-13 - 4-17 (Appendix 2.6).

2.6.5.4 Range, Distribution and Abundance

Spineflower has been limited to a narrow range in southern California. Historically, spineflower was found scattered across Los Angeles, Ventura and Orange counties, often in what is now highly urbanized locales. Only twelve recorded occurrences are known. In the late nineteenth and early twentieth centuries, spineflower was found in washes, sandy areas, in hills and on mesas, generally around the foothills of the San Gabriel Mountains and near Santa Ana, Orange County. Some of the historic Los Angeles sites, although greatly modified, may still support suitable habitat for spineflower, including Mt. Lowe, San Fernando (Pacoima, Little and Big Tujunga Washes), Elizabeth Lake and Chatsworth Park.

The Orange county site was only categorized as "hills near Santa Ana," and the Ventura county site is the Ahmanson Ranch location.[9] All twelve of the spineflower occurrences are mapped within 70 miles of each other; the two current locations (Ahmanson Ranch and Newhall Ranch) are approximately 17 miles apart (Sapphos 2000, pp. 8; CDFG 2001, pp. 12-15). For further information regarding the range, distribution and abundance of the spineflower, please refer to Sapphos 2001, pp. 2-2 - 2-4; 3-2; Figure 3.3-1; and pp. 3-3 - 3-4 (Appendix 2.6).

2.6.5.5 Habitat Characterization

Habitat characterization studies performed for Ahmanson Ranch show distinct similarities between geomorphic and soil characteristics for the known spineflower sites, and verified the tendency of this species to occur in sparsely vegetated areas on-site, often in association with bare soil, rock outcroppings, and exposed bedrock. In the Ahmanson Ranch project area, this taxon is found primarily on south-to-west and south-to-east facing slopes; on the Newhall Ranch site, this taxon is generally found on south-facing slopes (Seward 2002; Appendix 2.6).

Substrate. Sapphos Environmental conducted a review of geologic maps and found that historic and extant spineflower sites are frequently found at locations within the watershed at which geomorphic processes are not conducive to the development of soils. These sites occur in association with two generic conditions: (a) alluvial deposits of riverine systems; and (b) contact points between exposed bedding planes at which the parent material is exposed at the surface (Sapphos 2001).

The spineflower appears to exploit locations that have thin, highly mineralized soils. Historic locations often occur in association with surficial sediments (Qa), older dissected surficial sediments (Qoa), or alluvium (Qal) of riverine or alluvial systems at which the parent material typically consists of alluvial gravels and sand with a fine clay or silt component (Sapphos 2001). In upland locations, historic sites frequently occur at contacts between two similar layers of parent material at which the contact is exposed at the surface in relation to a syncline. As with the riverine or alluvial sites, these upland sites are located on parent materials that contain distinct beds of fine-grained materials, such as the Saugus Formation (Tsr), Monterey Shale (Tm, Tmss), and unnamed shale and sandstone (Tust, Tush). Geomorphic information is summarized in the Sapphos 2001 report, (Table 5.2.1.1-1).

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9 Collections from San Diego and San Bernardino counties were later found to be mislabeled or misidentified (CDFG 2001, 14).

The geologic evaluation prepared for the Newhall Ranch applicant focused on the geologic and geomorphic conditions of the three locations where spineflower was observed on Newhall Ranch. Based on the Seward report (Appendix 2.6), nearly all of the spineflower plants at Grapevine and Airport Mesas occur on granular, nonmarine terrace deposits or lithologically similar portions of the upper member of the Saugus Formation. The spineflowers plants at the San Martinez location occur primarily on old landslide debris.

Soils. According to environmental reports, the spineflower populations at the Ahmanson Ranch development site occurred in association with three USDA mapping units: Zamora clay loam, San Andreas sandy loam, and Santa Lucia shaly silty clay loam (GLA 1999; Sapphos 2001). Site observations in 2000 on Ahmanson Ranch indicated that occupied habitat was frequently characterized by a lack of soils (plants growing on exposed bedrock) or poorly developed soils (lacking true soil horizons). While occupied habitat frequently occurred in the vicinity of the three identified mapping units, spineflower appeared to grow most frequently in exposed bedding planes of the parent material.

On Newhall Ranch, nearly all of the spineflower plants at the three on-site locations occur on soils mapped as slightly eroded to eroded Castaic-Balcom silty clay loam or Terrace escarpments. Most of the spineflower plants at Grapevine Mesa and some at Airport Mesa are down slope of Terrace surfaces capped by Zamora clay loam. In addition, the vast majority of observed spineflower on Newhall Ranch grow on silty sand surface soils.

Soil conditions at historic sites were also reviewed and determined to be highly variable (Sapphos 2001). No other historic site was found to be characterized by Zamora loam, San Andreas sandy loam, or Santa Lucia shaly silty clay loam; however, certain consistent parameters were observed among the 2 extant sites and the 10 known historic sites. Of particular interest was the propensity for the plant to occur in locations with highly mineralized, poorly developed soils (or lack of soils). These conditions were created by two very different geomorphic processes. Several sites were located where bedding planes were exposed at the surface in association with a syncline (rock layers upturned by the movement of the underlying tectonic plate) of drainages characterized by alluvia deposits consisting of large granitic material. It is the County's understanding that a geologist did not conduct a site-specific investigation at Ahmanson Ranch in association with the Sapphos report.

General Site Observations. Field observations on both Ahmanson Ranch and Newhall Ranch indicated that spineflower occurs in areas of relatively low vegetative cover (*e.g.*, open ground, bare areas) regardless of the surrounding plant community. Open ground occurs within coastal sage scrub or as a result of rock outcroppings or soil surface disturbance. Spineflower plants were found growing at the

edge of scrub habitat, on and adjacent to rock outcroppings or exposed bedrock, and in disturbed soils. Open ground has become the visual signature for potential spineflower habitat because of the taxon's apparent preference for it (Sapphos 2001; Seward 2002).

Soil Physical Properties. Soil analyses conducted on the Ahmanson Ranch site indicated that areas characterized by a dense cover of grasses generally had better soil physical properties and higher nutrient levels (with the exception of nitrogen, which was low in all samples) than adjacent areas that supported spineflower and a sparse vegetative cover (Sapphos 2001). Based on this data, it appears that spineflower favors (or is restricted to) soils with poorly developed physical properties (*i.e.*, friable soils), which would align with assumptions that spineflower may have an affinity for poorly developed soils (Sapphos 2001).

Soil Compaction. Environmental studies also suggest that spineflower tolerates compacted soils. The ability of spineflower to exploit compacted soils is demonstrated by its ~~affinity for~~ occurrence in roads or trails that run through otherwise undisturbed locations (Sapphos 2001). Spineflower may not be able to compete with non-native grasses in better-developed and less compacted soils that have higher moisture and nutrient contents and higher levels of soils aeration (Sapphos 2001).

Elevation and Aspect. Of the 10 historic spineflower localities listed by the CNDDB (CDFG 1999), 7 lie between 500 and 1,500 feet above msl. Two historic sites (North Hollywood and Ballona) were recorded at lower elevations, and one historic site (Lake Elizabeth) was recorded at a higher elevation (CDFG 1999).

On Ahmanson Ranch, an analysis of elevation and aspect determined that spineflower polygons occur at elevations ranging from 1,220 to 1,406 feet (Sapphos 2001). In addition, spineflower polygons occur primarily on south-to-west and south-to-east facing aspects, with slopes ranging from 0 feet to 0.47 feet. For further information regarding Ahmanson Ranch populations, please refer to Sapphos 2001 report, Figure 5.2.1.3-1 and Table 5.2.1.3-1 (Appendix 2.6).

In addition, the relationship of plants to drainages and subdrainages has been evaluated (Sapphos 2001). The location of plants within the watershed helps to explain the lack of soil development and associated lack of competition from plants requiring better-developed soils found in spineflower areas, for soils are typically relocated from the top of the watershed to lower elevations by water movement (Sapphos 2001).

On Newhall Ranch, all of the observed spineflower occur within an elevation range of between 1,040 feet and 1,290 feet above sea level (Seward 2002). With rare exceptions, the spineflower populations on Newhall Ranch are generally observed on south-facing slopes at Grapevine and Airport Mesas. The

spineflower populations on the San Martinez location generally occur on elevated slopes and along rounded ridges facing to the south or east.

Vegetation. Based on a review of the CNDDB and other sources, ~~H~~historic site records describe spineflower as occurring in scrub habitats, historic localities in association with sandy washes would mostly likely characterized as Riversidean alluvial fan sage scrub (Holland 1986), whereas upland localities would likely be characterized as coastal sage scrub (Sapphos 2001). However, independent verification of herbaria data has not been conducted with regard to vegetation communities at historic locations of the spineflower. Within the Ahmanson Ranch area, the spineflower occurs primarily on slopes, in transitional scrub-grassland habitat. Plants also occur in openings of coastal sage scrub habitat, or at the margins of dense grassland on Laskey Mesa. Within these habitats, spineflower was observed in natural and disturbed openings that were sparsely vegetated, such as the interface between non-native grassland and scrub communities, exposed bedrock, roads, abandoned stock pens, trails, gopher mounds and fox burrows. These conditions of thin, compacted, and disturbed soils, characteristic of spineflower, appear to limit competition from other vegetation and allow spineflower to exploit those conditions (Sapphos 2001).

On Newhall Ranch, the vast majority of observed spineflower existed on silty sand soils. Spineflower populations were also observed on both disturbed and undisturbed ground. In undisturbed areas, the spineflower consistently occurred in sparsely vegetated areas consisting of barren ground, small annual grasses, and scattered bushes of buckwheat and sage scrub (Seward 2002).

Climate. Both timing and amount of precipitation may be important factors in germination and survival of the spineflower. For general information regarding climatic conditions, please refer to the Sapphos 2001 report (Appendix 2.6). In addition, the Newhall Ranch survey reports prepared by DUDEK and FLx provide that low rainfall in calendar year 2002 contributed to lower counts of observed spineflower and other sensitive plant species (*See*, Appendix 2.6).

2.6.6 IMPACT ANALYSIS

The Newhall Ranch Revised Draft EIR (March 8, 1999) contained an extensive analysis of potential impacts to biological resources, including potential impacts to sensitive plants and wildlife. Project opponents challenged the adequacy of the analysis and the mitigation measures proposed in the EIR through the court process. The Court found that the biological analysis and mitigation program were adequate and complete under CEQA. This section of the Revised ~~Draft~~ Additional Analysis is, in part, intended to set forth additional biological information, discuss potential impacts to sensitive plants found

on the Specific Plan site, and augment the prior mitigation program with additional performance standards to mitigate potential impacts to plants found on Newhall Ranch and any that may be found in the future.

2.6.6.1 Criteria for Determining Impact Significance

To assess the significance of Specific Plan impacts on sensitive plant species, this document utilized the criteria found in CEQA and the CEQA *Guidelines*. For example, both Section 15065(a) of the CEQA *Guidelines* and the CEQA Environmental Checklist (Appendix G of the CEQA *Guidelines*) contain applicable significance criteria.

Section 15065(a) states, in pertinent part, that a project may have a significant effect on the environment if it has the potential "to substantially degrade the quality of the environment, ...threaten to eliminate a plant or animal community, [or] reduce the number or restrict the range of an endangered, rare or threatened species...." In addition, the CEQA Environmental Checklist (Appendix G) states, in pertinent part, that a proposed project would result in a potentially significant impact if it would have a "substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive or special status species in local or regional plans, policies or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service."

Impacts to specific biota may be determined to be significant even if a project does not directly affect formally listed endangered or threatened species, as indicated in the CEQA provisions cited above. Other "sensitive" species may be classified as such and considered under the CEQA *Guidelines* because of local rarity or declining populations. For example, CDFG and other local governmental agencies may also use listings developed by groups such as the California Native Plant Society (CNPS) to determine the thresholds of significance. CNPS List 1 and List 2 species are included in this impact analysis because the criteria for plant species to be placed on List 1 or List 2 are similar to criteria that CDFG uses for species considered as candidates for listing or that are already listed as threatened or endangered. In addition, for purposes of this analysis, the significance thresholds include an assessment of whether implementation of the Newhall Ranch Specific Plan will substantially diminish habitat for endangered, rare, threatened or sensitive plant species, or substantially affect such plant species, as stated in the Revised Draft EIR (March 8, 1999).

2.6.6.2 Impact Assessment Methodology

As previously discussed, construction-level subdivision maps are not yet proposed at this Specific Plan and program EIR level, with the exception of the water reclamation plant. The Specific Plan designates only the zoning and land use designations for various development polygons indicated on the land use plan. As future projects within the Specific Plan are designed and engineered, a more accurate placement, size, and type of development will become known. At that time and consistent with CEQA, project-level surveys for sensitive plant species will be conducted and potential impacts on these species can be more specifically identified and mitigated. As was reported in the Newhall Ranch DAA (April 2001), no sensitive plants were found on the water reclamation plant site. Consequently, no further analysis of that site is provided in this document.

The three locations where spineflower was found to be present on Newhall Ranch are shown in **Figure 2.6-7a, San Fernando Valley Spineflower Locations - Grapevine and Airport Mesas,** and **Figure 2.7b, San Fernando Valley Spineflower Locations - San Martinez.** To determine areas of possible impact on the spineflower at the Specific Plan level, the proposed land uses for the Newhall Ranch Specific Plan were overlain on a map of all known locations of spineflower within Newhall Ranch (*See*, **Figure 2.6-1, San Fernando Valley Spineflower Locations,** above). Given the programmatic nature of the proposed Specific Plan, it was assumed that grading or ground disturbances would occur throughout the entire area of any land use polygon proposed for development on the Specific Plan Land Use Plan (*See*, Newhall Ranch DAA, Ex. 1.0-3). Such grading or disturbance would impact sensitive plants and their habitat. By taking this "worst-case" methodology, impacts to the spineflower are treated as significant at the Specific Plan level, absent implementation of the Newhall Ranch mitigation program (described below). However, with implementation of the mitigation program, each construction-level subdivision map(s) would be designed to accommodate the mitigation program and the specific mitigation measures necessary. At that stage, the Newhall Ranch subdivision map(s) would be accompanied by detailed, project-specific grading plans to be submitted to the County for processing. Under the Newhall Ranch mitigation program, each subdivision map, and the accompanying project-specific grading plans, would be required to avoid or adequately mitigate impacts to the spineflower and other sensitive plants. The analysis of each subdivision map, and the accompanying project-specific grading plans, would occur in the context of the EIR requirement imposed on the Newhall Ranch Specific Plan (*See*, Mitigation Measure 4.11-17).

It should be noted that approval of the Specific Plan does not authorize construction of any component of the Specific Plan (with the exception of the WRP site). In addition, Specific Plan approval does not approve any grading plans, nor authorize any grading or land disturbance within the Specific Plan boundaries (with the exception of the WRP site).

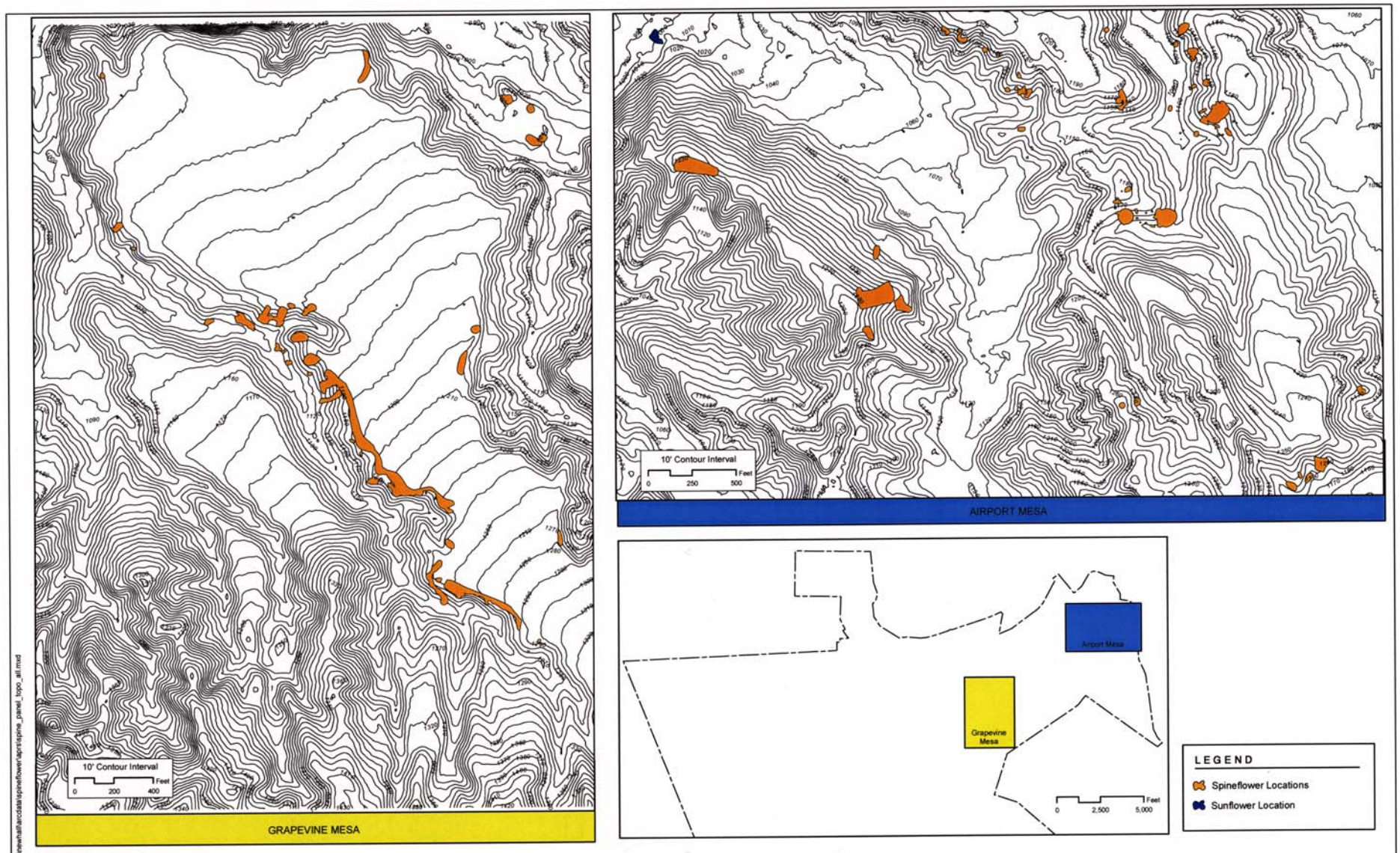
Conversely, the above-methodology assumed that impacts to spineflower and other sensitive plants observed within the four areas identified for conservation in the Newhall Ranch Specific Plan would be avoided. These areas include the Santa Clara River Corridor SMA; the large block of relatively undisturbed habitat in the higher elevations of the Santa Susana Mountains (the "High Country SMA"); all Open Areas; and the Salt Creek corridor.

The significance of direct and indirect impacts on spineflower and other sensitive plants takes into consideration the number of plants potentially affected, currently available information regarding the presence and distribution of spineflower and other sensitive plants on Newhall Ranch, how common or uncommon the plant species are on both the Specific Plan site and from a regional or state-wide perspective, and the sensitivity status of the plant species. These factors are typically evaluated based on the results of on-site biological surveys and studies, literature and database reviews, and discussions with biological experts. Potential impacts are then evaluated with respect to the CEQA significance threshold criteria described above.

2.6.6.3 Direct Impacts of the Specific Plan

Sensitive plants observed on Newhall Ranch during the course of the surveys on Newhall Ranch are summarized in **Table 2.6-2**, above. San Fernando Valley spineflower was observed in three general locations within the Specific Plan area: Airport Mesa, Grapevine Mesa, and San Martinez. Some populations of the spineflower are in locations that could be directly or indirectly affected by development associated with Specific Plan implementation, while other populations are located within areas that will be protected as open space. Based on field survey estimates, the approximately 6.1 acres (or 0.05 percent of the 11,963-acre Newhall Ranch) of habitat supporting spineflower plants are located within a development-related land use area; and 0.18 acres of habitat supporting spineflower plants are located in proposed open space areas in the Grapevine Mesa area. As previously stated, until more detailed project-level subdivision maps and plans are prepared, it is assumed that all land within an area zoned for development will be converted. Therefore, any spineflower populations within these areas have been determined at this time to be directly impacted (*i.e.*, removed from the site) by buildout of the Specific Plan.

As noted in **Table 2.6-2**, the short-joint beavertail cactus, a CNPS List 1B plant species, was also observed during the surveys. Two plant taxa were observed during the 2002 field surveys that, due to the dry field conditions during 2002, did not permit definitive identification of these taxa to the species level. As indicated in **Table 2.6-2**, these taxa include *Calochortus* and *Dudleya*. Both the *Calochortus* and *Dudleya* observations occurred in areas proposed for development under the Specific Plan. Surveys would need to be conducted during next year's blooming season to confirm the exact species of these taxa.



trewhall/arcdata/spineflower/aprs/spine_panel_topo_all.mxd

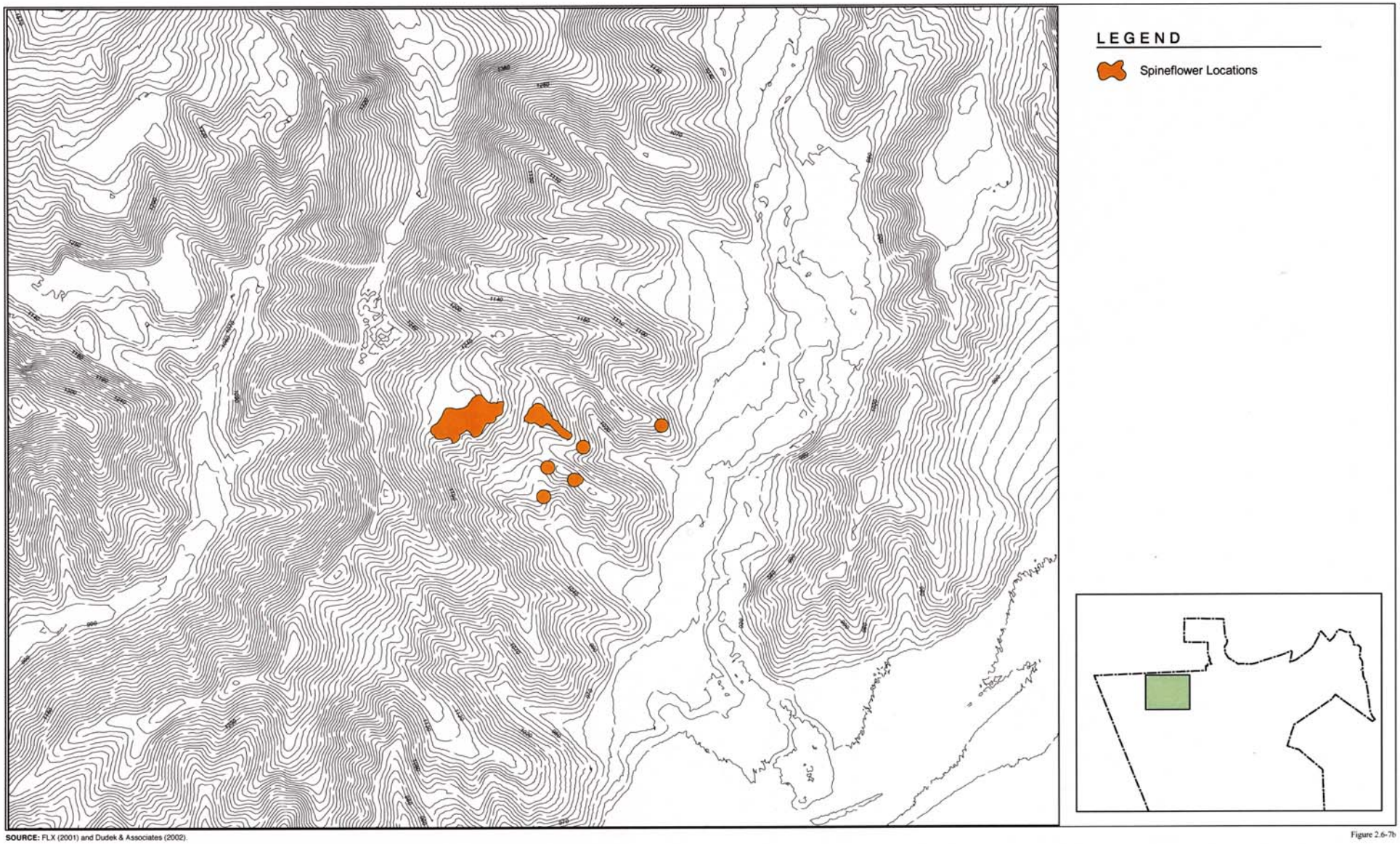
SOURCE: URS Corporation (2000), FLX (2001 and 2002), Dudek & Associates (2002).

Figure 2.6-7a

RARE PLANT LOCATIONS–GRAPEVINE AND AIRPORT MESAS

NEWHALL RANCH

FORMA
October 2002



SOURCE: FLX (2001) and Dudek & Associates (2002).

Figure 2.6-7b

RARE PLANT LOCATIONS–SAN MARTINEZ

NEWHALL RANCH

0 400 800 Feet

FORMA October 2002

A population of *Helianthus* was also discovered in a wetland area along the Santa Clara River. Because of the similarity of morphological characteristics between several species and subspecies of *Helianthus* potentially occurring in this region, the specific taxonomic identify of this single population of plants is not yet confirmed at this time. However, impacts to *Helianthus* are not considered significant because the population is located within an Open Area, which would prohibit development in that area.

An additional seven plant species that are state- or federally-listed as threatened or endangered, and 10 species listed by the CNPS as a List 1 or List 2 species, were not observed but were determined to have at least a moderate potential to occur within the Specific Plan area (DUDEK 2002). As previously noted, the focus of the 2002 plant surveys was to identify and map populations of the spineflower and other sensitive plants within the Specific Plan area. Focused surveys for other sensitive plant species potentially occurring in all suitable habitat within the Specific Plan area were not conducted at this time as the majority of these species have been addressed in the Specific Plan EIR (March 1999); and focused surveys for these plant species will be conducted during future project-level environmental review. However, the locations of any other plant species observed during the course of the spineflower surveys were mapped as illustrated in Appendix 2.6.

Impacts to any plants located within the Specific Plan area that are state- or federally-listed as threatened or endangered (*e.g.*, the spineflower) or listed as CNPS List 1 or List 2 plant species (*e.g.*, the cactus), are regarded as significant impacts under CEQA. Impacts to remaining plants are not considered significant if they are not expected to occur on site, have a low potential of occurring, or are of a relatively low sensitivity. If future surveys confirm the *Calochortus* species to be one of the CNPS List 1B plants potentially occurring in the area, or the *Dudleya* to be one of the federally-listed threatened species known to occur in the region, the loss of occupied habitat of either of these species, directly or indirectly, would be considered a significant impact.

2.6.6.4 Indirect Impacts of the Specific Plan

Indirect impacts to sensitive plants would occur to those habitat areas adjacent to or within proposed development areas, after implementation of the project-specific subdivision maps and associated grading plans. Indirect impacts associated with such proposed development are not quantifiable at the Specific Plan level, but are reasonably foreseeable. Specifically, the spineflower and other sensitive plant species are vulnerable to certain indirect effects associated with proposed development of Newhall Ranch. Because the character of the property will be altered from its current grazing and agricultural uses to a master planned community, the viability of the spineflower and other sensitive plant species depends upon an understanding of the indirect effects of proposed development in the vicinity of known sensitive

plant populations. As such, the discussion that follows addresses the indirect impacts associated with development on the Newhall Ranch site.

In 2000, the Conservation Biology Institute (CBI) prepared a report that assessed the potential indirect impacts to the San Fernando Valley spineflower from proposed adjacent development on the Ahmanson Ranch project site in Ventura County.[10] The CBI report is based on the current knowledge of spineflower biology and a review of the available scientific literature on indirect impacts or edge effects (*i.e.*, the adverse effects of development on adjacent sensitive biological resources), or the adverse changes to natural resource communities as a result of their proximity to developed or modified areas. The report focused on potential "risk factors" on edge effects to sensitive plants, particularly those factors that may adversely affect the spineflower, based on current knowledge of the spineflower's biology. The report identified seven overlapping risk factors or edge effects, which threaten the spineflower. These factors include:

(a) Non-native invasive plant species;

(b) Non-native invasive animal species;

(c) Vegetation clearing for fuel management or creation of roads and trails;

(d) Trampling;

(e) Changes in hydrological conditions (*i.e.*, increases in water supply due to urban irrigation and runoff);

(f) Chemical pollutants (*e.g.*, herbicides, pesticides, fertilizers); and

(g) Increased fire frequency.

The CBI report acknowledged that the use of buffers as an element of preserve design was important in ameliorating the effects of certain indirect impacts or risk factors/edge effects. The report analyzed five buffer widths ranging from 15 feet to 300 feet. The report then evaluated the Ahmanson Ranch (a development proposed in Ventura County) spineflower preserve design in relation to those risk factors, and management actions and alternative preserve design scenarios were then proposed that would minimize or eliminate the potential indirect impacts or risk factors/edge effects.

Each of the seven indirect impacts addressed in the CBI report are discussed further below.

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[10] The CBI report entitled, *Review of Potential Edge Effects on the San Fernando Valley Spineflower*, January 19, 2000, is included in Appendix 2.6.

(a) Non-Native Invasive Plant Species

Non-native plant species pose a threat to the spineflower. The conversion of open-soil habitats to exotic grassland appears to be the primary threat to spineflower at this time. Non-natives compete for light, water, and nutrients, and they can create a thatch that blocks the sun from reaching shade-intolerant plants like the spineflower, thus depleting the plant's seed bank. The successful invasion of exotic species may alter habitats and displace native species over time, leading to extirpation or extinction of natives like the spineflower (CBI 2000, Sapphos 2000, CDFG 2001, Sapphos 2001).

Development could negatively impact known spineflower populations because non-natives have been found to invade and become established after repeated burnings, disking or clearing of vegetation for fire protection, or following periods of drought and overgrazing, possible side effects of nearby human habitation. Non-natives may alter hydrological and biochemical cycles, disrupt natural fire regimes, and alter soil fertility within and adjacent to proposed development. Proposed development also threatens to fragment known spineflower populations, which could increase the likelihood of invasion by exotics. In light of these potential indirect effects, it has been determined that non-native invasive plant species pose a serious threat to the spineflower (CBI 2000, Sapphos 2000, CDFG 2001, Sapphos 2001).

(b) Non-Native Invasive Animal Species

An increase in domestic dogs and cats from adjacent development could indirectly affect the spineflower, because these non-native domestic predators could decrease the native rodent populations that may act as spineflower seed dispersal agents. In addition, introduction of the Argentine ant could adversely affect spineflower located near proposed development. These ants have the potential to negatively impact native ant populations, which may be secondary pollinators and seed dispersers of the spineflower. Argentine ants also rapidly invade disturbed areas, and sometimes even undisturbed areas, within stands of native habitat that are adjacent to development. Proposed development could introduce this exotic species into spineflower habitat, thus posing a threat to the continued viability of the plant. Therefore, it has been determined that non-native invasive animals have a potential to adversely affect known spineflower populations (CBI 2000, Sapphos 2000, CDFG 2001, Sapphos 2001).

(c) Vegetation Clearing

When native vegetation is cleared for fire protection along the boundary between proposed development and known spineflower populations, or for the creation of roads or trails, non-native plant species may be provided an opportunity to colonize gaps or bare areas. When vegetation is removed and soil is scraped,

non-natives are given the opportunity to become established. As discussed above, non-natives often out-compete native species like spineflower. This risk factor is considered relatively high because of its relationship to invasive plants and the uncertainty of controlling this factor. (CBI 2000, CDFG 2001).

(d) Trampling

Human trampling can damage individual spineflower plants and alter the spineflower's ecosystem. Trampling associated with proposed development can create gaps in vegetation and thus allow exotic, non-native species to become established; it can cause an increase in soil compaction; and it can lead to soil erosion. The recovery of spineflower, once trampled, is hard to predict. Some effects, like soil compaction or erosion, can be difficult and time-consuming to reverse. This edge effect, therefore, represents a threat to the spineflower (CBI 2000).

(e) Changes in Hydrological Conditions

Spineflower can be adversely impacted by changes in surface and subsurface hydrological conditions (*i.e.*, increased irrigation and runoff). Proposed development can remove native vegetation, increase runoff from roads and other paved surfaces, and result in an increase in ornamental landscaping and lawns which eventually lead to an increase in irrigation. These consequences can result in increased erosion and transport of particulate matter into known spineflower populations. Altered erosion, increased surface flows, and increased underground seepage can allow for the establishment of weedy non-native species and the invasion of Argentine ants. Changed hydrological conditions can alter seed bank characteristics and modify habitat for ground-dwelling fauna. Consequently, this risk factor poses a threat to the known spineflower populations (CBI 2000).

(f) Chemical Pollutants

The use of chemical pollutants during the development stage and by the residents of new development can decrease the number of plant pollinators; increase the existence of non-natives; and cause damage to, or the destruction of, native plants. Herbicide use can cause fragmentation of known spineflower populations, and insecticide use can result in pollution drift that can kill known spineflower populations. Fertilizers, especially nitrogen rich fertilizers, can promote the growth of non-native species, to the detriment of native species not adapted to high nitrogen environments. Thus, the use of chemicals near known spineflower populations can have an adverse indirect impact (CBI 2000, Sapphos 2000, Sapphos 2001).

(g) Increased Fire Frequency

Development near known spineflower populations can increase the possibility of fire because of human-related activities. Arson, or sparks from construction or utility maintenance activities, could lead to an increase in fires which indirectly may threaten the spineflower. The effect of fire on the spineflower is not yet known; however, under certain conditions a fire could damage a percentage of individual spineflower plants, or it could destroy an entire population. Direct scorching can create open areas, which are then susceptible to non-native plant and animal invasion. Colonization of an area by non-native grasses provides the fuel needed to start and maintain fires, increasing their frequency, extent, and intensity. Non-native plants tend to recover more quickly than native species, leading to their domination over natives like the spineflower. Consequently, this risk factor poses a threat to known spineflower populations (CBI 2000, Sapphos 2000, CDFG 2001, Sapphos 2001).

(h) Summary

The CBI (2000) report noted that these edge effects, or indirect impacts, pose various degrees of threat to spineflower plants depending on the distance of the plants to the edge of development. The report stated that literature on invasive non-native animals indicated that most adverse effects on spineflower as a result of these two factors are concentrated within 100-325 feet of the development edge. Literature reviewed on invasive non-native plants (as a result of vegetation clearing, increased fire frequency, or other disturbances) indicated that most impacts would occur within the first 80-100 feet, with a gradual decline in invasive species beyond 100 feet. Changes in hydrological regimes resulting in increased surface and subsurface runoff may have a zone of influence that extends up to 200 feet. The majority of pesticide drift from chemicals will extend less than 35 feet from the source while fertilizers, though typically localized, can be more widely dispersed through surface runoff or seepage. The effects of trampling are generally direct and limited to the area of impact.

The CBI (2000) report concluded that the ability of buffer areas to be effective in minimizing edge effects depends upon the width of the buffer between the development edge and spineflower populations. For chemicals, buffers need to be from 30-50 feet in width to be moderately effective; for invasive plants, vegetation clearing, hydrological changes, and trampling, buffers need to be at least 80-100 feet to be moderately effective; and buffers need to be at least 200 feet in width to be moderately effective for invasive animals and increased fire frequency.

However, the CBI report also concluded that a number of other biological and geomorphological factors can influence the overall ability of buffers at varying widths to minimize indirect impacts of development

on spineflower populations. These factors included the size and juxtaposition of spineflower preserves to developed areas; the degree of fragmentation or continuity between preserved spineflower populations and to open space areas; the percentage of non-native vegetation to native vegetation in proposed buffer and preserve areas; soil chemistry and type; and the disturbance history of proposed buffers and preserves. In addition, the implementation of various short-term and long-term management actions to buffers and the development edge can result in buffers being more effective at shorter widths, up to a point, than if the actions were not taken. Depending on the degree to which other factors discussed above are present, and to the extent management actions are implemented, buffers can be effective at widths of 80 to 200 feet. It is acknowledged that in the absence of management actions, the buffer widths may need to be greater than 200 feet.

Based on this analysis of indirect impacts to spineflower and other sensitive plants, all seven indirect impacts/edge effects are considered significant in connection with the proposed development of Newhall Ranch, absent implementation of the Newhall Ranch mitigation program described below.

2.6.6.5 Cumulative Impacts

The San Fernando Valley spineflower is known to exist on several locations within Ahmanson Ranch, in Ventura County, and on several locations within the applicant's property holdings. Those property holdings consist of three locations within the Newhall Ranch Specific Plan site, namely, Grapevine Mesa, Airport Mesa and San Martinez, and two off-site locations known as the Commerce Center and Magic Mountain (*See*, **Figure 2.6-3,** above). Given the distance of these sites from each other (*i.e.*, Ahmanson Ranch, Newhall Ranch, Commerce Center, and Magic Mountain site), potential impacts created by human disturbance on one of the sites is not expected to impact spineflower populations on any other site. However, because the spineflower's range is limited, significant impacts to individual spineflower populations due to development are considered cumulatively significant if unmitigated.

2.6.7 MITIGATION MEASURES

2.6.7.1 Introduction

This section sets forth mitigation measures that the County and applicant propose to undertake to conserve the state-listed San Fernando Valley spineflower, in conjunction with the mitigation of other sensitive plant species. This mitigation program consists of:

(a) The existing Specific Plan EIR mitigation measures, which were adopted by the County's Board of Supervisors on March 23, 1999, and which were found by the Court to be adequate under CEQA in the Newhall Ranch litigation;

(b) The revised Specific Plan EIR mitigation measures contained in the Newhall Ranch Final Additional Analysis (October 2001); and

(c) The additional Specific Plan EIR mitigation measures, which the applicant has agreed to be imposed in the event that the Newhall Ranch Specific Plan is re-approved.

This mitigation program also includes a County-imposed mitigation measure requiring preparation of a tiered project-level EIR in conjunction with each project-specific tentative tract map for the Newhall Ranch Specific Plan (*See*, Specific Plan EIR Mitigation Measure 4.11-17). While this measure was imposed by the County to ensure that water needed for each proposed subdivision map is confirmed as part of the County's subdivision map application process, the measure applies with equal force to all potentially significant environmental effects, including project-specific impacts on sensitive biological resources. For example, for residential projects undertaken pursuant to a specific plan where an EIR has been prepared, CEQA *Guidelines* §15182 provides a partial exemption to the preparation of any further EIRs or negative declarations if the proposed project conforms with that specific plan and if it meets other specified requirements. However, notwithstanding the Section 15182 specific plan partial exemption, EIRs will be required for each Newhall Ranch tentative tract map application (*See*, Mitigation Measure 4.11-17).

It is also anticipated that each project-specific EIR for the Newhall Ranch Specific Plan will impose conditions and mitigation measures that are beyond those identified in the Newhall Ranch Final EIR and the Newhall Ranch Final Additional Analysis. For that reason, it is further anticipated that the standards set forth below are *minimum* standards subject to change or increase after completion of each project-specific EIR, including the required, updated sensitive plant and animal surveys for each subdivision map, and the consultation and project-level permitting requirements imposed by federal and state agencies, as appropriate (*See*, revised Specific Plan EIR Mitigation Measure 4.6-53, 4.6-59).

2.6.7.2 Existing Specific Plan EIR Mitigation Measures

It should be noted that the Court in the Newhall Ranch litigation rejected claims that the Newhall Ranch Final EIR "improperly deferred" the analysis and mitigation of the Specific Plan's biological impacts. Instead, the Court found that the mitigation requirements discussed in the Final EIR "include performance standards that can be utilized to hold [the County] to compliance with the EIR, and that adequately inform the public of the nature of the proposed mitigation designed to reduce the significant

impacts on biological resources...during the development of the [Specific Plan]."[11] The Court also found that the Specific Plan's "environmental consequences...to biological resources on site have been explored ...and mitigation measures adopted with performance standards specific enough to demonstrate the feasibility of the mitigation that is proposed."[12] Based on the review conducted, and the Court's findings regarding of the adequacy of the existing Specific Plan EIR mitigation measures relating to sensitive biological resources, the County finds that the existing mitigation measures remain valid, feasible, enforceable and beyond further legal challenge. However, as discussed below, two mitigation measures were revised in conjunction with the Newhall Ranch Final Additional Analysis (October 2001), because that document identified the presence of the spineflower at the Grapevine location on the Specific Plan site.

2.6.7.3 Revised Specific Plan EIR Mitigation Measures

This section highlights the two revised EIR mitigation measures, which were previously identified in the Newhall Ranch Final Additional Analysis (October 2001), and which were revised to strengthen the Newhall Ranch mitigation program for rare, threatened or endangered animal or plant species, including the spineflower. The project applicant agreed to revise the two EIR mitigation measures because of the presence of spineflower on Newhall Ranch, and in response to County staff recommendations and public comments. The revised mitigation measures are shown below (revisions are shown in ~~strikeout~~ and **bold** text). In addition, revised Mitigation Measure 4.6-59 has been replaced by a new revised Mitigation Measure 4.6-59, which imposes additional consultation requirements beyond those specified in the prior measure.

Updated Survey Requirements at the Subdivision Map Level

"4.6-53. If, at the time **any** subdivisions **map** proposing construction ~~are~~ **is** ~~processed~~**submitted**, the County determines through an Initial Study, **or otherwise,** that there may be rare, threatened or endangered, **plant or animal** species on the property ~~being~~ **to be** subdivided, then, **in addition to the prior surveys conducted on the Specific Plan site to define the presence or absence of sensitive habitat and associated species, ~~a~~current, updated** site-specific surveys **for all such animal or plant species** shall be conducted in accordance with the consultation requirements set forth in Mitigation Measure 4.6-59 **within those areas of the Specific Plan where such animal or plant species occur or are likely to occur.**

The site-specific surveys shall include the unarmored three-spine stickleback, the arroyo toad, the Southwestern pond turtle, the California red-legged frog, the southwestern willow flycatcher, the least Bell's vireo, the San Fernando Valley spineflower and any other rare, sensitive, threatened, or endangered plant or animal species occurring, or likely to occur, on the property to be subdivided. All site-specific surveys shall be conducted

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11 *See*, Court's Statement of Decision, filed August 3, 2000, pp. 14, 16.

12 *See*, Court's Statement of Decision, filed August 3, 2000, pp. 17.

during appropriate seasons by qualified botanists or qualified wildlife biologists in a manner that will locate any rare, sensitive, threatened, or endangered animal or plant species that may be present. To the extent there are applicable protocols published by either the United States Fish and Wildlife Service or the California Department of Fish and Game, all such protocols shall be followed in preparing the updated site-specific surveys.

All site-specific survey work shall be documented in a separate report containing at least the following information: (a) project description, including a detailed map of the project location and study area; (b) a description of the biological setting, including references to the nomenclature used and updated vegetation mapping; (c) detailed description of survey methodologies; (d) dates of field surveys and total person-hours spent on the field surveys; (e) results of field surveys, including detailed maps and location data; (f) an assessment of potential impacts; (g) discussion of the significance of the rare, threatened or endangered animal or plant populations found in the project area, with consideration given to nearby populations and species distribution; (h) mitigation measures, including avoiding impacts altogether, minimizing or reducing impacts, rectifying or reducing impacts through habitat restoration, replacement or enhancement, or compensating for impacts by replacing or providing substitute resources or environments, consistent with CEQA (*Guidelines* §15370); (i) references cited and persons contacted; and (j) other pertinent information, which is designed to disclose impacts and mitigate for such impacts." ~~to define the presence or absence of such species and any necessary mitigation measures shall be determined and applied."~~

Agency Consultation/Permit Requirements and Imposition of Additional Mitigation

4.6-59. Consultation shall occur with **the County of Los Angeles ("County") and California Department of Fish and Game ("CDFG") at each of the following milestones:**

1) **Before Surveys.** Prior to conducting sensitive plant or animal surveys at the Newhall Ranch subdivision map level, the applicant, or its designee, shall consult with the County and CDFG for purposes of establishing and/or confirming the appropriate survey methodology to be used.

2) **After Surveys**. After completion of sensitive plant or animal surveys at the subdivision map level, draft survey results shall be made available to the County and CDFG within sixty (60) calendar days after completion of the field survey work.

3) **Subdivision Map Submittal**. Within thirty (30) calendar days after the applicant, or its designee, submits its application to the County for processing of a subdivision map in the Mesas Village or Riverwood Village, a copy of the submittal shall be provided to CDFG. In addition, the applicant, or its designee, shall schedule a consultation meeting with the County and CDFG for purposes of obtaining comments and input on the proposed subdivision map submittal. The consultation meeting shall take place at least thirty (30) days prior to the submittal of the proposed subdivision map to the County.

4) **Development/Disturbance and Further Mitigation.** Prior to any development within, or disturbance to, habitat occupied by rare, threatened, or endangered plant or animal species, or to any portion of the Spineflower Mitigation Area Overlay, as defined below, all required permits shall be obtained from both USFWS and CDFG, as applicable. It is further anticipated that the federal and state permits will impose conditions and mitigation measures required by federal and state law that are beyond those identified in the Newhall Ranch Final EIR (March 1999), the Newhall Ranch DAA (April 2001) and the Newhall Ranch Revised DAA (2002). It is also anticipated that conditions and mitigation measures required by federal and state law for project-related impacts on endangered, rare or threatened species and their habitat will likely require changes and revisions to Specific Plan development footprints, roadway alignments, and the limits, patterns and techniques associated with project-specific grading at the subdivision map level.

2.6.7.4 Additional Specific Plan EIR Mitigation Measures

Additional mitigation measures have been identified to ensure the conservation of the spineflower on Newhall Ranch. The project applicant has agreed to these additional mitigation measures in the event that the County re-approves the Specific Plan.

The mitigation measures, identified below, follow the same numbering used for the "Biota" mitigation measures set forth in the Newhall Ranch Final EIR, Final Additional Analysis and the revised Newhall Ranch Mitigation Monitoring Program for the Specific Plan.

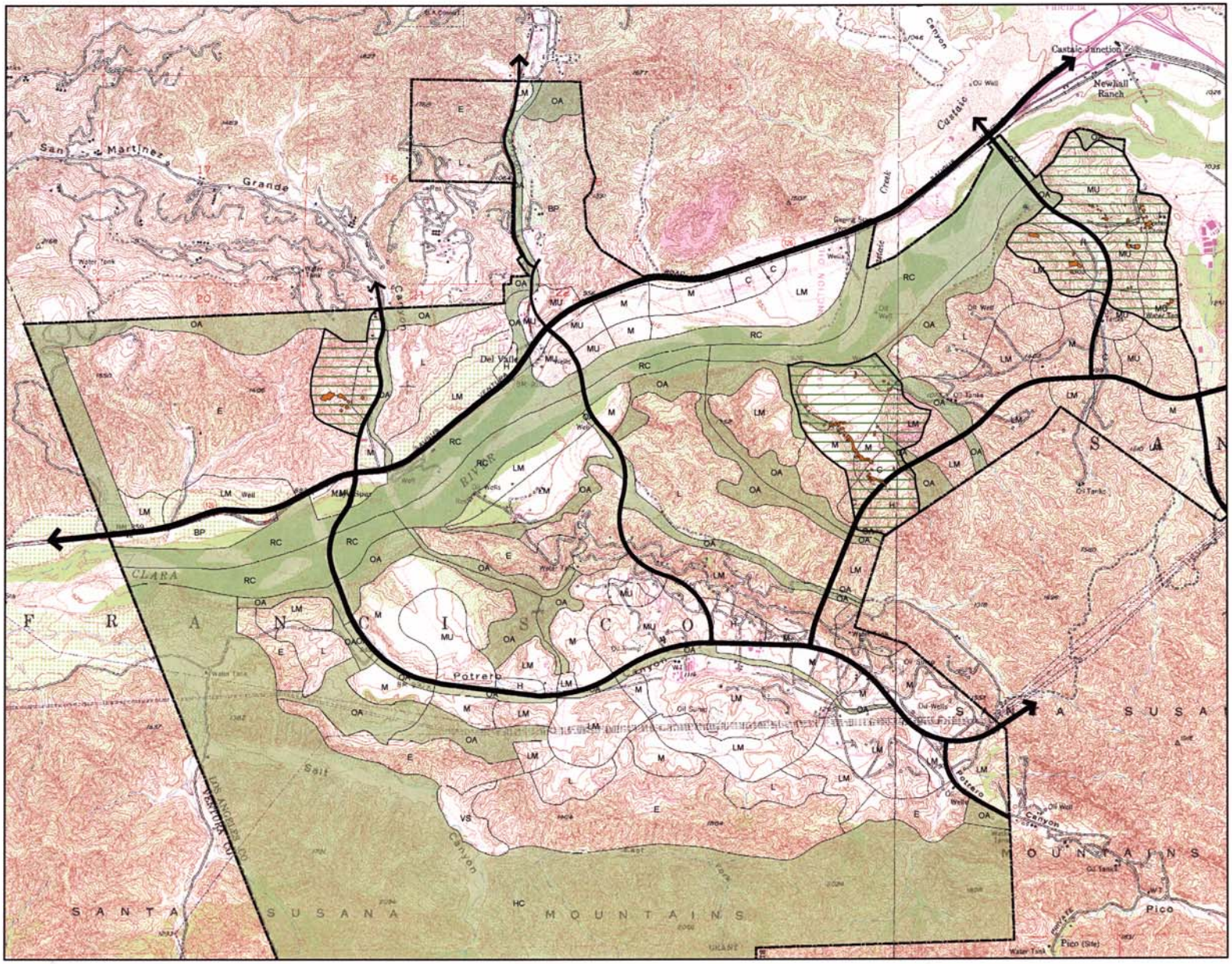
Spineflower Mitigation Area Overlay

4.6-65. In order to facilitate the conservation of the spineflower on the Newhall Ranch Specific Plan site, the applicant, or its designee, shall, concurrent with Specific Plan approval, agree to the identified special study areas shown below in **Figure 2.6-8, Spineflower Mitigation Area Overlay**. The applicant, or its designee, further acknowledges that, within and around the Spineflower Mitigation Area Overlay (**Figure 2.6-8**), changes will likely occur to Specific Plan development footprints, roadway alignments, and the limits, patterns and techniques associated with project-specific grading at the subdivision map level. The applicant, or its designee, shall design subdivision maps that are responsive to the characteristics of the spineflower and all other endangered plant species that may be found on the Specific Plan site.

Spineflower Preserves

4.6-66. Direct impacts to known spineflower populations within the Newhall Ranch Specific Plan area shall be avoided or minimized through the establishment of one or more on-site preserves that are configured to ensure the continued existence of the species in perpetuity. Preserve(s) shall be delineated in consultation with the County and CDFG, and will likely require changes and revisions to Specific Plan development footprints for lands within and around the Spineflower Mitigation Area Overlay (**Figure 2.6-8**).

Delineation of the boundaries of Newhall Ranch spineflower preserve(s) for the entire Specific Plan area shall be completed in conjunction with approval of the first Newhall Ranch subdivision map filed in either the Mesas Village, or that portion of Riverwood Village in which the San Martinez spineflower population occurs.



NEWHALL RANCH

LEGEND

- LOS ANGELES SUNFLOWER
- SPINEFLOWER LOCATION
- SPECIAL STUDY MITIGATION OVERLAY

LAND USE CATEGORIES

- E — ESTATE RESIDENTIAL
- L — LOW DENSITY RESIDENTIAL
- LM — LOW-MEDIUM DENSITY RESIDENTIAL
- M — MEDIUM DENSITY RESIDENTIAL
- H — HIGH DENSITY RESIDENTIAL
- C — COMMERCIAL
- BP — BUSINESS PARK
- MU — MIXED USE
- VS — VISITOR SERVING
- OA — OPEN AREA
- RC — RIVER CORRIDOR
- HC — HIGH COUNTRY
- ROADS

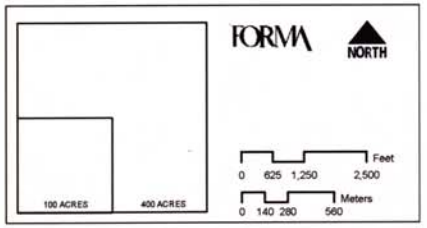


Figure 2.6-8

SPINEFLOWER MITIGATION AREA OVERLAY

A sufficient number of known spineflower populations shall be included within the Newhall Ranch spineflower preserve(s) in order to ensure the continued existence of the species in perpetuity. The conservation of known spineflower populations shall be established in consultation with the County and CDFG, and as consistent with standards governing issuance of an incidental take permit for spineflower pursuant to Fish and Game Code Section 2081, subdivision (b).

In addition to conservation of known populations, spineflower shall be introduced in appropriate habitat and soils in the Newhall Ranch preserve(s). The creation of introduced populations shall require seed collection and/or top soil at impacted spineflower locations and nursery propagation to increase seed and sowing of seed. The seed collection activities, and the maintenance of the bulk seed repository, shall be approved in advance by the County and CDFG.

Once the boundaries of the Newhall Ranch spineflower preserve(s) are delineated, the project applicant, or its designee, shall be responsible for conducting a spineflower population census within the Newhall Ranch spineflower preserve(s) annually for 10 years. (These census surveys shall be in addition to the surveys required by Mitigation Measure 4.6-53, above.) The yearly spineflower population census documentation shall be submitted to the County and CDFG, and maintained by the project applicant, or its designee. If there are any persistent population declines documented in the annual population census reports, the project applicant, or its designee, shall be responsible for conducting an assessment of the ecological factor(s) that are likely responsible for the decline, and implement management activity or activities to address these factors where feasible. In no event, however, shall project-related activities jeopardize the continued existence of the Newhall Ranch spineflower populations. If a persistent population decline is documented, such as a trend in steady population decline that persists for a period of 5 consecutive years, or a substantial drop in population is detected over a 10-year period, spineflower may be introduced in consultation with CDFG in appropriate habitat and soils in the Newhall Ranch preserve(s), utilizing the bulk spineflower seed repository, together with other required management activity or activities. These activities shall be undertaken by a qualified botanist/biologist, subject to approval by the County and CDFG. The project applicant, or its designee, shall be responsible for the funding and implementation of the necessary management activity or activities, including monitoring, as approved by the County and CDFG.

Annual viability reports shall be submitted to the County and CDFG for 10 years following delineation of the Newhall Ranch spineflower preserve(s) to ensure long-term documentation of the spineflower population status within the Newhall Ranch preserve(s). In the event annual status reports indicate the spineflower population within the Newhall Ranch preserve(s) is not stable and viable 10 years following delineation of the spineflower preserve(s), the project applicant, or its designee, shall continue to submit annual status reports to the County and CDFG for a period of no less than an additional 5 years.

Connectivity, Reserve Design and Buffers

4.6-67. Indirect impacts associated with the interface between the preserved spineflower populations and planned development within the Newhall Ranch Specific Plan shall be avoided or minimized by establishing open space connections with Open Area, River Corridor, or High Country land use designations. In addition, buffers (*i.e.*, setbacks from developed, landscaped or other use areas) shall be established around portions of the delineated preserve(s) not connected to Open Area, the River Corridor or the High Country land use designations. The open space connections and buffer configurations shall take into account local hydrology, soils, existing and proposed adjacent land uses, the presence of non-native invasive plant species, and seed dispersal vectors.

Open space connections shall be configured such that the spineflower preserves are connected to Open Area, River Corridor, or High Country land use designations to the extent practicable. Open space connections shall be of adequate size and configuration to achieve a

moderate to high likelihood of effectiveness in avoiding or minimizing indirect impacts (*e.g.*, invasive plants, increased fire frequency, trampling, chemicals, *etc.*) to the spineflower preserve(s). Open space connections for the spineflower preserve(s) shall be configured in consultation with the County and CDFG. Open space connections for the spineflower preserve(s) shall be established for the entire Specific Plan area in conjunction with approval of the first Newhall Ranch subdivision map filed in either the Mesa Village, or that portion of the Riverwood Village in which the San Martinez spineflower location occurs.

For preserves and/or those portions of preserves not connected to Open Area, River Corridor, or High Country land use designations, buffers shall be established at variable distances of between 80 and 200 feet from the edge of development to achieve a moderate to high likelihood of effectiveness in avoiding or minimizing indirect impacts (*e.g.*, invasive plants, increased fire frequency, trampling, chemicals, *etc.*) to the spineflower preserve(s). The buffer size/configuration shall be guided by the analysis set forth in the *Review of Potential Edge Effects on the San Fernando Valley Spineflower*, prepared by Conservation Biology Institute, January 19, 2000, and other sources of scientific information and analysis, which are available at the time the preserve(s) and buffers are established. Buffers for the spineflower preserve(s) shall be configured in consultation with the County and CDFG for the entire Specific Plan area. Buffers for the spineflower preserve(s) shall be established in conjunction with approval of the first Newhall Ranch subdivision map filed in either the Mesa Village, or that portion of the Riverwood Village in which the San Martinez spineflower location occurs.

~~Buffer configurations may include the width of any adjacent roadway system or associated rights-of-way, because roadways and rights-of-way can afford some protection to the spineflower preserve(s) and contribute to the effectiveness of the buffers by further avoiding or minimizing the potential indirect impacts of future development. In designing buffers that include roads, the design shall take into account edge effects from the roads by assessing, among other factors, the likelihood of disturbance based upon topography, road runoff and adjacent vegetation types.~~ Roadways and road rights-of-way shall not be constructed in any spineflower preserve(s) and buffer locations on Newhall Ranch, unless constructing the road(s) in such location is found to be the environmentally superior alternative in subsequently required tiered EIRs in connection with the Newhall Ranch subdivision map(s) process. No other development or disturbance of native habitat shall be allowed within the spineflower preserve(s) or buffer(s).

The project applicant, or its designee, shall be responsible for revegetating open space connections and buffer areas of the Newhall Ranch spineflower preserve(s) to mitigate temporary impacts due to grading that will occur within portions of those open space connections and buffer areas. The impacted areas shall be reseeded with a native seed mix to prevent erosion, reduce the potential for invasive non-native plants, and maintain functioning habitat areas within the buffer area. Revegetation seed mix shall be reviewed and approved by the County and CDFG.

Preserve Protection/Fencing

4.6-68. To protect the preserved Newhall Ranch spineflower populations, and to further reduce potential direct impacts to such populations due to unrestricted access, the project applicant, or its designee, shall erect and maintain temporary orange fencing and prohibitive signage around the Newhall Ranch preserve(s), open space connections and buffer areas, which are adjacent to areas impacted by proposed development prior to and during all phases of construction. The areas behind the temporary fencing shall not be used for the storage of any equipment, materials, construction debris or anything associated with construction activities.

Following the final phase of construction of any Newhall Ranch subdivision map adjacent to the Newhall Ranch spineflower preserve(s), the project applicant, or its designee, shall install and maintain permanent fencing along the subdivision tract bordering the preserve(s). Permanent signage shall be installed on the fencing along the preservation boundary to indicate that the fenced area is a biological preserve, which contains protected species and

habitat, that access is restricted, and that trespassing and fuel modification are prohibited within the area. The permanent fencing shall be designed to allow wildlife movement.

The plans and specifications for the permanent fencing and signage shall be approved by the County and CDFG prior to the final phase of construction of any Newhall Ranch subdivision map adjacent to a Newhall Ranch spineflower preserve(s).

Preserve Protection/Hydrological Alterations

4.6-69. Indirect impacts resulting from changes to hydrology (*i.e.*, increased water runoff from surrounding development) at the interface between spineflower preserve(s) and planned development within the Newhall Ranch Specific Plan shall be avoided or mitigated to below a level of significance.

Achievement of this standard will be met through the documented demonstration by the project applicant, or its designee, that the storm drain system achieves pre-development hydrological conditions for the Newhall Ranch spineflower preserve(s). To document such a condition, the project applicant, or its designee, shall prepare a study of the pre- and post-development hydrology, in conjunction with Newhall Ranch subdivision maps adjacent to spineflower preserve(s). The study shall be used in the design and engineering of a storm drain system that achieves pre-development hydrological conditions. The study must conclude that proposed grade changes in development areas beyond the buffers will maintain pre-development hydrology conditions within the preserve(s). The study shall be approved by the Planning Director of the County, and the resulting conditions confirmed by CDFG.

The storm drain system for Newhall Ranch subdivision maps adjacent to any spineflower preserves must be approved by the County prior to the initiation of any grading activities.

Road Construction Measures

4.6-70. Consistent with the Spineflower Mitigation Area Overlay reflected in Mitigation Measure 4.6-65, direct ~~and indirect~~ impacts to known Newhall Ranch spineflower populations associated with proposed road construction or modifications to existing roadways shall be further assessed for proposed road construction at the Newhall Ranch subdivision map level, in conjunction with the tiered EIR required for each subdivision map. To avoid or substantially lessen <u>direct</u> impacts to known spineflower populations, Specific Plan roadways shall be redesigned or realigned, to the extent practicable, to achieve the spineflower preserve and connectivity/preserve design/buffer standards set forth in Mitigation Measures 4.6-66 and 4.6-67. The project applicant, or its designee, acknowledges that that road redesign and re-alignment is a feasible means to avoid or substantially lessen potentially significant impacts on the now known Newhall Ranch spineflower populations. Road redesign or alignments to be considered at the subdivision map level include:

(a) Commerce Center Drive;

(b) Magic Mountain Parkway;

(c) Chiquito Canyon Road;

(d) Long Canyon Road;

(e) San Martinez Grande Road;

(f) Potrero Valley Road;

(g) Valencia Boulevard; and

(h) Any other or additional roadways that have the potential to result in significant impacts to known Newhall Ranch spineflower populations.

Roadways and road rights-of-way shall not be constructed in any spineflower preserve(s) and buffer locations on Newhall Ranch, unless constructing the road(s) in such location is found to be the environmentally superior alternative in subsequently required tiered EIRs in connection with the Newhall Ranch subdivision map(s) process.

Engineering, Design and Grading Modifications

4.6-71. Consistent with the Spineflower Mitigation Area Overlay reflected in Mitigation Measure 4.6-65, direct ~~and indirect~~ impacts to known Newhall Ranch spineflower populations shall be further assessed at the Newhall Ranch subdivision map level, in conjunction with the required tiered EIR process. To avoid or substantially lessen impacts to known spineflower populations at the subdivision map level, the project applicant, or its designee, may be required to adjust Specific Plan development footprints, roadway alignments, and the limits, patterns and techniques associated with project-specific grading to achieve the spineflower preserve and connectivity/preserve design/buffer standards set forth in Mitigation Measures 4.6-66 and 4.6-67 for all future Newhall Ranch subdivision maps that encompass identified spineflower populations.

Fire Management Plan

4.6-72. A Fire Management Plan shall be developed to avoid and minimize direct and indirect impacts to the spineflower, in accordance with the adopted Newhall Ranch Resource Management Plan (RMP), to protect and manage the Newhall Ranch spineflower preserve(s) and buffers.

The Fire Management Plan shall be completed by the project applicant, or its designee, in conjunction with approval of any Newhall Ranch subdivision map adjacent to a spineflower preserve.

The final Fire Management Plan shall be approved by the County of Los Angeles Fire Department through the processing of subdivision maps.

Under the final Fire Management Plan, limited fuel modification activities within the spineflower preserves will be restricted to selective thinning with hand tools to allow the maximum preservation of Newhall Ranch spineflower populations. No other fuel modification or clearance activities shall be allowed in the Newhall Ranch spineflower preserve(s). Controlled burning may be allowed in the future within the Newhall Ranch preserve(s) and buffers, provided that it is based upon a burn plan approved by the County of Los Angeles Fire Department and CDFG. The project applicant, or its designee, shall also be responsible for annual maintenance of fuel modification zones, including, but not limited to, removal of undesirable non-native plants, revegetation with acceptable locally indigenous plants and clearing of trash and other debris in accordance with the County of Los Angeles Fire Department.

Water Flow Diversion and Management

4.6-73. At the subdivision map level, the project applicant, or its designee, shall design and implement project-specific design measures to minimize changes in surface water flows to the Newhall Ranch spineflower preserve(s) for all Newhall Ranch subdivision maps adjacent to the preserve(s) and buffers, and avoid and minimize indirect impacts to the spineflower. Prior to issuance of a grading permit for each such subdivision map, the project applicant, or its designee, shall submit for approval to the County plans and specifications that ensure implementation of the following design measures:

(a) During construction activities, drainage ditches, piping or other approaches will be put in place to convey excess storm water and other surface water flows away from the Newhall Ranch spineflower preserve(s) and connectivity/preserve design/buffers, identified in Mitigation Measures 4.6-66 and 4.6-67;

(b) Final grading and drainage design will be developed that does not change the current surface and subsurface hydrological conditions within the preserve(s);

(c) French drains will be installed along the edge of any roadways and fill slopes that drain toward the preserve(s);

(d) Roadways will be constructed with slopes that convey water flows within the roadway easements and away from the preserve(s);

(e) Where manufactured slopes drain toward the preserve(s), a temporary irrigation system would be installed to the satisfaction of the County in order to establish the vegetation on the slope area(s). This system shall continue only until the slope vegetation is established and self-sustaining;

(f) Underground utilities will not be located within or through the preserve(s). Drainage pipes installed within the preserve(s) away from spineflower populations to convey surface or subsurface water away from the populations will be aligned to avoid the preserve(s) to the maximum extent practicable; and

(g) Fencing or other structural type barriers that will be installed to reduce intrusion of people or domestic animals into the preserve(s) shall incorporate footing designs that minimize moisture collection.

Biological Monitor

4.6-74. A knowledgeable, experienced botanist/biologist, subject to approval by the County and CDFG, shall be required to monitor the grading and fence/utility installation activities that involve earth movement adjacent to the Newhall Ranch spineflower preserve(s) to avoid the incidental take through direct impacts of conserved plant species, and to avoid disturbance of the preserve(s). The biological monitor will conduct bi-weekly inspections of the project site during such grading activities to ensure that the mitigation measures provided in the adopted Newhall Ranch Mitigation Monitoring Program (Biota section) are implemented and adhered to.

Monthly monitoring reports, as needed, shall be submitted to the County verifying compliance with the mitigation measures specified in the adopted Newhall Ranch Mitigation Monitoring Program (Biota section).

The biological monitor will have authority to immediately stop any such grading activity that is not in compliance with the adopted Newhall Ranch Mitigation Monitoring Program (Biota section), and to take reasonable steps to avoid the take of, and minimize the disturbance to, spineflower populations within the preserve(s).

Construction Impact Avoidance Measures

4.6-75. The following measures shall be implemented to avoid and minimize indirect impacts to Newhall Ranch spineflower populations during all phases of project construction:

(a) **Water Control**. Watering of the grading areas would be controlled to prevent discharge of construction water into the Newhall Ranch preserve(s) or on ground sloping toward the preserve(s). Prior to the initiation of grading operations, the project applicant, or its designee, shall submit for approval to the County an irrigation plan describing watering

control procedures necessary to prevent discharge of construction water into the Newhall Ranch preserve(s) and on ground sloping toward the preserve(s).

(b) **Storm Water Flow Redirection**. Diversion ditches would be constructed to redirect storm water flows from graded areas away from the Newhall Ranch preserve(s). To the extent practicable, grading of areas adjacent to the preserve(s) would be limited to spring and summer months (May through September) when the probability of rainfall is lower. Prior to the initiation of grading operations, the project applicant, or its designee, would submit for approval to the County a storm water flow redirection plan that demonstrates the flow of storm water away from the Newhall Ranch spineflower preserve(s).

(c) **Treatment of Exposed Graded Slopes**. Graded slope areas would be trimmed and finished as grading proceeds. Slopes would be treated with soil stabilization measures to minimize erosion. Such measures may include seeding and planting, mulching, use of geotextiles and use of stabilization mats. Prior to the initiation of grading operations, the project applicant, or its designee, would submit for approval to the County the treatments to be applied to exposed graded slopes that would ensure minimization of erosion.

Reassessment Requirement

4.6-76. In conjunction with submission of the first Newhall Ranch subdivision map in either Mesas Village or that portion of Riverwood Village in which the San Martinez spineflower location occurs, the project applicant, or its designee, shall reassess project impacts, both direct and indirect, to the spineflower populations using subdivision mapping data, baseline data from the Newhall Ranch Final EIR and data from the updated plant surveys (*See*, Specific Plan EIR Mitigation Measure 4.6-53).

This reassessment shall take place during preparation of the required tiered EIR for each subdivision map. If the reassessment results in the identification of new or additional impacts to Newhall Ranch spineflower populations, which were not previously known or identified, the mitigation measures set forth in this program, or a Fish and Game Code Section 2081 permit(s) issued by CDFG, shall be required, along with any additional mitigation required at that time.

Newhall Ranch Monitoring and Management

4.6-77. Direct and indirect ~~I~~impacts to the preserved Newhall Ranch spineflower populations shall require a monitoring and management plan, subject to the approval of the County. The applicant shall consult with CDFG with respect to preparation of the Newhall Ranch spineflower monitoring/management plan. This plan shall be in place when the preserve(s) and connectivity/preserve design/buffers are established (*See*, Mitigation Measures 4.6-66 and 4.6-67). The criteria set forth below shall be included in the plan.

Monitoring. The purpose of the monitoring component of the plan is to track the viability of the Newhall Ranch spineflower preserve(s) and its populations, and to ensure compliance with the adopted Newhall Ranch Mitigation Monitoring Program (Biota section).

The monitoring component of the plan shall investigate and monitor factors such as population size, growth or decline, general condition, new impacts, changes in associated vegetation species, pollinators, seed dispersal vectors and seasonal responses. Necessary management measures will be identified. The report results will be sent annually to the County, along with photo documentation of the assessed site conditions.

The project applicant, or its designee, shall contract with a qualified botanist/biologist, approved by the County, with the concurrence of CDFG, to conduct quantitative monitoring over the life of the Newhall Ranch Specific Plan. The botanist/biologist shall have a minimum of three years experience with established monitoring techniques and familiarity

with southern California flora and target taxa. Field surveys of the Newhall Ranch spineflower preserve(s) will be conducted each spring. Information to be obtained will include: (a) an estimate of the numbers of spineflowers in each population within the preserve(s); (b) a map of the extent of occupied habitat at each population; (c) establishment of photo monitoring points to aid in documenting long-term trends in habitat; (d) aerial photographs of the preserved areas at five-year intervals; (e) identification of significant impacts that may have occurred or problems that need attention, including invasive plant problems, weed problems and fencing or signage repair; and (f) overall compliance with the adopted mitigation measures.

For a period of three years from Specific Plan re-approval, all areas of potential habitat on the Newhall Ranch site will be surveyed annually in the spring with the goal of identifying previously unrecorded spineflower populations. Because population size and distribution limits are known to vary depending on rainfall, annual surveys shall be conducted for those areas proposed for development in order to establish a database appropriate for analysis at the project-specific subdivision map level (rather than waiting to survey immediately prior to proceeding with the project-specific subdivision map process). In this way, survey results gathered over time (across years of varying rainfall) will provide information on ranges in population size and occupation. New populations, if they are found, will be mapped and assessed for inclusion in the preserve program to avoid impacts to the species.

Monitoring/Reporting. An annual report will be submitted to the County and CDFG by December 31st of each year. The report will include a description of the monitoring methods, an analysis of the findings, effectiveness of the mitigation program, site photographs and adoptive management measures, based on the findings. Any significant adverse impacts, signage, fencing or compliance problems identified during monitoring visits will be reported to the County and CDFG for corrective action by the project applicant, or its designee.

Management. Based on the outcome of on going monitoring and additional project-specific surveys addressing the status and habitat requirements of the spineflower, active management of the Newhall Ranch spineflower preserve(s) will be required in perpetuity. Active management activities will be triggered by a downward population decline over 5 consecutive years, or a substantial drop in population over a 10-year period following County re-approval of the Specific Plan. Examples of management issues that may need to be addressed in the future include, but are not limited to, control of exotic competitive non-native plant species, herbivory predation, weed control, periodic controlled burns or fuel modification compliance.

After any population decline documented in the annual populations census following County re-approval of the Specific Plan, the project applicant, or its designee, shall be responsible for conducting an assessment of the ecological factor(s) that are likely responsible for the decline, and implement management activity or activities to address these factors where feasible. If a persistent population decline is documented, such as a trend in steady population decline persistent for a period of 5 consecutive years, or a substantial drop in population detected over a 10-year period, spineflower may be introduced in appropriate habitat and soils in the Newhall Ranch preserve(s), utilizing the bulk spineflower seed repository, together with other required management activity or activities. In connection with this monitoring component, the project applicant, or its designee, shall contract with a qualified botanist/biologist, approved by the County, to complete: (a) a study of the breeding and pollination biology of the spineflower, including investigation into seed physiology to assess parameters that may be important as management tools to guarantee self-sustainability of populations, which may otherwise have limited opportunity for germination; and (b) a population genetics study to document the genetic diversity of the Newhall Ranch spineflower population. The criteria for these studies shall be to develop data to make the Newhall Ranch spineflower management program as effective as possible. These studies shall be subject to approval by the County's biologist, with the concurrence of CDFG. These activities shall be undertaken by a qualified botanist/biologist, subject to approval by the County with the concurrence of CDFG. The

project applicant, or its designee, shall be responsible for the funding and implementation of the necessary management activity or activities, as approved by the County and CDFG.

The length of the active management components set forth above shall be governed by attainment of successful management criteria set forth in the plan rather than by a set number of years.

Translocation/Reintroduction Program

4.6-78. To the extent project-related direct and indirect significant impacts on spineflower cannot be avoided or substantially lessened through establishment of the Newhall Ranch spineflower preserve(s), and other avoidance, minimization, or other compensatory mitigation measures, a translocation and reintroduction program may be implemented in consultation with CDFG to further mitigate such impacts. Direct impacts (*i.e.*, take) to occupied spineflower areas shall be fully mitigated at a 4:1 ratio. Impacts to occupied spineflower areas caused by significant indirect effects shall be mitigated at a 1:1 ratio.

Introduction of new spineflower areas will be achieved through a combination of direct seeding and translocation of the existing soil seed bank that would be impacted by grading. Prior to any development within, or disturbance to, spineflower populations, on-site and off-site mitigation areas shall be identified and seed and top soil shall be collected. One-third of the collected seed shall be sent to the Rancho Santa Ana Botanical Garden for storage. One third of the seed shall be sent to the USDA National Seed Storage Lab in Fort Collins, Colorado for storage. One third shall be used for direct seeding of the on-site and off-site mitigation areas.

Direct seeding. Prior to the initiation of grading, the project applicant, or its designee, shall submit to the County a program for the reintroduction of spineflower on Newhall Ranch. The reintroduction program shall include, among other information: (a) location map with scale; (b) size of each introduction polygon; (c) plans and specifications for site preparation, including selective clearing of competing vegetation; (d) site characteristics; (e) protocol for seed collection and application; and (f) monitoring and reporting. The program shall be submitted to CDFG for input and coordination. The project applicant, or its designee, shall implement the reintroduction program prior to the initiation of grading. At least **two** candidate spineflower reintroduction areas will be created within Newhall Ranch and one candidate spineflower reintroduction area will be identified off site. Both on-site and off-site reintroduction areas will be suitable for the spineflower in both plant community and soils, and be located within the historic range of the taxon. Success criteria shall be included in the monitoring/management plan, with criteria for the germination, growth, and production of viable seeds of individual plants for a specified period.

Although the reintroduction program is experimental at this stage, the County considers such a program to be a feasible form of mitigation at this juncture based upon available studies. Botanists/biologists familiar with the ecology and biology of the spineflower would prepare and oversee the reintroduction program.

Translocation. Prior to the initiation of grading, the project applicant, or its designee, shall submit to the County a translocation program for the spineflower. Translocation would salvage the topsoil of spineflower areas to be impacted due to grading. Salvaged spineflower soil seed bank would be translocated to the candidate spineflower reintroduction areas. The translocation program shall include, among other information: (a) location map with scale; (b) size of each translocation polygon; (c) plans and specifications for site preparation, including selective clearing of competing vegetation; (d) site characteristics; (e) protocol for topsoil collection and application; and (f) monitoring and reporting. The translocation program shall be submitted to CDFG for input and coordination. Translocation shall occur within the candidate spineflower reintroduction areas on site and off site. Successful criteria for each site shall be included in the monitoring/management plan/with criteria for the germination and growth to reproduction of individual plants for the first year a specified period.

Although the translocation program is experimental at this stage, the County considers such a program to be a feasible form of mitigation at this juncture based upon available studies. Botanists/biologists familiar with the ecology and biology of the spineflower would prepare and oversee the translocation program.

On-going Agricultural Activities

4.6-79. The project applicant, or its designee, shall engage in regular and on going consultation with the County and CDFG in connection with its on-going agricultural operations in order to avoid or minimize significant direct impacts to the spineflower.

In addition, the project applicant, or its designee, shall provide 30 days advance written notice to the County and CDFG of the proposed conversion of its on-going rangeland operations on Newhall Ranch to more intensive agricultural uses. The purpose of the advance notice requirement is to allow the applicant, or its designee, to coordinate with the County and CDFG to avoid or minimize significant impacts to the spineflower prior to the applicant's proposed conversion of its on-going rangeland operations to more intensive agricultural uses. This coordination component will be implemented by or through the County's Department of Regional Planning and/or the Regional Manager of CDFG. Implementation will consist of the County and/or CDFG conducting a site visit of the proposed conversion area(s) within the 30-day period, and making a determination of whether the proposed conversion area(s) would destroy or significantly impact spineflower population in or adjacent to those areas. If it is determined that the conversion area(s) do not destroy or significantly impact spineflower populations, then the County and/or CDFG will authorize such conversion activities in the proposed conversion area(s). However, if it is determined that the conversion area(s) may destroy or significantly impact spineflower populations, then the County and/or CDFG will issue a stop work order to the applicant, or its designee. If such an order is issued, the applicant, or its designee, shall not proceed with any conversion activities in the proposed conversion area(s). However, the applicant, or the designee, may take steps to relocate the proposed conversion activities in an alternate conversion area(s). In doing so, the applicant, or its designee, shall follow the same notice and coordination provisions identified above. This conversion shall not include ordinary pasture maintenance and renovation or dry land farming operations consistent with rangeland management.

4.6-80. Upon approval of tentative tract map(s) impacting the San Martinez portion of the Specific Plan site, the applicant shall work with the Department of Regional Planning staff and SEATAC to establish an appropriately sized preserve area to protect the spineflower population at San Martinez Canyon.

2.6.8 CUMULATIVE MITIGATION MEASURES

No cumulative measures are proposed beyond the mitigation measures that would be implemented on a project-by-project basis. No such measures are proposed, because the project mitigation program specified above sufficiently mitigates the direct and indirect impacts of the proposed Specific Plan. As to Ahmanson Ranch, the impacts to the spineflower and other sensitive plant species are reported to be mitigated to below a level of significance as well. Finally, all proposed development in the region, which impacts the spineflower, or other listed plant species, must obtain an incidental take permit under Section 2081 of the California ESA. The take permit cannot be issued unless the impacts are fully mitigated and CDFG makes a "no jeopardy" finding as to the project impacts.

2.6.9 UNAVOIDABLE SIGNIFICANT IMPACTS ANALYSIS

The Newhall Ranch Specific Plan would result in the direct loss of San Fernando Valley spineflower and its habitat, would potentially cause indirect impacts due to development edge effects, and would contribute to significant cumulative impacts. These impacts are considered significant; however, because actions are to be taken that would be sufficient to minimize the take of the spineflower, fully mitigate the loss, and create additional spineflower populations, both on site and off site, the impacts to the spineflower are considered significant, but mitigable under CEQA and the CEQA *Guidelines*. This finding nevertheless requires the project applicant to obtain an incidental take permit(s) from CDFG after project approval, and the take permit(s) will not be issued unless CDFG makes findings of "no jeopardy" regarding the spineflower.

2.6.10 REFERENCES

The reference materials listed below were considered in preparing this section. These reference materials are incorporated by this reference and will be made available for public review by contacting: County of Los Angeles Department of Regional Planning, 320 West Temple Street, 13th Floor, Los Angeles, California 90012, Contact Lee Stark.

Abrams, L. 1923. *Illustrated Flora of the Pacific States.* Stanford University Press, Stanford, California.

Allen, E.B. 1996. *Characterizing The Habitat Of Slender-Horned Spineflower (Dodecahema leptoceras).* Report to the California Department of Fish and Game.

Boyd, S. 1999. *Vascular Flora of the Liebre Mountains, Western Transverse Ranges, California.* Aliso 18(2): 93-129.

California Department of Fish and Game. 2001. *Report to the Fish and Game Commission on the Status of San Fernando Valley Spineflower (Chorizanthe parryi* var. *fernandina),* Status Report 2001-1.

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2.7 Additional Alternatives

2.7.1 PURPOSE

According to the CEQA *Guidelines* Section 15126.6, the purpose of the Project Alternatives section is to assess a range of reasonable alternatives to the Specific Plan, or to the location of the Specific Plan, which would feasibly attain most of the basic objectives of the Specific Plan, but which would avoid or substantially lessen any of the previously-identified significant effects of the Specific Plan. Specific Plan objectives are presented in Section 1.0, Project Description, of the Newhall Ranch Specific Plan and Water Reclamation Plan Revised Draft EIR (March 1999). The EIR is available for review at the Los Angeles County Department of Regional Planning, 320 West Temple Street, 13th Floor, Los Angeles, California. According to the CEQA *Guidelines*, the discussion of each alternative should be sufficient "to allow meaningful evaluation, analysis, and comparison with the proposed project." Therefore, the significant effects of each alternative will be discussed in less detail than those of the Specific Plan, but in enough detail to foster informed decision-making and public participation.

2.7.2 INTRODUCTION

As indicated in the Newhall Ranch Draft Additional Analysis (April 2001), and Chapter 2.6 of this revised Draft Additional Analysis, a rare plant species commonly known as the San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*; "spineflower") has been found on the Specific Plan site at three general locations, and at two offsite locations in the vicinity of Newhall Ranch. *See*, **Section 2.6** for a complete description of the characteristics and locations of the spineflower populations. In addressing potential significant impacts of the Specific Plan on various environmental topics, including sensitive biological resources, the original Draft EIR presented an analysis of a wide range of on- and off-site alternatives to the Specific Plan. Several of these alternatives focused specifically on reducing or eliminating the potential significant impacts of the Specific Plan on sensitive biological resources found on the Specific Plan site. During the litigation on the Newhall Ranch Final EIR, the project opponents argued that the analysis of alternatives presented in the EIR was inadequate. The trial court did not agree and found that the alternatives analysis was legally adequate and complete under CEQA and the CEQA *Guidelines*.

2.7.3 EXISTING SPECIFIC PLAN ALTERNATIVES

As indicated above, several of the EIR's on-site alternatives already addressed potentially significant impacts to sensitive biological resources. A brief summary of these on-site alternatives is presented below (*See*, Section 8.0, Project Alternatives, of the Revised Draft EIR (March 1999) for the full presentation of these alternatives).

- Alternative 1 – The No Project Alternative. This alternative is required by the CEQA *Guidelines*, and it compares the impacts, which might occur if the site is left in its present condition with those that would be generated by the proposed Specific Plan. Leaving the site in its present condition may not preclude impacts to on-site spineflower populations, as described further below in the "No Project Alternative" subsection;

- Alternative 2 – Site Buildout under the *Santa Clarita Valley Area Plan*. The purpose of this alternative is to describe the impacts of developing the site as allowed by the *Santa Clarita Valley Area Plan* and to compare such impacts with those generated by the Specific Plan. Under this alternative, approximately 2,070 dwelling units and 47,372 square feet of commercial space could be constructed on the Specific Plan site. Given that a substantially lesser amount of grading and its associated ground and habitat disturbance would occur with Alternative 2, and given that there would be a substantial reduction in site population with Alternative 2, the direct and indirect biological impact of Alternative 2 would be less than that of the Specific Plan. Development under Alternative 2 could occur within designated SEAs 20 and 23, but to a lesser degree and intensity than with the Specific Plan. However, grazing activities would continue with Alternative 2 in both SEAs. Also, the applicant has indicated that the Open Areas of the Specific Plan site, including the High Country and the River Corridor Special Management Areas, would not be dedicated to the public in perpetuity, but would remain in private ownership with no provision for public access. With regard to the spineflower specifically, direct disturbance due to development to known spineflower populations could be avoided under this alternative, thereby lessening potentially significant impacts to this plant species. However, as indicated above, cattle grazing would continue in areas containing the spineflower;

- Alternative 3 – The Clustered Alternative (Same Amount of Development as Specific Plan, Smaller Footprint). The primary purpose of this alternative is to minimize or avoid potentially significant biological impacts by reducing the development footprint of the Specific Plan. In doing so, many other impacts which could occur as a result of land surface disturbance (*e.g.*, impacts to cultural resources, geotechnical resources, fugitive dust impacts generated by grading, *etc.*) might also be reduced in magnitude by a reduction in the development footprint of the Specific Plan. Also, the reduction in Specific Plan footprint could also result in the avoidance, in whole or in part, of populations of spineflower, thereby lessening potentially significant impacts to that plant species;

- Alternative 4 – The 19,750 Unit Alternative (20 Percent Reduction in Development, Same Footprint). The primary purpose of this alternative is to minimize or avoid potentially significant traffic, air quality, noise, indirect biological, utility (*e.g.*, water demand, wastewater generation), and public service (*e.g.*, fire department, sheriff department) impacts by generally decreasing the amount of development on the site. Given that a lesser amount of grading and its associated ground and habitat disturbance would occur, and given that there would be a reduction in site population with Alternative 7, the biological impact of Alternative 7 would be less than that of the Specific Plan. This would include a reduction in the amount of direct ground

disturbance to areas containing spineflower populations, thereby lessening potentially significant impacts to that plant species;

- Alternative 5 – The 15,000 Unit Alternative (39 Percent Reduction in Development, Smaller Footprint). The primary purpose of this alternative is to avoid or minimize the potentially significant direct and indirect biological impacts created by the Specific Plan by reducing the amount of development and by reducing the footprint upon which such development would occur. In doing so, many other impacts which could occur as a result of site development, including impacts to spineflower populations, might also be reduced in magnitude. Given that a lesser amount of grading and its associated ground and habitat disturbance would occur, and given that there would be a substantial reduction in site population with Alternative 5, the biological impact of Alternative 5, including impacts to spineflower populations, would be less than that of the Specific Plan; and

- Alternative 6 – The 8,000 Unit Alternative (68 Percent Reduction in Development, Smaller Footprint). The primary purpose of this alternative is to avoid or minimize the potentially significant visual and biological impacts created by the Specific Plan. In doing so, many other impacts which could occur as a result of site development might also be reduced in magnitude. With the exception of the water reclamation plant, development under Alternative 6 would not occur within designated SEAs 20 and 23. Given that a substantially lesser amount of grading and its associated ground and habitat disturbance would occur, and given that there would be a substantial reduction in site population with Alternative 6, the biological impact of Alternative 6 would be less than that of the Specific Plan. With regard to the spineflower populations, potentially significant impacts created by development-related ground disturbance would be lessened.

In addition to the on-site alternatives, the EIR addressed several off-site alternatives to the Specific Plan. While it is not known whether or not the off-site alternative locations contain spineflower populations, it is certainly possible, given the presence of land suitable for its growth. Under such conditions, development of the Newhall Ranch Specific Plan on another site may simply be transferring potentially significant impacts to the spineflower to other locations, thereby not avoiding or lessening impacts to the species. If, on the other hand, off-site alternative locations do not maintain spineflower populations, significant impacts to the species caused by development on Newhall Ranch could be avoided by moving the proposed Specific Plan to another location. *See,* Revised Draft EIR Section 8.0.4, Off-site Alternatives to the Specific Plan, for a complete discussion of off-site alternatives.

2.7.4 ADDITIONAL SPECIFIC PLAN ALTERNATIVES

In keeping with CEQA's requirement that an EIR assess a range of reasonable alternatives to a project, and given the information regarding the spineflower located on the Specific Plan site and the potential for significant impacts to the plant, this Revised Draft Additional Analysis identifies an expanded analysis of "Alternative 1 - No Project Alternative", and provides three additional alternatives to the Specific Plan that are intended to further address potentially significant impacts to the spineflower.

These alternatives are referred to as "Alternative 7 – Spineflower Translocation Alternative", "Alternative 8 – Spineflower Avoidance Alternative I" and "Alternative 9 – Spineflower Avoidance Alternative II". Please note that Alternatives 2 through 6 were already adequately analyzed in the Newhall Ranch Revised Draft EIR (March 1999).

2.7.4.1 Alternative 1 – No Project Alternative

The No Project Alternative is required by the CEQA *Guidelines*, and it compares the impacts which might occur if the site is left in its present condition with those that would be generated by the proposed Specific Plan. The Specific Plan site is in a partially disturbed condition as a result of existing oil and natural gas operations, grazing, and on-going farming activities (*See*, refer to Newhall Ranch Revised Draft EIR, Section 2.0, Environmental and Regulatory Setting, for a detailed discussion of existing site conditions). Under the No Project Alternative, the Specific Plan site would remain as vacant land with on-going oil and natural gas operations; agricultural activities would remain along the Santa Clara River Corridor, on the mesas overlooking the River, and in the wider canyon bottoms; and cattle grazing would remain in Potrero Canyon, along the River, and in other upland and mountainous portions of the Specific Plan site. In addition, Southern California Edison Company and Southern California Gas Company would retain their on-site facilities and the site would continue to be used for motion picture filming.

Although nothing would change within the Specific Plan boundaries under this scenario, the disturbance associated with retaining existing uses on the site would continue. For instance, grazing and on-going farming activities on site would continue to disturb the soil surface and existing on-site vegetation. While such disturbances would continue with the No Project Alternative, they would be of lesser magnitude than the Specific Plan, although some areas that would be protected under the Specific Plan would continue to be disturbed under the No Project Alternative.

In addition, under the No Project Alternative, the applicant would continue with its farming/agricultural, grazing and oil and gas operations. The continuation of farming/agricultural operations could also legally intensify over most portions of Newhall Ranch. In particular, the spineflower population areas existing on Newhall Ranch could be converted legally to row crops or dry farming. Similarly, spineflower population areas could continue to be subject to on-going cattle grazing. On Newhall Ranch, the known spineflower populations occur in agricultural production areas, including farming and cattle grazing. In short, without implementation of the Specific Plan, including its revised mitigation program relating to the spineflower and other sensitive plant species, the on-site

spineflower populations could be lawfully damaged or otherwise destroyed in connection with existing and on-going agricultural/farming/grazing operations.

Based solely on environmental criteria, however, the No Project Alternative would be considered environmentally superior to the Specific Plan because the potential Specific Plan-related impacts described in Section 4.0 of Newhall Ranch Revised Draft EIR (March 1999) would not occur. However, by retaining the Specific Plan site under existing conditions, most of the applicant's Specific Plan objectives would not be met and, if development does not occur on the site, the anticipated future demand for housing[1] and commercial services would likely stimulate development elsewhere in the Santa Clarita Valley, including development in less accessible areas of the Valley with environmental resources that may be comparable to or of greater value than those found on the Specific Plan site.

The applicant has also indicated that, if the Specific Plan is not implemented as proposed and this alternative is implemented instead, the following would result:

- Neither the River Corridor (813 acres) nor the High Country (3,949.9 acres) would be preserved as Special Management Areas available for public use;
- Cattle grazing would continue in both the River Corridor and High Country; no trails would be constructed on the Specific Plan site, including the County-proposed River trail and the trail network proposed by the applicant as part of the Specific Plan;
- No additional restrictions would be placed on the public use of the River Corridor; the County *Master Plan of Highways* alignment of Commerce Center Drive would not be extended south to link with Magic Mountain Parkway by the applicant;
- Conservation of the Asistencia (San Fernando Mission Annex) site would not occur;
- No Metrolink rail right-of-way would be reserved through the site;
- No park-and-ride lot/Metrolink station site along SR-126 would be available on the site;
- No fire station would be constructed off Chiquito Canyon Road near the community of Val Verde;
- No golf course would be available;
- No recreational lake would be available for public use; and
- No additional tax revenue would be generated from the site.

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1 *See*, Southern California Association of Government population projections for project census tracts, Newhall Ranch Revised Draft EIR, Section 4.21, Population, Housing and Employment.

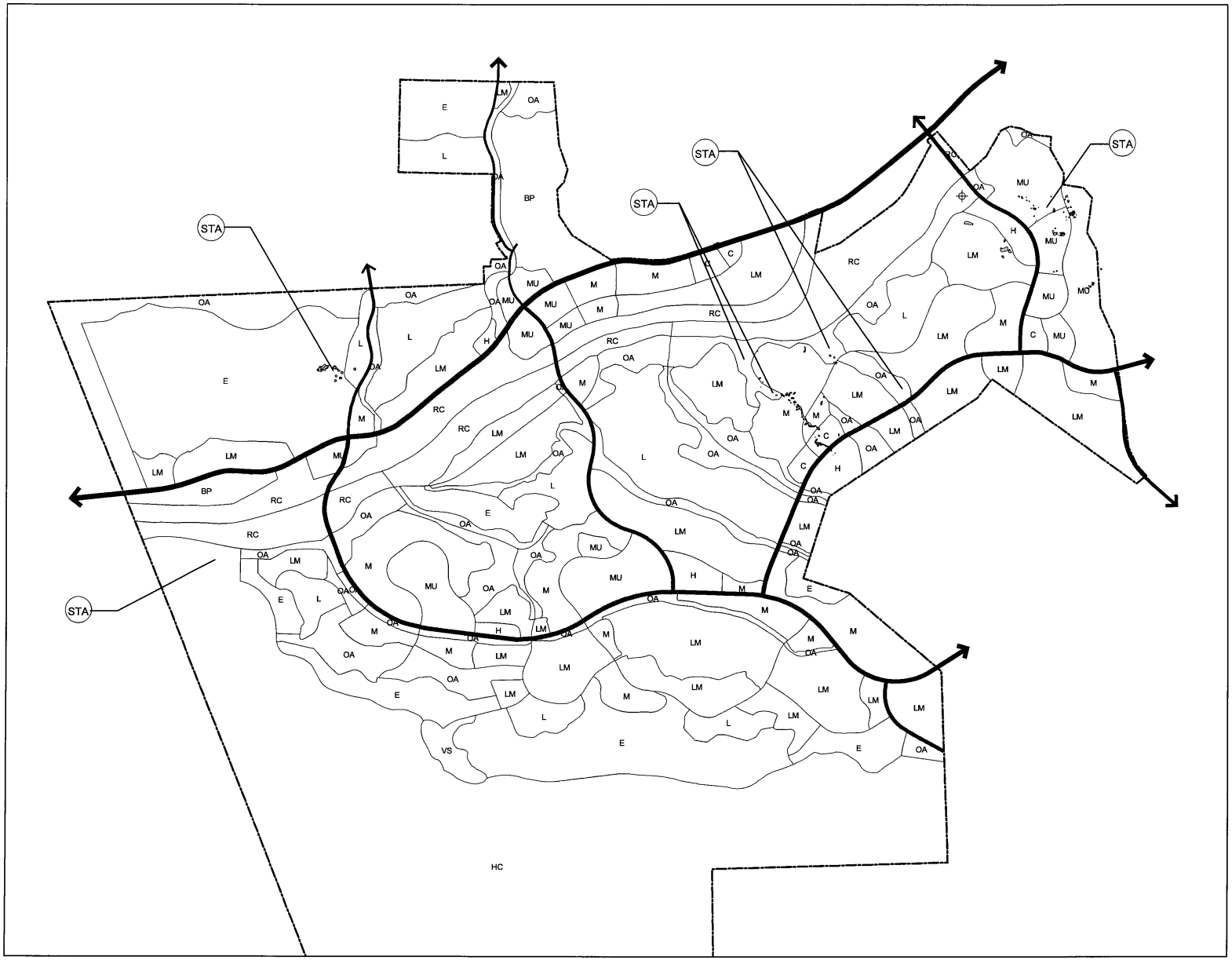
Because implementation of this alternative would not meet the applicant's objectives for the site and would likely just divert urban development from this site to another, the alternative is not considered acceptable.

2.7.4.2 Alternative 7 – Spineflower Translocation Alternative (Same Amount of Development, Spineflower Populations Translocated On-site)

The primary purpose of Alternative 7 is to avoid significant impacts to the on-site spineflower populations by actively translocating all known spineflower plants and seed bank to a location on the Specific Plan site suitable for spineflower growth, including the collection of top soils containing spineflower plants and seed bank, so that the top soil could be relocated to the same relocation area(s) as the translocated spineflower plants.

The basis for this alternative is found in the California Native Plant Protection Act (Fish and Game Code, Sections 1900-1913). The legal protection afforded to listed plant species under the agricultural exemption provided by the Native Plant Protection Act (Section 1913(a)) is a 10-day notice requirement to enable CDFG to "salvage" plants if CDFG has notified the landowner that a listed plant is growing on the property. During the 10-day advance notice period, CDFG may enter the property and salvage the plant through transplantation or translocation activities. Consistent with the legal protections afford by the Native Plant Protection Act, this alternative would protect all known on-site spineflower populations for ten days until CDFG salvages the plants through transplantation or translocation activities within the Specific Plan site.

Under Alternative 7, the Specific Plan site would be developed consistent with the Specific Plan Land Use Plan; the same amount of residential, commercial, industrial and other proposed land uses would occur on the site. However, as part of this alternative, several potential translocation areas are designated on the Specific Plan site as shown on **Figure 2.7-1**. The spineflower potentially impacted by implementation of the Specific Plan, without mitigation, presently occupy over 6 acres of land area. While the amount of land set aside for this purpose has not been quantified, given the overall size of the Newhall Ranch area, at least 24 acres of relocation area could be readily found in on-site locations suitable for this species (24 acres allows for a 4:1 replacement ratio).



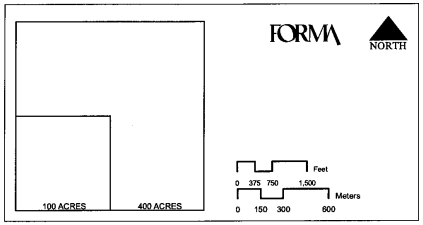
NEWHALL RANCH

L E G E N D

- LOS ANGELES SUNFLOWER
- SPINEFLOWER LOCATION
- STA — POTENTIAL SPINEFLOWER TRANSLOCATION AREAS

LAND USE CATEGORIES

- E — ESTATE RESIDENTIAL
- L — LOW DENSITY RESIDENTIAL
- LM — LOW-MEDIUM DENSITY RESIDENTIAL
- M — MEDIUM DENSITY RESIDENTIAL
- H — HIGH DENSITY RESIDENTIAL
- C — COMMERCIAL
- BP — BUSINESS PARK
- MU — MIXED USE
- VS — VISITOR SERVING
- OA — OPEN AREA
- RC — RIVER CORRIDOR
- HC — HIGH COUNTRY
- ROADS



2.7-1

ALTERNATIVE 7
SPINEFLOWER TRANSLOCATION ALTERNATIVE

Given that Alternative 7 would result in the same amount of development as the proposed Specific Plan, the direct and indirect impacts of Alternative 7 would be the same as the Specific Plan with the exception of potential impacts to the spineflower and other resources that may be located within the translocation area. Other features of Alternative 7 include:

- The translocation areas would be completely fenced to preclude direct intrusion impacts;
- The costs associated with the translocation alternative would be borne by the Specific Plan applicant;
- The land replacement area ratio of approximately 4:1 would allow enough setback space from development to minimize indirect impacts to the plant according to the study prepared by the Conservation Biology Institute (January 2000);
- The translocation process would be conducted under the direction of the project biologist, as approved by Los Angeles County, and under the supervision of Los Angeles County and with input and coordination from CDFG; and
- Land uses that would have been developed within the footprint of the translocation areas would be transferred to adjacent development areas consistent with the provisions of the Specific Plan.

If the proposed Specific Plan is not implemented and Alternative 7 is implemented instead, the following would also result:

- Both the River Corridor and the High Country would be preserved as Special Management Areas available for public use;
- Cattle grazing would no longer occur in both the River Corridor and High Country; trails would be constructed on the Specific Plan site, including the County-proposed River trail and the trail network proposed by the applicant as part of the Specific Plan;
- The County *Master Plan of Highways* alignment of Commerce Center Drive would be extended south to link with Magic Mountain Parkway;
- Potential for the possible conservation of the Asistencia (San Fernando Mission Annex) site would exist;
- A Metrolink rail right-of-way would be reserved through the site;
- A park-and-ride lot/Metrolink station site along SR-126 would be available on the site;
- A fire station would likely be constructed off Chiquito Canyon Road near the community of Val Verde; and
- Approximately the same amount of tax revenue would be generated on the site.

Conclusion

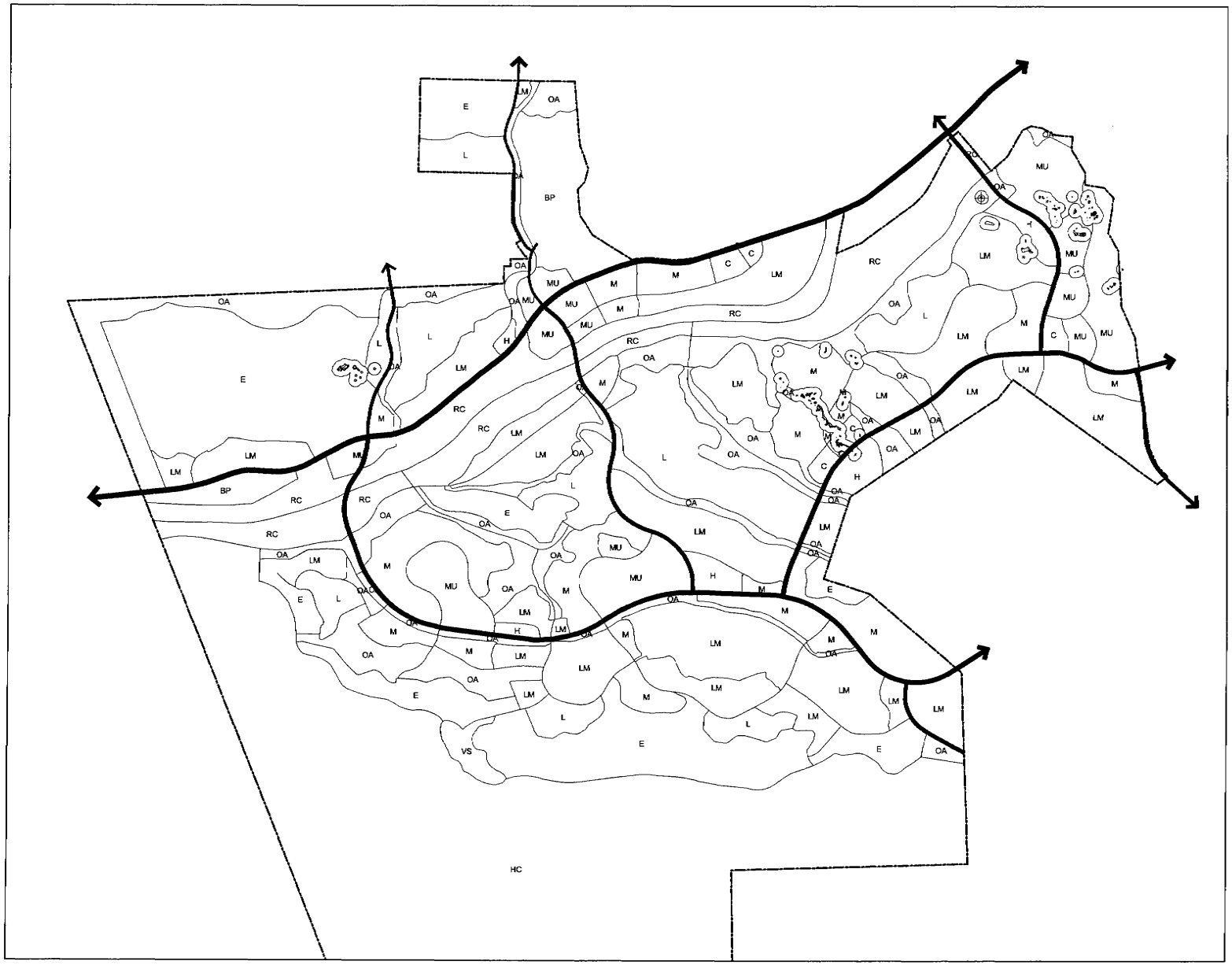
While all the Specific Plan objectives would be met with this alternative, Alternative 7 may not necessarily be considered environmentally superior to the Specific Plan with respect to spineflower impacts. While plants, along with the topsoil, would be salvaged and moved to areas containing spineflower plants collected and placed in translocation areas, temporary disturbance to most of the spineflower populations would occur during this process. In addition, some of the translocation areas would not have the same degree of connectivity to proposed open area that would occur under the Specific Plan. Conversely, the mitigation plan proposed as part of the Specific Plan would result in the direct preservation in place of significantly more of the known spineflower plant area and would result in several more mitigation features (*i.e.*, connectivity, buffering, providing hydrologic protection of spineflower areas, managing water flow, *etc.*) than would be provided under this Alternative. Consequently, Alternative 7 is not considered as favorable from a rare plant perspective as the Specific Plan.

2.7.4.3 Alternative 8 – Spineflower Avoidance Alternative I (21,182 Units, Four Percent Reduction in Residential Development, 13 Percent Reduction in Non-Residential Development, Smaller Footprint)

The primary purpose of Alternative 8 is to avoid or minimize the potentially significant direct and indirect biological impacts to the spineflower created by the Specific Plan by reducing the amount of development and by reducing the footprint upon which such development would occur. In doing so, many other impacts which could occur as a result of site development might also be reduced in magnitude. Alternative 8 proposes 21,182 Residential units, 5.24 million square feet of Commercial uses, a water reclamation plant, and a golf course (*See,* **Figure 2.7-2, Alternative 8 – Spineflower Avoidance Alternative I**). The total number of Residential units under Alternative 8 is four percent less than under the Specific Plan and the total non-residential square footage is 13 percent less. Other characteristics of Alternative 8 include:

- As shown in **Figure 2.7-2**, development would not occur at or near most areas that have known populations of spineflower. This alternative assumes that a minor "take", or impact, would occur to small spineflower populations that are isolated and/or would occur in other areas to allow for the construction of major infrastructure components, such as the extension of Magic Mountain Parkway through the site to future Potrero Canyon Road would impact the spineflower near Grapevine Mesa. In addition, many of the proposed spineflower mitigation measures proposed in **Section 2.6** would not occur (*See,* **(f) Biological Resources** below);

- Reduction in residential housing units from 22,038 to 21,182 (and associated loss of approximately 86 housing units for low and moderate income families), and reduction in commercial development from 5.72 million square feet to 5.24 million square feet (and associated loss of 1,887 jobs/employment);



NEWHALL RANCH

L E G E N D

- SUNFLOWER LOCATION
- SPINEFLOWER SINGLE PLANT LOCATIONS
- SPINEFLOWER LOCATIONS (w/ 150' Buffer)

LAND USE CATEGORIES

- E — ESTATE RESIDENTIAL
- L — LOW DENSITY RESIDENTIAL
- LM — LOW-MEDIUM DENSITY RESIDENTIAL
- M — MEDIUM DENSITY RESIDENTIAL
- H — HIGH DENSITY RESIDENTIAL
- C — COMMERCIAL
- BP — BUSINESS PARK
- MU — MIXED USE
- VS — VISITOR SERVING
- OA — OPEN AREA
- RC — RIVER CORRIDOR
- HC — HIGH COUNTRY
- ROADS

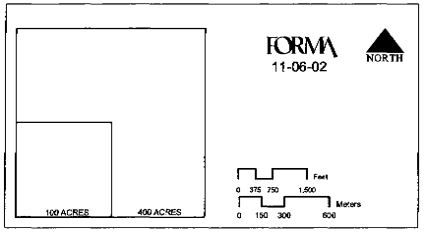


FIGURE 2.7-2

ALTERNATIVE 8
SPINEFLOWER AVOIDANCE
ALTERNATIVE I

- A reduction in development area from approximately 5,826 acres to 5,698 acres, resulting in an increase of Open Area from approximately 6,138 acres to 6,265 acres, and
- On-site population would decrease from 59,707 to 57,008.

The applicant has indicated that, if the Specific Plan is not implemented as proposed and Alternative 8 is implemented instead, the following would result:

- The High Country (3,949.9 acres) would not be designated as a Special Management Area;
- The River Corridor (813 acres) would still be dedicated;
- Cattle grazing would continue in the High Country;
- The only features relating to trails would be the provision of pedestrian and bicycle trails on major roadways only (except, however, trails proposed for Commerce Center Drive and Magic Mountain Parkway, which would be eliminated from the Specific Plan);
- No restrictions would be placed on the use of the River Corridor;
- No Metrolink rail right-of-way would be reserved through the site;
- No park-and-ride lot/Metrolink station site along SR-126 would be available on the site;
- No fire station would be constructed off Chiquito Canyon Road near the community of Val Verde; and
- No recreational lake would be available for public use; and less tax revenue would be generated on the site.

Table 2.7-1, Alternative 8 – Spineflower Avoidance Alternative I Statistical Summary provides a breakdown of the land uses and intensities proposed for Alternative 8.

Table 2.7-1
Alternative 8
Spineflower Avoidance Alternative I Statistical Summary

Land Uses		Gross Acres	Dwelling Units	Square Footage
Residential:				
Estates		1,314	419	
Second Units			419	
Low		750	668	
Low Medium		1,784	5,957	
Medium		827	7,382	
High		117	2,296	
	Subtotal	4,792	17,141	
Mixed-Use and Non-Residential:				
Mixed Use[1]		588	4,041	3,508,223
Commercial		62		438,625
Business Park		245		1,295,000
Water Reclamation Plant		11		
	Subtotal	906	4,041	5,241,848
Major Open Areas:		6,265		
	Totals	**11,963**	**21,182**	**5,241,848**

Source: FORMA (November2002).
[1]Mixed uses include Commercial and Residential uses.

It is assumed, for the sake of this impact analysis, that units under the Estate, Low, and Low-Medium Residential designation would be single-family detached units, and that units under the Mixed Use and Medium designations would be multi-family attached units. The following discussion compares the environmental impacts of Alternative 8 to those of the Specific Plan.

(a) Geotechnical and Soil Resources

Alternative 8 would have a smaller development footprint than the Specific Plan; grading in the eastern and western portion of the Mesas Village and in Riverwood north of SR-126 that would have occurred under the Specific Plan would not occur under Alternative 8. Development activity subject to the effects of seismic events would occur under Alternative 8. However, because site development under Alternative 8 would require less ground disturbance than the Specific Plan and would require less earth movement, from a geotechnical standpoint, Alternative 8 would be environmentally superior to the Specific Plan.

(b) Flood

Urban runoff that would be generated under Alternative 8 would be conveyed and discharged into the Santa Clara River. Like the Specific Plan, it is expected that implementation of Alternative 8 would

also reduce runoff quantities from the Specific Plan site from current runoff conditions by reducing the amount of debris in the runoff. However, because the Specific Plan would have more developed area than Alternative 8, the amount of debris in the runoff from the Specific Plan site would be more under Alternative 8 than under the Specific Plan and, therefore, so would total runoff quantities. Consequently, the Specific Plan is superior to Alternative 8.

With respect to runoff quality, development under Alternative 8 would be required to comply with the same Regional Water Quality Control Board standards as the Specific Plan and no environmentally superior alternative can be identified.

(c) Traffic/Access

Implementation of Alternative 8 would result in a decrease in trips. Specifically, average daily trip generation on the Specific Plan site would decrease from 334,000 trips to approximately 328,010 trips (a two percent decrease). Alternative 8 would decrease traffic impacts on local roadways, would require fewer roadway improvements off the Specific Plan site than the Specific Plan, and would be environmentally superior to the Specific Plan with respect to traffic/access impacts.

(d) Noise

With a reduction in the amount of development on the site and associated trip reduction would be a reduction in noise impacts on and in the vicinity of the site. The analysis presented in the Revised Draft EIR determined that only one off-site location within the vicinity of the Specific Plan site—the Travel Village RV Park—would be significantly impacted by Specific Plan-generated noise. A reduction in the Newhall Ranch traffic volumes of approximately two percent would reduce the noise level increase at the Travel Village RV Park; however, noise would still exceed the off-site mobile source thresholds of significance. Therefore, Alternative 8 would be environmentally superior to the Specific Plan with respect to noise impacts due to the overall reduction in noise levels generated by the Specific Plan.

(e) Air Quality

Because less on-site grading would occur under Alternative 8, the total amount of grading and construction-related air quality impacts would be less than those of the Specific Plan. In addition, Alternative 8 would generate less traffic than the Specific Plan. The effect of this reduction in building space and vehicle trips on air emissions is provided below.

Emissions Source	Emissions in Pounds per Day CO	VOC	NO_x	SO_x	PM_{10}
Proposed Specific Plan	17,575.7	835.6	3,015.6	315.9	43,185.6
Spineflower Avoidance Alternative I	17,260	821	2,962	310	42,412
Recommended SCAQMD Thresholds	550.0	55.0	55.0	150.0	150.0

Source: Impact Sciences, Inc., November2002.

As shown, Alternative 8 would generate fewer air emissions than the Specific Plan. Therefore, it would be environmentally superior to the Specific Plan with respect to air quality. The emissions generated by Alternative 8 would, however, exceed the thresholds recommended by the SCAQMD and, as with the Specific Plan, would be considered significant.

(f) Biological Resources

Table 2.7-2 compares the acreage of habitats impacted by Alternative 8 with that impacted by the Specific Plan. As shown, approximately 57.3 fewer acres of sensitive habitats are impacted by Alternative 8 in non-SEA areas. Impacts to sensitive habitats in SEAs 20 and 23 would remain unchanged. Given that a lesser amount of grading and its associated ground and habitat disturbance would occur, and given that there would be a reduction in site population with Alternative 8, the biological impact of Alternative 8 would generally be less than that of the Specific Plan.

Table 2.7-2
Comparison of Impact on Sensitive Habitats – Alternative 8

	W/Specific Plan (acres)	W/Alternative 8 (acres)	Net Change (acres)
Non-SEA Areas			
• Sensitive Habitats	2,313.3	2,256.0	(57.3)
• Other Habitats	2,970.9	2,925.3	(45.6)
Subtotal	5,284.2	5,181.3	(102.9)

Note: Impacts in SEAs 20 and 23 would remain unchanged under Alternative 8.

However, grazing activities would continue with Alternative 8 in the High Country SMA and in areas not within spineflower preserve boundaries. Also, the applicant has indicated that the Open Areas of the High Country Special Management Area would not be dedicated for public use, but would remain in

private ownership with no provision for public access. From a biological standpoint, the reduction in grading and avoidance of most on-site spineflower populations under Alternative 8 could environmentally outweigh the loss to the public of the High Country Special Management Area. However, this alternative also allows a "take", or impact, to occur to small spineflower populations that are isolated and/or in other areas to allow for the construction of major infrastructure components, such as the extension of Magic Mountain Parkway. When compared with the Specific Plan with the proposed mitigation to spineflower impacts presented in **Section 2.6**, the preserved spineflower populations under this alternative would not be connected to proposed open areas as proposed under the Specific Plan. Nor would other proposed mitigation measures occur. Specific measures proposed within ~~this~~ the revised Draft Additional Analysis that would not occur with this alternative include:

- the Agency consultation provisions proposed in **Section 2.6**;
- the provision of Spineflower Special Study Mitigation Overlays;
- the creation of managed preserves as described in **Section 2.6**;
- the connectivity and buffer provisions as described in **Section 2.6**;
- the provision for future engineering, design and grading review and modifications;
- the monitoring and management provisions as described in **Section 2.6**; and
- consultation provisions regarding on-going agricultural activities.

In effect, under Alternative 8 populations of spineflower would essentially be surrounded by proposed development within 150 feet with fencing to prohibit trespass, thereby eliminating any connection to open space areas and the active preserve management and consultation provisions proposed as mitigation in **Section 2.6**. Based on this information, Alternative 8 is not biologically superior to the Specific Plan with respect to impacts to the spineflower.

(g) Visual Qualities

Development intensities in the northeastern corner of the Specific Plan site along SR-126 and Commerce Center Drive would remain comparable to that of the Specific Plan, and visual impacts of this part of the site would remain essentially unchanged from that of the Specific Plan. However, because less development would be located along small portions of the bluffs south of the Santa Clara River than under the Specific Plan, slightly less development would be visible to travelers along SR-126. Alternative 8 was analyzed as follows based on the viewing location information provided in Section 4.7, Visual Qualities:

(1) Viewing Location 1 (west of the site in Ventura County, along SR-126 looking east)

Under Alternative 8, development would appear generally the same from a visual perspective. The changes in the Specific Plan design would not be visible from this viewing location. A water reclamation plant would also be constructed under Alternative 8 in the same location as under the Specific Plan and would have a visual impact comparable to that of the proposed plant. Because generally the same amount of development would be visible from this viewing location under Alternative 8 than under the Specific Plan, Alternative 8 would similar visual impacts than the Specific Plan, and would not be the environmentally superior alternative with respect to visual impacts from Viewing Location 1.

(2) Viewing Location 2 (on site, along SR-126 west of San Martinez Grande looking south)

Visual impacts from Viewing Location 2 would be similar under Alternative 8 than under the Specific Plan because the land uses changes shown in this alternative would not be visible from this location. Therefore, Alternative 8 is not environmentally superior to the Specific Plan with respect to visual impacts from Viewing Location 2.

(3) Viewing Location 3 (on site, near the SR-126/Chiquito Canyon Road intersection looking south)

Under the Specific Plan and Alternative 8, Low-Medium and Medium Residential development is proposed south of the River and at Long Canyon and would be visible in the foreground of this viewshed. Mid-ground development under Alternative 8 would be visible to the same extent that it would be visible under the Specific Plan. However, the background view to the east of the Grapevine Mesa area in the Mesas Village might appear slightly less intense due to the fact that some land uses would be removed from this portion of the Specific Plan site in order to preserve in place spineflower populations. Therefore, Alternative 8 would have slightly less of a visual impact than the Specific Plan and would be environmentally superior to the Specific Plan with respect to visual impacts from Viewing Location 3.

(4) Viewing Location 4 (at the northern site boundary on Chiquito Canyon Road looking south)

Under the Specific Plan, the proposed Business Park, Medium Residential development along Chiquito Canyon Road, and Low-Medium and Low Residential development south of the River would be visible from Viewing Location 4. The Business Park, Residential development along Chiquito Canyon Road,

and Low Residential development south of the River would also be visible from this viewing location under Alternative 8. The Low-Medium Residential development proposed south of the River at Long Canyon would also still occur under this development scheme, and the same amount of Residential development south of the River would be visible in the distance under Alternative 8. Due to the extent of development still visible from this location, no noticeable visible change would occur under Alternative 8.

(5) Viewing Location 5 (on site, along SR-126 on the west side of Castaic Creek looking south)

Although development would occur within this viewshed under Alternative 8, it would be slightly less intensive than under the Specific Plan. For instance, some of the Medium Residential development proposed in this viewshed south of the Santa Clara River would be replaced with the Open Area land use designation to preserve spineflower populations. To the east south of the river in the Airport Mesa portion of the Mesas Village, some of the Mixed-Use, High Residential and Low-Medium Residential areas would also be replaced with the Open Area land use designation. (*See*, **Figure 2.7-2, Alternative 8 – Spineflower Avoidance Alternative**). Because development intensities visible from Viewing Location 5 would be slightly less under Alternative 8 than under the Specific Plan, visual impacts would be less, making Alternative 8 environmentally superior to the Specific Plan with respect to visual impacts from Viewing Location 5.

(6) Viewing Location 6 (off site, generally from the SR-126/I-5 Interchange looking west and southwest toward site)

Mixed use development south of the Santa Clara River in the Airport Mesa area would be slightly less visible from Viewing Location 6 under the Specific Plan and under Alternative 8. This is because some of the Mixed Use development would be replaced with the Open Area designation to preserve spineflower populations. The same would be the case further to the west in the Grapevine Mesa area as some visible Medium Residential land uses would be replaced with Open Area Therefore, the degree of visual impact under Alternative 8 would be slightly less than under the Specific Plan, making Alternative 8 marginally environmentally superior to the Specific Plan with respect to visual impacts from this viewing location.

(7) Viewing Locations 7, 8, and 9 (off site, generally from Interstate 5 and points east, looking west and southwest toward site)

Some of the Mixed-Use development at the Airport Mesa area that would appear in the viewshed of Viewing Locations 7, 8, and 9 would be replaced under Alternative 8 with Open Area as spineflower

populations are preserved. Therefore, Alternative 8 would be environmentally superior to the Specific Plan with respect to visual impacts from this viewing location.

(8) Viewing Location 10 (Off Site, from the Rim of the Valley Trail, looking north toward site)

Views from the Rim of the Valley trail would be visually slightly less intense in appearance under Alternative 8 when compared with the Specific Plan, because any reductions in development at the Airport Mesa and Grapevine Mesa areas would be so slight in appearance (given the distance between the trail and the development area) as to be visually imperceptible.

(9) Conclusion of Visual Comparison

Because portions of the Newhall Ranch Specific Plan visible from highly traveled visual corridors would have development replaced with Open Area under Alternative 8, this alternative would be environmentally superior to the Specific Plan.

(h) Cultural/Paleontological Resources

Because less ground disturbance would occur under Alternative 8, potential impacts to cultural and paleontological resources on the Specific Plan site would be less under Alternative 8 than if the Specific Plan were to develop as proposed. Therefore, Alternative 8 is environmentally superior with respect to cultural resources.

(i) Wastewater Disposal

The Specific Plan would generate 6.9 mgd of wastewater, while wastewater generation for Alternative 8 would be approximately 6.5 million gallons per day (mgd), all of which would be treated at an on-site water reclamation plant. Assuming that the on-site plant would be sized to treat all wastewater from Alternative 8, neither the Specific Plan nor Alternative 8 would have a significant impact relative to the treatment infrastructure. However, Alternative 8 would be environmentally superior to the Specific Plan with respect to wastewater disposal because less treated wastewater would be generated.

(j) Water Resources

Water demand for Alternative 8 would be approximately 16,860 acre-feet per year, including a potable water demand of 8,010 and a non-potable water demand of 8,850 acre-feet per year, respectively. The

Specific Plan total water demand would be approximately 17,680 acre-feet per year, including a potable water demand of 8,645 and a non-potable water demand of 9,035 acre-feet per year, respectively. The decrease in residential units and non-residential development would decrease water demand under this alternative by approximately five percent. Because this alternative would consume less water from potable water resources than the Specific Plan, it would be environmentally superior to the Specific Plan with respect to impacts on potable water resources.

(k) Education

Alternative 8 would generate approximately 8,428 students as compared to the 8,780 students that would be generated by the Specific Plan. Therefore, Alternative 8 is environmentally superior to the Specific Plan with respect to school impacts.

(l) Natural Gas/Electricity

Implementation of both the Specific Plan and Alternative 8 would require the use and expenditure of nonrenewable petroleum resources. Alternative 8 would consume approximately four to nine percent less petroleum resources than the Specific Plan. Although these energy resources are commercially available, Alternative 8 would consume less petroleum-based energy resources than the Specific Plan and would be environmentally superior to the Specific Plan.

(m) Police Services

Because less development would occur on the site under Alternative 8 and a smaller on-site population would result, it is expected that Alternative 8 would have less of an impact on the Sheriff's Department than the Specific Plan. For the same reasons, Alternative 8 would also have smaller demands for CHP and emergency services in the area of the Specific Plan site. As a result, Alternative 8 would be environmentally superior to the Specific Plan with respect to police services.

(n) Fire Services and Hazards

Because, Alternative 8 would result in less development and a smaller population on the Specific Plan site than would occur under the Specific Plan, there would be fewer Fire Department calls to the site than under the Specific Plan. Therefore, with respect to providing fire services to the Specific Plan site, Alternative 8 is environmentally superior to the Specific Plan.

(o) Environmental Safety

As discussed in Revised Draft EIR Section 4.5, Environmental Safety, potential impacts may result on the Specific Plan site if development occurs in the following locations:

- adjacent to historic and continuing oil and natural gas operations,
- in close proximity to the Southern California Edison electrical transmission lines,
- in close proximity to the Southern California Gas Company high pressure gas lines,
- adjacent to State Route 126, upon which hazardous wastes are transported,
- in close proximity to Chiquito Canyon Landfill,
- within the Castaic Lake dam inundation area, and
- adjacent to on-going agricultural operations.

The safety conditions under which Alternative 8 would be developed would be similar to those with development of the Specific Plan. The primary difference between development of Alternative 8 would be a reduction in site population, particularly in areas used in the past for oil and natural gas production. This results in less exposure to potential hazards, as unlikely as their occurrence might be. For this reason, Alternative 8 is superior environmentally to the Specific Plan with respect to environmental safety.

(p) Libraries

Based on County Library planning standards of 0.35 square feet of library facilities per capita and 2.0 books per capita, the Specific Plan would require a total of 20,897square feet of library facilities with 119,414 additional volumes for the library system's collection. In comparison, development under Alternative 8 would, according to County Library standards, require 19,953 square feet of library facilities and 114,017 volumes. Development under Alternative 8 would have less of an impact on County Library facilities than would the Specific Plan and would be environmentally superior to the Specific Plan.

(q) Parks, Recreation and Trails

Under County (and Quimby Act) requirements, development of the Specific Plan would require the applicant to provide 246 dedicated acres of local parkland; the Specific Plan as proposed would exceed

this requirement, by a total of 6,175 acres for parks, recreation, and Open Area, including Neighborhood and Community Parks, a 15-acre lake, an 18-hole golf course, trails, the River Corridor and High Country SMAs, and other Open Area (*See*, Revised Draft EIR Section 4.20, Parks, Recreation and Trails for a full discussion on this topic). Per County requirements, development under Alternative 8 would require dedication of a total of approximately 235 acres for parkland. The applicant has indicated that just the River Corridor, and not the High Country, would be preserved for public use under Alternative 8. Because the Specific Plan would provide more on-site recreational land than would Alternative 8, the Specific Plan would be environmentally superior to Alternative 8.

(r) Population, Housing and Employment

(1) Population

Development of the Newhall Ranch would result in a resident population of 59,707 at buildout. This population is within SCAG's 1994 growth projections for the area, but not the County's 1990 projections (*See*, Revised Draft EIR Section 4.21, Population, Housing and Employment for further discussion). Alternative 8 would result in approximately 57,008 persons on the Newhall Ranch site. This population is well within SCAG's 1994 growth projections for the region, but not the County's 1990 projections.

(2) Housing

Alternative 8 includes 21,182 dwelling units ranging in intensity from Estate to Medium Residential; however, Alternative 8 includes a sizable reduction in the amount of High Residential development (the number of High Residential units is reduced by 532 units to 6,337 units) and in the amount of Medium Residential development (the number of Medium Residential units is reduced by 270 units to 7,382 units). This housing is consistent with SCAG's 1994 adopted forecasts for the region, but not the County's 1990 forecast (*See*, Revised Draft EIR Section 4.21 for further discussion). Therefore, these units are part of SCAG's planned growth of the area, but not the existing County's projections.

However, because the Specific Plan would include a greater number of High and Medium Residential units than Alternative 8, the Specific Plan would provide a wider range of housing units that would serve a broader range of socioeconomic groups than Alternative 8. A reduction in the amount of High and Medium Residential units with Alternative 8 would also result in a decrease in the amount of affordable housing units on the site and in the region.

(3) Employment

Development of the Newhall Ranch would result in an employment population of 19,226. Development consistent with Alternative 8 would generate 17,436 on-site employment opportunities. SCAG forecasts 17,500 jobs for 2015 in the census tracts that overlie the Specific Plan site; therefore, the Specific Plan's estimated employment exceeds SCAG's forecast, but Alternative 8 would provide fewer jobs than the SCAG forecast. The Santa Clarita Valley has been identified by SCAG as an area in need of additional employment opportunities. Under Alternative 8, the jobs to housing ratio would be increased from 0.78 to 0.82, which is more job rich than the Specific Plan. However, the Specific Plan provides 1,790 more jobs than does Alternative 8. Consequently, from an employment standpoint, the Specific Plan is superior to Alternative 8.

As with the Specific Plan, the population, housing and employment generated by Alternative 8 do not fall within the County's 1990 projections. However, SCAG projects much more growth in this area than does the County. As would the Specific Plan, Alternative 8 would require a General Plan Amendment. Given the differences between County projections and SCAG projections, the dates of those projections (1990 and 1994, respectively), and the implications to population and housing forecasts resulting from each, no environmental preference with respect to population and housing can necessarily be concluded.

(s) Solid Waste Disposal

At buildout, the Specific Plan would generate approximately 47,741 tons of solid waste per year. In comparison, Alternative 8 would generate approximately 45,354 tons of solid waste annually. Alternative 8 would also generate smaller amounts of bio-solids resulting from the wastewater treatment process. Given the smaller solid waste generation totals associated with Alternative 8, implementation of Alternative 8 would be environmentally superior to the Specific Plan with respect to solid waste disposal.

(t) Agricultural Resources

There are 547 acres of prime farmland and 48 acres of unique farmland on the Specific Plan site. Development of the site consistent with the Specific Plan would result in the loss of this land to urban uses. Development of the site under Alternative 8 would permit development in areas of the site that are designated as prime farmland and unique farmland (specifically, development would occur on prime farmland north and south of SR-126, west of Chiquito Canyon Road, north of Potrero Canyon just south of the River, and on Potrero Mesa, and would occur on unique farmlands of importance located north of

Potrero Canyon just south of the River). However, development would occur on fewer acres of farmland under Alternative 8 than would the Specific Plan because farming activity on the Grapevine and Airport Mesa areas of the site would no longer occur in some areas in order to preserve populations of the spineflower. Therefore, Alternative 8 is environmentally superior to the Specific Plan with respect to the loss of agricultural land.

In general, the conversion of prime agricultural land is irreversible and is, therefore, considered an unavoidable significant impact. However, in light of the continuing trend by the County of Los Angeles to convert cultivated lands to urban uses to accommodate growth, and the fact that the prime agricultural land on the Specific Plan site is already impaired (*i.e.*, relatively difficult and less economical to farm) and is, therefore, generally of lower value than larger and better situated parcels found to the west, the loss of agricultural productivity on prime agricultural land under such circumstances is not considered a significant impact. Thus, there is no environmentally superior alternative with respect to loss of agricultural productivity on the Specific Plan site.

Conclusion

Because some of the environmental impacts of the Specific Plan would be avoided or minimized with Alternative 8, it is environmentally superior to the Specific Plan in some respects (*e.g.*, air quality impacts, traffic impacts, noise impacts, etc). However, Alternative 8 has been rejected in favor of the Specific Plan because Alternative 8 too narrowly limits the range of housing opportunities provided and because many of the basic objectives of the Specific Plan identified in the Project Description of this EIR (Revised Draft EIR Section 1.0) would not be achieved (*See*, information presented below for examples). In addition, when compared with the Specific Plan with the proposed mitigation to spineflower impacts, the preserved spineflower populations under this alternative would not be connected to proposed open areas as proposed under the Specific Plan. In addition, grazing activities would continue with Alternative 8 in the High Country SMA and in areas not within spineflower preserve boundaries. Also, the applicant has indicated that the Open Areas of the High Country Special Management Area would not be dedicated for public use, but would remain in private ownership with no provision for public access. From a biological standpoint, the reduction in grading and avoidance of most on-site spineflower populations under Alternative 8 could environmentally outweigh the loss to the public of the High Country Special Management Area. However, this alternative also allows a "take", or impact, to occur to small spineflower populations that are isolated and/or in other areas to allow for the construction of major infrastructure components, such as the extension of Magic Mountain Parkway. When compared with the Specific Plan with the proposed mitigation to spineflower impacts presented in **Section 2.6**, the preserved spineflower populations would not be

connected to proposed open areas as proposed under the Specific Plan. Nor would other proposed mitigation measures occur. Specific measures proposed within this Revised Draft Additional Analysis that would not occur with this alternative include:

- the Agency consultation provisions proposed in **Section 2.6**;
- the provision of Spineflower Special Study Mitigation Overlays;
- the creation of managed preserves as described in **Section 2.6**;
- the connectivity and buffer provisions as described in **Section 2.6**;
- the provision for future engineering, design and grading review and modifications;
- the monitoring and management provisions as described in **Section 2.6**; and
- consultation provisions regarding on-going agricultural activities.

In effect, under Alternative 8 populations of spineflower would essentially be surrounded by proposed development within 150 feet with fencing to prohibit trespass, thereby eliminating any connection to open space areas and the active preserve management and consultation provisions proposed as mitigation in **Section 2.6**. Based on this information, Alternative 8 is not biologically superior to the Specific Plan with respect to impacts to the spineflower.

Other Specific objectives not met or impeded to some extent with Alternative 8 are listed below:

- Provide a complementary and supportive array of land uses which will enable development of a community with homes, shopping, employment, schools, recreation, cultural and worship facilities, public services, and open space.
- Establish land uses and development regulations which permit a wide range of housing densities, types, styles, prices, and tenancy (for sale and rental).
- Adopt development regulations which provide flexibility to respond to and adjust to changing economic and market conditions over a long period of time.
- Retain a major public open space area which could act as a regional recreational park.
- Provide an extensive system of pedestrian, bicycle, and hiking trails within the Villages and hiking trails in the High Country and other open areas.
- Preserve the Santa Clara River corridor and adjacent uplands containing significant natural resources for their resource value, open space, and recreational use.
- Retain a major open space area and its natural vegetation as a wildlife or ecological preserve.

For all the reasons provided above, Alternative 8 has been rejected in favor of the proposed Specific Plan as mitigated.

2.7.4.4 Alternative 9 – Spineflower Avoidance Alternative II (20,281 Units, Eight Percent Reduction in Residential Development, 20 Percent Reduction in Non-Residential Development, Smaller Footprint)

The primary purpose of Alternative 9 is to avoid or minimize the potentially significant direct and indirect biological impacts to the spineflower created by the Specific Plan by reducing the amount of development and by reducing the footprint upon which such development would occur. In doing so, many other impacts which could occur as a result of site development might also be reduced in magnitude. Alternative 9 proposes 20,281 Residential units, 4.98 million square feet of Commercial uses, a water reclamation plant, and a golf course (*See*, **Figure 2.7-3, Alternative 9 – Spineflower Avoidance Alternative II**). The total number of Residential units under Alternative 9 is eight percent less than under the Specific Plan and the total non-residential square footage is 20 percent less. Other characteristics of Alternative 9 include:

- As shown in **Figure 2.7-3**, development would not occur at or near most areas that have known populations of spineflower. This alternative assumes that a minor "take", or impact, would occur to small spineflower populations that are isolated and/or would occur in other areas to allow for the construction of major infrastructure components (*e.g.*, construction of the Magic Mountain Parkway extension through the site to future Potrero Canyon Road would impact the spineflower near Grapevine Mesa.). In addition, many of the proposed spineflower mitigation measures in **Section 2.6** would not occur (*See*, **(f) Biological Resources** below);
- Reduction in residential housing units from 22,038 to 20,281 (and associated loss of approximately 176 housing units for low and moderate income families), and reduction in commercial development from 5.72 million square feet to 4.98 million square feet (and associated loss of 2,741 jobs/employment);
- Reduction in development area from approximately 5,826 acres to 5,567 acres, resulting in an increase of Open Area from approximately 6,138 acres to 6,396 acres, and
- On-site population would decrease from 59,707 to 54,775.

The applicant has indicated that, if the Specific Plan is not implemented as proposed and Alternative 9 is implemented instead, the following would result:

- The High Country (3,949.9 acres) would not be designated as a Special Management Area;
- The River Corridor (813 acres) would still be dedicated;
- Cattle grazing would continue in the High Country;

- The only features relating to trails would be the provision of pedestrian and bicycle trails on major roadways only (except, however, trails proposed for Commerce Center Drive and Magic Mountain Parkway, which would be eliminated from the Specific Plan);
- No restrictions would be placed on the use of the River Corridor;
- No Metrolink rail right-of-way would be reserved through the site;
- No park-and-ride lot/Metrolink station site along SR-126 would be available on the site;
- No fire station would be constructed off Chiquito Canyon Road near the community of Val Verde; and
- No recreational lake would be available for public use; and less tax revenue would be generated on the site.

Table 2.7-3, Alternative 9 – Spineflower Avoidance Alternative II Statistical Summary provides a breakdown of the land uses and intensities proposed for Alternative 9.

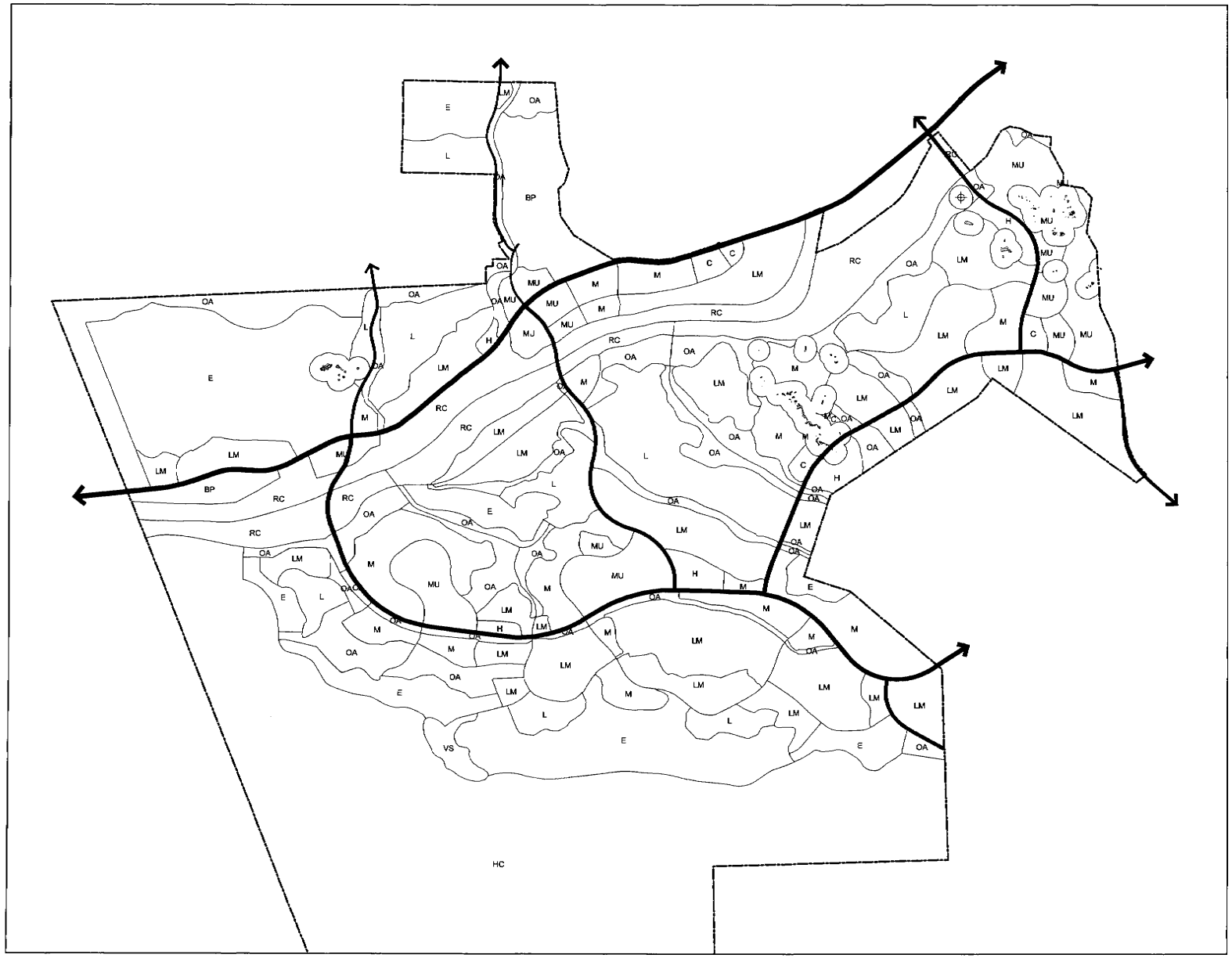
Table 2.7-3
Alternative 9
Spineflower Avoidance Alternative II Statistical Summary

Land Uses	Gross Acres	Dwelling Units	Square Footage
Residential:			
Estates	1,305	416	
Second Units		416	
Low	736	664	
Low Medium	1,769	5,914	
Medium	792	7,068	
High	108	2,151	
Subtotal	4,710	16,629	
Mixed-Use and Non-Residential:			
Mixed Use[1]	550	3,652	3,309,698
Commercial	51		379,221
Business Park	245		1,295,000
Water Reclamation Plant	11		
Subtotal	857	3,652	4,983,919
Major Open Areas:	6,396		
Totals	**11,963**	**20,281**	**4,983,919**

Source: FORMA (November2002).
[1] *Mixed uses include Commercial and Residential uses.*

It is assumed, for the sake of this impact analysis, that units under the Estate, Low, and Low-Medium Residential designation would be single family detached units, and that units under the Mixed Use and

Figure 2.7-3, Alternative 9, Spineflower Avoidance Alternative II.



NEWHALL RANCH

L E G E N D

- LOS ANGELES SUNFLOWER
- SPINEFLOWER LOCATION (w/ 300' Buffer)

LAND USE CATEGORIES

- E — ESTATE RESIDENTIAL
- L — LOW DENSITY RESIDENTIAL
- LM — LOW-MEDIUM DENSITY RESIDENTIAL
- M — MEDIUM DENSITY RESIDENTIAL
- H — HIGH DENSITY RESIDENTIAL
- C — COMMERCIAL
- BP — BUSINESS PARK
- MU — MIXED USE
- VS — VISITOR SERVING
- OA — OPEN AREA
- RC — RIVER CORRIDOR
- HC — HIGH COUNTRY
- ROADS

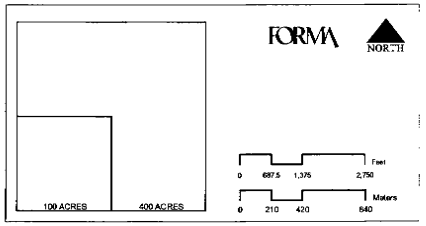


Figure 2.7- 3

ALTERNATIVE 9
SPINEFLOWER AVOIDANCE
ALTERNATIVE II

Medium designations would be multi-family attached units. The following discussion compares the environmental impacts of Alternative 9 to those of the Specific Plan.

(a) Geotechnical and Soil Resources

Alternative 9 would have a smaller development footprint than the Specific Plan; grading in the eastern and western portion of the Mesas Village and in Riverwood north of SR-126 that would have occurred under the Specific Plan would not occur under Alternative 9. Development activity subject to the effects of seismic events would occur under Alternative 9. However, because site development under Alternative 9 would require less ground disturbance than the Specific Plan and would require less earth movement, from a geotechnical standpoint, Alternative 9 would be environmentally superior to the Specific Plan.

(b) Flood

Urban runoff that would be generated under Alternative 9 would be conveyed and discharged into the Santa Clara River. Like the Specific Plan, it is expected that implementation of Alternative 9 would also reduce runoff quantities from the Specific Plan site from current runoff conditions by reducing the amount of debris in the runoff. However, because the Specific Plan would have more developed area than Alternative 9, the amount of debris in the runoff from the Specific Plan site would be more under Alternative 9 than under the Specific Plan and, therefore, so would total runoff quantities. Consequently, the Specific Plan is superior to Alternative 9.

With respect to runoff quality, development under Alternative 9 would be required to comply with the same Regional Water Quality Control Board standards as the Specific Plan and no environmentally superior alternative can be identified.

(c) Traffic/Access

Implementation of Alternative 9 would result in a decrease in trips. Specifically, average daily trip generation on the Specific Plan site would decrease from 334,000 trips to approximately 310,897 trips (a seven percent decrease). Alternative 9 would decrease traffic impacts on local roadways, would require fewer roadway improvements off the Specific Plan site than the Specific Plan, and would be environmentally superior to the Specific Plan with respect to traffic/access impacts.

(d) Noise

With a reduction in the amount of development on the site and associated trip reduction would be a reduction in noise impacts on and in the vicinity of the site. The analysis presented in the Revised Draft EIR determined that only one off-site location within the vicinity of the Specific Plan site - the Travel Village RV Park - would be significantly impacted by Specific Plan-generated noise. A reduction in the Newhall Ranch traffic volumes of approximately seven percent would reduce the noise level increase at the Travel Village RV Park; however, noise would still exceed the off-site mobile source thresholds of significance. Therefore, Alternative 9 would be environmentally superior to the Specific Plan with respect to noise impacts due to the overall reduction in noise levels generated by the Specific Plan.

(e) Air Quality

Because less on-site grading would occur under Alternative 9, the total amount of grading and construction-related air quality impacts would be less than those of the Specific Plan. In addition, Alternative 9 would generate less traffic than the Specific Plan. The effect of this reduction in building space and vehicle trips on air emissions is provided below.

Emissions Source	Emissions in Pounds per Day				
	CO	VOC	NO_x	SO_x	PM_{10}
Proposed Specific Plan	17,575.7	835.6	3,015.6	315.9	43,185.6
Spineflower Avoidance Alternative II	16,359	778	2,807	294	40,199
Recommended SCAQMD Thresholds	550.0	55.0	55.0	150.0	150.0

Source: Impact Sciences, Inc., November 2002.

As shown, Alternative 9 would generate fewer air emissions than the Specific Plan. Therefore, it would be environmentally superior to the Specific Plan with respect to air quality. The emissions generated by Alternative 9 would, however, exceed the thresholds recommended by the SCAQMD and, as with the Specific Plan, would be considered significant.

(f) Biological Resources

Table 2.7-4 compares the acreage of habitats impacted by Alternative 9 with that impacted by the Specific Plan. As shown, approximately 112.3 fewer acres of sensitive habitats are impacted by Alternative 9 in non-SEA areas. Impacts to sensitive habitats in SEAs 20 and 23 would remain

unchanged. Given that a lesser amount of grading and its associated ground and habitat disturbance would occur, and given that there would be a reduction in site population with Alternative 9, the biological impact of Alternative 9 would generally be less than that of the Specific Plan.

Table 2.7-4
Comparison of Impact on Sensitive Habitats – Alternative 9

	W/Specific Plan (acres)	W/Alternative 9 (acres)	Net Change (acres)
Non-SEA Areas			
• Sensitive Habitats	2,313.3	2,201	(112.3)
• Other Habitats	2,970.9	2,862.6	(108.3)
Subtotal	5,284.2	5,063.6	(220.6)

Note: Impacts in SEAs 20 and 23 would remain unchanged under Alternative 9.

However, grazing activities would continue with Alternative 9 in the High Country SMA and in areas not within spineflower preserve boundaries. Also, the applicant has indicated that the Open Areas of the High Country Special Management Area would not be dedicated for public use, but would remain in private ownership with no provision for public access. From a biological standpoint, the reduction in grading and avoidance of most on-site spineflower populations under Alternative 9 could environmentally outweigh the loss to the public of the High Country Special Management Area. However, this alternative also allows a "take", or impact, to occur to small spineflower populations that are isolated and/or in other areas to allow for the construction of major infrastructure components, such as the extension of Magic Mountain Parkway. When compared with the Specific Plan with the proposed mitigation to spineflower impacts presented in **Section 2.6**, the preserved spineflower populations would provide a small degree of connectivity to open areas. However, the degree of connectivity would not be as great as would occur with the mitigation proposed for the Specific Plan. Nor would other proposed mitigation measures occur. Specific measures proposed within ~~this~~ the Draft Additional Analysis that would not occur with this alternative include:

- the Agency consultation provisions proposed in **Section 2.6**;
- the provision of Spineflower Special Study Mitigation Overlays;
- the creation of managed preserves as described in **Section 2.6**;
- the connectivity and buffer provisions as described in **Section 2.6**;
- the provision for future engineering, design and grading review and modifications;
- the monitoring and management provisions as described in **Section 2.6**; and
- consultation provisions regarding on-going agricultural activities.

In effect, under Alternative 9 populations of spineflower would essentially be surrounded by proposed development within 300 feet with fencing to prohibit trespass, thereby eliminating most connections to open space areas and all the active preserve management and consultation provisions proposed as mitigation in **Section 2.6**. Based on this information, Alternative 9 is not biologically superior to the Specific Plan with respect to impacts to the spineflower.

(g) Visual Qualities

Development intensities in the northeastern corner of the Specific Plan site along SR-126 and Commerce Center Drive would remain comparable to that of the Specific Plan, and visual impacts of this part of the site would remain essentially unchanged from that of the Specific Plan. However, because less development would be located along small portions of the bluffs south of the Santa Clara River than under the Specific Plan, slightly less development would be visible to travelers along SR-126. Alternative 9 was analyzed as follows based on the viewing location information provided in Section 4.7, Visual Qualities:

(1) Viewing Location 1 (west of the site in Ventura County, along SR-126 looking east)

Under Alternative 9, development would appear generally the same from a visual perspective. The changes in the Specific Plan design would not be visible from this viewing location. A water reclamation plant would also be constructed under Alternative 9 in the same location as under the Specific Plan and would have a visual impact comparable to that of the proposed plant. Because generally the same amount of development would be visible from this viewing location under Alternative 9 than under the Specific Plan, Alternative 9 would similar visual impacts than the Specific Plan, and would not be the environmentally superior alternative with respect to visual impacts from Viewing Location 1.

(2) Viewing Location 2 (on site, along SR-126 west of San Martinez Grande looking south)

Visual impacts from Viewing Location 2 would be similar under Alternative 9 than under the Specific Plan because the land uses changes shown in this alternative would not be visible from this location. Therefore, Alternative 9 is not environmentally superior to the Specific Plan with respect to visual impacts from Viewing Location 2.

(3) Viewing Location 3 (on site, near the SR-126/Chiquito Canyon Road intersection looking south)

Under the Specific Plan and Alternative 9, Low-Medium and Medium Residential development is proposed south of the River and at Long Canyon and would be visible in the foreground of this viewshed. Mid-ground development under Alternative 9 would be visible to the same extent that it would be visible under the Specific Plan. However, the background view to the east of the Grapevine Mesa area in the Mesas Village might appear slightly less intense due to the fact that some land uses would be removed from this portion of the Specific Plan site in order to preserve in place spineflower populations. Therefore, Alternative 9 would have slightly less of a visual impact than the Specific Plan and would be environmentally superior to the Specific Plan with respect to visual impacts from Viewing Location 3.

(4) Viewing Location 4 (at the northern site boundary on Chiquito Canyon Road looking south)

Under the Specific Plan, the proposed Business Park, Medium Residential development along Chiquito Canyon Road, and Low-Medium and Low Residential development south of the River would be visible from Viewing Location 4. The Business Park, Residential development along Chiquito Canyon Road, and Low Residential development south of the River would also be visible from this viewing location under Alternative 9. The Low-Medium Residential development proposed south of the River at Long Canyon would also still occur under this development scheme, and the same amount of Residential development south of the River would be visible in the distance under Alternative 9. Due to the extent of development still visible from this location, no noticeable visible change would occur under Alternative 9.

(5) Viewing Location 5 (on site, along SR-126 on the west side of Castaic Creek looking south)

Although development would occur within this viewshed under Alternative 9, it would be slightly less intensive than under the Specific Plan. For instance, some of the Medium Residential development proposed in this viewshed south of the Santa Clara River would be replaced with the Open Area land use designation to preserve spineflower populations. To the east south of the river in the Airport Mesa portion of the Mesas Village, some of the Mixed-Use, High Residential and Low-Medium Residential areas would also be replaced with the Open Area land use designation. (*See*, **Figure 2.7-3, Alternative 9, Spineflower Avoidance Alternative II**). Because development intensities visible from Viewing Location 5 would be slightly less under Alternative 9 than under the Specific Plan, visual impacts

would be less, making Alternative 9 environmentally superior to the Specific Plan with respect to visual impacts from Viewing Location 5.

(6) Viewing Location 6 (off site, generally from the SR-126/I-5 Interchange looking west and southwest toward site)

Mixed use development south of the Santa Clara River in the Airport Mesa area would be slightly less visible from Viewing Location 6 under the Specific Plan and under Alternative 9. This is because some of the Mixed Use development would be replaced with the Open Area designation to preserve spineflower populations. The same would be the case further to the west in the Grapevine Mesa area as some visible Medium Residential land uses would be replaced with Open Area Therefore, the degree of visual impact under Alternative 9 would be slightly less than under the Specific Plan, making Alternative 9 marginally environmentally superior to the Specific Plan with respect to visual impacts from this viewing location.

(7) Viewing Locations 7, 8, and 9 (off site, generally from Interstate 5 and points east, looking west and southwest toward site)

Some of the Mixed-Use development at the Airport Mesa area that would appear in the viewshed of Viewing Locations 7, 8, and 9 would be replaced under Alternative 9 with Open Area as spineflower populations are preserved. Therefore, Alternative 9 would be environmentally superior to the Specific Plan with respect to visual impacts from this viewing location.

(8) Viewing Location 10 (Off Site, from the Rim of the Valley Trail, looking north toward site)

Views from the Rim of the Valley trail would be visually slightly less intense in appearance under Alternative 9 when compared with the Specific Plan, because any reductions in development at the Airport Mesa and Grapevine Mesa areas would be so slight in appearance (given the distance between the trail and the development area) as to be visually imperceptible.

(9) Conclusion of Visual Comparison

Because portions of the Newhall Ranch Specific Plan visible from highly traveled visual corridors would have development replaced with Open Area under Alternative 9, this alternative would be environmentally superior to the Specific Plan.

(h) Cultural/Paleontological Resources

Because less ground disturbance would occur under Alternative 9, potential impacts to cultural and paleontological resources on the Specific Plan site would be less under Alternative 9 than if the Specific Plan were to develop as proposed. Therefore, Alternative 9 is environmentally superior with respect to cultural resources.

(i) Wastewater Disposal

The Specific Plan would generate 6.9 mgd of wastewater, while wastewater generation for Alternative 9 would be approximately 6.45 million gallons per day (mgd), all of which would be treated at an on-site water reclamation plant. Assuming that the on-site plant would be sized to treat all wastewater from Alternative 9, neither the Specific Plan nor Alternative 9 would have a significant impact relative to the treatment infrastructure. However, Alternative 9 would be environmentally superior to the Specific Plan with respect to wastewater disposal because less treated wastewater would be generated.

(j) Water Resources

Water demand for Alternative 9 would be approximately 16,553 acre-feet per year, including a potable water demand of 7,764 and a non-potable water demand of 8,789 acre-feet per year, respectively. The Specific Plan total water demand would be approximately 17,680 acre-feet per year, including a potable water demand of 8,645 and a non-potable water demand of 9,035 acre-feet per year, respectively. The decrease in residential units and non-residential development would decrease water demand under this alternative by approximately seven percent. Because this alternative would consume less water from potable water resources than the Specific Plan, it would be environmentally superior to the Specific Plan with respect to impacts on potable water resources.

(k) Education

Alternative 9 would generate approximately 8,078 students as compared to the 8,780 students that would be generated by the Specific Plan. Therefore, Alternative 9 is environmentally superior to the Specific Plan with respect to school impacts.

(l) Natural Gas/Electricity

Implementation of both the Specific Plan and Alternative 9 would require the use and expenditure of nonrenewable petroleum resources. Alternative 9 would consume approximately eight to 12 percent less petroleum resources than the Specific Plan. Although these energy resources are commercially available, Alternative 9 would consume less petroleum-based energy resources than the Specific Plan and would be environmentally superior to the Specific Plan.

(m) Police Services

Because less development would occur on the site under Alternative 9 and a smaller on-site population would result, it is expected that Alternative 9 would have less of an impact on the Sheriff's Department than the Specific Plan. For the same reasons, Alternative 9 would also have smaller demands for CHP and emergency services in the area of the Specific Plan site. As a result, Alternative 9 would be environmentally superior to the Specific Plan with respect to police services.

(n) Fire Services and Hazards

Because, Alternative 9 would result in less development and a smaller population on the Specific Plan site than would occur under the Specific Plan, there would be fewer Fire Department calls to the site than under the Specific Plan. Therefore, with respect to providing fire services to the Specific Plan site, Alternative 9 is environmentally superior to the Specific Plan.

(o) Environmental Safety

As discussed in Revised Draft EIR Section 4.5, Environmental Safety, potential impacts may result on the Specific Plan site if development occurs in the following locations:

- adjacent to historic and continuing oil and natural gas operations,
- in close proximity to the Southern California Edison electrical transmission lines,
- in close proximity to the Southern California Gas Company high pressure gas lines,
- adjacent to State Route 126, upon which hazardous wastes are transported,
- in close proximity to Chiquito Canyon Landfill,
- within the Castaic Lake dam inundation area, and
- adjacent to on-going agricultural operations.

The safety conditions under which Alternative 9 would be developed would be similar to those with development of the Specific Plan. The primary difference between development of Alternative 9 would be a reduction in site population, particularly in areas used in the past for oil and natural gas production. This results in less exposure to potential hazards, as unlikely as their occurrence might be. For this reason, Alternative 9 is superior environmentally to the Specific Plan with respect to environmental safety.

(p) Libraries

Based on County Library planning standards of 0.35 square feet of library facilities per capita and 2.0 books per capita, the Specific Plan would require a total of 20,897 square feet of library facilities with 119,414 additional volumes for the library system's collection. In comparison, development under Alternative 9 would, according to County Library standards, require 19,171 square feet of library facilities and 109,550 volumes. Development under Alternative 9 would have less of an impact on County Library facilities than would the Specific Plan and would be environmentally superior to the Specific Plan.

(q) Parks, Recreation and Trails

Under County (and Quimby Act) requirements, development of the Specific Plan would require the applicant to provide 246 dedicated acres of local parkland; the Specific Plan as proposed would exceed this requirement, by a total of 6,175 acres for parks, recreation, and Open Area, including Neighborhood and Community Parks, a 15-acre lake, an 18-hole golf course, trails, the River Corridor and High Country SMAs, and other Open Area (*See*, Revised Draft EIR Section 4.20, Parks, Recreation and Trails for a full discussion on this topic). Per County requirements, development under Alternative 9 would require dedication of a total of approximately 226 acres for parkland. The applicant has indicated that just the River Corridor, and not the High Country, would be preserved for public use under Alternative 9. Because the Specific Plan would provide more on-site recreational land than would Alternative 9, the Specific Plan would be environmentally superior to Alternative 9.

(r) Population, Housing and Employment

(1) Population

Development of the Newhall Ranch would result in a resident population of 59,707 at buildout. This population is within SCAG's 1994 growth projections for the area, but not the County's 1990 projections

(*See*, Revised Draft EIR Section 4.21, Population, Housing and Employment for further discussion). Alternative 9 would result in approximately 54,775 persons on the Newhall Ranch site. This population is well within SCAG's 1994 growth projections for the region, but not the County's 1990 projections.

(2) Housing

Alternative 9 includes 20,281 dwelling units ranging in intensity from Estate to Medium Residential; however, Alternative 9 includes a sizable reduction in the amount of High Residential development (the number of High Residential units is reduced by 1,066 units to 5,803 units) and in the amount of Medium Residential development (the number of Medium Residential units is reduced by 584 units to 7,068 units). This housing is consistent with SCAG's 1994 adopted forecasts for the region, but not the County's 1990 forecast (*See*, Revised Draft EIR Section 4.21 for further discussion). Therefore, these units are part of SCAG's planned growth of the area, but not the existing County's projections.

However, because the Specific Plan would include a greater number of High and Medium Residential units than Alternative 9, the Specific Plan would provide a wider range of housing units that would serve a broader range of socioeconomic groups than Alternative 9. A reduction in the amount of High and Medium Residential units with Alternative 9 would also result in a decrease in the amount of affordable housing units on the site and in the region.

(3) Employment

Development of the Newhall Ranch would result in an employment population of 19,226. Development consistent with Alternative 9 would generate 16,582 on-site employment opportunities. SCAG forecasts 17,500 jobs for 2015 in the census tracts that overlie the Specific Plan site; therefore, the Specific Plan's estimated employment exceeds SCAG's forecast, but Alternative 9 would provide fewer jobs than the SCAG forecast. The Santa Clarita Valley has been identified by SCAG as an area in need of additional employment opportunities. Under Alternative 9, the jobs to housing ratio would be increased from 0.78 to 0.82, which is more jobs rich than the Specific Plan. However, the Specific Plan provides 2,644 more jobs than does Alternative 9. Consequently, from an employment standpoint, the Specific Plan is superior to Alternative 9.

As with the Specific Plan, the population, housing and employment generated by Alternative 9 do not fall within the County's 1990 projections. However, SCAG projects much more growth in this area than does the County. As would the Specific Plan, Alternative 9 would require a General Plan Amendment.

Given the differences between County projections and SCAG projections, the dates of those projections (1990 and 1994, respectively), and the implications to population and housing forecasts resulting from each, no environmental preference with respect to population and housing can necessarily be concluded.

(s) Solid Waste Disposal

At buildout, the Specific Plan would generate approximately 47,741 tons of solid waste per year. In comparison, Alternative 9 would generate approximately 43,900 tons of solid waste annually. Alternative 9 would also generate smaller amounts of bio-solids resulting from the wastewater treatment process. Given the smaller solid waste generation totals associated with Alternative 9, implementation of Alternative 9 would be environmentally superior to the Specific Plan with respect to solid waste disposal.

(t) Agricultural Resources

There are 547 acres of prime farmland and 48 acres of unique farmland on the Specific Plan site. Development of the site consistent with the Specific Plan would result in the loss of this land to urban uses. Development of the site under Alternative 9 would permit development in areas of the site that are designated as prime farmland and unique farmland (specifically, development would occur on prime farmland north and south of SR-126, west of Chiquito Canyon Road, north of Potrero Canyon just south of the River, and on Potrero Mesa, and would occur on unique farmlands of importance located north of Potrero Canyon just south of the River). However, development would occur on fewer acres of farmland under Alternative 9 than would the Specific Plan because farming activity on the Grapevine and Airport Mesa areas of the site would no longer occur in some areas in order to preserve populations of the spineflower. Therefore, Alternative 9 is environmentally superior to the Specific Plan with respect to the loss of agricultural land.

In general, the conversion of prime agricultural land is irreversible and is, therefore, considered an unavoidable significant impact. However, in light of the continuing trend by the County of Los Angeles to convert cultivated lands to urban uses to accommodate growth, and the fact that the prime agricultural land on the Specific Plan site is already impaired (*i.e.*, relatively difficult and less economical to farm) and, therefore, is generally of lower value than larger and better situated parcels found to the west, the loss of agricultural productivity on prime agricultural land under such circumstances is not considered a significant impact. Thus, there is no environmentally superior alternative with respect to loss of agricultural productivity on the Specific Plan site.

Conclusion

Because some of the environmental impacts of the Specific Plan would be avoided or minimized with Alternative 9, it is environmentally superior to the Specific Plan in some respects (*e.g.*, air quality impacts, traffic impacts, noise impacts, etc). However, Alternative 9 has been rejected in favor of the Specific Plan because Alternative 9 too narrowly limits the range of housing opportunities provided and because many of the basic objectives of the Specific Plan identified in the Project Description of this EIR (Revised Draft EIR Section 1.0) would not be achieved (*See*, information presented below for examples). In addition, when compared with the Specific Plan with the proposed mitigation to spineflower impacts, the preserved spineflower populations would not be connected to proposed open areas to the same degree as they would be under the mitigation proposed for the Specific Plan. In addition, grazing activities would continue with Alternative 9 in the High Country SMA and in areas not within spineflower preserve boundaries. Also, the applicant has indicated that the Open Areas of the High Country Special Management Area would not be dedicated for public use, but would remain in private ownership with no provision for public access. From a biological standpoint, the reduction in grading and avoidance of most on-site spineflower populations under Alternative 9 could environmentally outweigh the loss to the public of the High Country Special Management Area. However, this alternative also allows a "take", or impact, to occur to small spineflower populations that are isolated and/or in other areas to allow for the construction of major infrastructure components, such as the extension of Magic Mountain Parkway. When compared with the Specific Plan with the proposed mitigation to spineflower impacts presented in **Section 2.6**, the preserved spineflower populations would provide a small degree of connectivity to open areas; however, the degree of connectivity would not be as great as would occur under the mitigation proposed for the Specific Plan. Nor would other proposed mitigation measures occur. Specific measures proposed within ~~this~~ the Draft Additional Analysis that would not occur with this alternative include:

- the Agency consultation provisions proposed in **Section 2.6**;
- the provision of Spineflower Special Study Mitigation Overlays;
- the creation of managed preserves as described in **Section 2.6**;
- the connectivity and buffer provisions as described in **Section 2.6**;
- the provision for future engineering, design and grading review and modifications;
- the monitoring and management provisions as described in **Section 2.6**; and
- consultation provisions regarding on-going agricultural activities.

In effect, under Alternative 9 populations of spineflower would essentially be surrounded by proposed development within 300 feet with fencing to prohibit trespass, thereby eliminating the connection to open space areas and the active preserve management and consultation provisions proposed as mitigation in **Section 2.6**. Based on this information, Alternative 9 is not biologically superior to the Specific Plan with respect to impacts to the spineflower.

Other Specific objectives not met or impeded to some extent with Alternative 9 are listed below:

- Provide a complementary and supportive array of land uses which will enable development of a community with homes, shopping, employment, schools, recreation, cultural and worship facilities, public services, and open space.
- Establish land uses and development regulations which permit a wide range of housing densities, types, styles, prices, and tenancy (for sale and rental).
- Adopt development regulations which provide flexibility to respond to and adjust to changing economic and market conditions over a long period of time.
- Retain a major public open space area which could act as a regional recreational park.
- Provide an extensive system of pedestrian, bicycle, and hiking trails within the Villages and hiking trails in the High Country and other open areas.
- Preserve the Santa Clara River corridor and adjacent uplands containing significant natural resources for their resource value, open space, and recreational use.
- Retain a major open space area and its natural vegetation as a wildlife or ecological preserve.

For all the reasons provided above, Alternative 9 has been rejected in favor of the proposed Specific Plan as mitigated.

3.0 WATER RECLAMATION PLANT ALTERNATIVES

3.1 INTRODUCTION

On page 4 of the Court's Writ (Appendix 1.0(a)), the Court found that the Final EIR for the Newhall Ranch Specific Plan and Water Reclamation Plant lacked substantial evidence to support the County's conclusion that siting the Water Reclamation Plant ("WRP") at the non-river location would not mitigate the biological impacts of siting the plant as proposed, immediately adjacent to SEA 23. Based on that finding, and based on the EIR's brief discussion of the WRP's biological impacts, the Court found the EIR was deficient in its analysis of the proposed location of the WRP.

The trial court directed the County to address the alternative of siting the WRP off-river, including an analysis of the biological impacts of that siting. The trial court also directed the County to consider the analysis and adopt such mitigation measures, alternatives, and/or additional or revised findings as may be necessary to comply with CEQA and the Court's Writ.

3.2 CONTENT OF SECTION

This section of the Supplemental Analysis presents the following information:

a. Summary description of the WRP;

b. Description of the biological impacts created by the WRP at the location proposed in the Specific Plan;

c. Summary of the WRP alternatives analyzed in the Final EIR that were upheld by the trial court;

d. Summary of the off-site WRP alternatives analyzed in the Final EIR that were upheld by the trial Court;

e. Updated analysis of the Off-River WRP Alternative;

f. Analysis of a new On-River Alternative;

g. Comparison between all the alternatives analyzed; and

h. Identification of the environmentally superior alternative.

3.3 DESCRIPTION OF THE NEWHALL RANCH WATER RECLAMATION PLANT

Section 5.0 of the Final EIR for the Newhall Ranch Specific Plan and WRP contains a detailed description of the Newhall Ranch Water Reclamation Plant, including descriptions of its construction and operational characteristics. A summary of that information is provided below.

3.3.1 WRP Siting Criteria

In siting a water reclamation plant, the site chosen should meet several criteria in order to efficiently treat the waste and dispose of the treated effluent. The criteria to be considered include:

a. Locate the facility at or near a low elevation relative to area being served;

b. The WRP site should be compatible with surrounding land uses;

c. The site should be located to have as few wastewater line road or highway crossings as possible;

d. The treated effluent discharge point should be located as close as possible to the watercourse receiving the treated discharge;

e. A level site or one with some slight slope is desirable;

f. The site should be on soil that can be easily excavated;

g. The site should not have poor soil bearing capacity nor require prohibitive foundation costs;

h. Sites with high groundwater elevations should be avoided;

i. The site should not be located over an active fault or in an unstable geologic area;

j. The site should be of sufficient size so that all facilities are at one location; and

k. Utility services for the WRP, primarily electricity, should be readily available.

Provided below is a discussion of each of these criteria.

The major criterion used for siting a WRP is locating the facility at or near a low elevation for the wastewater system service area. This siting criteria allows as much wastewater as possible to flow to the WRP site by gravity instead of being pumped up to the facility by pump stations and force mains. Location of the WRP at a low elevation point eliminates the electrical costs of operating pump stations, and the potential for collection system pump station(s) and force main failures which reduces environmental risk. It is also desirable to locate the WRP at the lowest elevation so that the difference in elevation between the gravity wastewater system discharge and the WRP facility elevation is as small as possible. This also minimizes electrical costs associated with pumping the wastewater from the

wastewater line discharge to the treatment facility inlet. Reducing electrical power consumption positively benefits the environment as it reduces the pollution associated with the production of electricity from fossil fuels. The proposed project site is located at a low elevation compared with the portion of the site being provided with wastewater treatment service. The WRP site is proposed at approximately 850 feet above mean sea level (msl). Ground elevations on the Newhall Ranch Specific Plan site range from approximately 830 feet to 3,200 feet above msl. Ground elevations of the areas proposed for development range from approximately 830 feet to 1,500 feet.

A WRP site should be compatible with surrounding land uses. Some of the compatible land uses include industrial, commercial, agricultural, open space, and transportation corridors. Land uses that are generally not compatible include residential areas, schools, and multipurpose community parks due to noise, traffic, and potential odors. The WRP is proposed to be constructed within the Business Park (BP) Specific Plan land use designation. Uses in the BP designation are commercial, office and industrial in nature. Such uses are compatible with the proposed WRP. Specific Plan land uses adjacent to the Business Park and WRP include SR-126 on the north (a four-lane transportation corridor) and Special Management Area/SEA 23 on the south and east. Agricultural uses occur to the west in Ventura County.

A WRP site should be located to have as few wastewater line road or highway crossings as possible as wastewater lines that cross roads create potential conflicts with other utilities (*e.g.*, natural gas lines, oil lines, water lines, telephone lines, *etc.*) that are located in the roadway right-of-way and enhance the possibility of being broken when new utilities are constructed nearby. Where wastewater lines are installed in an existing road, construction costs increase due to the need to provide adequate availability of the roadway for public use during construction. When the WRP can be located at the low elevation in the service system area, this will usually mean locating the interceptor wastewater line parallel to the major drainage way, preferably on the down gradient side of any roads parallel to the drainage way or river. Location of the WRP site on the river-side (down gradient) of a parallel roadway will eliminate having the wastewater line cross the road to connect with the plant, in this case SR-126, and the problems associated with installing this line while keeping the existing roadway open to traffic.

The WRP site treated effluent discharge point should be located as close as possible to the receiving stream, in this case the Santa Clara River, to minimize the construction and maintenance associated with this WRP effluent disposal line. The site should not be within the Los Angeles County 50-year Capital Flood Plain nor the Federal Insurance Administration 100-year Flood Plain unless the site grade can be raised above the level of the 50-year Capital Flood. The proposed site is located adjacent to the Santa Clara River and would be elevated above the flood plain through the placement of fill material consistent with the Specific Plan.

A level site or one with some slight slope is desirable, since this reduces site-grading costs compared to a site with extreme differences in site elevation. A site with some slope can often be used advantageously to reduce power requirements and pumping costs required for pumping wastewater from one treatment process to another. The proposed site is relatively flat, with a gentle slope toward the river and, consequently, meets this criterion.

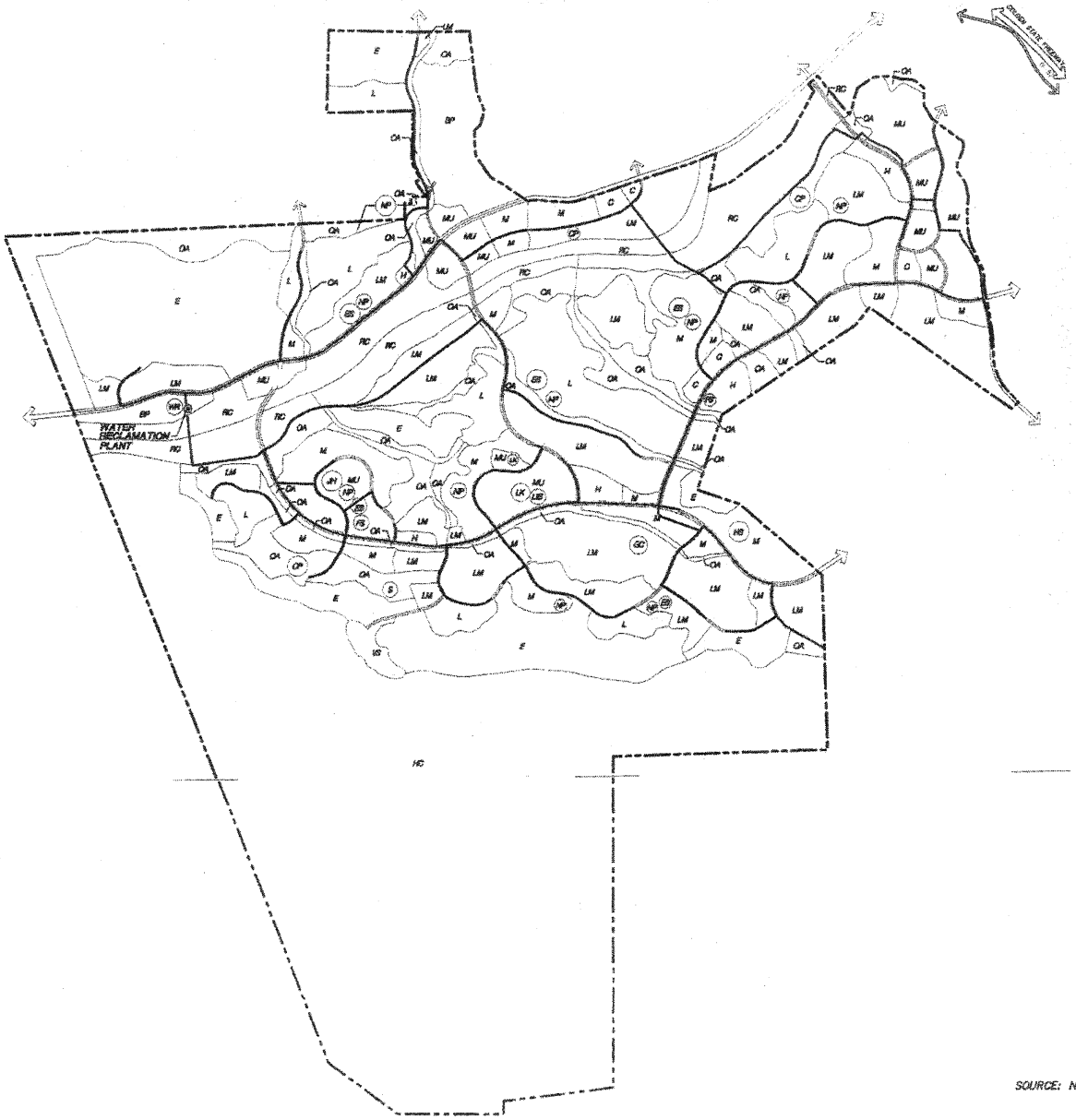
Location of the WRP site on soil that can be easily excavated is advantageous over a site with bedrock outcrops that require costly site excavation for installation of below ground basins, tanks, piping and utilities. Where possible, the sites that should be avoided are those with poor soil bearing capacity or which would require prohibitive foundation costs (*i.e.*, piles). The proposed site is easily excavated and the soil conditions have favorable soil bearing capacity. Avoidance, if possible, of sites with high groundwater elevations is desirable if the facility will require construction of in-ground basins and tanks. The proposed project site is not located in an area of high groundwater. The site should not be located over an active fault or in an unstable geologic area. The proposed project is located on a geologically stable site, with no active faults (the nearest fault, the Del Valle fault, is approximately 1.5 miles east of the WRP site). The WRP site should also be sufficient in size so that all facilities are at one location without roads or natural features crossing the site that would physically separate the various wastewater treatment facilities. The proposed site is large enough to house all necessary facilities at one location.

Finally, availability of utility services for the WRP, primarily electricity, is an important siting criteria as is access to a major roadway due to the need for truck delivery of supplies, and removal of residual materials produced by the WRP. The proposed site is adjacent to SR-126, which provides the required access to necessary utilities.

As indicated above, the proposed project site was selected because it is the location on the Specific Plan site that best meets the siting criteria listed and detailed above.

3.3.2 Overview of WRP

The WRP is proposed to be located on the south side of SR-126, adjacent to the Santa Clara River, and near the Los Angeles County/Ventura County boundary line (*See*, **Figure 3.0-1** [Final EIR Figure 5.0-1, Proposed Wastewater Treatment Facility and Service Area], which is provided below). The proposed WRP would have a treatment capacity of 6.9 million gallons per day (mgd) and a maximum peak flow



NEWHALL RANCH.
Newhall Ranch Company

LEGEND

PROPOSED SEWAGE TREATMENT PLANT

PROPOSED SANITATION DISTRICT BOUNDARY (NEWHALL RANCH)

IMPACT SCIENCES INC

NORTH

FIGURE 3.0-1
PROPOSED WASTEWATER TREATMENT FACILITY AND SERVICE PLAN

SOURCE: CH2MHILL June 26, 2000.

of 13.8 mgd.[1] A peaking factor of 2.0 has been applied to the 6.9 mgd to calculate a maximum flow of 13.8 mgd through the plant. The WRP is proposed to consist of primary, secondary, and tertiary treatment facilities, as well as solids handling and disinfection facilities. The WRP has been sized to exclusively serve the needs of the Newhall Ranch Specific Plan. A new sanitation district would also be formed and its boundary would coincide with that of the Specific Plan site. The Specific Plan site will also be required to annex into the Consolidated Sewer Maintenance District if its sewers are to be maintained by the County. Based on the assumption that the new WRP would be operated and maintained by a joint administrative staff, the WRP would be constructed to meet CSDLAC specifications and requirements, as well as requirements of other governmental agencies including the Los Angeles County Department of Public Works sewer design standards.

The Newhall Ranch Specific Plan is proposed with the concept of total water management. Therefore, water supply planning for the Specific Plan required development of a water budget (discussed fully in Section 4.11, Water Resources, of the Final EIR). This water budget addresses both potable and nonpotable water demands for uses within the Specific Plan area. It was determined that the proposed WRP would treat all wastewater from interior (potable) water uses which would generate 5,630 acre-feet/year of reclaimed water for irrigation of Specific Plan landscape areas.[2]

A goal of the proposed WRP is to reclaim the maximum amount of wastewater generated by the Specific Plan in order to meet a portion of the non-potable water demand of the Specific Plan. As such, the WRP is proposed as a "zero, or near zero-discharge" system. The goal of this system is to reclaim all wastewater treated at the WRP, with no or only minor seasonal (winter) discharges to local water bodies. A total reclaimed water system with a near zero-discharge would both dispose of treated wastewater and add to the local water supplies. This system would require development of dual water distribution systems for the Specific Plan: one system to deliver potable water and one completely separate system to deliver non-potable reclaimed wastewater for use at the golf course and public landscape areas proposed as part of the Specific Plan site.

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1 The average flow for the WRP is 6.9 mgd, and a peaking factor of 2.0 has been used to calculate a maximum flow of 13.8 mgd through the plant. The plant was conservatively sized using CSDLAC criteria. For sewer design, the generation factors are disaggregated by residential zoning categories, light and heavy industrial, general and limited commercial, hospitals, schools, universities, airports, and parks. The underlying effluent generation rate for the residential category is 85 gallons per capita per day (gpcpd). Using this criteria, wastewater generation is estimated at 6.93 mgd (7,763 ac-ft per year). The peaking factor is the ratio between the peak storm flow and the average dry weather flow. Based on an actual peak and average flow conditions at their various water reclamation plants, County Sanitation District of Los Angeles County professional staff has suggested that a peaking factor of 2.0 be incorporated in this plant's design parameters. This represents a conservative estimate that will allow for higher than normal fluctuations in peak flows.

2 One acre-foot is equivalent to 325,851 gallons.

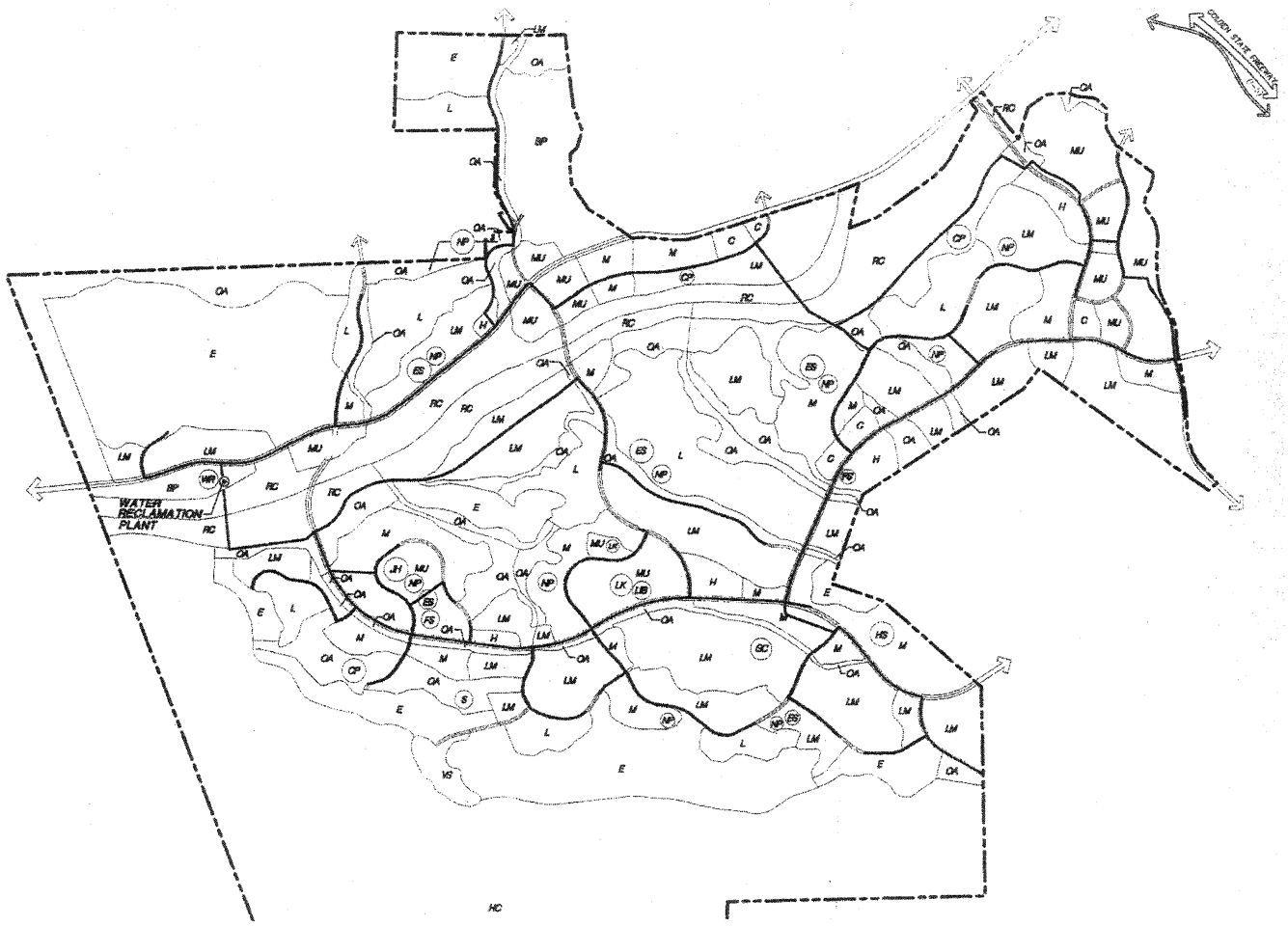
Non-potable irrigation demands vary throughout the year based on seasonal weather characteristics. In contrast, wastewater generation is generally consistent throughout the year, as it is a function of indoor water uses. The monthly wastewater generation in acre-feet per month is expected to vary only slightly, partly because of the variation in the number of days per month.

All of the reclaimed water generated at the proposed WRP is expected to be used directly for irrigation during an average year condition, except in the months of October though March. During those six months, excess reclaimed water could be discharged to the Santa Clara River, or transported to other uses beyond the Specific Plan boundaries. To assess a worst-case condition, the Final EIR assessed the impacts of discharging the excess reclaimed water directly to the Santa Clara River. The potential water flow and biological impacts of wastewater discharge on the river was assessed in the Final EIR, and the trial court found that analysis to be adequate and complete. The Final EIR indicated that no significant biological or flood-related impacts would be created by the proposed WRP. Of the 5.0 mgd (5,630 acre-feet per year) of wastewater generated by Specific Plan interior water use, 286 acre-feet per year (5.1 percent) of tertiary treated effluent could be discharged to the river. The plant operating at full capacity (7,763 acre-feet per year) could discharge 1,025 acre-feet per year of treated effluent to the river (12.2 percent of its effluent). Therefore, the proposed WRP could discharge a range of 286 to 1,025 acre-feet per year of tertiary-treated effluent into the Santa Clara River.

A wastewater collection and treatment system comprised of gravity sewers and force mains, pump stations, and a water reclamation plant (WRP) is proposed within the Conceptual Backbone Sewer Plan (*See*, **Figure 3.0-2** [Final EIR Figure 5.0-2, Conceptual Backbone Sewer Plan], which is provided below). A description of the preliminary design and operational characteristics of the WRP facilities is presented in Final EIR Section 5.0, Subsection 3.c, Proposed Treatment Facilities.

3.3.3 Water Reclamation Plant Site Layout and Grading

The 6.9 mgd capacity Newhall Ranch WRP is sized using CSDLAC criteria to exclusively serve the needs of the Newhall Ranch Specific Plan. No excess capacity is provided for in the WRP construction, nor is any additional capacity required to make the WRP economically feasible. As requested by the CSDLAC, however, the site for the proposed WRP has been sized to accommodate potential facilities that might be required by new Federal or State treatment requirements. The 6.9 mgd plant can be built in a number of possible staging sequences, ranging from all at once, to two distinct stages, to a series of three or more stages. Staging sequences will be determined in conjunction with the development staging of the Specific Plan itself. Based on the sizing criteria described above, the WRP would be constructed on 15 acres of land.



NEWHALL RANCH
Newhall Ranch Company

LEGEND

SEWER LINE SYSTEM

PROPOSED WATER RECLAMATION PLANT

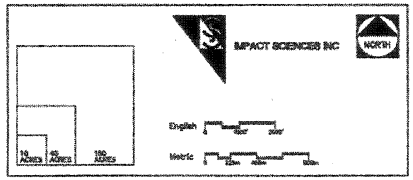


FIGURE 3.0-2
CONCEPTUAL BACKBONE SEWER PLAN

SOURCE: CH2MHILL June 28, 2000.

Grading is anticipated to involve clearing of the ground surface, over-excavation, and the placement and compaction of up to 15 feet of fill material across the WRP site. The fill is needed to avoid interruption of facility operations in the event of a storm-related flood and to keep sewage holding tanks above the levels of the projected Los Angeles County 50-year Capital Flood. Initial grading would also extend onto an adjacent 24 acres of land within the narrow, Business Park-designated area in which the WRP would be located. This is needed to: (1) provide a driveway linkage from the WRP site to SR-126 near the western edge of this area, where the grade difference next to the highway is least; and, (2) to rough-grade the remaining land between the WRP site and SR-126 in preparation for future Business Park development to allow for balanced grading on-site. For a detailed discussion of WRP grading impacts, refer to Final EIR Subsection 5.1, Geotechnical and Soil Resources. An illustration of the WRP's layout is provided on **Figure 3.0-3** (Final EIR Figure 5.0-3, Proposed WRP Site Layout).

3.4 BIOLOGY IMPACTS OF THE WRP

3.4.1 Existing Habitats and Sensitive Species

As shown on **Figure 3.0-4, WRP Site Vegetation**, the 15-acre WRP site is presently undeveloped and consists of the following habitats: southern cottonwood willow riparian forest (1.0 acres of CRW), mule fat scrub (3.0 acres of MFS) and arrow weed scrub (1.5 acres of AWS). The remainder of the WRP site (9.5 acres) is presently in agricultural production. The 24 acres of adjacent land that would be graded to facilitate construction of the WRP is mostly in a disturbed condition (*i.e.*, approximately 23.6 acres is in agricultural production), while a relatively small amount is arrow weed scrub (approximately 0.4 acre). Each of these habitat types is described below.

Southern Cottonwood-Willow Riparian Forest – This community type is a mature riparian woodland habitat where a substantial tree layer has developed. Cottonwood trees dominate the forest with large red willow trees as co-dominants. Smaller shrub and tree forms of arroyo willow along with mule fat (*Baccharis salicifolia*) and arrow weed (*Pluchea sericea*) shrubs are common in the understory. An occasional western sycamore (*Platanus racemosa*) and California bay (*Umbellularia californica*) also occur in this habitat. It is found along the upper Santa Clara River banks, upper flood plain, and on terraces of the Santa Clara River. Approximately 1.0 acre of this sensitive habitat occurs on the WRP site, but sycamore and bay trees are not present in the area being affected by development of the WRP.

Included in the acreage total above is southern cottonwood-willow riparian forest areas where the understory has been opened up due to disturbance from grazing or brush clearing. Giant cane (*Arundo donax*) and some tamarisk (*Tamarix* sp.) have invaded the understory in some areas.

Additional information regarding this vegetation type and vertebrate species association is included in Final EIR Appendix 4.6.

Mule Fat Scrub – Mule fat scrub is typically a mature riparian habitat dominated by mule fat shrubs (*Baccharis salicifolia*). Co-dominant plant species include narrow-leaved willow (*Salix exigua*), giant cane (*Arundo donax*), and some tamarisk (*Tamarix* sp.). This habitat type is found along the Santa Clara River on upper portions of the flood plain.

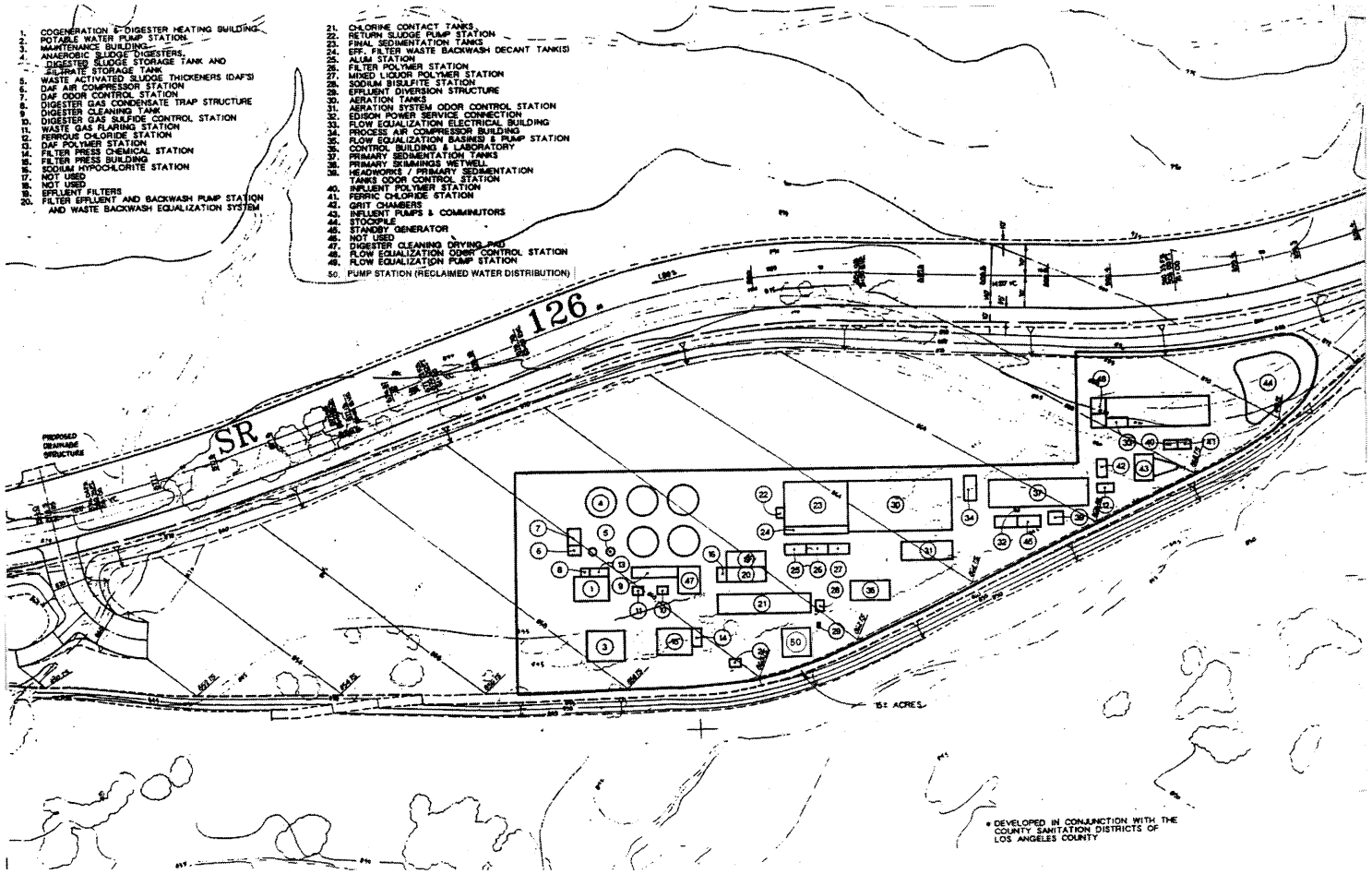
A subclass of mule fat scrub was used to denote the development of this plant community along the active channel of the Santa Clara River. Successional mule fat scrub denotes a young, successional community dominated by young saplings of predominantly mule fat and narrow-leaved willow. This subclass is found within the low flow (active) channel of the Santa Clara River on sandbars where frequent scouring by floods prevents it from fully developing into mature mule fat scrub. Approximately 3.0 acres of this habitat occur on the WRP site.

Additional information regarding this vegetation type and vertebrate species association is included in Final EIR Appendix 4.6.

Arrow Weed Scrub – This shrub-dominated plant community is characterized by arrow weed shrubs. Big saltbush (*Atriplex lentiformis*) and mule fat shrubs are often co-dominants in more open stands, especially along road cuts. This plant community is located on the upper Santa Clara River flood plain and along the manufactured slopes near SR-126. Approximately 1.5 acres of this habitat occur on the WRP site and approximately 0.4 acre occurs on the adjacent area to be graded.

Additional information regarding this vegetation type and vertebrate species association is included in Final EIR Appendix 4.6.

Disturbed Areas – Areas of Newhall Ranch that have been cleared for roads, agricultural activities, fuel breaks, development (*i.e.*, ranch houses, oil company facilities), or that have been grazed are characterized as disturbed habitats. These disturbed areas either lack vegetation or are characterized by a dominance of primarily non-native weeds and grasses. Types of habitats categorized by Dames & Moore (1993) under this habitat type on the property include ruderal vegetation, agriculture fields, disturbed areas (lack vegetation), and areas of ornamental plantings. On the WRP site, agricultural fields occur adjacent to the aforementioned habitats adjacent to the Santa Clara River and SR-126.



SOURCE: CH2M HHILL, WATER RESOURCES AND WASTEWATER MANAGEMENT FOR NEWHALL RANCH PROJECT, (THOUSAND OAKS, CALIFORNIA: JANUARY 1996).

NEWHALL RANCH™
Newhall Ranch Company

IMPACT SCIENCES INC

NORTH

N.T.S. N.T.S.

FIGURE 3.0-3
PROPOSED WRP SITE LAYOUT

NEWHALL RANCH
Newhall Ranch Company

L E G E N D

- WRP - 15 ac
- BUSINESS PARK - 24 ac
- NEWHALL RANCH SPECIFIC PLAN BOUNDARY

HABITAT TYPES

AD	AGRICULTURAL DRAINS
AG	AGRICULTURAL AND OTHER DEVELOPED USES
AWS	ARROW WEED SCRUB
CRW	SOUTHERN COTTONWOOD/ WILLOW RIPARIAN FOREST
CSS	COASTAL SAGE SCRUB
FM	VALLEY FRESHWATER MARSH
G	GRASSLAND
GBS	GREAT BASIN SCRUB
GBSR_ADJ	GREAT BASIN SCRUB RIPARIAN ADJACENT
MFS	MULE FAT SCRUB
WS	SOUTHERN WILLOW SCRUB

Feet 0 100 200 400
Meters 0 37.5 75 150

FORMA PSOMAS
12-15-00
NR27_wrp_new.apr

FIGURE 3.0-4
WRP SITE VEGETATION

Additional information regarding this vegetation type and vertebrate species association is included in Final EIR Appendix 4.6.

Sensitive Species – The southern boundary of the WRP site is adjacent to the Santa Clara River corridor. As noted in the California Department of Fish and Game Notice of Preparation letter, dated December 11, 2000, the Santa Clara River corridor supports riparian vegetation which provides habitat for the endangered unarmored three-spine stickleback, southwestern willow flycatcher, and least Bell's vireo, as well as other sensitive aquatic species such as the southwestern pond turtle and southwestern arroyo toad (a detailed description of the biological character of this area and the entire River Corridor is presented in Final EIR Section 4.6, Biota, and Appendix 4.6). Additionally, the NOP letter states that the San Fernando Valley Spineflower, considered extinct but newly discovered, may also be present on the site.

Bird surveys along the River Corridor conducted by Daniel Guthrie in the spring and early summer of 1999 did not detect the presence of least Bell's vireo or southwestern willow flycatcher on the WRP site.[3] Both flycatchers and vireo were spotted elsewhere along the River corridor within the Newhall Ranch Specific Plan.

With regard to amphibians, RECON Consultants conducted focused surveys, pursuant to U.S. Fish and Wildlife Service protocols, along the River corridor for the arroyo toad during the spring of 1994, 1995, and 1999. No arroyo toads were detected during these focused surveys.[4] Further, while sensitive aquatic reptile trapping efforts have collected numerous pond turtles along the Santa Clara River, these were captured between the Castaic Creek confluence with the Santa Clara River and the Old Road Bridge just west of I-5. This area of the river is located upstream and outside of the WRP project site (*See*, Draft EIR page 4.6-80). Finally, the project site is outside of the critical habitat designated for California red-legged frog[5] and this frog is considered to have a low potential for occurrence within the Newhall Ranch Specific Plan. In short, no rare, threatened or endangered wildlife species have been identified on the proposed WRP project site.

With regard to the Spineflower, this plant is an herbaceous annual in the buckwheat family that generally blooms from April to June. Historically, the species ranged from Los Angeles, through Orange and San

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3 *Bird Surveys in the Proposed Riverwood Project Area, Near Valencia, California*, Daniel Guthrie W.M. Keck Science Center, August 1999.

4 *Survey for Arroyo Southwestern Toad for Newhall Ranch*, RECON Consultants, July 12, 1999.

5 U.S. Department of the Interior, Fish and Wildlife Service, *Final Determinations of Critical Habitat for the California Red-Legged Frog; Final Rule*, Federal Register, March 13, 2001.

Bernardino Counties, but development now covers much of this area. The Spineflower is believed to require gravelly to sandy soils, often in washes, conditions that do not occur on the WRP site. It also appears to be shade and competition intolerant, requiring relatively open habitat free of shade and competing plants.[6] ~~While i~~In the spring 2000, one small population of the Spineflower was detected one half mile south and outside of the River corridor (south of Grapevine Mesa)~~.~~ However, prior plant surveys on the WRP site have not detected the Spineflower at this location. Based on known habitat requirements, there is a very low potential for this plant to occur on the WRP site given the disturbed nature of the site, and presence of competing plants in the form of agricultural row crops and native riparian vegetation along the River Corridor as documented above. As for the remainder of the Specific Plan area, the impact potential remains the same as reported in the prior Final EIR. As reported, the impact potential is the loss of individual plant species due to development. This impact potential is considered mitigated by the measures contained in the Final EIR. Mitigation Measure 4.6-53 of the Newhall Ranch Final EIR requires that site-specific surveys be conducted to determine the presence or absence of rare, threatened, or endangered species if the County determines through an Initial Study that such an animal or plant species could be present. Consequently, site specific surveys must be conducted within those areas of the Specific Plan where this plant is likely to occur at the time a subdivision map is filed. *See also*, EIR Mitigation Measure 4.6-59. In addition, in response to comments, EIR Mitigation Measures 4.6-53 and 4.6-59 have been revised to strengthen the mitigation program for impacts to plant and animal species. *See*, Appendix 3.0 for more information regarding the arroyo toad, red-legged frog and the Spineflower.

3.4.2 Biological Impacts

Impacts generated by the proposed WRP would occur during two general stages, including the construction stage and plant operational stage. Direct biological impacts would occur during construction of the proposed WRP. The impacts would be primarily associated with the vegetation removal and grading activity that would be required to prepare the site for construction of the facility (*i.e.*, the buildings, waste conveyance and treatment equipment, pavement, *etc.*). Direct biological impacts associated with the operation of the WRP are primarily associated with the occasional discharge of treated effluent from the plant into the Santa Clara River. Indirect impacts (*e.g.*, increased light and glare) are those that could potentially affect wildlife species that inhabit the River Corridor. Construction and operational impacts created by the proposed WRP are described below, as are indirect impacts.

3.4.2.1 Construction Impacts

The primary construction impact of the WRP is the direct ground disturbance caused by vegetation removal and grading. Included in such activities is the installation of buried bank stabilization along the riverbank at the southern edge of the site. It is anticipated that the initial grading would involve the

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6 Petition to the State of California Fish and Game Commission to list the San Fernando Valley Spineflower as Endangered under the California Endangered Species Act. December 1999.

conversion of approximately 39 acres of land, consisting of 15 acres for the WRP site and 24 acres for land adjacent to the WRP site. Of the 39 acres impacted, 1.0 acre is land located on the WRP site along the northern edge of the river containing biologically sensitive cottonwood willow riparian forest. The balance of the land (38.0 acres, of which 4.5 acres is located on the WRP site) is comprised of non-sensitive habitat, including disturbed area (33.1 acres), mule fat scrub (3.0 acres) and arrow weed scrub (1.9 acres).

Table 3.0-1, Biological Impacts Due to WRP Construction, below, provides a numerical description of the habitats impacted by construction of the WRP. All construction impacts associated with the WRP are considered permanent.

Table 3.0-1
Biological Impacts Due to WRP Construction

Vegetation Type	Acres Impacted
On WRP Site	
- Cottonwood Willow Riparian Forest	1.0
- Mule Fat Scrub	3.0
- Arrow Weed Scrub	1.5
- Disturbed (agricultural land)	9.5
Subtotal for WRP Site	**15.0**
Adjacent to WRP Site	
- Arrow Weed Scrub	0.4
- Disturbed (agricultural land)	23.6
Total Land Impacted	**39.0**

Impacts associated with the conversion of sensitive habitat types (cottonwood willow riparian forest) are considered to be significant impacts. However, approval of the Specific Plan and its associated Resource Management Plan ("RMP") are applicable to the WRP. Therefore, all Final EIR Mitigation Measures addressing the conversion of sensitive riparian habitats (primarily Mitigation Measures 4.6-1 to 4.6-26, and 4.6-63) would apply to construction of the WRP. After implementation of those mitigation measures, the WRP's direct grading impacts would be reduced to below a level of significance.

The river corridor supports riparian vegetation which provides habitat for the endangered unarmored three-spine stickleback, southwestern willow flycatcher and least Bell's vireo, as well as other sensitive aquatic species (a detailed description of the biological character of this area and the entire River Corridor is presented in Final EIR Section 4.6, Biota, and Appendix 4.6). As indicated above, grading and site preparation for the WRP facilities would include the installation of buried bank stabilization along the riverbank at the southern edge of the site. Since no rare, threatened or endangered wildlife species have

been identified within the 39-acre area, no direct impacts to sensitive wildlife species are anticipated from site grading. However, without proper erosion and sedimentation controls, loose soils could be blown off by winds or transported in runoff during rainstorms and reach the river area, resulting in potentially significant impacts to riparian vegetation and habitat of sensitive species. Site grading and preparation activities in the riparian habitat along the riverbank must comply with permit requirements established by the California Department of Fish and Game, the U.S. Army Corps of Engineers and/or the U.S. Fish and Wildlife Service, which would include mitigation measures considered appropriate for this significant impact. In addition, those activities must comply with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit, which must be obtained prior to commencement of grading, ensuring that proper site runoff, erosion and sedimentation controls are provided to avoid significant impacts to river biota. Given that the San Fernando Spineflower is not expected to occur on the site, impacts to that plant due to site grading and construction would be less than significant.

Site grading/preparation is not expected to interfere with the movement of wildlife along the river, since all construction activities would occur outside of the active river channel. During active construction hours, wildlife movement along the river may be restricted because of increased noise and human presence; however, at the end of the construction day and overnight, the dormant construction site is not expected to affect wildlife movement.

3.4.2.2 Operational Impacts

The plant design is proposed to enable reclamation of most, if not all, of the treated wastewater through a reclaimed water distribution system in order to supply various irrigation uses throughout the Specific Plan area, reducing the need for better quality water and minimizing or avoiding discharges to the river. State Water Resources Control Board Resolution No. 77-1 sets forth the policy of the State to undertake all possible steps to encourage the use of reclaimed water to help meet the growing water requirements of the State. The Los Angeles Regional Water Quality Control Board (RWQCB) processes Water Reclamation Requirements (WRR) for projects that reuse wastewaters and thereby lessen the demand for higher quality fresh waters. Requirements of the California Department of Health Services are also incorporated into the WRRs. In accordance with the RWQCB Basin Plan, reclaimed water can be used for surface irrigation of food crops, landscape irrigation, and groundwater recharge. Under specified conditions, the state now requires the use of recycled water when available. (*See,* Senate Bill 2095 (Johnston) and Government Code Section 65602 relating to water recycling).

In wet winter seasons it is possible that approximately 286 to 1,025 acre-feet of tertiary-treated water that would not be reclaimed through the irrigation system due to lower demand might be discharged to the river from October through March. As discussed in Final EIR Section 5.0, Subsection 5.2, Flood, this water volume would not represent a significant increase in the volume of floodwaters or in the annual average river flow.[7] However this discharge would be to an impaired surface water as more fully described below.

As noted in the RWQCB NOP comment letter dated December 18, 2000, this reach of the Santa Clara River (Reach 7; Blue Cut to West pier Highway 99 (I-5)) was listed as impaired by the U.S. Environmental Protection Agency in 1999 for the following constituents; ammonia, chloride, coliform, and nitrate and nitrite. On December 7, 2000 the RWQCB adopted Resolution No. 00-21 to extend the interim chloride limits for discharges to the Santa Clara River until December 7, 2001 and modify the limit to 143 mg/L with an instantaneous maximum of 180 mg/L. The RWQCB also directed their staff to develop a Total Maximum Daily Load (TMDL) for chloride to protect downstream agricultural beneficial uses. A TMDL would take into consideration existing and reasonably foreseeable new load allocations, as well as seasonality, in arriving at a maximum daily load for all chloride discharges to the impaired reach. The water quality of the Newhall Ranch WRP discharge would have to comply with federal Clean Water Act requirements, as specified in a Waste Discharge Requirement (WDR) that must be obtained from the RWQCB. Discharge limits for chlorides and nitrates would be set by the RWQCB at the time this permit is issued, consistent with any adopted TMDL. In dry winter seasons, plant discharges to the river are not anticipated because irrigation demands in the Specific Plan area would be higher than in wetter winters, and it is expected that all reclaimed water would be used for on-site irrigation purposes. Under these conditions there would be zero discharge to the river and no chloride nitrate/nitrite or ammonia loadings to the surface waters of the Santa Clara River. In wet winter seasons, the plant may discharge to the river as stated above. Under these conditions the WRP discharges are minor compared to the volume of flood flows, the irrigation demands by downstream agricultural users are minimal or nonexistent during wet winter months, and any discharges would be subject to the limitations set forth in the WDR issued by the RWQCB. Given these hydrological and water quality considerations, no significant impacts to the river's biological resources are expected from the WRP discharges.

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7 Because the project does not contribute measurably to flood flows, there would be no effect on the "gap" in perennial flow within the Santa Clara River that separates populations of unarmored three-spine stickleback from the non-listed partially-armored stickleback found in the lower reaches of the Santa Clara River. The gap begins approximately one-mile downstream from the Los Angeles/Ventura County line. The gap generally is approximately 15 miles long during a normal year and approximately 9 miles long during a wet year, creating a barrier to fish migration. (Source: 2015 Santa Clarita Valley Joint Sewerage System Facilities Plan Final EIR (January 1998).

3.4.2.3 Indirect Impacts

Indirect impacts would also occur in the area surrounding the proposed WRP site. It is expected that operation of the Newhall Ranch WRP would result in indirect impacts to biological resources through increased noise, light, and glare. Indirect impacts associated with the proposed Specific Plan are not quantifiable, but are reasonably foreseeable. As such, the discussion that follows provides identification of the types of reasonably foreseeable secondary impacts and their relative magnitude such that decision-makers and the general public are aware of the indirect impact potential associated with implementation of the WRP.

Nighttime illumination is known to adversely impact animals in natural areas. Nighttime light can disturb resting behavior and can potentially alter breeding cycles and nesting behavior. Existing light sources in the area near the WRP site includes vehicular traffic traveling on SR-126. The greater Specific Plan site, however, is void of any measurable sources of light and glare. While the sources of light and glare located east of the site (*e.g.*, in the Santa Clarita Valley) are somewhat visible in the distance, the Specific Plan site, including the WRP site, is relatively dark.

WRP operation would increase the number of nighttime light sources on the site. If uncontrolled, such light, where proximal to sensitive natural areas, could adversely impact the animal species composition that occurs in these areas. However, approval of the Specific Plan and its associated RMP are applicable to the WRP. Therefore, for example, Final EIR Mitigation Measures 4.6-18 and 4.6-19 (addressing the treatment of transition areas between natural and development areas including Open Areas, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails), and Final EIR Mitigation Measure 4.6-56 (addressing project lighting requirements) would apply to the operations of the WRP. After implementation of those mitigation measures, the WRP's indirect light and glare impacts would be less than significant.

If substantial enough, noise generated during the WRP's operation could indirectly impact adjacent sensitive wildlife species. The equipment necessary to operate the plant (*e.g.*, pumps, *etc.*) would generate noise levels ranging from approximately 55 to 65 dB(A) at the plant boundary as the waste treatment process occurs. This noise is typically not instantaneous in nature, but rather is generated on a more consistent basis. Consequently, the noise generated does not create the high peaks that can disturb adjacent wildlife (*e.g.*, sensitive bird species). Also, the noise generated by the plant would be similar in character and magnitude (*i.e.*, 60 to 65 dB(A)) to vehicular noise already generated on SR-126 (*i.e.*, more of a consistent "hum" than louder disturbing peaks). Consequently, this noise would likely mix with the existing vehicular noise generated in the area and would not be perceived as a new noise source in an

otherwise quiet area. Consequently, indirect noise impacts created by the proposed WRP would not be considered significant.

3.5 WRP ALTERNATIVES ANALYSIS

3.5.1 On-Site Alternatives Already Approved by the Court

As indicated above, the trial court directed the County to assess the alternative of siting the WRP off-river. In its ruling, the Court indicated that the Final EIR already contains an adequate and complete assessment of all other on-site and off-site WRP alternatives. The on-site WRP alternatives addressed in the Final EIR already properly considered by Los Angeles County include:

3.5.1.1 No WRP Alternative

Under the No WRP Alternative, the Newhall Ranch Specific Plan would be approved and generating wastewater, but the WRP would not be constructed on the Specific Plan site and, presumably, wastewater generated would be discharged to the Santa Clara River untreated. Under federal Clean Water Act and State and County Health standards, however, this alternative scenario could not occur by law due to the substantial water quality and biological impacts that would occur.

3.5.1.2 Upstream Location Alternative

The WRP could be constructed at another location on the Specific Plan site, upstream of its present location. However, an upstream WRP location would require wastewater generated downstream of the plant to be pumped uphill to the plant, thereby increasing the construction, operation and maintenance costs of the system and the amount of energy needed to operate the system. In addition, an alternative on-site location would require slightly more land since land will be required for the plant, connecting lines, and now the pumps (pumps would not be required on the proposed project site because waste would flow by gravity to the proposed plant site). Excess wastewater not used for on-site irrigation purposes would still be discharged to the river. All other environmental impacts associated with this alternative (such as traffic, solid waste disposal, air quality, *etc.*) are considered similar to those created by the proposed WRP and would merely be relocated to another site as a result of this alternative.

3.5.1.3 Septic System Alternative

Disposing of wastewater generated by the proposed Specific Plan in a series of septic systems would not be feasible from a treatment quality standpoint. State and County health regulations would preclude this alternative, as too much wastewater would be generated on the site to allow for wastewater disposal in a way that would address health and safety considerations.

3.5.2 Off-Site Alternatives Already Approved by the Court

The off-site WRP alternatives addressed in the Final EIR already properly considered by Los Angeles County include:

3.5.2.1 Expand an Existing WRP (Valencia WRP)

Under this alternative, the existing Valencia WRP site located upstream of the Specific Plan site adjacent to the Santa Clara River and The Old Road would be expanded from its existing permitted capacity of 12.6 mgd to meet the needs of the Newhall Ranch Specific Plan rather than constructing a WRP on the Newhall Ranch Specific Plan site. Implementation of the expanded Valencia WRP would require wastewater generated downstream of the existing plant to be pumped uphill to the plant over great distances, thereby dramatically increasing the construction, operation and maintenance costs of the system in comparison to the proposed WRP, and the amount of energy needed to run the system. In addition, an expanded Valencia WRP would require slightly more land since there are additional land requirements for the plant, the pumps, and the pipes needed to connect the Newhall Ranch Specific Plan area to the Valencia WRP. Excess reclaimed water not used for on-site irrigation purposes would still be discharged to the river. Distribution of reclaimed water would require additional off-site pipelines from the Valencia WRP to the Specific Plan site. Most other environmental impacts associated with this alternative (such as traffic, solid waste, air quality, *etc.*) are considered similar to those created by the proposed WRP and would merely be relocated to another site as a result of this alternative. From a visual perspective, it would be less impacting to add on to the existing plant than to construct the proposed WRP; however, implementation of this alternative would not preclude the overall significant visual impact of the Specific Plan.

3.5.2.2 New WRP Site Upstream of Specific Plan Site

The WRP could be constructed at another location off the Specific Plan site, upstream of its present location. However, this would require wastewater generated downstream on the Newhall Ranch Specific

Plan site to be pumped uphill to the off-site plant over great distances, thereby dramatically increasing the construction, operation and maintenance costs of the system in comparison to the WRP as proposed, as well as the amount of energy needed to run the system. In addition, a new plant would require slightly more land due to the land requirements of the plant, the pumps, and the lines needed to connect the Newhall Ranch Specific Plan area to a new off-site WRP. This alternative assumes that the additional land needed to expand this plant to meet the needs of the Newhall Ranch Specific Plan beyond that already needed to serve other cumulative development could be purchased by the County Sanitation Districts of Los Angeles County (CSDLAC). Excess reclaimed water not used for on-site irrigation purposes would still be discharged to the river or one of its tributaries. All other environmental impacts associated with this alternative (such as traffic, solid waste, air quality, *etc.*) are considered similar to those created by the proposed WRP and would merely be relocated to another site as a result of this alternative (while a specific off-site upstream alternative as not been found, it is likely that an alternative site would also result in the conversion of undeveloped land, resulting in a degree of biological impact less than, similar or possibly greater than the proposed WRP site).

3.5.2.3 New WRP Site Downstream of Specific Plan Site in Ventura County

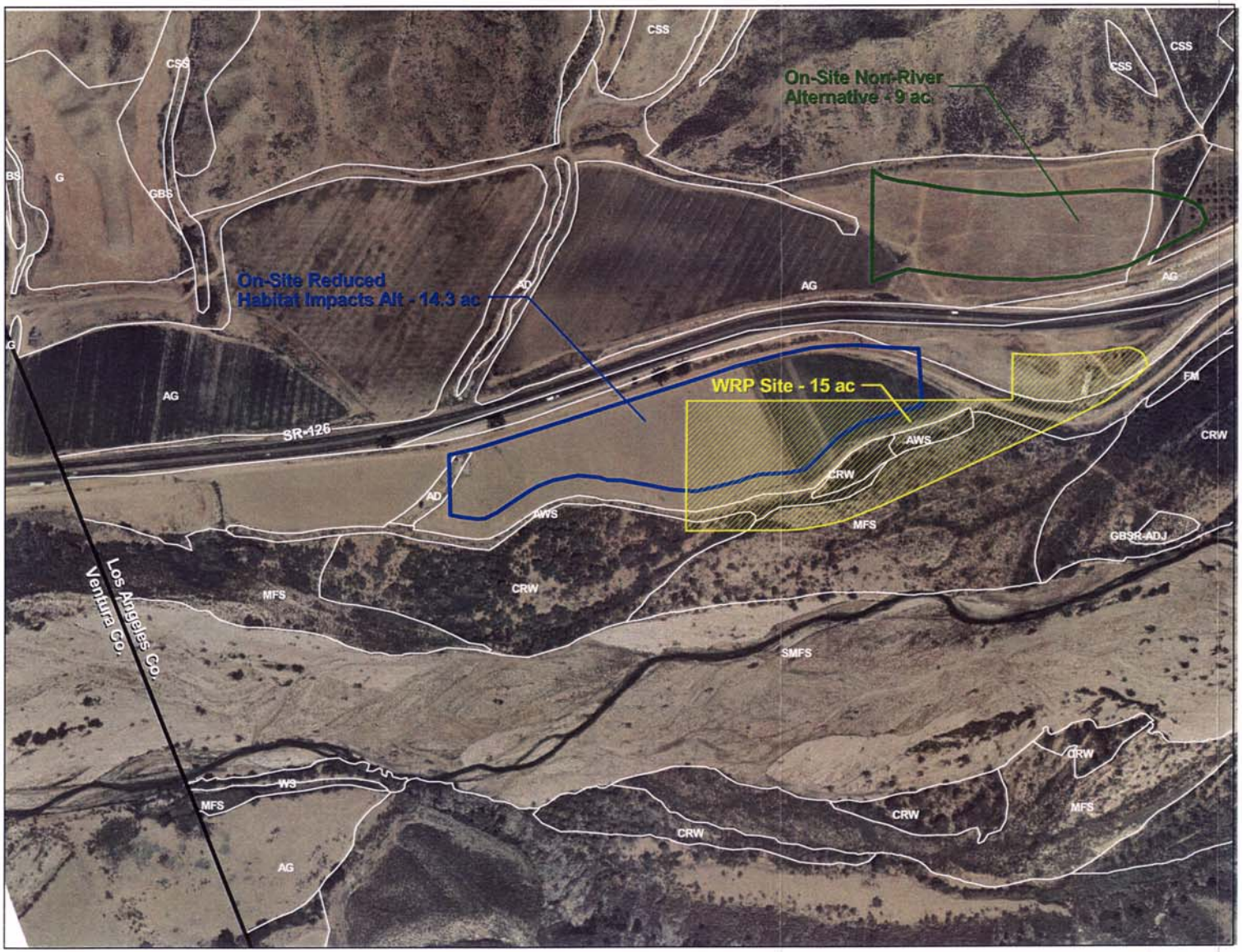
The proposed WRP would be operated and maintained by the CSDLAC. Because the alternative Ventura County WRP would not be in Los Angeles County and, therefore, could not be operated by the CSDLAC, this alternative is not feasible from an operational standpoint. However, overlooking this fact, and assuming the WRP is constructed downstream of the Newhall Ranch Specific Plan site in Ventura County, it would require a greater amount of wastewater infrastructure in terms of the piping needed to extend the Newhall Ranch Specific Plan system into Ventura County. Furthermore, a greater amount of infrastructure would be required to pump the treated wastewater upstream for irrigation uses at the Newhall Ranch Specific Plan site. This alternative could also be growth inducing, because wastewater infrastructure would be extended from the Specific Plan site to the Ventura County WRP site through an undeveloped area, thereby removing an impediment to growth in that intervening area of undeveloped land. Environmental impacts would also be greater in that additional undeveloped land would be used for the WRP, while the proposed WRP would be part of the Business Park uses under the Specific Plan. All other environmental impacts associated with this alternative (such as traffic, air quality, *etc.*) are considered similar to those created by the proposed WRP and would merely be relocated to another site as a result of this alternative.

3.5.3 On-Site Non-River Alternative Requiring Further Analysis

The Court found that the Final EIR for the Newhall Ranch Specific Plan and Water Reclamation Plant lacked substantial evidence to support the County's conclusion that siting the WRP at the non-river location would not mitigate the biological impacts of siting the plant as proposed, immediately adjacent to SEA 23. The intent of this analysis is to provide additional information regarding the non-river alternative.

The non-river alternative would entail constructing the WRP at a location more removed from the Santa Clara River than the proposed location (*See*, **Figure 3.0-5, Alternative WRP Locations**). It is expected that slightly less land would be required for the WRP under this alternative (approximately 9 acres compared to 15 acres under the proposed project because the non-river site is not as confined). However, it should be noted that regardless of the alternative selected, all the land (either the 15 acres for the proposed project or 9 acres for this alternative site) would be converted to either Business Park or Residential uses under the Specific Plan, respectively, if not used for the WRP. Excess wastewater not used for on-site irrigation purposes would still be discharged to the river and additional pipelines would be required to carry the treated wastewater to the discharge point. The layout of the On-Site Non-River Alternative is illustrated in **Figure 3.0-6, On-Site Non-River WRP Layout**. The WRP would be at a slightly higher elevation and, therefore, would require some pumping, resulting in higher costs for construction, operation and maintenance, and higher energy costs. With the exception of biological resources, agricultural resources, noise, air quality and energy consumption, all other environmental impacts associated with this alternative (such as traffic, *etc.*) are considered similar to those created by the proposed project and would merely be relocated to another site as a result of this alternative.

As shown on **Figure 3.0-5**, this alternative WRP site, like the proposed project site, is considered "prime" farmland. The WRP at the proposed project site would result in the conversion of approximately 9.5 acres of prime farmland. Development of the WRP under this alternative would require the conversion of approximately 9 acres of prime farmland. Because construction of the WRP on this alternative site would slightly decrease impacts to agricultural resources by approximately 0.5 acres, the Non-River Alternative is slightly superior to the proposed project from an agricultural resources perspective when considering only the plant itself. However, it should be noted that if the WRP is not constructed on this alternative site, the 9 acres of agricultural land present on the alternative site would still be converted to residential land uses under the Specific Plan. Similarly, if the WRP is constructed at this alternative site and not the proposed project site, the 9.5 acres of agricultural land on the proposed project site would still be converted to urban land uses (*i.e.*, Business Park). Consequently, under either the proposed project or this alternative site, all the agricultural land (18.5 acres) would be converted to urban uses regardless of



NEWHALL RANCH
Newhall Ranch Company

L E G E N D

- PROPOSED PROJECT - 15 ac
- ON-SITE REDUCED HABITAT IMPACTS ALTERNATIVE - 14.3 ac
- ON-SITE NON-RIVER ALTERNATIVE - 9 ac
- NEWHALL RANCH SPECIFIC PLAN BOUNDARY

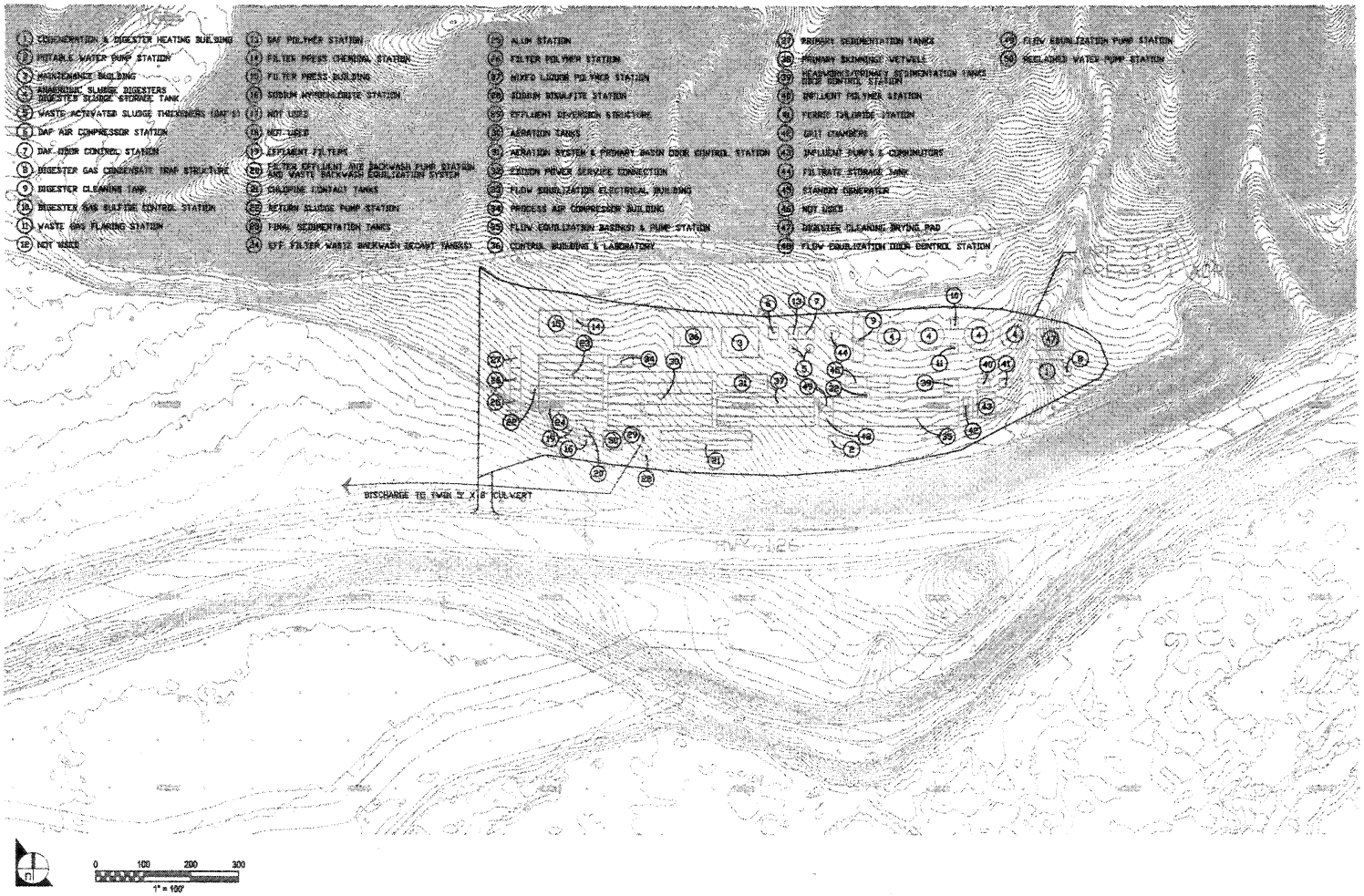
HABITAT TYPES

AD	AGRICULTURAL DRAINS
AG	AGRICULTURAL AND OTHER DEVELOPED USES
AWS	ARROW WEED SCRUB
CRW	SOUTHERN COTTONWOOD/ WILLOW RIPARIAN FOREST
CSS	COASTAL SAGE SCRUB
FM	VALLEY FRESHWATER MARSH
G	GRASSLAND
GBS	GREAT BASIN SCRUB
GBSR_ADJ	GREAT BASIN SCRUB RIPARIAN ADJACENT
MFS	MULE FAT SCRUB
WS	SOUTHERN WILLOW SCRUB

Feet 0 100 200 400
Meters 0 37.5 75 150

FORMA
PSOMAS
12-15-00
NR27_wrp_new.apr

FIGURE 3.0-5
ALTERNATIVE WRP LOCATION



NEWHALL RANCH.
Newhall Ranch Company

IMPACT SCIENCES INC
NORTH

FIGURE 3.0-6
ON-SITE NON-RIVER WRP LAYOUT

SOURCE: CH2MHILL June 26, 2000.

the alternative selected. Consequently, this alternative is not necessarily environmentally superior to the proposed project with respect to agricultural resource impacts. Agricultural impacts are equivalent when comparing the proposed project with this alternative given the ultimate conversion of both sites.

From a biological perspective, implementation of this alternative would decrease the magnitude of impacts to sensitive and non-sensitive riparian vegetation communities. The alternative site contains no sensitive habitats. Conversely, the proposed project would result in the permanent conversion of approximately 5.5 acres of riparian habitat, 1.0 acre of which is considered sensitive (Cottonwood Willow Riparian Forest). Given that this alternative site is completely under agricultural production, the San Fernando Spineflower does not occur at this location. Because implementation of this alternative would completely avoid significant impacts to riparian habitats, the Non-River Alternative would be environmentally superior to the proposed project from a biological perspective.

The Non-River Alternative would result in an increase in energy consumption when compared with the proposed project because it would require a greater amount of energy to pump waste up grade to the treatment plant. A consequence of this increased energy consumption would be the generation of air emissions in amounts incrementally greater than under the proposed project.

Because the treatment plant at either location would generally cause the same amount of noise, neither alternative is environmentally preferable from a noise generation perspective. However, the Non-River Alternative would be located immediately adjacent to planned Low-Medium Residential land uses, which are incompatible with a WRP. Under the proposed project, the WRP would not be located adjacent to incompatible land uses. Rather, it would be located adjacent to planned Business Park uses. With regard to noise generation and land use compatibility, therefore, the proposed project is environmentally superior to the Non-River Alternative.

Implementation of the Non-River Alternative would not result in a completely superior environmental condition compared to the proposed WRP site. Impacts to sensitive biological resources would be less under the Non-River Alternative when compared with the proposed project. However, impacts to air quality, energy consumption and noise would be greater under the Non-River Alternative. The Non-River Alternative would also not meet as many of the WRP siting criteria as the proposed project. Siting criteria that would not be met by this alternative include:

a. Locating the facility at or near the low elevation for the sewer system service area. This criterion allows as much sewage as possible to flow to the WRP site by gravity instead of being pumped up to the facility by pump stations and force mains. The Non-River Alternative would require pumping up grade (by approximately 25 to 30 vertical feet) in order to convey waste to the plant.

Consequently, electrical cost for operating pump stations would be higher and the potential for collection system pump station(s) and force main failures would increase. Reducing electrical power consumption has a positive benefit on the environment as a whole as it reduces the pollution associated with the production of electricity from fossil fuels.

b. The WRP site should be compatible with surrounding land uses. Some land uses considered compatible with treatment plants are industrial, commercial, agricultural, open space, and transportation corridors. Land uses that are generally not compatible due to noise, traffic, and potential odors are residential areas, schools, and multipurpose community parks. Siting the WRP at the Non-River Alternative site approximately 200 to 300 feet from the proposed WRP site would place the WRP directly adjacent to planned Low-Medium Residential land uses. Consequently, it is expected that, relative to the proposed project site adjacent to Business Park uses, this alternative would result in the submission of a higher number of nuisance complaints to the plant operator, potentially leading to added costs of operation.

c. The WRP should be sited so as to have as few wastewater line road/highway crossings as possible. Sewers that cross roads create potential conflicts with other utilities that are located in the roadway right of way and create the possibility of their being broken when new utilities are constructed nearby. Implementation of this alternative would require the installation of sewer lines under SR-126 to convey waste both to and from the plant. The potential for infrastructure conflicts would increase, as would the costs of construction. Location of the WRP site on the river-side of a parallel roadway would eliminate the need for one sewer line to cross the road (in this case SR-126) and the problem of installing the line while keeping the existing roadway open to traffic.

d. The WRP reclaimed water discharge point should be located as close as possible to the receiving stream to minimize the construction and maintenance costs associated with the WRP effluent disposal line. Under the Non-River Alternative, the plant would be placed several hundred feet farther from the river than under the proposed project resulting in a longer discharge line and proportionately greater construction and maintenance costs.

In light of these facts, on balance, the Non-River Alternative is considered environmentally superior with regards to impacts on sensitive biological habitats, and is not considered environmentally superior to the proposed project with regards to impacts to air quality, energy consumption and noise.

3.5.4 New On-Site Alternative (Reduced Habitat Impacts)

A new alternative not previously considered in the Final EIR is the On-Site Alternative (Reduced Habitat Impacts). This new alternative would entail constructing the WRP in approximately the same location as the proposed project. However, the plant would be situated and arranged in a manner that would avoid permanent impacts to sensitive and non-sensitive riparian habitats.

The configuration of the On-Site Alternative (Reduced Habitat Impacts) is illustrated on **Figure 3.0-7, On-Site Alternative (Reduced Habitat Impacts) WRP Layout**. This alternative would require less land than would the proposed project because the site is more constrained by its location in between the river and SR-126 than the proposed site. The site is more compressed in order to avoid permanent encroachment into riparian areas. While the proposed project would result in the conversion of approximately 15 acres of land in the proposed Business Park, this alternative would result in the conversion of approximately

14.3 acres of land. However, it should be noted that regardless of the alternative selected, all the land (either the 15 acres for the proposed project or 14.3 acres for this alternative configuration) would be converted to either WRP or Business Park uses. Excess wastewater not used for on-site irrigation purposes would still be discharged to the river. With the exception of biological and agricultural resources, all other environmental impacts associated with this alternative (such as traffic, air quality, *etc.*) are considered similar to those created by the proposed WRP and would merely be relocated to this different site configuration.

With respect to biological resources, implementation of this alternative would avoid the permanent conversion of approximately 5.5 acres of sensitive and non-sensitive riparian habitats when compared to the proposed project. This alternative would be constructed completely on agricultural and other disturbed land. However, it should be noted that in order to provide access for construction of and bank protection for the plant along the River, approximately 11 acres of riparian habitat area would be temporarily impacted and later revegetated in native species under the requirements of the Specific Plan. Consequently, from the perspective of permanent biological impacts to riparian habitat, this alternative would be environmentally superior to the proposed project.

However, with respect to agricultural resource impacts, the proposed project would convert 9.5 acres of prime farmland to WRP uses. In contrast, this alternative would result in the conversion of approximately 14.1 acres of prime farmland. However, it should be noted that if the WRP is not constructed on this alternative site, the 14.1 acres of agricultural land present on the alternative site would be converted to Business Park land uses under the Specific Plan. Similarly, if the WRP is constructed at this alternative site and not the proposed project site, the 9.5 acres of agricultural land on the proposed project site would still be converted to urban land uses (*i.e.*, Business Park). Consequently, under either the proposed project or this alternative site, all the agricultural land would be converted to urban uses regardless of the alternative selected. Consequently, from the perspective of agricultural resource impacts, this alternative is not necessarily environmentally superior to the proposed project. It should be noted that the County of Los Angeles overrode the impact of agricultural land conversion caused by buildout of the Specific Plan, including those associated with WRP construction.

In conclusion, the On-Site Alternative (Reduced Habitat Impacts) alternative is environmentally superior to the proposed project. Impacts in one environmental category would be less (*i.e.*, biological resources). All other impacts would be roughly equivalent. It should be noted that this alternative also meets the Water Reclamation Plant siting criteria to the same extent as the proposed project. *See*, siting criteria analysis presented above and **Table 3.0-2** below. **Table 3.0-2, Siting Criteria Comparison Matrix**, compares each of the WRP Alternatives with the siting criteria.

3.6 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Table 3.0-3, WRP Alternative Comparison Matrix, presents a matrix that compares the degree of impact for each of the WRP alternatives by environmental category. As shown, several of the alternatives are environmentally superior to the proposed project in some environmental categories, but not in others. However, one of the alternatives, the On-Site Alternative (Reduced Habitat Impacts), is superior to the proposed project in one environmental category, and environmental equivalent in all other categories. Consequently, the On-Site Alternative (Reduced Habitat Impacts) is the environmentally superior alternative.

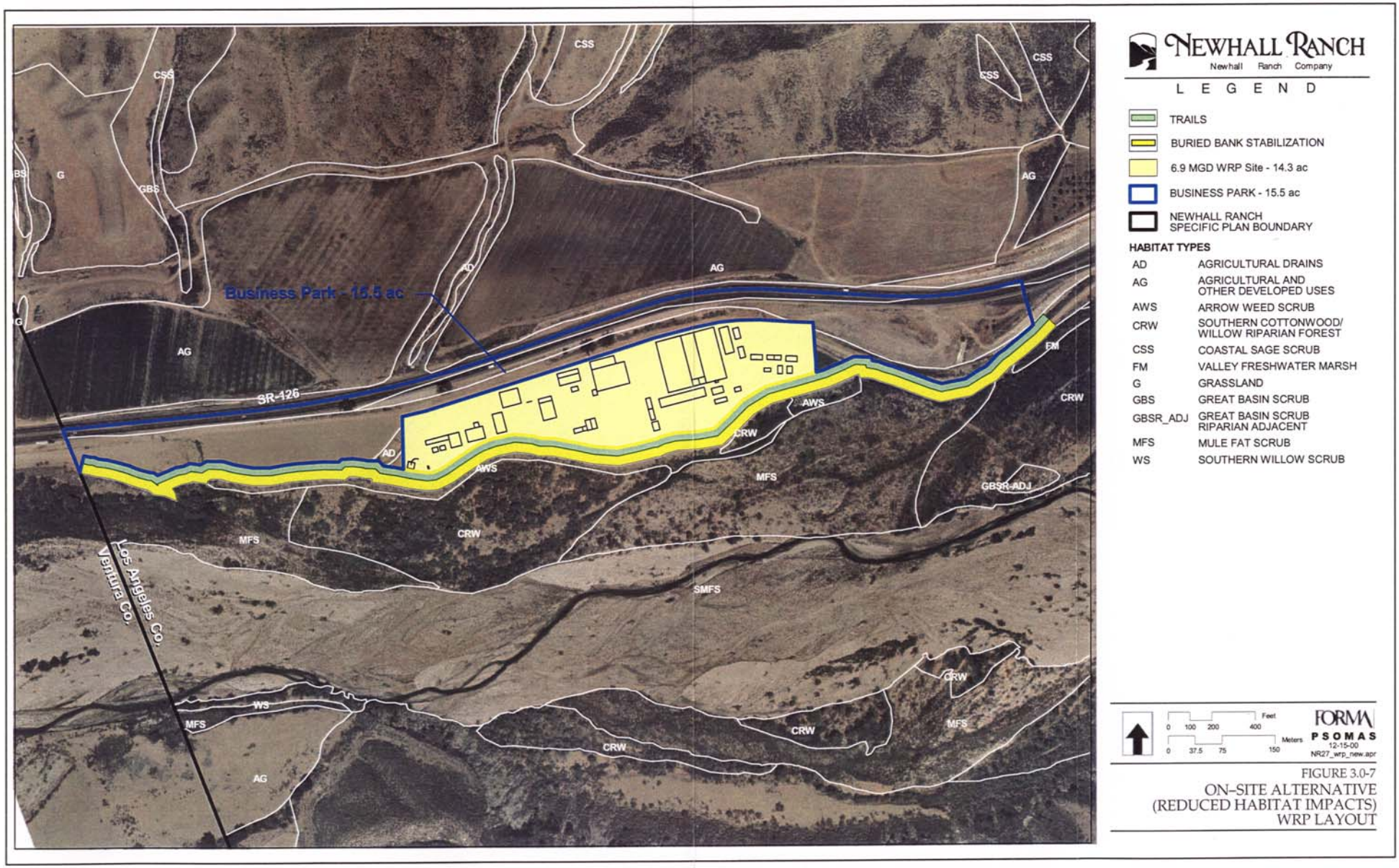


FIGURE 3.0-7
ON-SITE ALTERNATIVE
(REDUCED HABITAT IMPACTS)
WRP LAYOUT

Table 3.0-2
Siting Criteria Comparison Matrix [1]

Siting Criteria	Upstream Location Alternative	Expand an Existing WRP (Valencia WRP)	New WRP Site Upstream of Specific Plan Site	New WRP Site Downstream of Specific Plan Site in Ventura County	On-Site Non-River Alternative	On-site (Reduced Habitat Impacts) Alternative
Locate facility near a low elevation	Does Not Meet	Does Not Meet	Does Not Meet	Meets	Does Not Meet	Meets
Site should be compatible with surrounding land uses	Could Meet	Meets	Could Meet	Could Meet	Does Not Meet	Meets
Site should be located to have as few wastewater line road or highway crossings as possible	Does Not Meet	Does Not Meet	Does Not Meet	Could Meet	Does Not Meet	Meets
Located discharge point as close as possible to the receiving stream	Could Meet	Meets	Could Meet	Could Meet	Does Not Meet	Meets
A level site or one with some slope is desirable	Could Meet	Meets	Could Meet	Could Meet	Meets	Meets
Site should be on soil that can be easily excavated	Could Meet	Meets	Could meet	Could Meet	Meets	Meets
Site should not have poor soil bearing capacity or require prohibitive foundation costs	Could Meet	Meets	Could Meet	Could Meet	Meets	Meets
Avoid sites with high groundwater elevations	Could Meet	Meets	Could Meet	Could Meet	Meets	Meets
Site should not be located over an active fault or in an unstable geologic area	Could Meet	Meets	Could meet	Could Meet	Meets	Meets
Site should be of sufficient size so all facilities are at one location	Could Meet	Meets	Could Meet	Could Meet	Meets	Meets
Utility services for the WRP should be readily available	Meets	Meets	Could Meet	Could Meet	Meets	Meets

[1] Note: the "No WRP Alternative" and the "Septic System Alternative" are not included in this table as implementation of these alternatives would result in no WRP being constructed.

KEY: The term "Meets" indicates that the alternative in question definitely meets the particular siting criterion to the same degree as the proposed project site. The term "Could Meet" indicates that it is possible the alternative could meet the criterion to the same degree as the proposed project site. However, because the exact alternative site is not known, a final determination cannot be made. The term "Does Not Meet" indicates that the alternative definitely does not meet the siting criterion to the same degree as the proposed project site.

Table 3.0-3
WRP Alternative Comparison Matrix

Environmental Category	Alternatives Upheld by the Court						Alternative Rejected by the Court	New Alternative
	No WRP Alternative	Upstream On-Site Location Alternative	Septic System Alternative	Expand Existing WRP	New WRP Site Upstream of Specific Plan	WRP in Ventura County	Non-River Alternative	On-site (Reduced Habitat Impacts) Alternative*
Geotechnical	N/A	=	N/A	=	=	=	=	=
Flood	N/A	=	N/A	=	=	=	=	=
Cultural/Paleontological Resources	N/A	G	N/A	G	G	G	=	=
Agricultural Resources	N/A	=	N/A	=	=	=	=	=
Environmental Safety	N/A	=	N/A	=	=	=	=	=
Biota	N/A	G	N/A	G	G	G	L	L
Visual Qualities	N/A	=	N/A	L	=	=	=	=
Traffic/Access	N/A	=	N/A	=	=	=	=	=
Noise	N/A	=	N/A	=	G	=	G	=
Air Quality	N/A	G	N/A	G	G	G	G	=
Water Resources	N/A	=	N/A	=	=	=	=	=
Wastewater Disposal	N/A	=	N/A	=	=	=	=	=
Natural Gas	N/A	=	N/A	=	=	=	=	=
Electricity	N/A	G	N/A	G	G	G	G	=
Solid Waste Disposal	N/A		N/A	=	=	=	=	=
Education	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Police Services	N/A	=	N/A	=	=	=	=	=
Fire Services and Hazards	N/A	=	N/A	=	=	=	=	=
Libraries	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Parks, Recreation and Trails	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Population, Housing and Employment	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Key: "*" denotes the environmentally superior alternative. "G" Impact of Alternative is Greater than Proposed Project; "L" Impact of Alternative is Less than Proposed Project; "="Impact of Alternative is approximately similar to the Proposed Project.

MITIGATION MONITORING PLAN
(Newhall Ranch Specific Plan)

INTRODUCTION The Mitigation Monitoring Program describes the procedures the applicant and others will use to implement the mitigation measures adopted in connection with the approval of the Specific Plan and Water Reclamation Plant and the methods of monitoring such actions. A Monitoring Program is necessary only for impacts which would be significant if not mitigated. The following consists of a monitoring program table noting the responsible agency for mitigation monitoring, the schedule and a list of all Specific Plan-related mitigation measures.

PURPOSE *The Mitigation Monitoring Program (MMP) has been prepared in conformance with Section 21081.6 of the California Environmental Quality Act. It is the intent of this program to (1) verify satisfaction of the required mitigation measures of the EIR; (2) provide a methodology to document implementation of the required mitigation; (3) provide a record of the Monitoring Program; (4) identify monitoring responsibility; (5) establish administrative procedures for the clearance of mitigation measures; (6) establish the frequency and duration of monitoring; and (7) utilize existing review processes wherever feasible.*

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.1 GEOTECHNICAL AND SOIL RESOURCES			
4.1-1. The standard building setbacks from ascending and descending man-made slopes are to be followed in accordance with Section 1806.4 of the Los Angeles County Building Code, unless superseded by specific geologic and/or soils engineering evaluations. (Allan E. Seward Engineering Geology, Inc., 19 September 1994, p. 44)	Applicant (Civil Engineer, Geotechnical Engineer, Engineering Geologist)	Building and Grading Plan Check	1. LACDPW, Geology/Soils Section, and Building and Safety 2. LACDPW, Building and Safety and Geology/Soils Section 3. Prior to Issuance of Building Permits

ACOE - U.S. Army Corps of Engineers
CIWMB - California Integrated Waste Management Board
CSDLAC - County Sanitation Districts of Los Angeles County
FCD - Flood Control Division
LACDRP - Los Angeles County Department of Regional Planning
LACDPW - Los Angeles County Department of Public Works
LACFPD - Los Angeles County Fire Protection District
CPUC - California Public Utilities Commission
CNLM - Center for Natural Lands Management
RWQCBLAR - Regional Water Quality Control Board, Los Angeles Region
SCAQMD - South Coast Air Quality Management District
USFWS - U.S. Fish and Wildlife Service
WSHUHSD - William S. Hart Union High School District

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.1 GEOTECHNICAL AND SOIL RESOURCES (cont.)			
4.1-2. The existing Grading Ordinance for planting and irrigation of cut-slopes and fill slopes is to be adhered to for grading operations within the project site. (Allan E. Seward Engineering Geology, Inc., 19 September 1994, p. 44)	Applicant (Civil Engineer)	Field Verification	1. LACDPW, Building and Safety 2. LACDPW, Building and Safety 3. Prior to Issuance of Occupancy Permits
4.1-3. In order to safeguard against major seismic-related structural failures, all buildings within the project boundaries are to be constructed in conformance with the Los Angeles County Uniform Building Code, as applicable.	Applicant (Project Structural Engineer)	Building Plan Check	1. LACDPW, Building and Safety 2. LACDPW, Building and Safety 3. Prior to Issuance of Building Permits
MITIGATION FOR GEOLOGIC HAZARDS			
4.1-4. The location and dimensions of the exploratory trenches and borings undertaken by Allan E. Seward Engineering Geology, Inc. and R.T. Frankian & Associates are to be noted on all grading plans relative to future building plans, unless the trenches and/or borings are removed by future grading operations. If future foundations traverse the trenches or borings, they are to be reviewed and approved by the project Geotechnical Engineer. (Allan E. Seward Engineering Geology, Inc., 19 September 1994, p. 45)	Applicant (Geotechnical Engineer)	Grading Plan Check Field Verification	1. LACDPW, Geology/Soils Section 2. LACDPW, Geology/Soils Section 3. Prior to Approval of Final Grading Plans; grading
4.1-5. Wherever the Pacoima Formation is exposed, it may be potentially expansive; therefore, it is to be tested by the project Soils Engineer at the grading plan stage to determine its engineering characteristics and mitigation requirements, as necessary.	Applicant (Geotechnical Engineer)	Grading Plan Check	1. LACDPW, Geology/Soils Section 2. LACDPW, Geology/Soils Section 3. Prior to Approval of Final Grading Plans
4.1-6. Should any expansive soils be encountered during grading operations, they are not to be placed nearer the finished surface than 8 feet below the bottom of the subgrade elevation. This depth is subject to revision depending upon the expansive potential measured during grading. (R.T. Frankian & Associates, 19 September 1994, Appendix I)	Applicant (Geotechnical Engineer) Grading Contractor	Field Investigation	1. LACDPW, Geology/Soils Section 2. LACDPW, Geology/Soils Section 3. During Grading

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.1 GEOTECHNICAL AND SOIL RESOURCES (cont.)			
4.1-7. If expansive materials are encountered at subgrade elevation in cut areas, the soils are to be removed to a depth of 8 feet below the "finished" or "subgrade" surface and the excavated area backfilled with nonexpansive, properly compacted soils. This depth is subject to revision depending upon the expansive potential measured during grading. (R.T. Frankian & Associates, 19 September 1994, Appendix I)	Applicant (Geotechnical Engineer)	Field Investigation	1. LACDPW, Geology/Soils Section 2. LACDPW, Geology/Soils Section 3. During Grading
4.1-8. At the time of subdivision, which allows construction, areas subject to liquefaction are to be mitigated to the satisfaction of the project Geotechnical Engineer prior to site development. (R.T. Frankian & Associates, 19 September 1994, Appendix I)	Applicant (Geotechnical Engineer)	Grading Plan Check Field Verification	1. LACDPW, Geology/Soils Section 2. LACDPW, Geology/Soils Section 3. Prior to Issuance of Grading Permit(s)
4.1-9. Subdrains are to be placed in areas of high ground water conditions (Potrero Canyon, in particular) or wherever extensive irrigation is planned. The systems are to be designed to the specifications of the Newhall Ranch Specific Plan Geotechnical Engineer.	Applicant (Geotechnical Engineer and Engineering Geologist)	Grading Plan Check Field Verification	1. LACDPW, Geology/Soils Section 2. LACDPW, Geology/Soils Section 3. Prior to Issuance of Grading Permit and Verify During Grading
4.1-10. Subdrains are to be placed in the major and minor canyon fills, behind stabilization blankets, buttress fills, and retaining walls, and as required by the Geotechnical Engineer during grading operations. (R.T. Frankian & Associates, 19 September 1994, Appendix I)	Applicant (Geotechnical Engineer and Engineering Geologist)	Grading Plan Check Field Verification	1. LACDPW, Geology/Soils Section 2. LACDPW, Geology/Soils Section 3. Prior to Issuance of Grading Permit and Verify During Grading
4.1-11. Canyon subdrains may be installed in "V"-ditches or in a rectangular trench excavated to expose competent material or bedrock as approved by the Geotechnical Engineer.	Applicant (Geotechnical Engineer and Engineering Geologist)	Grading Plan Check Field Verification	1. LACDPW, Geology/Soils Section 2. LACDPW, Geology/Soils Section 3. Prior to Issuance of Grading Permit and Verify During Grading

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.1 GEOTECHNICAL AND SOIL RESOURCES (cont.)			
4.1-12. The vertical spacing of subdrains behind buttress fills, stabilization blankets, *etc.*, are to be a maximum of 15 feet. The gradient is to be at least 2 percent to the discharge end. (R.T. Frankian & Associates, 19 September 1994, Appendix I)	Applicant (Geotechnical Engineer)	Grading Plan Check Field Verification	1. LACDPW, Geology/Soils Section 2. LACDPW, Geology/Soils Section 3. Prior to Issuance of Grading Permit and Verify During Grading
4.1-13. Geological materials subject to hydroconsolidation (containing significant void space) are to be removed prior to the placement of fill. Specific recommendations relative to hydroconsolidation are to be provided by the project Geotechnical Engineer at the subdivision stage. (Allan E. Seward Engineering Geology, Inc., 19 September 1994, p. 44)	Applicant (Geotechnical Engineer and Engineering Geologist)	Receipt of Specific Hydro-consolidation Recommend-ations Field Verification	1. LACDPW, Geology/Soils Section 2. LACDPW, Geology/Soils Section 3. Prior to Approval of Final Grading Plans and Verify During Grading
4.1-14. Proposed structures on ridgelines will have a minimum 20-foot horizontal setback from the margin of the bedrocks to prevent perched or ground water levels where relatively impermeable materials can block downward migration.	Applicant (Geotechnical Engineer and Engineering Geologist)	Grading Plan Check Field Verification	1. LACDPW, Geology/Soils Section, and Building and Safety 2. LACDPW, Building and Safety 3. Prior to Issuance of Grading Permits and Verify during Grading
4.1-15. Subsurface exploration is required to delineate the depth and lateral extent of the landslides shown on the geologic map. This work shall be undertaken at the subdivision stage. (Allan E. Seward Engineering Geology, Inc., 19 September 1994, p. 15) Landslides must be mitigated through stabilization, removal, and/or building setbacks as determined by the Newhall Ranch Specific Plan Geotechnical Engineer, and to the satisfaction of the Los Angeles County Department of Public Works.	Applicant (Geotechnical Engineer and Engineering Geologist)	Receipt of Exploratory Data and Mitigation Field Verification	1. LACDPW, Geology/Soils Section 2. LACDPW, Geology/Soils Section 3. Prior to Approval of Final Grading Plan and Verify During Grading
4.1-16. At the subdivision stage, the existence of landslides designated with "3" on Figure 4.1-2, Existing Landslide Areas, and within or adjacent to the development area is to be confirmed. (Allan E. Seward Engineering Geology, Inc., 19 September 1994,p. 15) If landslides are confirmed in these areas, they are to be mitigated through stabilization, removal, and/or building setbacks as determined by the Newhall Ranch Specific Plan Geotechnical Engineer.	Applicant (Geotechnical Engineer)	Grading Plan Check Field Verification	1. LACDPW, Geology/Soils Section 2. LACDPW, Geology/Soils Section 3. Prior to Approval of Final Grading Plan and Verify During Grading

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.1 GEOTECHNICAL AND SOIL RESOURCES (cont.)			
4.1-17. The existence, or lack thereof, of landslides on or adjacent to the roadway alignments for the extension of Magic Mountain Parkway and Valencia Boulevard will be evaluated by subsurface investigations at the subdivision stage. (Allan E. Seward Engineering Geology, Inc., 13 December 1995, p. 11) If landslides are confirmed in these areas, they are to be mitigated through stabilization, removal, and/or building setbacks as determined by the Newhall Ranch Specific Plan Geotechnical Engineer.	Applicant (Geotechnical Engineer and Engineering Geologist)	Grading Plan Check Field Verification	1. LACDPW, Geology/Soils Section 2. LACDPW, Geology/Soils Section 3. Prior to Approval of Final Grading Plan and Verify During Grading
4.1-18. The potential hazards associated with debris flow scars and other possible surficial failures located in proximity to the roadway alignments for the extension of Magic Mountain Parkway and Valencia Boulevard will be evaluated at the subdivision stage. (Allan E. Seward Engineering Geology, Inc., 13 December 1995, p. 11) These areas are to be mitigated as determined by the Newhall Ranch Specific Plan Geotechnical Engineer.	Applicant (Geotechnical Engineer and Engineering Geologist)	Grading Plan Check	1. LACDPW, Geology/Soils Section 2. LACDPW, Geology/Soils Section 3. Prior to Approval of Final Grading Plan and Verify During Grading
4.1-19. Remove debris from surficial failures during grading operations prior to the placement of fill. (Allan E. Seward Engineering Geology, Inc., 19 September 1994, p. 16)	Applicant (Geotechnical Engineer)	Field Verification	1. LACDPW, Geology/Soils Section 2. LACDPW, Geology/Soils Section 3. During Grading Operations
4.1-20. All soils and/or unconsolidated slopewash and landslide debris is to be removed prior to the placement of compacted fills. (Allan E. Seward Engineering Geology, Inc., 19 September 1994, p. 45)	Applicant (Geotechnical Engineer and Engineering Geologist)	Grading Plan Check Field Verification	1. LACDPW, Geology/Soils Section 2. LACDPW, Geology/Soils Section 3. Prior to approval of Final Grading Plan and During Grading

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.1 GEOTECHNICAL AND SOIL RESOURCES (cont.)			
4.1-21. Cut-slopes, which will expose landslide material, are to undergo geologic and geotechnical evaluation at the subdivision stage to determine their stability and degree of consolidation. (Allan E. Seward Engineering Geology, Inc., 19 September 1994, p. 15) Several options are available to mitigate potential landslide failure in the proposed cut-slopes. Landslides may be stabilized with buttress fills or shear keys designed by the Newhall Ranch Specific Plan Geotechnical Engineer; landslide material can be entirely removed and replaced with a stability fill; or the slope can be redesigned to avoid the landslide. Landslides underlying cut pad or road areas may be removed or partially removed if the Newhall Ranch Specific Plan Geologist and Geotechnical Engineer conclude that the landslide is stable and sufficiently consolidated to build on. Landslides located on ascending natural slopes above proposed graded areas will also require evaluation for stability. Unstable landslides on natural slopes above graded areas will either require stabilization, removal or building setbacks to mitigate potential hazards.	Applicant (Geotechnical Engineer and Engineering Geologist)	Grading Plan Check Field Verification	1. LACDPW, Geology/Soils Section 2. LACDPW, Geology/Soils Section 3. Prior to Approval of Final Grading Plan and During Grading
4.1-22. Additional geologic investigations are required prior to approval of future tentative maps which allow construction, or grading plans to determine the geologic and geotechnical feasibility of the fifteen (15) lots proposed in the High Country SMA.	Applicant (Geotechnical Engineer)	Grading Plan Check	1. LACDPW, Geology/Soils Section 2. LACDPW, Geology/Soils Section 3. Prior to Approval of Tentative Maps for the 15 Estate Residential Lots
4.1-23. Prior to construction of the road embankment located within landslide Qls II, a compacted fill shear key will be constructed at the property boundary. (R.T. Frankian & Associates, 19 September 1994, p. 6)	Applicant (Geotechnical Engineer and Engineering Geologist)	Grading Plan Check Field Verification	1. LACDPW, Geology/Soils Section, and Building and Safety 2. LACDPW, Building and Safety 3. Prior to Construction of the Road Embankment and Verify During Grading
4.1-24. Landslides, which will not affect the proposed grading concept, are to be placed in Restricted Use Areas on the Final Maps. (Allan E. Seward Engineering Geology, Inc., 19 September 1994, p. 43)	Applicant (Geotechnical Engineer and Engineering Geologist)	Grading Plan Check	1. LACDPW, Geology/Soils Section 2. LACDPW, Geology/Soils Section 3. Prior to Approval of Final Maps

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.1 GEOTECHNICAL AND SOIL RESOURCES (cont.)			
4.1-25. Surficial stability of cut-slopes designated with a "G" are to be fully evaluated at the subdivision stage, due to the possibility of wedge failures or surficial material in the slope. Corrective grading measures are to be presented in detail as mitigation at both the subdivision and Grading Plan stages of development. (Allan E. Seward Engineering Geology, Inc., 19 September 1994, pp. 17, 43)	Applicant (Geotechnical Engineer and Engineering Geologist)	Grading Plan Check Field Verification	1. LACDPW, Geology/Soils Section 2. LACDPW, Geology/Soils Section 3. Prior to Approval of Final Grading Plans and During Grading
4.1-26. Cut slopes designated as "P" are potentially unstable and are to be fully evaluated at the subdivision stage to ascertain whether they are stable as designed. Corrective grading measures are to be presented in detail as mitigation at both the subdivision and Grading Plan stages of development. (Allan E. Seward Engineering Geology, Inc., 19 September 1994, pp. 17, 43)	Applicant (Geotechnical Engineer and Engineering Geologist)	Grading Plan Check Field Verification	1. LACDPW, Geology/Soils Section 2. LACDPW, Geology/Soils Section 3. Prior to Approval of Final Grading Plans and During Grading
4.1-27. Cut-slopes designated with a "U" are to be further investigated at the subdivision stage to confirm underlying geologic conditions and slope stability. Corrective grading measures are to be presented in detail as mitigation at both the subdivision and Grading Plan stages of development. (Allan E. Seward Engineering Geology, Inc., 19 September 1994, pp. 17, 43)	Applicant (Geotechnical Engineer and Engineering Geologist)	Grading Plan Check Field Verification	1. LACDPW, Geology/Soils Section 2. LACDPW, Geology/Soils Section 3. Prior to Approval of Final Grading Plans and During Grading
4.1-28. Cut-slopes associated with the construction of the proposed extensions of Magic Mountain Parkway and Valencia Boulevard are to be further investigated at the subdivision stage to confirm the underlying geologic conditions and slope stability. Corrective measures are to be required if it is determined that the cut-slopes will not be stable. (Allan E. Seward Engineering Geology, Inc., 13 December 1995, pp. 11 & 12) According to Allan E. Seward Engineering Geology, Inc., unstable cut-slopes can either be redesigned or stabilized using various corrective grading techniques. Redesign options for unstable cut-slopes include reorientation, relocation and reducing the proposed slope gradient. Options for corrective grading include the construction of buttress fills, stability fills, shear keys, and complete removal of the landslide material.	Applicant (Geotechnical Engineer and Engineering Geologist)	Grading Plan Check Field Verification	1. LACDPW, Geology/Soils Section 2. LACDPW, Geology/Soils Section 3. Prior to Approval of Final Grading Plans and During Grading

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.1 GEOTECHNICAL AND SOIL RESOURCES (cont.)			
4.1-29. Orientations of the bedrock attitudes are to be evaluated by the Newhall Ranch Specific Plan Engineering Geologist to identify locations of required buttress fills. Buttress fill design and recommendations, if necessary, are to be presented as mitigation during the grading plan stage. (R.T. Frankian & Associates, 19 September 1994, Appendix I)	Applicant (Geotechnical Engineer and Engineering Geologist)	Grading Plan Check Field Verification	1. LACDPW, Geology/Soils Section 2. LACDPW, Geology/Soils Section 3. Prior to Approval of Final Grading Plans
4.1-30. All fills, unless otherwise specifically designed, are to be compacted to at least 90 percent of the maximum dry unit weight as determined by ASTM Designation D 1557-91 Method of Soil Compaction. (R.T. Frankian & Associates, 19 September 1994, Appendix I)	Applicant (Geotechnical Engineer)	Field Verification	1. LACDPW, Geology/Soils Section 2. LACDPW, Geology/Soils Section 3. During Grading
4.1-31. No fill is to be placed until the area to receive the fill has been adequately prepared and approved by the Geotechnical Engineer. (R.T. Frankian & Associates, 19 September 1994, Appendix I)	Applicant (Geotechnical Engineer)	Field Verification	1. LACDPW, Geology/Soils Section, Building and Safety 2. LACDPW, Geology/Soils Section, Building and Safety 3. During Grading
4.1-32. Fill soils are to be kept free of all debris and organic material. (R.T. Frankian & Associates, 19 September 1994, Appendix I)	Applicant (Geotechnical Engineer)	Field Verification	1. LACDPW, Geology/Soils Section, Building and Safety 2. LACDPW, Geology/Soils Section, Building and Safety 3. During Grading
4.1-33. Rocks or hard fragments larger than 8 inches are not to be placed in the fill without approval of the Geotechnical Engineer, and in a manner specified for each occurrence. (R.T. Frankian & Associates, 19 September 1994, Appendix I)	Applicant (Geotechnical Engineer)	Field Verification	1. LACDPW, Geology/Soils Section, Building and Safety 2. LACDPW, Geology/Soils Section, Building and Safety 3. During Grading
4.1-34. Rock fragments larger than 8 inches are not to be placed within 10 feet of finished pad grade or the subgrade of roadways or within 15 feet of a slope face. (R.T. Frankian & Associates, 19 September 1994, Appendix I)	Applicant (Geotechnical Engineer)	Field Verification	1. LACDPW, Geology/Soils Section, Building and Safety 2. LACDPW, Geology/Soils Section, Building and Safety 3. During Grading

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.1 GEOTECHNICAL AND SOIL RESOURCES (cont.)			
4.1-35. Rock fragments larger than 8 inches may be placed in windrows, below the limits given above, provided the windrows are spaced at least 5 feet vertically and 15 feet horizontally. Granular soil must be flooded around windrows to fill voids between the rock fragments. The granular soil is to be wheel rolled to assure compaction. (R.T. Frankian & Associates, 19 September 1994, Appendix I)	Applicant (Geotechnical Engineer)	Field Verification	1. LACDPW, Geology/Soils Section, Building and Safety 2. LACDPW, Geology/Soils Section, Building and Safety 3. During Grading
4.1-36. The fill material is to be placed in layers which, when compacted, is not to exceed 8 inches per layer. Each layer is to be spread evenly and is to be thoroughly mixed during the spreading to insure uniformity of material and moisture. (R.T. Frankian & Associates, 19 September 1994, Appendix I)	Applicant (Geotechnical Engineer)	Field Verification	1. LACDPW, Geology/Soils Section, Building and Safety 2. LACDPW, Geology/Soils Section, Building and Safety 3. During Grading
4.1-37. When moisture content of the fill material is too low to obtain adequate compaction, water is to be added and thoroughly dispersed until the soil is approximately 2 percent over optimum moisture content. (R.T. Frankian & Associates, 19 September 1994, Appendix I)	Applicant (Geotechnical Engineer)	Field Verification	1. LACDPW, Geology/Soils Section, Building and Safety 2. LACDPW, Geology/Soils Section, Building and Safety 3. During Grading
4.1-38. When the moisture content of the fill material is too high to obtain adequate compaction, the fill material is to be aerated by blading or other satisfactory methods until the soil is approximately two percent over optimum moisture content. (R.T. Frankian & Associates, 19 September 1994, Appendix I)	Applicant (Geotechnical Engineer)	Field Verification	1. LACDPW, Geology/Soils Section, Building and Safety 2. LACDPW, Geology/Soils Section, Building and Safety 3. During Grading
4.1-39. Where fills toe out on a natural slope or surface, a keyway, with a minimum width of 16 feet and extending at least 3 feet into firm, natural soil, is to be cut at the toe of the fill. (R.T. Frankian & Associates, 19 September 1994, Appendix I)	Applicant (Geotechnical Engineer)	Field Verification	1. LACDPW, Geology/Soils Section, Building and Safety 2. LACDPW, Geology/Soils Section, Building and Safety 3. During Grading
4.1-40. Where the fills toe out on a natural or cut slope and the natural or cut slope is steeper than 5 horizontal to 1 vertical, a drainage bench with a width of at least 8 feet is to be established at the toe of the fill. Fills may be placed over cut slopes if the visible contact between the fill and cut is steeper than 45 degrees. (R.T. Frankian & Associates, 19 September 1994, Appendix I)	Applicant (Geotechnical Engineer)	Field Verification	1. LACDPW, Geology/Soils Section, Building and Safety 2. LACDPW, Geology/Soils Section, Building and Safety 3. During Grading

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.1 GEOTECHNICAL AND SOIL RESOURCES (cont.)			
4.1-41. When placing fills over slopes, sidewall benching is to extend into competent material, approved by the Geotechnical Engineer, with vertical benches not less than 4 feet. (R.T. Frankian & Associates, 19 September 1994, Appendix I) Competent material is defined as being free of loose soil, heavy fracturing or compressive soils.	Applicant (Geotechnical Engineer and Engineering Geologist)	Field Verification	1. LACDPW, Geology/Soils Section, Building and Safety 2. LACDPW, Geology/Soils Section, Building and Safety 3. During Grading
4.1-42. When constructing fill slopes, the grading contractor is to avoid spillage of loose material down the face of the slope during the dumping and compacting operations. (R.T. Frankian & Associates, 19 September 1994, Appendix I)	Applicant (Geotechnical Engineer)	Field Verification	1. LACDPW, Geology/Soils Section, Building and Safety 2. LACDPW, Geology/Soils Section, Building and Safety 3. During Grading
4.1-43. The outer faces of fill slopes are to be compacted by backing a sheepsfoot compactor over the top of the slope, and thoroughly covering all of the slope surface with overlapping passes of the compactor. Compaction of the slope is to be repeated after each 4 feet of fill has been placed. The required compaction must be obtained prior to placement of additional fill. As an alternate, the slope can be overbuilt and cut back to expose a compacted core. (R.T. Frankian & Associates, 19 September 1994, Appendix I)	Applicant (Geotechnical Engineer)	Field Verification	1. LACDPW, Geology/Soils Section, Building and Safety 2. LACDPW, Geology/Soils Section, Building and Safety 3. During Grading
4.1-44. All artificial fill associated with past petroleum activities as well as other existing artificial fill, are to be evaluated by the Newhall Ranch Specific Plan Geotechnical Engineer at the subdivision and/or Grading Plan Stage. (Allan E. Seward Engineering Geology, 19 September 1994, Inc., p. 45) Unstable fills are to be mitigated through removal, stabilization, or other means as determined by the Newhall Ranch Specific Plan Geotechnical Engineer.	Applicant (Geotechnical Engineer and Engineering Geologist)	Receipt of Geotechnical Evaluation Field Verification	1. LACDPW, Geology/Soils Section, Building and Safety 2. LACDPW, Geology/Soils Section, Building and Safety 3. Prior to Approval of Final Subdivision Maps or Grading Plans, and Verify During Grading
4.1-45. Surface runoff from the future graded areas is not to run over any natural, cut, or fill slopes. (Allan E. Seward Engineering Geology, Inc., 19 September 1994, p. 20)	Applicant (Civil Engineer and Construction Superintendent)	Include this Measure in Specifications Field Verification	1. LACDPW, Geology/Soils Section, Building and Safety 2. LACDPW, Geology/Soils Section, Building and Safety 3. During Grading

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.1 GEOTECHNICAL AND SOIL RESOURCES (cont.)			
4.1-46. Runoff from future pads and structures is to be collected and channeled to the street and/or natural drainage courses via non-erosive drainage devices. (Allan E. Seward Engineering Geology, Inc., 19 September 1994, p. 20)	Applicant (Civil Engineer and Construction Superintendent)	Include this Measure in Specifications Field Verification	1. LACDPW, Geology/Soils Section, Building and Safety 2. LACDPW, Geology/Soils Section, Building and Safety 3. During Grading
4.1-47. Water is not to stand or pond anywhere on the graded pads. (Allan E. Seward Engineering Geology, Inc., 19 September 1994, p. 20)	Applicant (Civil Engineer and Construction Superintendent)	Include this Measure in Specifications Field Verification	1. LACDPW, Geology/Soils Section, Building and Safety 2. LACDPW, Geology/Soils Section, Building and Safety 3. During Grading
4.1-48. Oil and water wells that might occur on site are to be abandoned in accordance with State and local regulations. (Allan E. Seward Engineering Geology, Inc., 19 September 1994, p. 45)	Applicant (Well abandonment Specialist)	Receipt of Confirmation of Abandonment	1. California Department of Conservation, Division of Oil and Gas, Building and Safety 2. LACDPW, Geology/Soils Section, Building and Safety 3. Prior to Issuance of Grading Permits
4.1-49. If any leaking or undocumented oil wells are encountered during grading operations, their locations are to be surveyed and the current well conditions evaluated immediately. (Allan E. Seward Engineering Geology, Inc., 19 September 1994, p. 21) Measures are to be taken to document the wells, abandonment, and remediate the well sites (if necessary) in accordance with State and local regulations.)	Applicant (Civil Engineer and Well Abandonment Specialist)	Include Measure in Specifications Field Documentation	1. California Department of Conservation, Division of Oil and Gas, Building and Safety 2. California Department of Conservation, Division of Oil and Gas, Building and Safety 3. During Grading
4.1-50. The exact status and location of the Exxon (Newhall Land & Farming) oil well #31 will be evaluated at the subdivision stage. If necessary, the well will be abandoned in accordance with State and local regulations. (Allan E. Seward Engineering Geology, Inc., 13 December 1995, p. 12)	Applicant (Civil Engineer and Well Abandonment Specialist)	Locate Well #31 on Tract Map Documentation of Abandonment, if applicable	1. California Department of Conservation, Division of Oil and Gas, Building and Safety 2. California Department of Conservation, Division of Oil and Gas, Building and Safety 3. Prior to Issuance of Grading Permit

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.1 GEOTECHNICAL AND SOIL RESOURCES (cont.)			
MITIGATION FOR SEISMIC HAZARDS			
4.1-51. Survey control will be required to precisely locate the Salt Creek and Del Valle Faults at the subdivision stage. (Allan E. Seward Engineering Geology, Inc., 19 September 1994, p. 33)	Applicant (Civil Engineer and Engineering Geologist)	Receipt of Geotechnical Documentation	1. LACDPW, Geology Section 2. LACDPW, Geology Section 3. Prior to Tract Map/Site Plan Approvals as Applicable
4.1-52. Additional subsurface trenching will be performed within the Holser Structural Zone on Newhall Ranch during the subdivision stage to evaluate its existence. Within Potrero Canyon, additional subsurface evaluation will be performed during the subdivision stage to confirm that nontectonic alluvial movement was the cause of surface ground cracking during the January 17, 1994 earthquake, and to evaluate the potential for shallow-depth faults. (Allan E. Seward Engineering Geology, Inc. 19 September 1994, p. 42, as revised above) No distinct evidence for Holocene activity on any of the faults traversing the Newhall Ranch Specific Plan site was observed during Allan E. Seward Engineering Geology, Inc.'s investigation; however, based on the distinct nature of faulting, the possible association of minor seismic activity, and compatible orientation of the faulting in relation to the current stress regime of the Transverse Ranges, preliminary Building Setback Zones have been designated around the mapped fault zones (*See*, Figure 4.1-4).	Applicant (Engineering Geologist)	Receipt of Geotechnical Documentation	1. LACDPW, Geology Section 2. LACDPW, Geology Section 3. Prior to Tract Map/Site Plan Approvals as Applicable
4.1-53. Precise Building Setback Zones for the Newhall Ranch Specific Plan site are to be defined at the subdivision stage.	Applicant (Civil Engineer and Engineering Geologist)	Setback Zones Identified on Tract Maps/Site Plans	1. LACDPW, Geology Section, and Building and Safety 2. LACDPW, Geology Section, and Building and Safety 3. Prior to Tract Map and Site Plan and Final Map Approvals, as Applicable
4.1-54. Due to the potential activity of the Salt Creek and Del Valle Faults, site development is to remain outside of Building Setback Zones around fault traces, and the possible fault zone connecting them (*See*, Figure 4.1-4). (Allan E. Seward Engineering Geology, Inc., 19 September 1994, p. 42)	Applicant (Civil Engineer and Engineering Geologist)	Setback Zones Identified on Tract Maps/Site Plans	1. LACDPW, Geology Section, and Building and Safety 2. LACDPW, Geology Section, and Building and Safety 3. Prior to Tract Map/Site Plan/Final Map Approvals, as Applicable

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.1 GEOTECHNICAL AND SOIL RESOURCES (cont.)			
The zone shown around the possible fault connecting the Del Valle and Salt Creek Faults may be deleted if future work shows that this fault segment does not exist.			
4.1-55. To minimize potential hazards from shattered ridge effects, structures and storage tanks proposed on ridgelines are to have a minimum 20-foot setback from the margins of the bedrock. Designation of specific building setbacks will require evaluation at the subdivision stage. (Allan E. Seward Engineering Geology, Inc., 19 September 1994, p. 40) Building setback zones are to be identified on all site plans and tract maps for the site.	Applicant (Engineering Geologist)	Setback Zones Identified on Tract Maps/Site Plans	1. LACDPW, Geology Section, and Building and Safety 2. LACDPW, Geology Section, and Building and Safety 3. Prior to Tract Map/Site Plan Approvals, as Applicable
4.1-56. The potential for ground motion and ground failure associated with a seismic event in proximity to the planned roadway alignments of Magic Mountain Parkway and Valencia Boulevard will be evaluated at the subdivision stage. (Allan E. Seward Engineering Geology, Inc., 13 December 1995, p. 11) Mitigation to reduce associated significant impacts will also be identified at that time.	Applicant (Engineering Geologist)	Receipt of Geotechnical Report and Mitigation	1. LACDPW, Geology/Soils Section, and Building and Safety 2. LACDPW, Geology/Soils Section, and Building and Safety 3. Prior to Final Map Approval

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.2 FLOOD			
4.2-1. All on- and off-site flood control improvements necessary to serve the Newhall Ranch Specific Plan are to be constructed to the satisfaction of the County of Los Angeles Department of Public Works Flood Control Division.	Applicant (Civil Engineer)	Approval of Drainage Plans Field Verification	1. LACDPW, FCD 2. LACDPW, FCD 3. Prior to Issuance of Occupancy Permit(s)
4.2-2. All necessary permits or letters of exemption from the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, California Department of Fish and Game, and the Regional Water Quality Control Board for Specific Plan-related development are to be obtained prior to construction of drainage improvements. The performance criteria to be used in conjunction with 1603 agreements and/or 404 permits are described in Section 4.6, Biological Resources, **Mitigation Measures 4.6-1** through **4.6-10** (restoration) and **4.6-11** through **4.6-16** (enhancement).	Applicant	Receipt of all Necessary Permit(s)	1. ACOE, USFWS, CDFG, RWQCBLAR 2. ACOE, USFWS, CDFG, RWQCBLAR 3. Prior to Grading
4.2-3. All necessary streambed agreement(s) are to be obtained from the California Department of Fish and Game wherever grading activities alter the flow of streams under CDFG jurisdiction. The performance criteria to be used in conjunction with 1603 agreements and/or 404 permits are described in Section 4.6, Biological Resources, **Mitigation Measures 4.6-1** through **4.6-10** (restoration) and **4.6-11** through **4.6-16** (enhancement).	Applicant	Receipt of Streambed Agreements	1. CDFG 2. LACDPW, FCD 3. Prior to Grading
4.2-4. Conditional Letters of Map Revision (CLOMR) relative to adjustments to the 100-year FIA flood plain are to be obtained by the applicant after the proposed drainage facilities are constructed.	Applicant (Civil Engineer)	Receipt of CLOMR(s)	1. Federal Insurance Administration 2. LACDPW 3. Upon Completion of Facilities
4.2-5. Prior to the approval and recordation of each subdivision map, a Hydrology Plan, Drainage Plan, and Grading Plan (including an Erosion Control Plan if required) for each subdivision must be prepared by the applicant of the subdivision map to ensure that no significant erosion, sedimentation, or flooding impacts would occur during or after site development. These plans shall be prepared to the satisfaction of the County of Los Angeles Department of Public Works.	Applicant (Project Engineer)	Approval of Final Hydrology Plan, Final Drainage Plan, and Final Grading Plan	1. LACDPW, FCD and Geology/Soils Section 2. LACDPW, FCD and Geology/Soils Section 3. Prior to Recording of Each Subdivision Map

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.2 FLOOD (cont.)			
4.2-6. Install permanent erosion control measures, such as desilting and debris basins, drainage swales, slope drains, storm drain inlet/outlet protection, and sediment traps in order to prevent sediment and debris from the upper reaches of the drainage areas which occur on the Newhall Ranch site from entering storm drainage improvements. These erosion control measures shall be installed to the satisfaction of the County of Los Angeles Department of Public Works.	Applicant (Project Engineer)	Field Verification	1. LACDPW, FCD 2. LACDPW, FCD 3. Prior to Issuance of Occupancy Permits
4.2-7. The applicant for any subdivision map permitting construction shall satisfy all applicable requirements of the NPDES Program in effect in Los Angeles County to the satisfaction of the County of Los Angeles Department of Public Works. These requirements currently include preparation of an Urban Storm Water Mitigation Plan (USWMP) containing design features and Best Management Practices (BMPs) appropriate and applicable to the subdivision. In addition, the requirements currently include preparation of a Storm Water Management Pollution Prevention Plan (SWPPP) containing design features and BMPs appropriate and applicable to the subdivision. The County of Los Angeles Department of Public Works shall monitor compliance with those NPDES requirements.	Applicant (Construction Superintendent)	Submittal of USWMP and SWPPP to RWQCBLAR Field Verification	1. RWQCBLAR 2. LACDPW, Building and Safety 3. Prior to Grading and During Grading Operations
4.2-8. The applicant for any subdivision map permitting construction shall comply with all appropriate requirements of the County of Los Angeles Standard Urban Stormwater Mitigation Plan ("SUSMP") requirements, and comply with the SWRCB-issued General Permit for Construction Activity Storm Water (SWRCB Order 99-08-DWQ), as it may be amended from time to time or replaced by other applicable stormwater permits. ~~or demonstrate equivalency to these requirements.~~	Applicant (Construction Superintendent)	Submittal of SUSMP to LACDPW Field Verification	1. LACDPW, FCD 2. LACDPW, FCD 3. Prior to Issuance of Occupancy Permits

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.3 CULTURAL/PALEONTOLOGICAL RESOURCES			
The following mitigation measures are derived from the Los Angeles County Environmental Document Reporting Procedures and Guidelines for paleontological resources and Appendix K of the CEQA *Guidelines* for the protection of cultural resources. Both documents require that reasonable efforts be made to reduce significant impacts on cultural resources to levels below identified thresholds of significance:			
4.3-1. Any adverse impacts to California-LAN-2133, -2235, and the northern portion of -2233 are to be mitigated by avoidance and preservation. Should preservation of these sites be infeasible, a Phase III data recovery (salvage excavation) operation is to be completed on the sites so affected, with archaeological monitoring of grading to occur during subsequent soils removals on the site. This will serve to collect and preserve the scientific information contained therein, thereby mitigating all significant impacts to the affected cultural resource.	Applicant (Archaeologist)	Qualified Archaeologist Present During Grading Activities of Sites	1. LA County Department of Regional Planning 2. LA County Department of Regional Planning 3. Prior to and During Grading Activities, as appropriate
4.3-2. Any significant effects to California-LAN-2241 are to be mitigated through site avoidance and preservation. Should this prove infeasible, an effort is to be made to relocate, analyze and re-inter the disturbed burial at some more appropriate and environmentally secure locale within the region.	Applicant (Archaeologist)	Qualified Archaeologist Present During Grading Activities of site if not located before	1. LA County Department of Regional Planning 2. LA County Department of Regional Planning 3. Prior to and During Grading Activities, as appropriate
4.3-3. In the unlikely event that additional artifacts are found during grading within the development area or future roadway extensions, an archaeologist will be notified to stabilize, recover and evaluate such finds.	Applicant (Archaeologist)	Include this Measure in Subdivision Map Conditions if appropriate	1. LA County Department of Regional Planning 2. LA County Department of Regional Planning 3. During Tentative Map Processing

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.3 CULTURAL/PALEONTOLOGICAL RESOURCES (cont.)			
4.3-4. As part of an inspection testing program, a Los Angeles County Natural History Museum-approved inspector is to be on site ~~during an appropriate number of excavations into the Pico Formation, Saugus Formation, Quaternary Terrace Deposits, and Quaternary Older Alluvium. Should the excavations yield significant paleontological resources, excavation is to be stopped or redirected until the extent of the find is established and the resources are salvaged.~~ to salvage scientifically significant fossil remains. The duration of these inspections depends on the potential for the discovery of fossils, the rate of excavation, and the abundance of fossils. Geological formations (like the Saugus Formation) with a high potential will initially require full time monitoring during grading activities. Geologic formations (like the Quaternary terrace deposits) with a moderate potential will initially require half-time monitoring. If fossil production is lower than expected, the duration of monitoring efforts should be reduced. Because of known presence of microvertebrates in the Saugus Formation, samples of at least 2,000 pounds of rock shall be taken from likely horizons, including localities 13, 13A, 14, and 23. These samples can be stock-piled to allow processing later to avoid delays in grading activities. The frequency of these samples will be determined based on field conditions. Should the excavations yield significant paleontological resources, excavation is to be stopped or redirected until the extent of the find is established and the resources are salvaged. Because of the long duration of the Specific Plan, a reassessment of the paleontological potential of each rock unit will be used to develop mitigation plans for subsequent subdivisions. The report shall include an itemized inventory of the fossils, pertinent geologic and stratigraphic data, field notes of the collectors and include recommendations for future monitoring efforts in those rock units. Prior to grading, an agreement shall be reached with a suitable public, non-profit scientific repository, such as the Los Angeles County Museum of Natural History or similar institution, regarding acceptance of fossil collections.	Applicant (Archaeologist)	LA County Natural History Museum-Approved Inspector Present During Grading Activities	1. LA County Department of Regional Planning 2. LA County Department of Regional Planning 3. During Grading Activities in the Pico Formation, Saugus Formation, Quaternary Terrace Deposits, and Quaternary Older Alluvium

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.4 AGRICULTURAL RESOURCES			
4.4-1. Purchasers of homes located within 1,500 feet of an agricultural field or grazing area are to be informed of the location and potential effects of farming uses prior to the close of escrow.	Applicant	Include this Information in CC&Rs	1. LA County Department of Regional Planning 2. LA County Department of Regional Planning 3. At Home Sales
4.4-2. New homes within 1,500 feet of farming uses within Ventura County, if any, are to be informed that agricultural activities within Ventura County are protected under the County's right-to-farm ordinance, and are to be provided with copies of the County's Amended Ordinance 3730-5/7/85.	Applicant	Include this Information in CC&Rs	1. LA County Department of Regional Planning 2. LA County Department of Regional Planning 3. At Home Sales

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.5 ENVIRONMENTAL SAFETY			
4.5-1. All final school locations are to comply with the California State Board of Education requirement that no schools be sited within 100 feet from the edge of the right-of-way of 100-110 kV lines; 150 feet from 220-230 kV lines; and 250 feet from 345 kV lines.	Applicant	Tentative Tract Map Review	1. State Board of Education 2. LA County Department of Regional Planning 3. Prior to Approval of Tract Maps
4.5-2. Only non-habitable structures shall be located within SCE easements.	Applicant	Tentative Tract Map Review	1. LA County Department of Regional Planning 2. LA County Department of Regional Planning 3. Prior to Approval of Tract Maps
4.5-3. Prior to issuance of grading permits, all abandoned oil and natural gas-related sites must be remediated to the satisfaction of the California Department of Oil and Gas, the Los Angeles County Hazardous Materials Control Program, the South Coast Air Quality Management District, and/or the Regional Water Quality Control Board (Los Angeles region).	Applicant/On-Site Oil and Natural Gas Producers	Confirmation that Oil- and Natural Gas-Related Sites are Satisfactorily Remediated	1. California Department of Conservation, Division of Oil and Gas; LA County Hazardous Materials Control Program; SCAQMD; and RWQCBLAR 2. California Department of Conservation, Division of Oil and Gas; LA County Hazardous Materials Control Program; SCAQMD; and RWQCBLAR 3. Prior to Issuance of Grading Permits
4.5-4. All on-going oil and natural gas operational sites adjacent to or in close proximity to residential, mixed-use, commercial, business park, schools, and local and Community Parks shall be secured by fencing and emergency access to these locations shall be provided.	Applicant/On-Site Oil and Natural Gas Producers	Field Verification	1. California Department of Conservation, Division of Oil and Gas 2. LACDPW, Building and Safety Department 3. Prior to Issuance of Building Permits
4.5-5. The Specific Plan is to meet the requirements of SCGC in terms of pipeline relocation, grading in the vicinity of gas mains, and development within Southern California Gas Company easements. These requirements would be explicitly defined by SCGC at the future tentative map stage.	Applicant (Civil Engineer)	Grading Plan Check	1. SCGC 2. LACDPW 3. Prior to Approval of Grading Plan

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.5 ENVIRONMENTAL SAFETY (cont.)			
4.5-6. All potential buyers or tenants of property in the vicinity of Southern California Gas Company transmission lines are to be made aware of the line's presence in order to assure that no permanent construction or grading occurs over and within the vicinity of the high-pressure gas mains.	Applicant	Include this Information in CC&Rs	1. LA County Department of Regional Planning 2. LA County Department of Regional Planning 3. At Home Sales
4.5-7. In accordance with the provisions of the Los Angeles County Building Code, Section 308(d), all buildings and enclosed structures that would be constructed within the Specific Plan located within 25 feet of oil or gas wells shall be provided with methane gas protection systems. Buildings located between 25 feet and 200 feet of oil or gas wells shall, prior to the issuance of building permits by the County of Los Angeles, be evaluated in accordance with the current rules and regulations of the State of California Division of Oil and Gas.	Applicant (Building Contractors)	Include this Requirement in Building Specifications Field Verification	1. California Department of Conservation, Division of Oil and Gas and LACDPW, Building and Safety 2. LACDPW, Building and Safety 3. Prior to Issuance of Occupancy Permits
4.5-8. In accordance with the provisions of the Los Angeles County Building Code, Section 308(c), all buildings and structures located within 1,000 feet of a landfill containing decomposable material (in this case the Chiquito Canyon Landfill) shall be provided with a landfill gas migration protection and/or control system.	Applicant (Building Contractors)	Include this Requirement in Building Specifications Field Verification	1. LACDPW, Building and Safety 2. LACDPW, Building and Safety 3. Prior to Issuance of Occupancy Permits
4.5-9. In accordance with the provisions of the Los Angeles County Code, Title 11, Division 4, Underground Storage of Hazardous Materials regulations, the County of Los Angeles Department of Public Works shall review, prior to the issuance of building permits by the County of Los Angeles, any plans for underground hazardous materials storage facilities (*e.g.*, gasoline) that may be constructed or installed within the Specific Plan.	Applicant (Building Contractors)	Include this Requirement in Building Specifications Field Verification	1. LACDPW, Building and Safety 2. LACDPW, Building and Safety 3. Prior to Issuance of Occupancy Permits

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase

4.6 BIOTA

Development of the Newhall Ranch Specific Plan will result in impacts to biological resources, some of which are considered to be significant. However, the Specific Plan generally avoids areas of highest biological value, and concentrates development in lower quality areas. The mitigation measures presented below, if successfully implemented, would reduce the degree of many of these impacts to a level that is considered not significant.

Mitigation measures are separated into three categories. The first includes an overview of those design features that are incorporated as part of the Specific Plan to reduce the biological impact potential. The second category includes specific mitigation measures incorporated as part of the Resource Management Plan. The last category includes additional mitigation measures recommended as part of this Draft EIR. The specific mitigation measures in each of these categories are defined below.

SPECIFIC PLAN DESIGN MEASURES

The Specific Plan was designed to partially mitigate potential impacts to sensitive biological resources through avoidance in order to maximize the conservation of important biological features of the site. Specific elements of Specific Plan design that are intended to reduce impacts to plants, animals and habitat would be implemented through adoption and approval of the Specific Plan.

The habitat types and associated plant and wildlife species which occur on the property have become an integral part of the overall Specific Plan design, through the formulation of a conservation strategy that allows for the development of the site in a way that minimizes the effects to sensitive biological resources. In addition, this conservation strategy incorporates the design and management of important open areas in a way that conserves biological values. An important aspect of this approach was an analysis of the conservation value of habitats on the property, which used conservation principles and a GIS mapping methodology. An additional component of the conservation strategy was the consideration of the larger regional context in the conservation design of biological resources on the site. The Ranch, which extends from the ridgeline of the Santa Susana Mountains across the Santa Clara River to the uplands on the north, offers the potential for significant habitat contributions to a Santa Susana Mountains open area and a key segment of the Santa Clara River system, as well as regionally important connections between these habitat areas and across the River.

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase

4.6 BIOTA (cont.)

The biological resource conservation strategy developed for the Newhall Ranch property addresses the sequencing recommended by the resource agencies: avoidance, minimization, and mitigation for unavoidable impacts to key sensitive resources. The proposed large, open areas on the Newhall Ranch property avoid impacts to many of the highly sensitive species present or potentially occurring on the site, and their habitats. Further design with respect to potential unavoidable impacts to biological resources has minimized encroachments into key areas of the property, decreasing the overall impacts. Indirect impacts to biological resources are minimized through the dedication of large blocks of habitat that decreases the edge-area ratio, and thus, buffers the habitat from noise, lighting, and encroachment by domestic pets, non-native plants, and humans. The result of these design efforts has produced a biological resource conservation strategy that has focused conservation and mitigation efforts on the Newhall Ranch property into two Special Management Areas and their connection:

- the Santa Clara River Corridor (River Corridor SMA);
- the large block of relatively undisturbed habitats on higher elevations into the Santa Susana Mountains (High Country SMA); and
- the connection between these two areas along the Salt Creek drainage.

In this design, the Conceptual Grading Plan (Draft EIR, Figure 1.0-14) has been developed to allow for preservation of significantly large areas of sensitive native habitats associated with the natural drainage areas of the site, and major landforms have been maintained. Large contiguous blocks of valuable habitat have been avoided and provided with direct linkage. The Specific Plan has focused on putting the two key habitat resource areas into consolidated blocks (connected by the Salt Creek drainage), resulting in minimal boundaries with developed areas. The assembly of these three elements will facilitate their management as a single special management area system within the Specific Plan area, as well as allowing coordination and interface with other programs outside the boundary of Newhall Ranch. The transitions between development and the special management areas will be the focus of special design treatments to protect the integrity of the conserved areas. As indicated above, the "edges" of urban development areas have been minimized to reduce the indirect impact potential of the Specific Plan, and native and compatible species will be used for landscaping in these areas.

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase

4.6 BIOTA (cont.)

The open area system for Newhall Ranch includes the most important habitat areas of the Santa Clara River (River Corridor SMA) and the areas which have been least impacted by agricultural, and oil and natural gas production activities (High Country SMA). It also includes the largest, least fragmented patches of each habitat type that remain on Newhall Ranch. In addition to consolidating the habitat on the Ranch into two major interconnected blocks, the open areas include the largest remaining individual blocks of each of the important habitat types. Substantial proportions of each of the habitat types and vegetation associations that occur on the Ranch will be conserved within the open area system. The incorporation of the River, the mountains, and connection provides for conservation of substantially the entire range of terrain and vegetation types on Newhall Ranch.

By connecting the open areas into two major blocks with a major linkage, the land use plan for the Ranch provides for a minimum edge-to-area ratio within the Specific Plan area. The least accessible portion of the property, in terms of topography and presence of roads, is the High Country SMA. In addition, there is limited existing access to the River and to the Salt Creek corridor area. The topography along the High Country and River provide the opportunity to focus management activities to effectively limit access to the habitat in these key resource areas. Additional management practices are intended to restrict future access as the Specific Plan is implemented.

A critical component of the open area system within the Newhall Ranch property and in the region is the connection between the High Country and the River Corridor along Salt Creek. The corridor will provide continuity between the habitats and the wildlife populations within the property, as well as forming a permanent regional linkage between the Santa Clara River and the Santa Susana Mountains. Salt Creek is the most appropriate location for such a wildlife corridor connection because of several distinguishing characteristics. These include provision of a direct link between the two major open areas; less disturbance than any of the other potential connections; it is bound through most of its length by open area on the north side and, therefore, will not be surrounded by development in the future; it is the only drainage that would provide more than a discontinuous, narrow connection; it includes both upland and riparian vegetation through most of the corridor; and it is topographically isolated from areas of development on Newhall Ranch. Currently, a portion of the wildlife corridor is situated in Ventura County. Future land use decisions will be required to define the corridor's final configuration in areas that occur outside the County of Los Angeles.

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase

4.6 BIOTA (cont.)

RESOURCE MANAGEMENT PLAN MITIGATION

Approval of the Specific Plan and its associated RMP would involve an amendment to the Los Angeles County zoning ordinance such that the provisions of the Specific Plan and RMP are binding. Specific measures to mitigate impacts to biological resources are incorporated as part of the Resource Management Plan (RMP) that is part of the Newhall Ranch Specific Plan. These measures are identified below:

SANTA CLARA RIVER (RIVER CORRIDOR) SMA

MITIGATION REQUIREMENTS

Mitigation for impacts for the Specific Plan on riparian resources will include restoration of riparian habitat and may include enhancement activities as well. In addition, a mitigation bank may be established as discussed in this section. The general areas in which riparian mitigation activities may take place are shown on Exhibit 2.6-3, Candidate Riparian Restoration/Enhancement Areas, of the Specific Plan.

The mitigation of Specific Plan impacts through restoration of habitat and enhancement of existing habitat quality shall conform to the requirements set forth below:

MITIGATION THROUGH RESTORATION

Habitat restoration as referred to in the Specific Plan means the revegetation of native plant communities on sites that have had the habitat removed due to past activities, such as agricultural or oil and natural gas operations.

Riparian resources along the Santa Clara River that are impacted by the Newhall Ranch Specific Plan will require restoration of similar habitat and values. Avoidance of impacts to riparian resources shall be the primary goal during the design of the individual stages of the Specific Plan. Unavoidable impacts to riparian resources shall be minimized through Specific Plan design, and then mitigated by the implementation of a revegetation plan. The revegetation plan may be prepared as part of a California Department of Fish and Game 1603 Streambed Alteration Agreement or U.S. Army Corps of Engineers Section 404 Permit and shall include the following:

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
4.6-1. The restoration mitigation areas located within the River Corridor SMA shall be in areas that have been disturbed by previous uses or activities. Mitigation shall be conducted only on sites where soils, hydrology, and microclimate conditions are suitable for riparian habitat. First priority will be given to those restorable areas that occur adjacent to existing patches (areas) of native habitat that support sensitive species, particularly endangered or threatened species. The goal is to increase habitat patch size and connectivity with other existing habitat patches while restoring habitat values that will benefit sensitive species.	Applicant (Project Biologist)	Field Verification	1. ACOE, CDFG 2. ACOE, CDFG 3. Prior to Approval of Revegetation Plans
4.6-2. A qualified biologist shall prepare or review revegetation plans. The biologist shall also monitor the restoration effort from its inception through the establishment phase.	Applicant (Project Biologist)	Revegetation Plan Comments and Documentation of Restoration Monitoring from Qualified Biologist Field Verification	1. ACOE, CDFG 2. ACOE, CDFG 3. Prior to Approval of Revegetation Plans and Monitor During Restoration Effort
4.6-3. Revegetation Plans may be prepared as part of a California Department of Fish and Game 1603 Streambed Alteration Agreement and/or an U.S. Army Corps of Engineers Section 404 Permit, and shall include: • Input from both the Project proponent and resource agencies to assure that the Project objectives applicable to the River Corridor SMA and the criteria of this RMP are met. • The identification of restoration/mitigation sites to be used. This effort shall involve an analysis of the suitability of potential sites to support the desired habitat, including a description of the existing conditions at the site(s) and such base line data information deemed necessary by the permitting agency.	Applicant (Project Biologist)	Revegetation Plan Review	1. ACOE, CDFG 2. ACOE, CDFG 3. Prior to Approval of Revegetation Plan
4.6-4. The revegetation effort shall involve an analysis of the site conditions such as soils and hydrology so that site preparation needs can be evaluated. The revegetation plan shall include the details and procedures required to prepare the restoration site for planting (*i.e.*, grading, soil preparation, soil stockpiling, soil amendments, *etc.*), including the need for a supplemental irrigation system, if any.	Applicant (Project Biologist)	Revegetation Plan Review	1. ACOE, CDFG 2. ACOE, CDFG 3. Prior to Approval of Revegetation Plan

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
4.6-5. Restoration of riparian habitats within the River Corridor SMA shall use plant species native to the Santa Clara River. Cuttings or seeds of native plants shall be gathered within the River Corridor SMA or purchased from nurseries with local supplies to provide good genetic stock for the replacement habitats. Plant species used in the restoration of riparian habitat shall be listed on the approved project plant palette (Specific Plan Table 2.6-1, Recommended Plant Species for Habitat Restoration in the River Corridor SMA) or as approved by the permitting State and Federal agencies.	Applicant (Project Biologist)	Revegetation Plan Review Field Verification	1. ACOE, CDFG 2. ACOE, CDFG 3. Prior to Approval of Revegetation Plan and Monitor During Restoration Effort
4.6-6. The final revegetation plans shall include notes that outline the methods and procedures for the installation of the plant materials. Plant protection measures identified by the project biologist shall be incorporated into the planting design/layout.	Applicant (Project Biologist)	Revegetation Plan Review	1. ACOE, CDFG 2. ACOE, CDFG 3. Prior to Approval of Revegetation Plan
4.6-7. The revegetation plan shall include guidelines for the maintenance of the mitigation site during the establishment phase of the plantings. The maintenance program shall contain guidelines for the control of non-native plant species, the maintenance of the irrigation system, and the replacement of plant species.	Applicant (Project Biologist)	Revegetation Plan Review	1. ACOE, CDFG 2. ACOE, CDFG 3. Prior to Approval of Revegetation Plan
4.6-8. The revegetation plan shall provide for monitoring to evaluate the growth of the developing habitat. Specific performance goals for the restored habitat shall be defined by qualitative and quantitative characteristics of similar habitats on the River (*e.g.*, density, cover, species composition, structural development). The monitoring effort shall include an evaluation of not only the plant material installed, but the use of the site by wildlife. The length of the monitoring period shall be determined by the permitting state and/or federal agency.	Applicant (Project Biologist)	Revegetation Plan Review	1. ACOE, CDFG 2. ACOE, CDFG 3. Prior to Approval of Revegetation Plan

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
4.6-9. Monitoring reports for the mitigation site shall be reviewed by the permitting State and/or Federal agency.	Applicant (Project Biologist)	Review of Monitoring Reports	1. ACOE and CDFG 2. ACOE and CDFG 3. During Revegetation Activities
4.6-10. Contingency plans and appropriate remedial measures shall also be outlined in the revegetation plan.	Applicant (Project Biologist)	Revegetation Plan Review	1. ACOE, CDFG 2. ACOE, CDFG 3. Prior to Approval of Revegetation Plan
MITIGATION THROUGH ENHANCEMENT			
4.6-11. Habitat enhancement as referred to in this document means the rehabilitation of areas of native habitat that have been moderately disturbed by past activities (*e.g.*, grazing, roads, oil and natural gas operations, *etc.*) or have been invaded by non-native plant species such as giant cane (*Arundo donax*) and tamarisk (*Tamarix* sp.).	Applicant (Project Biologist)	Revegetation Plan Review	1. ACOE, CDFG 2. ACOE, CDFG 3. Prior to Approval of Revegetation Plan
4.6-12. Removal of grazing is an important means of enhancement of habitat values. Without ongoing disturbance from cattle, many riparian areas will recover naturally. Grazing except as permitted as a long-term resource management activity will be removed from the River Corridor SMA pursuant to the Long-Term Management Plan set forth in Section 4.6 of the Specific Plan EIR.	Land Owner/SMA Manager	Mitigation Monitoring Reports	1. LACDRP 2. LACDRP 3. Mitigation Monitoring Reports under CUP Condition No. 8
4.6-13. To provide guidelines for the installation of supplemental plantings of native species within enhancement areas, a revegetation plan shall be prepared prior to implementation of mitigation (*See,* guidelines for revegetation plans above). These supplemental plantings will be composed of plant species similar to those growing in the existing habitat patch (*See,* Specific Plan Table 2.6-1).	Applicant (Project Biologist)	Revegetation Plan Review	1. ACOE, CDFG 2. ACOE, CDFG 3. Prior to Approval of Revegetation Plan

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
4.6-14. Not all enhancement areas will necessarily require supplemental plantings of native species. Some areas may support conditions conducive for rapid "natural" re-establishment of native species. The revegetation plan may incorporate means of enhancement to areas of compacted soils, poor soil fertility, trash or flood debris, and roads as a way of enhancing riparian habitat values.	Applicant (Project Biologist)	Revegetation Plan Review	1. ACOE, CDFG 2. ACOE, CDFG 3. Prior to Approval of Revegetation Plan
4.6-15. Removal of non-native species such as giant cane (*Arundo donax*), salt cedar or tamarisk (*Tamarix* sp.), tree tobacco (*Nicotiana glauca*), castor bean (*Ricans communis*), if included in a revegetation plan to mitigate impacts, shall be subject to the following standards: • First priority shall be given to those habitat patches that support or have a high potential for supporting sensitive species, particularly endangered or threatened species. • All non-native species removals shall be conducted according to a resource agency approved exotics removal program. • Removal of non-native species in patches of native habitat shall be conducted in such a way as to minimize impacts to the existing native riparian plant species.	Applicant (Project Biologist)	Revegetation Plan Review	1. ACOE, CDFG 2. ACOE, CDFG 3. Prior to Approval of Revegetation Plan
MITIGATION BANKING			
4.6-16. Mitigation banking activities for riparian habitats will be subject to State and Federal regulations and permits. Mitigation banking for oak resources shall be conducted pursuant to the Oak Resources Replacement Program. Mitigation banking for elderberry scrub shall be subject to approval of plans by the County Forester.	Applicant (Project Biologist)	State and Federal Permits; Submittal of Permits	1. ACOE, CDFG 2. ACOE, CDFG, 3. Prior to Approval of Mitigation Banking Program
		Oak Resources; Review of Oak Tree Permit	1. LACDRP 2. LACDRP 3. Approval of Oak Tree Permit
		Elderberry Scrub; Review of Initial Study	1. LACDRP 2. LACDRP 3. Prior to Grading

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
MANAGEMENT REQUIREMENTS			
RECREATION AND ACCESS			
The quality of the habitat values that are conserved in the River Corridor SMA will benefit from the control of access to riparian areas. Guidelines for the control of access to the River Corridor SMA include the following:			
4.6-16. Access to the River Corridor SMA for hiking and biking shall be limited to the River trail system (including the Regional River Trail and various Local Trails) as set forth in this Specific Plan. • The River trail system shall be designed to avoid impacts to existing native riparian habitat, especially habitat areas known to support sensitive species. Where impacts to riparian habitat are unavoidable, disturbance shall be minimized and mitigated as outlined above under **Mitigation Measures 4.6-1** through **4.6-8**. • Access to the River Corridor SMA will be limited to day time use of the designated trail system. • Signs indicating that no pets of any kind will be allowed within the River Corridor SMA, with the exception that equestrian use is permitted on established trails, shall be posted along the River Corridor SMA. • No hunting, fishing, or motor or off-trail bike riding shall be permitted. • The trail system shall be designed and constructed to minimize impacts on native habitats.	Applicant (Design) SMA Manager (Access)	Review of Trails Plans, Tract Maps, and/or Site Plans (Design) Field Verification (Access)	1. LA County Department of Parks and Recreation 2. LA County Department of Parks and Recreation 3. Prior to Approval of Trails Plans, Tract Maps, and/or Site Plans, as applicable. 1. LACDRP 2. LACDRP 3. Upon Complaint
TRANSITION AREAS			
4.6-18. Where development lies adjacent to the boundary of the River Corridor SMA a transition area shall be designed to lessen the impact of the development on the conserved area. Transition areas may be comprised of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Exhibits 2.6-4, 2.6-5, and 2.6-6 indicate the relationship between the River Corridor SMA and the development (disturbed) areas of the Specific Plan. The SMAs and the Open Area as well as the undisturbed portions of the development areas are shown in green. As indicated on the exhibits, on the south side of the River the River Corridor SMA is separated from development by the River bluffs, except in one location. The Regional River Trail will serve as transition area on the north side of the River where development areas adjoin the River Corridor SMA (excluding Travel Village).	Applicant	Review of Trails Plans, Tract Maps, and/or Site Plans	1. LACDRP 2. LACDRP 3. Prior to Approval of Trails Plans, Tract Maps, and/or Site Plans, as applicable.

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
TRANSITION AREAS			
4.6-19. The following are the standards for design of transition areas: • In all locations where there is no steep grade separation between the River Corridor and development, a trail shall be provided along this edge. • Native riparian plants shall be incorporated into the landscaping of the transition areas between the River Corridor SMA and adjacent development areas where feasible for their long-term survival. Plants used in these areas shall be those listed on the approved plant palette (Specific Plan Table 2.6-2 of the Resource Management Plan [Recommended Plants for Transition Areas Adjacent to the River Corridor SMA]). • Roads and bridges that cross the River Corridor SMA shall have adequate barriers at their perimeters to discourage access to the River Corridor SMA adjacent to the structures. • Where bank stabilization is required to protect development areas, it shall be composed of ungrouted rock, or buried bank stabilization as described in Section 2.5.2.a, except at bridge crossings and other locations where public health and safety requirements necessitate concrete or other bank protection. • A minimum 100 foot wide buffer adjacent to the Santa Clara River should be required between the top river-side of bank stabilization and development within the Land Use Designations Residential Low Medium, Residential Medium, Mixed-Use and Business Park unless, through Planning Director review in consultation with the staff biologist, it is determined that a lesser buffer would adequately protect the riparian resources within the River Corridor or that a 100 foot wide buffer is infeasible for physical infrastructure planning. The buffer area may be used for public infrastructure, such as: flood control access; sewer, water and utility easements; abutments; trails and parks, subject to findings of consistency with the Specific Plan and applicable County policies.	Applicant	Review of Trails Plans, Tract Maps, and/or Site Plans	1. LACDRP and LACDPW for Bank Stabilization 2. LACDRP and LACDPW for Bank Stabilization 3. Prior to Approval of Trails Plans, Tract Maps, and/or Site Plans, as applicable
4.6-20. The following guidelines shall be followed during any grading activities that take place within the River Corridor SMA: • Grading perimeters shall be clearly marked and inspected by the project biologist prior to grading occurring within or immediately adjacent to the River Corridor SMA. • The project biologist shall work with the grading contractor to avoid inadvertent impacts to riparian resources.	Applicant (Project Biologist)	Field Verification	1. LACDPW 2. LACDPW 3. Prior to and During Grading Activities

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
GRADING ACTIVITIES			
LONG-TERM MANAGEMENT PLAN			
4.6-21. Upon final approval of the Newhall Ranch Specific Plan, the Special Management Area designation for the River Corridor SMA shall become effective. The permitted uses and development standards for the SMA are governed by the Development Regulations, Chapter 3 of the Specific Plan.	Los Angeles County	None Required	1. Los Angeles County 2. Los Angeles County 3. Upon Effective Date of Zoning Ordinance
4.6-22. Upon completion of development of all land uses, utilities, roads, flood control improvements, bridges, trails, and other improvements necessary for implementation of the Specific Plan within the River Corridor in each subdivision allowing construction within or adjacent to the River Corridor, a permanent, non-revocable conservation and public access easement shall be offered to the County of Los Angeles pursuant to **Mitigation Measure 4.6-23** below over the portion of the River Corridor SMA within that subdivision.	Land Owner	Offer of Dedication of Easement	1. LA County Department of Regional Planning 2. LA County Department of Regional Planning 3. Submittal of Monitoring Report(s) Under CUP Condition No. 8
4.6-23. The River Corridor SMA Conservation and Public Access Easement shall be offered to the County of Los Angeles prior to the transfer of the River Corridor SMA ownership, or portion thereof to the management entity described in **Mitigation Measure 4.6-26** below.	Land Owner	Offer of Dedication of Easement	1. LA County Department of Regional Planning 2. LA County Department of Regional Planning 3. Prior to Transfer of River Corridor Ownership Under 4.6-26
4.6-24. The River Corridor SMA Conservation and Public Access Easement shall prohibit grazing, except as a long-term resource management activity, and agriculture within the River Corridor and shall restrict recreation use to the established trail system. Agricultural land uses and grazing for purposes other than long-term resource management activities within the River Corridor shall be extended in the event of the filing of any legal action against Los Angeles County challenging final approval of the Newhall Ranch Specific Plan and any related project approvals or certification of the Final EIR for Newhall Ranch. Agricultural land uses and grazing for purposes other than long-term resource management activities within the River Corridor shall be extended by the time period between the filing of any such legal action and the entry of a final judgment by a court with appropriate jurisdiction, after exhausting all rights of appeal, or execution of a final settlement agreement between all parties to the legal action, whichever occurs first.	Land Owner	Review of Easement Document	1. LACDRP 2. LACDRP 3. Prior to Acceptance of Easement by County

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
4.6-25. The River Corridor SMA conservation and public access easement shall be consistent in its provisions with any other conservation easements to State or Federal resource agencies which may have been granted as part of mitigation or mitigation banking activities.	Land Owner	Review of Conservation Easement /and Resource Permits	1. LA County Department of Regional Planning 2. LA County Department of Regional Planning 3. Prior to Recordation of River Corridor SMA Conservation Easement
4.6-26. Prior to the recordation of the River Corridor SMA Conservation and Public Access Easement as specified in **Mitigation Measure 4.6-23** above, the land owner shall provide a plan to the County for the permanent ownership and management of the River Corridor SMA, including any necessary financing. This plan shall include the transfer of ownership of the River Corridor SMA to the Center for Natural Lands Management, or if the Center for Natural Lands Management is declared bankrupt or dissolved, ownership will transfer or revert to a *joint powers authority* consisting of Los Angeles County (4 members), the City of Santa Clarita (2 members), and the Santa Monica Mountains Conservancy (2 members).	Land Owner	Approval of Management Plan by County	1. LA County Department of Regional Planning 2. LA County Department of Regional Planning 3. Prior to Recordation of River Corridor SMA Conservation Easement
HIGH COUNTRY SPECIAL MANAGEMENT AREA (SMA)			
4.6-26a Two types of habitat restoration may occur in the High Country SMA: (1) riparian revegetation activities principally in Salt Creek Canyon; and (2) oak tree replacement in, or adjacent to, existing oak woodlands and savannahs. • Mitigation requirements for riparian revegetation activities within the High Country SMA are the same as those for the River Corridor SMA and are set forth in **Mitigation Measures 4.6-1** through **4.6-11** and **4.6-13** through **4.6-16** above. • Mitigation requirements for oak tree replacement are set forth in **Mitigation Measure 4.6-48** below.	Land Owner (Project Biologist)	Field Verification	1. ACOE, CDFG (Riparian) 2. ACOE, CDFG (Riparian) 3. Approval of Revegetation Plans
MITIGATION REQUIREMENTS Mitigation activities which may occur in the High Country SMA, either for impacts associated with the construction of Estate lots, trails or access roads, or for impacts identified during the subdivision process in other portions of the Specific Plan Area, include restoration of habitat and enhancement to existing habitat (*See,* discussion below). Mitigation banking may be established as provided below. In addition, Salt Creek Canyon is a high priority area for riparian mitigation.			

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
MITIGATION THROUGH RESTORATION			
Two types of habitat restoration may occur in the High Country SMA: (1) riparian revegetation activities principally in Salt Creek Canyon; and (2) oak resource replacement in, or adjacent to, existing oak woodlands and savannas.			
Mitigation requirements for riparian revegetation activities within the High Country SMA are the same as those for the River Corridor SMA and are set forth above.			
Mitigation requirements for oak resource replacement are set forth in Specific Plan Section 2.6, paragraph 3b of the Oak Tree Replacement Program of the Resource Management Program.			
ENHANCEMENT OF HABITAT			
4.6-27. Removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs, is a principal means of enhancing habitat values in the creeks, brushland and woodland areas of the SMA. The removal of grazing in the High Country SMA is discussed below under (b) 4. Long Term Management. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions as set forth for enhancement in the River Corridor SMA. Specific Plan Table 2.6-3 of the Resource Management Plan provides a list of appropriate plant species for use in enhancement areas in the High Country SMA.	Land Owner/CNLM	Enhancement Plans and Field Verification	1. LACDRP 2. CNLM 3. During Enhancement Activities
MITIGATION BANKING			
4.6-28. Mitigation banking activities for riparian habitats will be subject to State and Federal regulations and permits. Mitigation banking for oak resources, shall be conducted pursuant to the Oak Resource Replacement Program. Mitigation banking for elderberry scrub shall be subject to approval of plans by the County Forester.	Applicant (Project Biologist)	State and Federal Permits; Submittal of Permits	1. ACOE, and CDFG 2. ACOE, CDFG 3. Prior to Approval of Mitigation Banking Program
		Oak Resources; Review of Oak Tree Permit	1. LACDRP 2. LACDRP 3. Approval of Oak Tree Permit
		Elderberry Scrub; Review of Initial Study	1. LACDRP 2. LACDRP 3. Prior to Grading

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
MANAGEMENT REQUIREMENTS			
RECREATION AND ACCESS			
The recreation opportunities presented by the High Country SMA are a major benefit of the SMA. However, recreational needs must be balanced with the preservation of the habitat values, which are conserved in the SMA. Recreation and access will be governed by the following standards:			
4.6-29. Access to the High Country SMA will be limited to day time use of the designated trail system.	Manager of High Country SMA	Field Verification	1. JPA as described in 4.6-41 2. JPA 3. In Perpetuity
4.6-30. No pets of any kind will be allowed within the High Country SMA, with the exception that equestrian use is permitted on established trails.	Manager of High Country SMA	Field Verification	1. JPA 2. JPA 3. In Perpetuity
4.6-31. No hunting, fishing, or motor or trail bike riding shall be permitted.	Manager of High Country SMA	Field Verification	1. JPA 2. JPA 3. In Perpetuity
4.6-32. The trail system shall be designed and constructed to minimize impacts on native habitats.	Applicant (Project Biologist)	Review of Trails Plan	1. JPA 2. JPA 3. Prior to Approval of Trails Plan
TRANSITION/FUEL MODIFICATION AREAS			
Development areas are generally separated from the High Country SMA by steep slopes. Specific Plan Exhibit 2.6-7 of the Resource Management Program, Salt Creek Wildlife Corridor Land Use Perspective, illustrates that development adjacent to the Salt Creek Wildlife Corridor is significantly separated vertically from the corridor.			

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
4.6-33. Construction of buildings and other structures (such as patios, decks, *etc.*) shall only be permitted upon developed pads within Planning Areas OV-04, OV-10, PV-02, and PV-28 and shall not be permitted on southerly slopes facing the High Country SMA (Planning Area HC-01) or in the area between the original SEA 20 boundary and the High Country boundary. If disturbed by grading, all southerly facing slopes which adjoin the High Country SMA within those Planning Areas shall have the disturbed areas revegetated with compatible trees, shrubs and herbs from the list of plant species for south and west facing slopes as shown in Table 2.6-3, Recommended Plant Species For Use In Enhancement Areas In The High Country.	Applicant	Field Verification	1. LACDRP/LA County Forester 2. LACDRP/LA County Forester 3. Prior to the Issuance of Building Permits
Transition from the development edge to the natural area shall also be controlled by the standards of wildfire fuel modification zones as set forth in **Mitigation Measure 4.6-49**. Within fuel modification areas, trees and herbs from Table 2.6-3 of the Resource Management Plan should be planted toward the top of slopes; and trees at lesser densities and shrubs planted on lower slopes.	Project Landscape Architect	Receipt of Wildfire Fuel Modification Plan	1. Los Angeles County Forester 2. Los Angeles County Forester 3. Prior to Recordation of Subdivision Maps
GRADING ACTIVITIES			
4.6-34. Grading perimeters shall be clearly marked and inspected by the project biologist prior to impacts occurring within or adjacent to the High Country SMA.	Applicant (Project Biologist)	Field Verification	1. LACDPW 2. LACDPW 3. Prior To and During Grading
4.6-35. The project biologist shall work with the grading contractor to avoid inadvertent impacts to biological resources outside of the grading area.	Applicant (Project Biologist)	Field Verification	1. LACDPW 2. LACDPW 3. During Grading
LONG-TERM MANAGEMENT			
4.6-36. Upon final approval of the Newhall Ranch Specific Plan, the Special Management Area designation for the High Country SMA shall become effective. The permitted uses and development standards for the SMA are governed by the Development Regulations, Chapter 3.	Los Angeles County	None Required	1. Los Angeles County 2. Los Angeles County 3. Upon Effective Date of Zoning Ordinance

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
4.6-37. The High Country SMA shall be offered for dedication in three approximately equal phases of approximately 1,400 acres each proceeding from north to south, as follows: 1) The first offer of dedication will take place with the issuance of the 2,000th residential building permit of Newhall Ranch; 2) The second offer of dedication will take place with the issuance of the 6,000th residential building permit of Newhall Ranch; and 3) The remaining offer of dedication will be completed by the 11,000th residential building permit of Newhall Ranch. 4) The Specific Plan applicant shall provide a quarterly report to the Departments of Public Works and Regional Planning which indicates the number of residential building permits issued in the Specific Plan area by subdivision map number.	Land Owner	Offer of Dedication	1. LA County Department of Regional Planning 2. LA County Department of Building and Safety 3. Upon Issuance of Building Permits
4.6-38. Prior to dedication of the High Country SMA, a conservation and public access easement shall be offered to the County of Los Angeles and a conservation and management easement offered to the Center for Natural Lands Management. The High Country SMA Conservation and Public Access Easement shall be consistent in its provisions with any other conservation easements to State or Federal resource agencies which may have been granted as part of mitigation or mitigation banking activities.	Land Owner	Review of Easement Document	1. LA County Department of Regional Planning 2. LA County Department of Building and Safety 3. Upon Issuance of Building Permits
4.6-39. The High Country SMA conservation and public access easement shall prohibit grazing within the High Country, except for those grazing activities associated with the long-term resource management programs, and shall restrict recreation to the established trail system.	Land Owner	Review of Easement Document	1. LACDRP 2. LACDRP 3. Prior to Acceptance of Easement by Los Angeles County
4.6-40. The High Country SMA conservation and public access easement shall be consistent in its provisions with any other conservation easements to State or Federal resource agencies which may have been granted as part of mitigation or mitigation banking activities.	Land Owner	Review of Conservation Easement and Resource Permits	1. LA County Department of Regional Planning 2. LA County Department of Regional Planning 3. Prior to Recordation of High Country SMA Conservation Easement

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
4.6-41. The High Country SMA shall be offered for dedication in fee to a *joint powers authority* consisting of Los Angeles County (4 members), the City of Santa Clarita (2 members), and the Santa Monica Mountains Conservancy (2 members). The *joint powers authority* will have overall responsibility for recreation within and conservation of the High Country.	Land Owner	Offer of Dedication	1. LA County Department of Regional Planning 2. LA County Department of Regional Planning 3. Prior to Issuance of Building Permits
4.6-42. An appropriate type of service or assessment district shall be formed under the authority of the Los Angeles County Board of Supervisors for the collection of up to $24 per single family detached dwelling unit per year and $15 per single family attached dwelling unit per year, excluding any units designated as Low and Very Low affordable housing units pursuant to Section 3.10, Affordable Housing Program of the Specific Plan. This revenue would be assessed to the homeowner beginning with the occupancy of each dwelling unit and distributed to the *joint powers authority* for the purposes of recreation, maintenance, construction, conservation and related activities within the High Country Special Management Area.	Land Owner	Approval of Assessment District Report by County	1. LA County Department of Regional Planning 2. LA County Department of Regional Planning 3. Prior to Issuance of First Residential Occupancy Permit
OPEN AREA			
MITIGATION REQUIREMENTS			
4.6-43. Suitable portions of *Open Area* may be used for mitigation of riparian, oak resources, or elderberry scrub. Mitigation activities within Open Area shall be subject to the following requirements, as applicable. • River Corridor SMA Mitigation Requirements, including: **Mitigation Measures 4.6-1** through **4.6-11** and **4.6-13** through **4.6-16**; and • High Country SMA Mitigation Requirements, including: **Mitigation Measures 4.6-27, 4.6-29** through **4.6-42**, and • Mitigation Banking - **Mitigation Measure 4.6-16**.	Manager of Open Area	Review of Mitigation Plans/Field Verification	1. ACOE; CDFG or Los Angeles County as applicable 2. ACOE; CDFG or Los Angeles County as applicable 3. During Mitigation
MANAGEMENT REQUIREMENTS			
4.6-44. Drainages with flows greater than 2,000 cfs will have soft bottoms. Bank protection will be of ungrouted rock, or buried bank stabilization as described in Section 2.5.2.a, except at bridge crossings and other areas where public health and safety considerations require concrete or other stabilization.	Applicant (Civil Engineer)	Review Drainage Plans	1. LACDPW FCD 2. LACDPW FCD 3. Prior to Approval of Final Drainage Plans

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
MANAGEMENT REQUIREMENTS			
4.6-45. The precise alignments and widths of major drainages will be established through the preparation of drainage studies to be approved by the County at the time of subdivision maps which permit construction.	Applicant (Civil Engineer)	Review Drainage Plans	1. LACDPW FCD 2. LACDPW FCD 3. Prior to Approval of Tract Maps
4.6-46. While Open Area is generally intended to remain in a natural state, some grading may take place, especially for parks, major drainages, trails, and roadways. Trails are also planned to be within Open Area.	Applicant (Civil Engineer)	Review of Tentative Map	1. LACDRP 2. LACDRP 3. Prior to Tentative Map Approval
4.6-47. At the time that final subdivision maps permitting construction are recorded, the Open Area within the map will be offered for dedication to the Center for Natural Lands Management. Community Parks within Open Area are intended to be public parks. Prior to the offer of dedication of Open Area to the Center for Natural Lands Management, all necessary conservation and public access easements, as well as easements for infrastructure shall be offered to the County.	Land Owner	Review of Final Map	1. LACDRP 2. LACDRP 3. Prior to Recordation of Final Subdivision Maps
MITIGATION BANKING			
4.6-47a Mitigation Banking will be permitted within the River Corridor SMA, the High Country SMA, and the Open Area land use designations, subject to the following requirements: • Mitigation banking activities for riparian habitats will be subject to State and Federal regulations, and shall be conducted pursuant to the mitigation requirements set forth in **Mitigation Measure 4.6-1** through **4.6-15** above. • Mitigation banking for oak resources shall be conducted pursuant to **4.6-48** below. • Mitigation banking for elderberry scrub shall be subject to approval of plans by the County Forester.	Applicant (Project Biologist)	State and Federal Permits; Submittal of Permits Oak Resources; Review of Oak Tree Permit Elderberry Scrub; Review of Initial Study	1. ACOE, CDFG 2. ACOE, CDFG 3. Prior to Approval of Mitigation Banking Program 1. LACDRP 2. LACDRP 3. Approval of Oak Tree Permit 1. LACDRP 2. LACDRP 3. Prior to Grading

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
OAK RESOURCES REPLACEMENT PROGRAM			
4.6-48. Standards for the restoration and enhancement of oak resources within the High Country SMA and the Open Area include the following (oak resources include oak trees of the sizes regulated under the County Oak Tree Ordinance, southern California black walnut trees, Mainland cherry trees, and Mainland cherry shrubs): • To mitigate the impacts to oak resources which may be removed as development occurs in the Specific Plan Area, replacement trees shall be planted in conformance with the oak tree ordinance in effect at that time. • Oak resource species obtained from the local gene pool shall be used in restoration or enhancement. • Prior to recordation of construction-level final subdivision maps, an oak resource replacement plan shall be prepared that provides the guidelines for the oak tree planting and/or replanting. The Plan shall be reviewed by the Los Angeles Department of Regional Planning and the County Forester and shall include the following: site selection and preparation, selection of proper species including sizes and planting densities, protection from herbivores, site maintenance, performance standards, remedial actions, and a monitoring program. • All plans and specifications shall follow County oak tree guidelines, as specified in the County Oak Tree Ordinance.	Applicant (Project Biologist)	Oak Tree Permit(s)	1. LA County Forester 2. LA County Forester 3. Prior to Final Subdivision Map Recordation
WILDFIRE FUEL MODIFICATION The Specific Plan Area is within the extreme and moderate fire hazard zones as identified in the County of Los Angeles General Plan. The moderate fire hazard zone extends to those areas of Newhall Ranch where native brush can be found growing in its natural state. This is most common in the hillside areas. The extreme fire hazard zone includes high brush and woodlands, and all steep slopes regardless of vegetation (refer to **Section 4.18, Fire Services and Hazards**, for a detailed description of on-site fire zones). Development of Newhall Ranch will reduce the amount of native flammable vegetation present within the Specific Plan Area. Fire fighting capabilities will be provided by two fire stations on the Specific Plan site (*See*, Figure 1.0-3, Land Use Plan), other nearby stations, and a system of improved roads and an urban water system with fire flows as required by the County Fire Department. Existing and proposed off-site fire facilities will also serve the Specific Plan Area.			

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
Property damage and public safety risks associated with wildfire are greatest where homes and other structures will be located adjacent to large open areas dominated by native vegetation. This condition will occur primarily in the southern portion of the Specific Plan site and where portions of the development area in the northwest section of Riverwood Village abut large natural open areas.			
Access is currently provided to the Los Angeles County Fire Department for fire prevention control of the Specific Plan Area. Access will continue to be provided as the Specific Plan is implemented.			
Fuel modification mitigation includes:			
4.6-49. To minimize the potential exposure of the development areas, Open Area, and the SMAs to fire hazards, the Specific Plan is subject to the requirements of the Los Angeles County Fire Protection District (LACFPD), which provides fire protection for the area. At the time of final subdivision maps permitting construction in development areas that are adjacent to Open Area and the High Country SMA, a wildfire fuel modification plan shall be prepared in accordance with the fuel modification ordinance standards in effect at that time and shall be submitted for approval to the County Fire Department.	Applicant	Review of Wildfire Fuel Modification Plan	1. LA County Forester 2. LA County Forester 3. Prior to Recordation of Final Subdivision Maps
4.6-50. The wildfire fuel modification plan shall depict a fuel modification zone the size of which shall be consistent with the County fuel modification ordinance requirements. Within the zone, tree pruning, removal of dead plant material and weed and grass cutting shall take place as required by the fuel modification ordinance.	Applicant (Project Biologist)	Review of Wildfire Fuel Modification Plan	1. LA County Forester 2. LA County Forester 3. Prior to Recordation of Final Subdivision Maps
4.6-51. In order to enhance the habitat value of plant communities which require fuel modification, fire retardant plant species containing habitat value may be planted within the fuel modification zone. Typical plant species suitable for Fuel Modification Zones are indicated in Specific Plan Table 2. 6-5 of the Resource Management Plan. Fuel modification zones adjacent to SMAs and Open Areas containing habitat of high value such as oak woodland and savannas shall utilize a more restrictive plant list which shall be reviewed by the County Forester.	Applicant (Project Biologist)	Review of Wildfire Fuel Modification Plan	1. LA County Forester 2. LA County Forester 3. Prior to Recordation of Final Subdivision Maps

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
4.6-52. The wildfire fuel modification plan shall include the following construction period requirements: (a) a fire watch during welding operations; (b) spark arresters on all equipment or vehicles operating in a high fire hazard area; (c) designated smoking and non-smoking areas; and (d) water availability pursuant to the County Fire Department requirements.	Applicant (Project Biologist)	Review of Wildfire Fuel Modification Plan	1. LA County Forester 2. LA County Forester 3. Prior to Recordation of Final Subdivision Maps
EIR MITIGATION MEASURES			
To further reduce impacts to biological resources that would result from Specific Plan implementation the following mitigation measures are proposed:			
4.6-53. If, at the time any subdivisions map proposing construction ~~are~~ is ~~processed~~submitted, the County determines through an Initial Study, or otherwise, that there may be rare, threatened or endangered, plant or animal species on the property ~~being~~ to be subdivided, then, in addition to the prior surveys conducted on the Specific Plan site to define the presence or absence of sensitive habitat and associated species, a~~c~~urrent, updated site-specific surveys for all such animal or plant species shall be conducted in accordance with the consultation requirements set forth in Mitigation Measure 4.6-59 within those areas of the Specific Plan where such animal or plant species occur or are likely to occur. The site-specific surveys shall include the unarmored three-spine stickleback, the arroyo toad, the Southwestern pond turtle, the California red-legged frog, the southwestern willow flycatcher, the least Bell's vireo, the San Fernando Valley spineflower and any other rare, sensitive, threatened, or endangered plant or animal species occurring, or likely to occur, on the property to be subdivided. All site-specific surveys shall be conducted during appropriate seasons by qualified botanists or qualified wildlife biologists in a manner that will locate any rare, sensitive, threatened, or endangered animal or plant species that may be present. To the extent there are applicable protocols published by either the United States Fish and Wildlife Service or the California Department of Fish and Game, all such protocols shall be followed in preparing the updated site-specific surveys.	Applicant (Project Biologist)	Review of Initial Study	1. LACDRP 2. LACDRP 3. Prior to Approval of Subdivision Maps

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
4.6-53. (cont.) All site-specific survey work shall be documented in a separate report containing at least the following information: (a) project description, including a detailed map of the project location and study area; (b) a description of the biological setting, including references to the nomenclature used and updated vegetation mapping; (c) detailed description of survey methodologies; (d) dates of field surveys and total person-hours spent on the field surveys; (e) results of field surveys, including detailed maps and location data; (f) an assessment of potential impacts; (g) discussion of the significance of the rare, threatened or endangered animal or plant populations found in the project area, with consideration given to nearby populations and species distribution; (h) mitigation measures, including avoiding impacts altogether, minimizing or reducing impacts, rectifying or reducing impacts through habitat restoration, replacement or enhancement, or compensating for impacts by replacing or providing substitute resources or environments, consistent with CEQA (*Guidelines* §15370); (i) references cited and persons contacted; and (j) other pertinent information, which is designed to disclose impacts and mitigate for such impacts." ~~to define the presence or absence of such species and any necessary mitigation measures shall be determined and applied.~~"			
4.6-54. Prior to development within or disturbance to occupied unarmored threespine stickleback habitat, a formal consultation with the USFWS shall occur.	Applicant (Project Biologist)	Section 7 Consultation	1. USFWS 2. USFWS 3. Prior to Grading
4.6-55. Prior to development or disturbance within wetlands or other sensitive habitats, permits shall be obtained from pertinent Federal and State agencies and the Specific Plan shall conform with the specific provisions of said permits. Performance criteria shall include that described in **Mitigation Measures 4.6-1** through **4.6-16** and **4.6-42** through **4.6-47** for wetlands, and **Mitigation Measures 4.6-27**, **4.6-28**, and **4.6-42** through **4.6-48** for other sensitive habitats.	Applicant (Project Biologist)	Receipt of Appropriate Permit applications	1. ACOE, CDFG 2. ACOE, CDFG 3. Prior to Grading

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
4.6-56. All lighting along the perimeter of natural areas shall be downcast luminaries with light patterns directed away from natural areas.	Applicant	Building Permit Plot Plan Review	1. LACDRP 2. LACDRP 3. Prior to Issuance of Building Permits
4.6-57. Where bridge construction is proposed and water flow would be diverted, blocking nets and seines shall be used to control and remove fish from the area of activity. All fish captured during this operation would be stored in tubs and returned unharmed back to the River after construction activities were complete.	Applicant (Project Biologist)	Field Verification	1. ACOE, CDFG 2. ACOE, CDFG 3. Prior to Construction
4.6-58. To limit impacts to water quality the Specific Plan shall conform with all provisions of required NPDES permits and water quality permits that would be required by the State of California Regional Water Quality Control Board.	Project Engineer	Approval of a SWMP	1. LACDPW 2. LACDPW 3. Prior to Issuance of Grading Permit(s)

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
4.6-59. Consultation shall occur with the County of Los Angeles ("County") and California Department of Fish and Game ("CDFG") at each of the following milestones: 1) Before Surveys. Prior to conducting sensitive plant or animal surveys at the Newhall Ranch subdivision map level, the applicant, or its designee, shall consult with the County and CDFG for purposes of establishing and/or confirming the appropriate survey methodology to be used. 2) After Surveys. After completion of sensitive plant or animal surveys at the subdivision map level, draft survey results shall be made available to the County and CDFG within sixty (60) calendar days after completion of the field survey work. 3) Subdivision Map Submittal. Within thirty (30) calendar days after the applicant, or its designee, submits its application to the County for processing of a subdivision map in the Mesas Village or Riverwood Village, a copy of the submittal shall be provided to CDFG. In addition, the applicant, or its designee, shall schedule a consultation meeting with the County and CDFG for purposes of obtaining comments and input on the proposed subdivision map submittal. The consultation meeting shall take place at least thirty (30) days prior to the submittal of the proposed subdivision map to the County. 4) Development/Disturbance and Further Mitigation. Prior to any development within, or disturbance to, habitat occupied by rare, threatened, or endangered plant or animal species, or to any portion of the Spineflower Mitigation Area Overlay, as defined below, all required permits shall be obtained from both USFWS and CDFG, as applicable. It is further anticipated that the federal and state permits will impose conditions and mitigation measures required by federal and state law that are beyond those identified in the Newhall Ranch Final EIR (March 1999), the Newhall Ranch DAA (April 2001) and the Newhall Ranch Revised DAA (2002). It is also anticipated that conditions and mitigation measures required by federal and state law for project-related impacts on endangered, rare or threatened species and their habitat will likely require changes and revisions to Specific Plan development footprints, roadway alignments, and the limits, patterns and techniques associated with project-specific grading at the subdivision map level.	Applicant (Project Biologist)	Section 2081 Permit	1. USFWS and CDFG 2. USFWS and CDFG 3. Prior to Grading

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
4.6-60. If at the time subdivisions permitting construction are processed, the County determines through an Initial Study that there may be elderberry scrub vegetation on the property being subdivided, then a site specific survey shall be conducted to define the presence or absence of such habitat and any necessary mitigation measures shall be determined and applied.	Applicant (Project Biologist)	Review of Initial Study	1. LACDRP 2. LACDRP 3. Prior to Approval of Subdivision Maps
4.6-61. If at the time subdivisions permitting construction are processed, the County determines through and Initial Study that there may be mainland cherry trees and/or mainland cherry shrubs on the property being subdivided, then a site specific survey shall be conducted to define the presence or absence of such habitat and any necessary mitigation measures shall be determined and applied.	Applicant (Project Biologist)	Review of Initial Study	1. LACDRP 2. LACDRP 3. Prior to Approval of Subdivision Maps
4.6-62. When a map revision or Substantial Conformance determination on any subdivision map or Conditional Use Permit would result in changes to an approved oak tree permit, then the oak tree report for that oak tree permit must be amended for the area of change, and the addendum must be approved by the County Forester prior to issuance of grading permits for the area of the map or CUP being changed.	Applicant (Project Biologist)	Approval of Addendum to Oak Tree Report	1. LA County Forester 2. LA County Forester 3. Prior to Issuance of Grading Permits
4.6-63. Riparian resources that are impacted by buildout of the Newhall Ranch Specific Plan shall be restored with similar habitat at the rate of one acre replaced for each acre lost.	Applicant (Project Biologist)	ACOE 404 Permit	1. ACOE, CDFG 2. ACOE, CDFG 3. Prior to Grading
4.6-64. The operator of the golf course shall prepare a Golf Course Maintenance Plan which shall include procedures to control storm water quality and ground water quality as a result of golf course maintenance practices, including irrigation, fertilizer, pesticide and herbicide use. This Plan shall be prepared in coordination with the County biologist and approved by the County Planning Director prior to the issuance of a Certificate of Occupancy.	Applicant (Golf Course Operator)	Golf Course Maintenance Plan	1. LACDRP 2. LACDRP 3. Issuance of Golf Course Occupancy Permit

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
Spineflower Special Study Mitigation Overlay	Applicant	Review of Initial Study and subdivision	1. LACDRP 2. LACDRP and CDFG 3. Prior to Approval of Subdivision Maps
4.6-65. In order to facilitate the conservation of the spineflower on the Newhall Ranch Specific Plan site, the applicant, or its designee, shall, concurrent with Specific Plan approval, agree to the identified special study areas shown below in **Figure 2.6-8, Spineflower Mitigation Area Overlay**. The applicant, or its designee, further acknowledges that, within and around the Spineflower Mitigation Area Overlay (**Figure 2.6-8**), changes will likely occur to Specific Plan development footprints, roadway alignments, and the limits, patterns and techniques associated with project-specific grading at the subdivision map level. The applicant, or its designee, shall design subdivision maps that are responsive to the characteristics of the spineflower and all other endangered plant species that may be found on the Specific Plan site.			

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
Spineflower Preserves			
4.6-66. Direct impacts to known spineflower populations within the Newhall Ranch Specific Plan area shall be avoided or minimized through the establishment of one or more on-site preserves that are configured to ensure the continued existence of the species in perpetuity. Preserve(s) shall be delineated in consultation with the County and CDFG, and will likely require changes and revisions to Specific Plan development footprints for lands within and around the Spineflower Mitigation Area Overlay (**Figure 2.6-8**). Delineation of the boundaries of Newhall Ranch spineflower preserve(s) for the entire Specific Plan area shall be completed in conjunction with approval of the first Newhall Ranch subdivision map filed in either the Mesas Village, or that portion of Riverwood Village in which the San Martinez spineflower population occurs. A sufficient number of known spineflower populations shall be included within the Newhall Ranch spineflower preserve(s) in order to ensure the continued existence of the species in perpetuity. The conservation of known spineflower populations shall be established in consultation with the County and CDFG, and as consistent with standards governing issuance of an incidental take permit for spineflower pursuant to Fish and Game Code section 2081, subdivision (b). In addition to conservation of known populations, spineflower shall be introduced in appropriate habitat and soils in the Newhall Ranch preserve(s). The creation of introduced populations shall require seed collection and/or top soil at impacted spineflower locations and nursery propagation to increase seed and sowing of seed. The seed collection activities, and the maintenance of the bulk seed repository, shall be approved in advance by the County and CDFG.	Applicant	Review of Initial Study and subdivision	1. LACDRP 2. LACDRP and CDFG 3. To be completed in conjunction with approval of the first Newhall Ranch subdivision map filed in either the Mesas Village, or that portion of Riverwood Village in which the San Martinez spineflower population occurs.

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
Figure 2.6-8, Spineflower Special Study Mitigation Overlay			

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
4.6-66. (cont.) Once the boundaries of the Newhall Ranch spineflower preserve(s) are delineated, the project applicant, or its designee, shall be responsible for conducting a spineflower population census within the Newhall Ranch spineflower preserve(s) annually for 10 years. (These census surveys shall be in addition to the surveys required by **Mitigation Measure 4.6-53**, above.) The yearly spineflower population census documentation shall be submitted to the County and CDFG, and maintained by the project applicant, or its designee. If there are any persistent population declines documented in the annual population census reports, the project applicant, or its designee, shall be responsible for conducting an assessment of the ecological factor(s) that are likely responsible for the decline, and implement management activity or activities to address these factors where feasible. In no event, however, shall project-related activities jeopardize the continued existence of the Newhall Ranch spineflower populations. If a persistent population decline is documented, such as a trend in steady population decline that persists for a period of 5 consecutive years, or a substantial drop in population is detected over a 10-year period, spineflower may be introduced in consultation with CDFG in appropriate habitat and soils in the Newhall Ranch preserve(s), utilizing the bulk spineflower seed repository, together with other required management activity or activities. These activities shall be undertaken by a qualified botanist/biologist, subject to approval by the County and CDFG. The project applicant, or its designee, shall be responsible for the funding and implementation of the necessary management activity or activities, including monitoring, as approved by the County and CDFG. Annual viability reports shall be submitted to the County and CDFG for 10 years following delineation of the Newhall Ranch spineflower preserve(s) to ensure long-term documentation of the spineflower population status within the Newhall Ranch preserve(s). In the event annual status reports indicate the spineflower population within the Newhall Ranch preserve(s) is not stable and viable 10 years following delineation of the spineflower preserve(s), the project applicant, or its designee, shall continue to submit annual status reports to the County and CDFG for a period of no less than an additional 5 years.	Applicant	Review of Initial Study and subdivision	1. LACDRP 2. LACDRP and CDFG 3. To be completed in conjunction with approval of the first Newhall Ranch subdivision map filed in either the Mesas Village, or that portion of Riverwood Village in which the San Martinez spineflower population occurs.

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
Connectivity, Reserve Design and Buffers	Applicant	Review of Initial Study and subdivision	1. LACDRP/CDFG 2. LACDRP/CDFG 3. Prior to Approval of Subdivision Maps
4.6-67. Indirect impacts associated with the interface between the preserved spineflower populations and planned development within the Newhall Ranch Specific Plan shall be avoided or minimized by establishing open space connections with Open Area, River Corridor, or High Country land use designations. In addition, buffers (*i.e.*, setbacks from developed, landscaped or other use areas) shall be established around portions of the delineated preserve(s) not connected to Open Area, the River Corridor or the High Country land use designations. The open space connections and buffer configurations shall take into account local hydrology, soils, existing and proposed adjacent land uses, the presence of non-native invasive plant species, and seed dispersal vectors. Open space connections shall be configured such that the spineflower preserves are connected to Open Area, River Corridor, or High Country land use designations to the extent practicable. Open space connections shall be of adequate size and configuration to achieve a moderate to high likelihood of effectiveness in avoiding or minimizing indirect impacts (*e.g.*, invasive plants, increased fire frequency, trampling, chemicals, *etc.*) to the spineflower preserve(s). Open space connections for the spineflower preserve(s) shall be configured in consultation with the County and CDFG. Open space connections for the spineflower preserve(s) shall be established for the entire Specific Plan area in conjunction with approval of the first Newhall Ranch subdivision map filed in either the Mesa Village, or that portion of the Riverwood Village in which the San Martinez spineflower location occurs.			

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
4.6-67. (cont.) For preserves and/or those portions of preserves not connected to Open Area, River Corridor, or High Country land use designations, buffers shall be established at variable distances of between 80 and 200 feet from the edge of development to achieve a moderate to high likelihood of effectiveness in avoiding or minimizing indirect impacts (*e.g.*, invasive plants, increased fire frequency, trampling, chemicals, *etc.*) to the spineflower preserve(s). The buffer size/configuration shall be guided by the analysis set forth in the *Review of Potential Edge Effects on the San Fernando Valley Spineflower*, prepared by Conservation Biology Institute, January 19, 2000, and other sources of scientific information and analysis, which are available at the time the preserve(s) and buffers are established. Buffers for the spineflower preserve(s) shall be configured in consultation with the County and CDFG for the entire Specific Plan area. Buffers for the spineflower preserve(s) shall be established in conjunction with approval of the first Newhall Ranch subdivision map filed in either the Mesa Village, or that portion of the Riverwood Village in which the San Martinez spineflower location occurs. ~~Buffer configurations may include the width of any adjacent roadway system or associated rights-of-way, because roadways and rights-of-way can afford some protection to the spineflower preserve(s) and contribute to the effectiveness of the buffers by further avoiding or minimizing the potential indirect impacts of future development. In designing buffers that include roads, the design shall take into account edge effects from the roads by assessing, among other factors, the likelihood of disturbance based upon topography, road runoff and adjacent vegetation types.~~ Roadways and road rights-of-way shall not be constructed in any spineflower preserve(s) and buffer locations on Newhall Ranch unless constructing the road(s) in such location is found to be the environmentally superior alternative in subsequently required tiered EIRs in connection with the Newhall Ranch subdivision map(s) process.	Applicant	Review of Initial Study and subdivision	1. LACDRP/CDFG 2. LACDRP/CDFG 3. Prior to Approval of Subdivision Maps

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
4.6-67. (cont.) The project applicant, or its designee, shall be responsible for revegetating open space connections and buffer areas of the Newhall Ranch spineflower preserve(s) to mitigate temporary impacts due to grading that will occur within portions of those open space connections and buffer areas. The impacted areas shall be reseeded with a native seed mix to prevent erosion, reduce the potential for invasive non-native plants, and maintain functioning habitat areas within the buffer area. Revegetation seed mix shall be reviewed and approved by the County and CDFG.	Applicant	Review of Initial Study and subdivision	1. LACDRP/CDFG 2. LACDRP/CDFG 3. Prior to Approval of Subdivision Maps
Preserve Protection/Fencing			
4.6-68. To protect the preserved Newhall Ranch spineflower populations, and to further reduce potential direct impacts to such populations due to unrestricted access, the project applicant, or its designee, shall erect and maintain temporary orange fencing and prohibitive signage around the Newhall Ranch preserve(s), open space connections and buffer areas, which are adjacent to areas impacted by proposed development prior to and during all phases of construction. The areas behind the temporary fencing shall not be used for the storage of any equipment, materials, construction debris or anything associated with construction activities. Following the final phase of construction of any Newhall Ranch subdivision map adjacent to the Newhall Ranch spineflower preserve(s), the project applicant, or its designee, shall install and maintain permanent fencing along the subdivision tract bordering the preserve(s). Permanent signage shall be installed on the fencing along the preservation boundary to indicate that the fenced area is a biological preserve, which contains protected species and habitat, that access is restricted, and that trespassing and fuel modification are prohibited within the area. The permanent fencing shall be designed to allow wildlife movement. The plans and specifications for the permanent fencing and signage shall be approved by the County and CDFG prior to the final phase of construction of any Newhall Ranch subdivision map adjacent to a Newhall Ranch spineflower preserve(s).	Applicant (Project Biologist)	Review of Initial Study, subdivision, and grading permit application	1. LACDRP/CDFG 2. LACDRP/CDFG 3. Prior to Grading and Occupancy

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
Preserve Protection/Hydrological Alterations	Applicant (Project Biologist)	Review of map subdivision	1. LACDPW 2. LACDPW/CDFG 3. Prior to Approval of Subdivision Maps
4.6-69. Indirect impacts resulting from changes to hydrology (*i.e.,* increased water runoff from surrounding development) at the interface between spineflower preserve(s) and planned development within the Newhall Ranch Specific Plan shall be avoided or mitigated to below a level of significance. Achievement of this standard will be met through the documented demonstration by the project applicant, or its designee, that the storm drain system achieves pre-development hydrological conditions for the Newhall Ranch spineflower preserve(s). To document such a condition, the project applicant, or its designee, shall prepare a study of the pre- and post-development hydrology, in conjunction with Newhall Ranch subdivision maps adjacent to spineflower preserve(s). The study shall be used in the design and engineering of a storm drain system that achieves pre-development hydrological conditions. The study must conclude that proposed grade changes in development areas beyond the buffers will maintain pre-development hydrology conditions within the preserve(s). The study shall be approved by the Planning Director of the County, and the resulting conditions confirmed by CDFG. The storm drain system for Newhall Ranch subdivision maps adjacent to any spineflower preserves must be approved by the County prior to the initiation of any grading activities.			

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
Road Construction Measures	Applicant (Project Biologist)	Review of Initial Study and subdivision	1. LACDRP 2. LACDRP/CDFG 3. Prior to Approval of Subdivision Maps
4.6-70. Consistent with the Spineflower Mitigation Area Overlay reflected in **Mitigation Measure 4.6-65**, direct ~~and indirect~~ impacts to known Newhall Ranch spineflower populations associated with proposed road construction or modifications to existing roadways shall be further assessed for proposed road construction at the Newhall Ranch subdivision map level, in conjunction with the tiered EIR required for each subdivision map. To avoid or substantially lessen direct impacts to known spineflower populations, Specific Plan roadways shall be redesigned or realigned, to the extent practicable, to achieve the spineflower preserve and connectivity/preserve design/buffer standards set forth in **Mitigation Measures 4.6-66 and 4.6-67**. The project applicant, or its designee, acknowledges that that road redesign and re-alignment is a feasible means to avoid or substantially lessen potentially significant impacts on the now known Newhall Ranch spineflower populations. Road redesign or alignments to be considered at the subdivision map level include: (a) Commerce Center Drive; (b) Magic Mountain Parkway; (c) Chiquito Canyon Road; (d) Long Canyon Road; (e) San Martinez Grande Road; (f) Potrero Valley Road; (g) Valencia Boulevard; and (h) Any other or additional roadways that have the potential to significantly impact known Newhall Ranch spineflower populations. Roadways and road rights-of-way shall not be constructed in any spineflower preserve(s) and buffer locations on Newhall Ranch unless constructing the road(s) in such location is found to be the environmentally superior alternative in subsequently required tiered EIRs in connection with the Newhall Ranch subdivision map(s) process.			

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
Engineering, Design and Grading Modifications	Applicant (Project Biologist)	Review of Initial Study and subdivision	1. LACDRP 2. LACDRP/CDFG 3. Prior to Approval of Subdivision Maps
4.6-71. Consistent with the Spineflower Mitigation Area Overlay reflected in **Mitigation Measure 4.6-65**, direct ~~and indirect~~ impacts to known Newhall Ranch spineflower populations shall be further assessed at the Newhall Ranch subdivision map level, in conjunction with the required tiered EIR process. To avoid or substantially lessen impacts to known spineflower populations at the subdivision map level, the project applicant, or its designee, may be required to adjust Specific Plan development footprints, roadway alignments, and the limits, patterns and techniques associated with project-specific grading to achieve the spineflower preserve and connectivity/preserve design/buffer standards set forth in **Mitigation Measures 4.6-66 and 4.6-67** for all future Newhall Ranch subdivision maps that encompass identified spineflower populations.			

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
Fire Management Plan			
4.6-72. A Fire Management Plan shall be developed to avoid and minimize direct and indirect impacts to the spineflower, in accordance with the adopted Newhall Ranch Resource Management Plan (RMP), to protect and manage the Newhall Ranch spineflower preserve(s) and buffers. The Fire Management Plan shall be completed by the project applicant, or its designee, in conjunction with approval of any Newhall Ranch subdivision map adjacent to a spineflower preserve. The final Fire Management Plan shall be approved by the County of Los Angeles Fire Department through the processing of subdivision maps. Under the final Fire Management Plan, limited fuel modification activities within the spineflower preserves will be restricted to selective thinning with hand tools to allow the maximum preservation of Newhall Ranch spineflower populations. No other fuel modification or clearance activities shall be allowed in the Newhall Ranch spineflower preserve(s). Controlled burning may be allowed in the future within the Newhall Ranch preserve(s) and buffers, provided that it is based upon a burn plan approved by the County of Los Angeles Fire Department and CDFG. The project applicant, or its designee, shall also be responsible for annual maintenance of fuel modification zones, including, but not limited to, removal of undesirable non-native plants, revegetation with acceptable locally indigenous plants and clearing of trash and other debris in accordance with the County of Los Angeles Fire Department.	Applicant (Project Biologist)	Review of Initial Study and subdivision	1. LACFD 2. LACFD/CDFG 3. Prior to Approval of Subdivision Maps

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
Water Flow Diversion and Management	Applicant (Project Biologist)	Review of Initial Study and subdivision	1. LACDRP/LACDPW 2. LACDRP/LACDPW /CDFG 3. Prior to Approval of Subdivision Maps
4.6-73. At the subdivision map level, the project applicant, or its designee, shall design and implement project-specific design measures to minimize changes in surface water flows to the Newhall Ranch spineflower preserve(s) for all Newhall Ranch subdivision maps adjacent to the preserve(s) and buffers, and avoid and minimize indirect impacts to the spineflower. Prior to issuance of a grading permit for each such subdivision map, the project applicant, or its designee, shall submit for approval to the County plans and specifications that ensure implementation of the following design measures: (a) During construction activities, drainage ditches, piping or other approaches will be put in place to convey excess storm water and other surface water flows away from the Newhall Ranch spineflower preserve(s) and connectivity/preserve design/buffers, identified in **Mitigation Measures 4.6-66** and **4.6-67**; (b) Final grading and drainage design will be developed that does not change the current surface and subsurface hydrological conditions within the preserve(s); (c) French drains will be installed along the edge of any roadways and fill slopes that drain toward the preserve(s); (d) Roadways will be constructed with slopes that convey water flows within the roadway easements and away from the preserve(s); (e) Where manufactured slopes drain toward the preserve(s), a temporary irrigation system would be installed to the satisfaction of the County in order to establish the vegetation on the slope area(s). This system shall continue only until the slope vegetation is established and self-sustaining; (f) Underground utilities will not be located within or through the preserve(s). Drainage pipes installed within the preserve(s) away from spineflower populations to convey surface or subsurface water away from the populations will be aligned to avoid the preserve(s) to the maximum extent practicable; and (g) Fencing or other structural type barriers that will be installed to reduce intrusion of people or domestic animals into the preserve(s) shall incorporate footing designs that minimize moisture collection.			

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
Biological Monitor	Monitoring Biologist	Bi-weekly site inspections and monthly monitoring reports as needed	1. LACDRP/LACDPW 2. LACDRP/LACDPW /CDFG 3. Prior to Issuance of construction permit(s)
4.6-74. A knowledgeable, experienced botanist/biologist, subject to approval by the County and CDFG, shall be required to monitor the grading and fence/utility installation activities that involve earth movement adjacent to the Newhall Ranch spineflower preserve(s) to avoid the incidental take through direct impacts of conserved plant species, and to avoid disturbance of the preserve(s). The biological monitor will conduct bi-weekly inspections of the project site during such grading activities to ensure that the mitigation measures provided in the adopted Newhall Ranch Mitigation Monitoring Program (Biota section) are implemented and adhered to. Monthly monitoring reports, as needed, shall be submitted to the County verifying compliance with the mitigation measures specified in the adopted Newhall Ranch Mitigation Monitoring Program (Biota section). The biological monitor will have authority to immediately stop any such grading activity that is not in compliance with the adopted Newhall Ranch Mitigation Monitoring Program (Biota section), and to take reasonable steps to avoid the take of, and minimize the disturbance to, spineflower populations within the preserve(s).			

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
Construction Impact Avoidance Measures	Monitoring Biologist	Bi-weekly site inspections and monthly monitoring reports as needed	1. LACDRP/LACDPW 2. LACDRP/LACDPW /CDFG 3. Prior to issuance of occupancy permit(s)
4.6-75. The following measures shall be implemented to avoid and minimize indirect impacts to Newhall Ranch spineflower populations during all phases of project construction: (a) Water Control. Watering of the grading areas would be controlled to prevent discharge of construction water into the Newhall Ranch preserve(s) or on ground sloping toward the preserve(s). Prior to the initiation of grading operations, the project applicant, or its designee, shall submit for approval to the County an irrigation plan describing watering control procedures necessary to prevent discharge of construction water into the Newhall Ranch preserve(s) and on ground sloping toward the preserve(s). (b) Storm Water Flow Redirection. Diversion ditches would be constructed to redirect storm water flows from graded areas away from the Newhall Ranch preserve(s). To the extent practicable, grading of areas adjacent to the preserve(s) would be limited to spring and summer months (May through September) when the probability of rainfall is lower. Prior to the initiation of grading operations, the project applicant, or its designee, would submit for approval to the County a storm water flow redirection plan that demonstrates the flow of storm water away from the Newhall Ranch spineflower preserve(s). (c) Treatment of Exposed Graded Slopes. Graded slope areas would be trimmed and finished as grading proceeds. Slopes would be treated with soil stabilization measures to minimize erosion. Such measures may include seeding and planting, mulching, use of geotextiles and use of stabilization mats. Prior to the initiation of grading operations, the project applicant, or its designee, would submit for approval to the County the treatments to be applied to exposed graded slopes that would ensure minimization of erosion.			

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
Reassessment Requirement			
4.6-76. In conjunction with submission of the first Newhall Ranch subdivision map in either Mesas Village or that portion of Riverwood Village in which the San Martinez spineflower location occurs, the project applicant, or its designee, shall reassess project impacts, both direct and indirect, to the spineflower populations using subdivision mapping data, baseline data from the Newhall Ranch Final EIR and data from the updated plant surveys (*See*, Specific Plan EIR Mitigation Measure 4.6-53). This reassessment shall take place during preparation of the required tiered EIR for each subdivision map. If the reassessment results in the identification of new or additional impacts to Newhall Ranch spineflower populations, which were not previously known or identified, the mitigation measures set forth in this program, or a Fish and Game Code section 2081 permit(s) issued by CDFG, shall be required, along with any additional mitigation required at that time.	Applicant (Project Biologist)	In conjunction with submission of the first subdivision map in either Mesas Village or that portion of Riverwood Village in which the San Martinez spineflower location occurs	1. LACDRP 2. LACDRP/CDFG 3. Prior to subdivision map approval

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
Newhall Ranch Monitoring and Management			
4.6-77. Direct and indirect ~~l~~impacts to the preserved Newhall Ranch spineflower populations shall require a monitoring and management plan, subject to the approval of the County. The applicant shall consult with CDFG with respect to preparation of the Newhall Ranch spineflower monitoring/management plan. This plan shall be in place when the preserve(s) and connectivity/preserve design/buffers are established (*See*, **Mitigation Measures 4.6-66 and 4.6-67**). The criteria set forth below shall be included in the plan. **Monitoring**. The purpose of the monitoring component of the plan is to track the viability of the Newhall Ranch spineflower preserve(s) and its populations, and to ensure compliance with the adopted Newhall Ranch Mitigation Monitoring Program (Biota section). The monitoring component of the plan shall investigate and monitor factors such as population size, growth or decline, general condition, new impacts, changes in associated vegetation species, pollinators, seed dispersal vectors and seasonal responses. Necessary management measures will be identified. The report results will be sent annually to the County, along with photo documentation of the assessed site conditions. The project applicant, or its designee, shall contract with a qualified botanist/biologist, approved by the County, with the concurrence of CDFG, to conduct quantitative monitoring over the life of the Newhall Ranch Specific Plan. The botanist/biologist shall have a minimum of three years experience with established monitoring techniques and familiarity with southern California flora and target taxa. Field surveys of the Newhall Ranch spineflower preserve(s) will be conducted each spring. Information to be obtained will include: (a) an estimate of the numbers of spineflowers in each population within the preserve(s); (b) a map of the extent of occupied habitat at each population; (c) establishment of photo monitoring points to aid in documenting long-term trends in habitat; (d) aerial photographs of the preserved areas at five-year intervals; (e) identification of significant impacts that may have occurred or problems that need attention, including invasive plant problems, weed problems and fencing or signage repair; and (f) overall compliance with the adopted mitigation measures.	Applicant (Project Biologist)	Site surveys and annual reports as directed by this measure The length of the active management components set forth above shall be governed by attainment of successful management criteria	1. LACDRP 2. LACDRP/CDFG 3. As necessary per the guidelines set forth in the measure

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
4.6-77. (cont.) For a period of three years from Specific Plan re-approval, all areas of potential habitat on the Newhall Ranch site will be surveyed annually in the spring with the goal of identifying previously unrecorded spineflower populations. Because population size and distribution limits are known to vary depending on rainfall, annual surveys shall be conducted for those areas proposed for development in order to establish a database appropriate for analysis at the project-specific subdivision map level (rather than waiting to survey immediately prior to proceeding with the project-specific subdivision map process). In this way, survey results gathered over time (across years of varying rainfall) will provide information on ranges in population size and occupation. New populations, if they are found, will be mapped and assessed for inclusion in the preserve program to avoid impacts to the species. **Monitoring/Reporting.** An annual report will be submitted to the County and CDFG by December 31st of each year. The report will include a description of the monitoring methods, an analysis of the findings, effectiveness of the mitigation program, site photographs and adoptive management measures, based on the findings. Any significant adverse impacts, signage, fencing or compliance problems identified during monitoring visits will be reported to the County and CDFG for corrective action by the project applicant, or its designee. **Management.** Based on the outcome of ongoing monitoring and additional project-specific surveys addressing the status and habitat requirements of the spineflower, active management of the Newhall Ranch spineflower preserve(s) will be required in perpetuity. Active management activities will be triggered by a downward population decline over 5 consecutive years, or a substantial drop in population over a 10-year period following County re-approval of the Specific Plan. Examples of management issues that may need to be addressed in the future include, but are not limited to, control of exotic competitive non-native plant species, herbivory predation, weed control, periodic controlled burns or fuel modification compliance.	Applicant (Project Biologist)	Site surveys and annual reports as directed by this measure The length of the active management components set forth above shall be governed by attainment of successful management criteria	1. LACDRP 2. LACDRP/CDFG 3. As necessary per the guidelines set forth in the measure

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
4.6-77. (cont.) After any population decline documented in the annual populations census following County re-approval of the Specific Plan, the project applicant, or its designee, shall be responsible for conducting an assessment of the ecological factor(s) that are likely responsible for the decline, and implement management activity or activities to address these factors where feasible. If a persistent population decline is documented, such as a trend in steady population decline persistent for a period of 5 consecutive years, or a substantial drop in population detected over a 10-year period, spineflower may be introduced in appropriate habitat and soils in the Newhall Ranch preserve(s), utilizing the bulk spineflower seed repository, together with other required management activity or activities. In connection with this monitoring component, the project applicant, or its designee, shall contract with a qualified botanist/biologist, approved by the County, to complete: (a) a study of the breeding and pollination biology of the spineflower, including investigation into seed physiology to assess parameters that may be important as management tools to guarantee self-sustainability of populations, which may otherwise have limited opportunity for germination; and (b) a population genetics study to document the genetic diversity of the Newhall Ranch spineflower population. The criteria for these studies shall be to develop data to make the Newhall Ranch spineflower management program as effective as possible. These studies shall be subject to approval by the County's biologist, with the concurrence of CDFG. - These activities shall be undertaken by a qualified botanist/biologist, subject to approval by the County with the concurrence of CDFG. The project applicant, or its designee, shall be responsible for the funding and implementation of the necessary management activity or activities, as approved by the County and CDFG. The length of the active management components set forth above shall be governed by attainment of successful management criteria set forth in the plan rather than by a set number of years.	Applicant (Project Biologist)	Site surveys and annual reports as directed by this measure The length of the active management components set forth above shall be governed by attainment of successful management criteria	1. LACDRP 2. LACDRP/CDFG 3. As necessary per the guidelines set forth in the measure

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
Translocation/Reintroduction Program	Applicant (Project Biologist)	Review of Initial Study and subdivision	1. LACDRP/CDFG 2. LACDRP/CDFG 3. Prior to issuance of occupancy permits
4.6-78. To the extent project-related direct and indirect significant impacts on spineflower cannot be avoided or substantially lessened through establishment of the Newhall Ranch spineflower preserve(s), and other avoidance, minimization, or other compensatory mitigation measures, a translocation and reintroduction program may be implemented in consultation with CDFG to further mitigate such impacts. Direct impacts (*i.e.*, take) to occupied spineflower areas shall be fully mitigated at a 4:1 ratio. Impacts to occupied spineflower areas caused by significant indirect effects shall be mitigated at a 1:1 ratio. Introduction of new spineflower areas will be achieved through a combination of direct seeding and translocation of the existing soil seed bank that would be impacted by grading. Prior to any development within, or disturbance to, spineflower populations, on-site and off-site mitigation areas shall be identified and seed and top soil shall be collected. One-third of the collected seed shall be sent to the Rancho Santa Ana Botanical Garden for storage. One third of the seed shall be sent to the USDA National Seed Storage Lab in Fort Collins, Colorado for storage. One third shall be used for direct seeding of the on-site and off-site mitigation areas. **Direct seeding**. Prior to the initiation of grading, the project applicant, or its designee, shall submit to the County a program for the reintroduction of spineflower on Newhall Ranch. The reintroduction program shall include, among other information: (a) location map with scale; (b) size of each introduction polygon; (c) plans and specifications for site preparation, including selective clearing of competing vegetation; (d) site characteristics; (e) protocol for seed collection and application; and (f) monitoring and reporting. The program shall be submitted to CDFG for input and coordination. The project applicant, or its designee, shall implement the reintroduction program prior to the initiation of grading. At least two candidate spineflower reintroduction areas will be created within Newhall Ranch and one candidate spineflower reintroduction area will be identified offsite. Both on-site and off-site reintroduction areas will be suitable for the spineflower in both plant community and soils, and be located within the historic range of the taxon. Success criteria shall be included in the monitoring/management plan, with criteria for the germination, growth, and production of viable seeds of individual plants for a specified period.			

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
4.6-78. (cont.) Although the reintroduction program is experimental at this stage, the County considers such a program to be a feasible form of mitigation at this juncture based upon available studies. Botanists/biologists familiar with the ecology and biology of the spineflower would prepare and oversee the reintroduction program. **Translocation**. Prior to the initiation of grading, the project applicant, or its designee, shall submit to the County a translocation program for the spineflower. Translocation would salvage the topsoil of spineflower areas to be impacted due to grading. Salvaged spineflower soil seed bank would be translocated to the candidate spineflower reintroduction areas. The translocation program shall include, among other information: (a) location map with scale; (b) size of each translocation polygon; (c) plans and specifications for site preparation, including selective clearing of competing vegetation; (d) site characteristics; (e) protocol for topsoil collection and application; and (f) monitoring and reporting. The translocation program shall be submitted to CDFG for input and coordination. Translocation shall occur within the candidate spineflower reintroduction areas onsite and offsite. Successful criteria for each site shall be included in the monitoring/management plan/with criteria for the germination and growth to reproduction of individual plants for the first year a specified period. Although the translocation program is experimental at this stage, the County considers such a program to be a feasible form of mitigation at this juncture based upon available studies. Botanists/biologists familiar with the ecology and biology of the spineflower would prepare and oversee the translocation program.	Applicant (Project Biologist)	Review of Initial Study and subdivision	1. LACDRP/CDFG 2. LACDRP/CDFG 3. Prior to issuance of occupancy permits

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
On-going Agricultural Activities	Applicant	Thirty (30) days advance written notice of proposed conversion to more intensive agricultural uses	1. LACDRP/CDFG 2. LACDRP/CDFG 3. As necessary
4.6-79. The project applicant, or its designee, shall engage in regular and ongoing consultation with the County and CDFG in connection with its ongoing agricultural operations in order to avoid or minimize significant direct impacts to the spineflower. In addition, the project applicant, or its designee, shall provide 30 days advance written notice to the County and CDFG of the proposed conversion of its ongoing rangeland operations on Newhall Ranch to more intensive agricultural uses. The purpose of the advance notice requirement is to allow the applicant, or its designee, to coordinate with the County and CDFG to avoid or minimize significant impacts to the spineflower prior to the applicant's proposed conversion of its ongoing rangeland operations to more intensive agricultural uses. This coordination component will be implemented by or through the County's Department of Regional Planning and/or the Regional Manager of CDFG. Implementation will consist of the County and/or CDFG conducting a site visit of the proposed conversion area(s) within the 30-day period, and making a determination of whether the proposed conversion area(s) would destroy or significantly impact spineflower population in or adjacent to those areas. If it is determined that the conversion area(s) do not destroy or significantly impact spineflower populations, then the County and/or CDFG will authorize such conversion activities in the proposed conversion area(s). However, if it is determined that the conversion area(s) may destroy or significantly impact spineflower populations, then the County and/or CDFG will issue a stop work order to the applicant, or its designee. If such an order is issued, the applicant, or its designee, shall not proceed with any conversion activities in the proposed conversion area(s). However, the applicant, or the designee, may take steps to relocate the proposed conversion activities in an alternate conversion area(s). In doing so, the applicant, or its designee, shall follow the same notice and coordination provisions identified above. This conversion shall not include ordinary pasture maintenance and renovation or dry land farming operations consistent with rangeland management.			

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.6 BIOTA (cont.)			
San Martinez Population	Applicant	Upon approval of tentative tract map(s) impacting San Martinez portion of site	1. LACDRP/CDFG 2. LACDRP/CDFG 3. As necessary
4.6-80. Upon approval of tentative tract map(s) impacting the San Martinez portion of the Specific Plan site, the applicant shall work with the Department of Regional Planning staff and SEATAC to establish an appropriately sized preserve area to protect the spineflower population at San Martinez Canyon.			

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase

4.7 VISUAL QUALITIES

Key mitigation measures incorporated into the Specific Plan include, but are not limited to:

- the preservation of natural Santa Clara River vegetation and River bluffs,
- the preservation of canyons tributary to the Santa Clara River and other Open Area,
- the placement of the regional River Trail in between SR-126 and the River,
- the regulation and limitation of urban uses between SR-126 and the River which create large windows for viewing the River Corridor, the River bluffs and Santa Susana Mountains from SR-126,
- the preservation of the High Country SMA,
- the preservation of significant topographic features, such as Sawtooth Ridge and Ayers Rock,
- the installation of landscaping, and
- the preservation of significant oak tree stands (less than 4 percent of the estimated 16,000+ oak trees would be impacted).

Chapters 3 and 4 of the Specific Plan contain proposed Development Regulations and Design Guidelines, respectively. The reader is referred to those Chapters of the Specific Plan for the complete list. The Development Regulations and Design Guidelines are intended to provide a comprehensive set of regulations governing the use and development of land which is intended to achieve a development image that blends into adjoining natural landscapes and reduces the alteration of natural landforms and scenic natural features found on the Specific Plan site. The Specific Plan also includes landscape standards directing the use of drought-tolerant and native plants (including the replacement of removed oak trees) that would further highlight the surrounding natural environment. Development Regulations and Design Guidelines are proposed that address:

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.7 VISUAL QUALITIES (cont.)			
• setbacks (Development Regulations, Specific Plan Chapter 3.4, Table 3.4-1), • building heights (Development Regulations, Specific Plan Chapter 3.4, Table 3.4-1), • signage (Development Regulations, Specific Plan Chapter 3.6), • parking (Development Regulations, Specific Plan Chapter 3.7), • site planning (Design Guidelines, Specific Plan Chapter 4.3), • architecture (Design Guidelines, Specific Plan Chapter 4.4), • fencing (Design Guidelines, Specific Plan Chapter 4.5), • landscape design (Design Guidelines, Specific Plan Chapter 4.6), • lighting (Design Guidelines, Specific Plan Chapter 4.7), and • grading (Design Guidelines, Specific Plan Chapter 4.8).			
4.7-1. In conjunction with the development review process set forth in Chapter 5 of the Specific Plan, all future subdivision maps and other discretionary permits which allow construction shall incorporate the Development Guidelines (Specific Plan Chapter 3) and Design Guidelines (Specific Plan Chapter 4), and the design themes and view considerations listed in the Specific Plan.	Applicant	Plan Check	1. LA County Department of Regional Planning 2. LA County Department of Regional Planning 3. Prior to Approval of Final Maps

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.7 VISUAL QUALITIES (cont.)			
4.7-2. In design of residential tentative tract maps and site planning of multifamily areas and Commercial and Mixed-Use land use designations along SR-126, the following Design Guidelines shall be utilized. • Where the elevations of buildings will obstruct the views from SR-126 to the south, the location and configuration of individual buildings, driveways, parking, streets, signs and pathways shall be designed to provide view corridors of the River, bluffs and the ridge lines south of the River. Those view corridors may be perpendicular to SR-126 or oblique to it in order to provide for views of passengers within moving vehicles on SR-126. • The Community Park between SR 126 and the Santa Clara River shall be designed to promote views from SR-126 of the River, bluffs and ridge lines to the south of the River. • Residential Site Planning Guidelines set forth in Section 4.3.1 Residential and Architectural Guidelines set forth Section 4.4.1 Residential shall be employed to ensure that the views from SR-126 are aesthetically pleasing and that views of the River, bluffs and ridge lines south of the River are preserved to the extent practicable. • Mixed-Use and the Commercial Site Planning Guidelines set forth in Section 4.3.2 and Architectural Guidelines set forth Section 4.4.2 shall be incorporated to the extent practicable in the design of the Riverwood Village Mixed-Use and Commercial land use designations to ensure that the views from SR-126 are aesthetically pleasing and to preserve views of the River, bluffs and ridge lines south of the River. • Landscape improvements along SR 126 shall incorporate the Landscape Design Guidelines, set forth in Section 4.6 in order to ensure that the views from SR-126 are aesthetically pleasing and to preserve views of the River, bluffs and ridge lines south of the River.	Applicant	Plan Check	1. LA County Department of Regional Planning 2. LA County Department of Regional Planning 3. Prior to Approval of Final Subdivision Maps or Site Plans as applicable
No further mitigation is recommended beyond that already incorporated into the Specific Plan. While the measures contained in the Specific Plan minimize the Specific Plan's visual impact, they cannot reduce the magnitude of the impact to less than significant levels.			

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.8 TRAFFIC/ACCESS			
ON-SITE (EXCEPT SR-126 - SEE BELOW)			
The following mitigation is required relative to all on-site roadways and intersections except SR-126, which is discussed separately below:			
4.8-1. The applicants for future subdivision maps which permit construction shall be responsible for funding and constructing all on-site traffic improvements except as otherwise provided below. The obligation to construct improvements shall not preclude the applicants' ability to seek local, State or Federal funding for these facilities.	Applicant(s)	Bonding of and/or Receipt of Funding and/or Field Verification of Construction	1. LACDPW 2. LACDPW 3. Prior to Issuance of Building Permit
4.8-2. Prior to the approval of each subdivision map which permits construction, the applicant for that map shall prepare a transportation performance evaluation which shall indicate the specific improvements for all on-site roadways which are necessary to provide adequate roadway and intersection capacity as well as adequate right-of-way for the subdivision and other expected traffic. Transportation performance evaluations shall be approved by Los Angeles County Department of Public Works according to standards and policies in effect at that time. The transportation performance evaluation shall form the basis for specific conditions of approval for the subdivision.	Applicant (Traffic Engineer)	Receipt and Review of Transportation Performance Evaluation	1. LACDPW 2. LACDPW 3. Prior to Approval of Subdivision Maps
4.8-3. The applicants for future subdivisions shall provide the traffic signals at the 15 locations labeled "B" through "P" in Figure 4.8-17 as well as any additional signals warranted by future subdivision design. Signal warrants shall be prepared as part of the transportation performance evaluations noted in **Mitigation 4.8-2.**	Applicant (Traffic Engineer)	Installation of Traffic Signals or funding of or bonding of project's share	1. LACDPW 2. LACDPW 3. Prior to Issuance of Occupancy Permits
4.8-4. All development within the Specific Plan shall conform to the requirements of the Los Angeles County Transportation Demand Management (TDM) Ordinance.	Applicant (Traffic Engineer)	Subdivision Review	1. LACDPW 2. LACDPW 3. Prior to Final Map Approval and/or approval of improvement plans

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.8 TRAFFIC/ACCESS (cont.)			
4.8-5. The applicants for all future subdivision maps which permit construction shall consult with the local transit provider regarding the need for, and locations of, bus pull-ins on highways within the Specific Plan area. All bus pull-in locations shall be approved by the Department of Public Works, and approved bus pull-ins shall be constructed by the applicant.	Applicant (Traffic Engineer)	Verification of Consultation with Transit Providers Review of bus pull-in locations	1. LACDPW 2. LACDPW 3. Prior to Final Map Approval and/or approval of improvement plans
OFF-SITE ARTERIALS			
4.8-6. Prior to the recordation of the first subdivision map which permits construction, the applicant for that map shall prepare a transportation performance evaluation which shall determine the specific improvements needed to each off-site arterial and related costs in order to provide adequate roadway and intersection capacity for the expected Specific Plan and General Plan buildout traffic trips. The transportation performance evaluation shall be based on the Master Plan of Highways in effect at that time and shall be approved by the Los Angeles County Department of Public Works. The applicant shall be required to fund its fair share of improvements to these arterials, as stated on Table 4.8-18. The applicants total funding obligation shall be equitably distributed over the housing units and non-residential building square footage (*i.e.*, Business Park, Visitor-Serving, Mixed-Use, and Commercial) in the Specific Plan, and shall be a fee to be paid to the County and/or the City at each building permit. For off-site areas within the County unincorporated area, the applicant may construct improvements for credit against or in lieu of paying the fee.	Applicant(s)	Payment of Fee Determination of fair share funding obligation and fee structure for off-site improvements	1. LACDPW 2. LACDPW 3. Prior to Recordation of the First Subdivision Map

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.8 TRAFFIC/ACCESS (cont.)			
FREEWAYS AND STATE HIGHWAYS (I-5 AND SR-126 IN LOS ANGELES COUNTY)			
4.8-7. Each future performance evaluation which shows that a future subdivision map will create significant impacts on SR-126 shall analyze the need for additional travel lanes on SR-126. If adequate lane capacity is not available at the time of subdivision, the applicant of the subdivision shall fund or construct the improvements necessary to serve the proposed increment of development. Construction or funding of any required facilities shall not preclude the applicant's ability to seek State, Federal or local funding for these facilities.	Applicant(s)	Receipt and Review of Transportation Performance Evaluation Applicant Funding of or bonding of Fair Share of Improvements	1. LACDPW 2. LACDPW 3. Prior to Recordation of Final Tract Map

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.8 TRAFFIC/ACCESS (cont.)			
CONGESTION MANAGEMENT			
4.8-8. Project-specific environmental analysis for future subdivision maps which allow construction shall comply with the requirements of the Congestion Management Program in effect at the time that subdivision map is filed.	Applicant	Review of future environmental analysis	1. LACDPW 2. LACDPW 3. Prior to certification of future environmental documents
SR-126 IN VENTURA COUNTY			
4.8-9. Prior to the recordation of the first subdivision map which permits construction, the applicant for that map shall prepare a transportation evaluation including all of the Specific Plan land uses which shall determine the specific improvements needed to the following intersections with SR-126 in the City of Fillmore and community of Piru in Ventura County: "A", "B", "C", "D" and "E" Streets, Old Telegraph, Olive, Central, Santa Clara, Mountain View, El Dorado Road, and Pole Creek (Fillmore), and Main/Torrey and Center (Piru). The related costs of those intersection improvements and the project's fair share shall be estimated based upon the expected Specific Plan traffic volumes. The transportation performance evaluation shall be based on the Los Angeles County Master Plan of Highways in effect at that time and shall be approved by the Los Angeles County Department of Public Works. The applicant's total funding obligation shall be equitably distributed over the housing units and non-residential building square footage (*i.e.*, Business Park, Visitor Center, Mixed Use, and Commercial) in the Specific Plan, and shall be a fee to be paid to the City of Fillmore and the County of Ventura at each building permit.	Applicant (Traffic Engineer)	Receipt and Review of Transportation Performance Evaluation Payment of Fee to City of Fillmore or County of Ventura	1. LACDPW 2. LACDPW 3. Prior to Recordation of the First Subdivision Map; Payment of Fee Prior to Issuance of Building Permits

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.8 TRAFFIC/ACCESS (cont.)			
FREEWAY/HIGHWAY INTERSECTIONS AND INTERCHANGES			
4.8-10. The Specific Plan is responsible to construct or fund its fair-share of the intersections and interchange improvements indicated on Table 4.8-18. Each future transportation performance evaluation required by **Mitigation Measure 4.8-2** which identifies a significant impact at these locations due to subdivision map-generated traffic shall address the need for additional capacity at each of these locations. If adequate capacity is not available at the time of subdivision map recordation, the performance evaluation shall determine the improvements necessary to carry Specific Plan generated traffic, as well as the fair share cost to construct such improvements. If the future subdivision is conditioned to construct a phase of improvements which results in an overpayment of the fair-share cost of the improvement, then an appropriate adjustment (offset) to the fees paid to Los Angeles County and/or City of Santa Clarita pursuant to **Mitigation Measure 4.8-6** above shall be made.	Applicant	Field Verification of Construction or Receipt of Fair Share Funding or Bonding	1. LACDPW 2. LACDPW 3. Prior to Issuance of Occupancy Permits
4.8-11. The applicant of the Newhall Ranch Specific Plan shall participate in an I-5 developer fee program, if adopted by the Board of Supervisors for the Santa Clarita Valley.	Applicant	Field Verification of Construction or Receipt of Fair Share Funding or Bonding	1. LACDPW 2. LACDPW 3. Prior to Issuance of Occupancy Permits
4.8-12. The applicant of the Newhall Ranch Specific Plan shall participate in a transit fee program, if adopted for the entire Santa Clarita Valley by Los Angeles County and City of Santa Clarita.	Applicant	Field Verification of Construction or Receipt of Fair Share Funding or Bonding	1. LACDPW 2. LACDPW 3. Prior to Issuance of Occupancy Permits

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.8 TRAFFIC/ACCESS (cont.)			
4.8-13. Prior to the approval of each subdivision map which permits construction, the applicant for that map shall prepare a traffic analysis approved by the Los Angeles County Department of Public Works. The analysis will assess project and cumulative development (including an existing plus cumulative development scenario under the County's Traffic Impact Analysis Report Guidelines (TIA) and its Development Monitoring System (DMS)). In response to the traffic analysis, the applicant may construct off-site traffic improvements for credit against, or in lieu of paying, the mitigation fees described in **Mitigation Measure 4.8-6** above. If future subdivision maps are developed in phases, a traffic study for each phase of the subdivision map may be submitted to determine the improvements needed to be constructed with that phase of development.	Applicant(s) (Project Traffic Engineer)	Receipt and Review of TIA and DMS Traffic Analysis Applicant Funding of or bonding of Fair Share of Improvements	1. LACDPW 2. LACDPW 3. Prior to Recordation of the Final Tract Map

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.9 NOISE			
CONSTRUCTION			
4.9-1. All construction activity occurring on the Newhall Ranch Specific Plan site shall adhere to the requirements of the "County of Los Angeles Construction Equipment Noise Standards," County of Los Angeles Ordinance No. 11743, §12.08.440 as identified in Table 4.9-3.	Applicant (Construction Contractor)	Include Measure in Specifications Field Verification With Noise Monitor	1. LA County Department of Health Services 2. LACDPW, Building and Safety 3. During Grading and Construction Activities
4.9-2. Limit all construction activities near occupied residences to between the hours of 6:30 A.M. and 8:00 P.M., and exclude all Sundays and legal holidays pursuant to County Department of Public Works, Construction Division standards.	Applicant (Construction Contractor)	Include Measure in Specifications Field Verification	1. LA County Department of Health Services 2. LACDPW, Building and Safety 3. During Grading and Construction Activities
4.9-3. When construction operations occur adjacent to occupied residential areas, implement appropriate additional noise reduction measures that include changing the location of stationary construction equipment, shutting off idling equipment, notifying adjacent residences in advance of construction work, and installing temporary acoustic barriers around stationary construction noise sources.	Applicant (Construction Contractor)	Include Measure in Specifications Field Verification and Verification that Adjacent Residents Were Notified	1. LA County Department of Health Services 2. LACDPW, Building and Safety 3. During Grading and Construction Activities
4.9-4. Locate construction staging areas on-site to maximize the distance between staging areas and occupied residential areas.	Applicant (Construction Contractor)	Include Measure in Specifications Field Verification	1. LA County Department of Health Services 2. LACDPW, Building and Safety 3. During Grading and Construction Activities

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.9 NOISE (cont.)			
OPERATION			
4.9-5. Where new single family residential buildings are to be constructed within an exterior noise contour of 60 dB(A) CNEL or greater, or where any multi-family buildings are to be constructed within an exterior noise contour of 65 dB(A) CNEL or greater, an acoustic analysis shall be completed prior to approval of building permits. The acoustical analysis shall show that the building is designed so that interior noise levels resulting from outside sources will be no greater than 45 dB(A) CNEL.	Applicant	Receipt and Review of Acoustical Analysis	1. LA County Department of Health Services 2. LACDPW, Building and Safety 3. Prior to the Issuance of Building Permits
4.9-6. For single family residential lots located within the 60 dB(A) CNEL or greater noise contour, an acoustic analysis shall be submitted prior to tentative approval of the subdivision. The acoustic analysis shall show that exterior noise in outdoor living areas (*e.g.*, back yards, patios, *etc.*) will be reduced to 60 dB(A) CNEL or less.	Applicant	Receipt and Review of Acoustical Analysis	1. LA County Department of Health Services 2. LACDPW, Building and Safety 3. Prior to Tentative Approval of Subdivision
4.9-7. For multi-family residential lots located within the 65 dB(A) CNEL or greater noise contour, an acoustic analysis shall be submitted prior to tentative approval of the subdivision. The acoustic analysis shall show that exterior noise in outdoor living areas (*e.g.*, back yards, patios, *etc.*) will be reduced to 65 dB(A) CNEL or less.	Applicant	Receipt and Review of Acoustical Analysis	1. LA County Department of Health Services 2. LACDPW, Building and Safety 3. Prior to Tentative Approval of Subdivision
4.9-8. For school sites located within the 70 dB(A) CNEL or greater noise contour, an acoustic analysis shall be submitted prior to tentative approval of the subdivision. The acoustic analysis shall show that noise at exterior play areas will be reduced to 70 dB(A) CNEL or less.	Applicant	Receipt and Review of Acoustical Analysis	1. LA County Department of Health Services 2. LACDPW, Building and Safety 3. Prior to Tentative Approval of Subdivision
4.9-9. All residential air conditioning equipment installed within the Newhall Ranch Specific Plan site shall adhere to the requirements of the County of Los Angeles Residential Air Conditioning and Refrigeration Noise Standards, County of Los Angeles Ordinance No. 11743, §12.08.530.	Building Contractor	Field Verification	1. LA County Department of Health Services 2. LACDPW, Building and Safety 3. Prior to the Issuance of Occupancy Permits

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.9 NOISE (cont.)			
4.9-10. All stationary and point sources of noise occurring on the Newhall Ranch Specific Plan site shall adhere to the requirements of the County of Los Angeles Ordinance No. 11743, §12.08.390 as identified in Table 4.9-2, County of Los Angeles Exterior Noise Standards for Stationary and Point Noise Sources.	Future Owners/ Operators within project	Field Verification	1. LA County Department of Health Services 2. LA County Department of Building and Safety 3. During Life of Project
4.9-11. Loading, unloading, opening, closing, or other handling of boxes, crates, containers, building materials, garbage cans or similar objects between the hours of 10:00 P.M. and 6:00 A.M. in such a manner as to cause a noise disturbance is prohibited in accordance with the County of Los Angeles Ordinance No. 11743, §12.08.460.	Future Owners/ Operators within project	Field Verification	1. LA County Department of Health Services 2. LACDPW, Building and Safety 3. During Life of Project
4.9-12. Loading zones and trash receptacles in commercial and Business Park areas shall be located away from adjacent residential areas, or provide attenuation so that noise levels at residential uses do not exceed the standards identified in §12.08.460 of the Ordinance No. 11743.	Applicant	Plan Check Field Verification	1. LA County Department of Health Services 2. LACDPW, Building and Safety 3. Prior to Approval of Final Maps or improvement/building plans and Verify Prior to Issuance of Occupancy Permits
4.9-13. Where residential lots are located with direct lines of sight to the Magic Mountain Theme Park, an acoustic analysis shall be submitted to show that exterior noise on the residential lots generated by activities at the park do not exceed the standards identified in §12.08.390 of the Ordinance No. 11743 as identified in Table 4.9-2, County of Los Angeles Exterior Noise Standards for Stationary and Point Noise Sources.	Applicant	Receipt and Review of Acoustical Analysis	1. LA County Department of Health Services 2. LACDPW, Building and Safety 3. Prior to the Issuance of Building Permits
4.9-14. After the time that occupancy of uses on the Newhall Ranch Specific Plan site occurs, AND when noise levels at the Travel Village RV Park reach 70 dB(A) CNEL at locations where recreational vehicles are inhabited, the applicant shall construct a noise abatement barrier to reduce noise levels at the RV Park to 70 dB(A) CNEL or less.	Applicant	Receipt and Review of Acoustical Analysis Field Verification	1. LA County Department of Health Services 2. LACDPW, Building and Safety 3. Upon Occupancy of Uses on Newhall Ranch and if/when noise levels in Travel Village reach 70 dB(A) CNEL

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.9 NOISE (cont.)			
4.9-15. Despite the absence of a significant impact, applicants for all building permits of Residential, Mixed-Use, Commercial, and Business Park land uses (Project) shall pay to the Santa Clara Elementary School District, prior to issuance of building permits, the project's pro rata share of the cost of a sound wall to be located between SR-126 and the Little Red School House. The project's pro rata share shall be determined by multiplying the estimated cost of the sound wall by the ratio of the project's estimated contribution of average daily trips on SR-126 (ADT) at the Little Red School House (numerator) to the total projected cumulative ADT increase at that location (denominator).[1] The total projected cumulative ADT increase shall be determined by subtracting the existing trips on SR-126[2] from the projected cumulative trips as shown in Table 1 of Topical Response 5 - Traffic Impacts to State and Local Roads in Ventura County after adding the total Newhall Ranch ADT traveling west of the City of Fillmore.	Applicants for all Building Permits	Payment to Santa Clara Elementary School District	1. LACDRP 2. LACDPW, Building and Safety 3. Upon Issuance of Building Permits
4.9-16. Despite the absence of a significant impact, the applicant for all building permits of Residential, Mixed-Use, Commercial and Business Park land uses (Project) shall participate on a fair-share basis in noise attenuation programs developed and implemented by the City of Moorpark to attenuate vehicular noise on SR-23 just north of Casey Road for the existing single-family homes which front SR-23. The mitigation criteria shall be to reduce noise levels to satisfy State noise compatibility standards. The project's pro rata share shall be determined by multiplying the estimated cost of attenuation by the ratio of the project's estimated contribution of average daily trips on SR-23 (ADT) north of the intersection of SR-23 and Casey Road (numerator) to the total projected cumulative ADT increase at that location (denominator).[3] The total projected cumulative ADT increase shall be determined by subtracting the existing trips on SR-23 north of Casey Road[4] from the projected cumulative trips as shown in Topical Response 5 - Traffic Impacts to State and Local Roads in Ventura County after adding the total Newhall Ranch ADT traveling south of the City of Fillmore.	Applicants for all Building Permits	Payment to City of Moorpark	1. LACDRP 2. LACDPW, Building and Safety 3. Upon Issuance of Building Permits

[1] Cost of Sound Wall X (Project ADT on SR-126 @ LRSH*/Total Projected Cumulative ADT Increase on SR-126 @ LRSH*) * LRSH = Little Red School House.

[2] 25,165 ADT using linear extrapolation from Table 1 of Topical Response 5 - Traffic Impacts to State and Local Roads in Ventura County.

[3] Cost of mitigation x (Project ADT on SR-23 north of Casey Road/Total Projected cumulative ADT Increase on SR-23 north of Casey Road).

[4] ADT using linear extrapolation from Table 1 of Topical Response 5 - Traffic Impacts to State and Local Roads in Ventura County.

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.9 NOISE (cont.)			
4.9-17. Prior to the approval of any subdivision map which permits construction within the Specific Plan area, the applicant for that map shall prepare an acoustical analysis assessing project and cumulative development (including an existing plus project analysis, and an existing plus cumulative development analysis including the project). The acoustical analysis shall be based upon State noise land use compatibility criteria and shall be approved by the Los Angeles County Department of Health Services. In order to mitigate any future impacts resulting from the project's contribution to significant cumulative noise impacts to development in existence as of the adoption of the Newhall Ranch Specific Plan and caused by vehicular traffic on off-site roadways, the applicant for building permits of Residential, Mixed-Use, Commercial, Visitor Serving and Business Park land uses shall, prior to issuance of building permits, pay a fee to Los Angeles County, Ventura County, the City of Fillmore or the City of Santa Clarita. The amount of the fee shall be the project's fair-share under any jurisdiction-wide or Santa Clarita Valley-wide noise programs adopted by any of the above jurisdictions.	Applicants for all Building Permits	Payment of Fee to Los Angeles County, Ventura County, City of Fillmore or the City of Santa Clarita	1. LACDRP 2. Los Angeles Co. Department of Health Services 3. Upon Issuance of Building Permits

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase

4.10 AIR QUALITY

As discussed in Draft EIR, the proposed Specific Plan includes an on-site mobility system with alternatives to automobile use. Bus transit service within the Santa Clarita Valley currently provides linkages to the Metrolink rail station located on Soledad Canyon Road in the City of Santa Clarita, as well as to major commercial and other high activity centers within the Santa Clarita Valley. As set forth in Specific Plan, bus pull-ins will be provided throughout the Newhall Ranch Specific Plan site. Transit service is expected to serve the site when the demand for service justifies the extension of service to the area. The bus transit system will serve to implement SCAQMD mitigation measures pertaining to the establishment of shuttles from the Specific Plan site to commercial core areas and to major rail transit centers.

In addition, the Specific Plan incorporates a variety of design concepts, which will reduce total vehicle miles traveled and encourage alternative modes of transportation. These features include Mixed-Use areas, the location of employment centers in proximity to residential areas, and trails, which will accommodate bicycles and pedestrians, which link employment centers and commercial areas. The Specific Plan also reserves land for a future rail right-of-way and an area has been identified for a future transit station within the Specific Plan area. The Specific Plan is designed to reduce vehicle miles traveled through encouraging alternative modes of travel and allowing for residents to work, shop, and recreate in close proximity to their homes.

The Specific Plan would be built out over an estimated 25-year period. It is unknown at this time what technological developments may take place that may affect the identification and implementation of mitigation measures; however, preliminary information is available on the direction that these developments appear to be taking. Projects planned today should be able to integrate improvements, which facilitate use of new technologies as they become commercially available. For example, several alternatives to gasoline-powered vehicles are being developed today. Fuel cells which generate little, if any, pollutant emissions are being designed and tested as means to supply energy, heat, and cooling for structures. The potential application of measures such as these to reduce emissions should be studied as they become readily available and economically viable. However, with regard to "a fuel cell program for the commercial and industrial buildings", there is no supportable evidence that such a mitigation measure is economically achievable and therefore feasible. Nor is any data available to demonstrate that such a measure would have a measurable or significant effect on reducing air emissions. In addition, Los Angeles County is not aware of any objective data demonstrating that such a measure, if implemented, would measurably reduce air emissions. SCAQMD's CEQA *Air Quality Handbook* does not recommend this measure for non-residential land uses. For all these reasons, Los Angeles County rejects this measure as infeasible.

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.10 AIR QUALITY (cont.)			
However, the following features have been incorporated as part of the Specific Plan to reduce motor vehicle trips:			
4.10-1. The Specific Plan will provide Commercial and Service uses in close proximity to residential subdivisions.	Applicant	Approval of Tentative Maps	1. LACDRP 2. LACDRP 3. Prior to Tentative Subdivision Map Approvals
4.10-2. The Specific Plan will locate residential uses in close proximity to Commercial uses, Mixed-Uses, and Business Parks.	Applicant	Approval of Tentative Maps	1. LACDRP 2. LACDRP 3. Prior to Tentative Subdivision Map Approvals
4.10-3. Bus pull-ins will be constructed throughout the Specific Plan site.	Applicant	Final Highway Plan Check	1. LACDPW 2. LACDPW 3. Prior to Tentative Subdivision Map Approvals
4.10-4. Pedestrian facilities, such as sidewalks, and community regional, and local trails, will be provided throughout the Specific Plan site.	Applicant	Submittal of Tentative Maps	1. LACDRP 2. LACDRP 3. Prior to Tentative Subdivision Map Approvals
4.10-5. Roads with adjacent trails for pedestrian and bicycle use will be provided throughout the Specific Plan site connecting the individual Villages and community.	Applicant	Submittal of Tentative Maps	1. LACDRP 2. LACDRP 3. Prior to Tentative Subdivision Map Approvals

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.10 AIR QUALITY (cont.)			
CONSTRUCTION IMPACTS			
4.10-6. The applicant of future subdivisions shall implement all rules and regulations adopted by the Governing Board of the SCAQMD which are applicable to the development of the subdivision (such as Rule 402 - Nuisance, Rule 403 - Fugitive Dust, Rule 1113 - Architectural Coatings) and which are in effect at the time of development. The purpose of Rule 403 is to reduce the amount of particulate matter entrained in the ambient air as a result of man-made fugitive dust sources by requiring actions to prevent, reduce, or mitigate fugitive dust emissions. Rule 403 applies to any activity or man-made condition capable of generating fugitive dust such as the mass and remedial grading associated with the project as well as weed abatement and stockpiling of construction materials (*i.e.*, rock, earth, gravel). Rule 403 requires that grading operations either (1) take actions specified in Tables 1 and 2 of the Rule for each applicable source of fugitive dust and take certain notification and record keeping actions; or (2) obtain an approved Fugitive Dust Control Plan. A complete copy of the SCAQMD's Rule 403 Implementation Handbook, which has been included in Appendix 4.10, provides guideline tables to demonstrate the typical mitigation program and record keeping required for grading operations (Tables 1 and 2 and sample record keeping chart). The record keeping is accomplished by on-site construction personnel, typically the construction superintendent. Each future subdivision proposed in association with the Newhall Ranch Specific Plan shall implement the following if found applicable and feasible for that subdivision:	Applicant	Plan Check Review and apply applicable rules as part of environmental document	1. LACDRP 2. LACDRP 3. Prior to Tentative Subdivision Map Approvals
GRADING a. Apply non-toxic soil stabilizers according to manufacturers' specification to all inactive construction areas (previously graded areas inactive for ten days or more). b. Replace groundcover in disturbed areas as quickly as possible.			

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase

4.10 AIR QUALITY (cont.)

4.10-6. (cont.)

c. Enclose, cover, water twice daily, or apply non-toxic soil binders according to manufacturers' specifications, to exposed piles (*i.e.*, gravel, sand, dirt) with 5 percent or greater silt content.
d. Water active sites at least twice daily.
e. Suspend all excavating and grading operations when wind speeds (as instantaneous gusts) exceed 25 mph.
f. Monitor for particulate emissions according to District-specified procedures.
g. All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of freeboard (*i.e.*, minimum vertical distance between top of the load and the top of the trailer) in accordance with the requirements of CVC Section 23114.

PAVED ROADS

h. Sweep streets at the end of the day if visible soil material is carried onto adjacent public paved roads (recommend water sweepers with reclaimed water).
i. Install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash off trucks and any equipment leaving the site each trip.

UNPAVED ROADS

j. Apply water three times daily, or non-toxic soil stabilizers according to manufacturers' specifications, to all unpaved parking or staging areas or unpaved road surfaces.
k. Reduce traffic speeds on all unpaved roads to 15 mph or less.
l. Pave construction roads that have a traffic volume of more than 50 daily trips by construction equipment, 150 total daily trips for all vehicles.
m Pave all construction access roads at least 100 feet on to the site from the main road.
n. Pave construction roads that have a daily traffic volume of less than 50 vehicular trips.

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.10 AIR QUALITY (cont.)			
4.10-7. Prior to the approval of each future subdivision proposed in association with the Newhall Ranch Specific Plan, each of the construction emission reduction measures indicated below (and in Tables 11-2 and 11-3 of the SCAQMD's CEQA *Air Quality Handbook*, as amended) shall be implemented if found applicable and feasible for that subdivision. Tables of currently applicable measures are provided for reference in EIR Appendix 4.10.	Applicant	Field Verification and review and include applicable and feasible rules as part of environmental document	1. LACDRP 2. LACDRP 3. Prior to Tentative Subdivision Map Approvals
ON-ROAD MOBILE SOURCE CONSTRUCTION EMISSIONS:			
a. Configure construction parking to minimize traffic interference.			
b. Provide temporary traffic controls when construction activities have the potential to disrupt traffic to maintain traffic flow (*e.g.*, signage, flag person, detours).			
c. Schedule construction activities that affect traffic flow to off-peak hours (*e.g.*, between 7:00 P.M. and 6:00 A.M. and between 10:00 A.M. and 3:00 P.M.).			
d. Develop a trip reduction plan to achieve a 1.5 average vehicle ridership (AVR) for construction employees.			
e. Implement a shuttle service to and from retail services and food establishments during lunch hours.			
f. Develop a construction traffic management plan that includes the following measures to address construction traffic that has the potential to affect traffic on public streets: - Rerouting construction traffic off congested streets; - Consolidating truck deliveries; and - Providing temporary dedicated turn lanes for movement of construction trucks and equipment on and off of the site.			
g Prohibit truck idling in excess of two minutes.			
OFF-ROAD MOBILE SOURCE CONSTRUCTION EMISSIONS:			
h. Use methanol-fueled pile drivers.			
i. Suspend use of all construction equipment operations during second stage smog alerts.			
j. Prevent trucks from idling longer than two minutes.			
k. Use electricity from power poles rather than temporary diesel-powered generators.			
l. Use electricity from power poles rather than temporary gasoline-powered generators.			
m Use methanol- or natural gas-powered mobile equipment instead of diesel.			
n. Use propane- or butane-powered on-site mobile equipment instead of gasoline.			

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.10 AIR QUALITY (cont.)			
OPERATION IMPACTS			
The following measures based on current technology and feasibility will be implemented to reduce the operational emissions of the Specific Plan.			
4.10-8. The applicant of future subdivisions shall implement all rules and regulations adopted by the Governing Board of the SCAQMD which are applicable to the development of the subdivision (such as Rule 402 - Nuisance, Rule 1102 - Petroleum Solvent Dry Cleaners, Rule 1111 - NOx Emissions from Natural Gas-Fired, Fan-Type Central Furnaces, Rule 1146 - Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters) and which are in effect at the time of occupancy permit issuance.	Applicant	Field Verification and review and include applicable and feasible rules as part of environmental document	1. LACDRP 2. LACDRP 3. Prior to Tentative Subdivision Map Approvals
4.10-9. Prior to the approval of each future subdivision proposed in association with the Newhall Ranch Specific Plan, each of the operational emission reduction measures indicated below (and in Tables 11-6 and 11-7 of the SCAQMD's CEQA *Air Quality Handbook*, as amended) shall be implemented if found applicable and feasible for that subdivision. Tables of currently applicable measures are provided for reference in Appendix 4.10.	Applicant	Field Verification and review and include applicable and feasible rules as part of environmental document	1. LACDRP 2. LACDRP 3. Prior to Tentative Subdivision Map Approvals
ON-ROAD MOBILE SOURCE OPERATIONAL EMISSIONS:			
RESIDENTIAL USES a. Include satellite telecommunications centers in residential subdivisions. b. Establish a shuttle service from residential subdivisions to commercial core areas. c. Construct on-site or off-site bus stops (*e.g.*, bus turnouts, passenger benches, and shelters). d. Construct off-site pedestrian facility improvements, such as overpasses and wider sidewalks. e. Include retail services within or adjacent to residential subdivisions. f. Provide shuttles to major rail transit centers or multi-modal stations. g. Contribute to regional transit systems (*e.g.*, right-of-way, capital improvements, *etc.*). h. Synchronize traffic lights on streets impacted by development. i. Construct, contribute, or dedicate land for the provision of off-site bicycle trails linking the facility to designated bicycle commuting routes.			

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.10 AIR QUALITY (cont.)			
4.10-9. (cont.) **COMMERCIAL USES** j. Provide preferential parking spaces for carpools and vanpools and provide 7'2" minimum vertical clearance in parking facilities for vanpool access. k. Implement on-site circulation plans in parking lots to reduce vehicle queuing. l. Improve traffic flow at drive-throughs by designing separate windows for different functions and by providing temporary parking for orders not immediately available for pickup. m Provide video-conference facilities. n. Set up resident worker training programs to improve job/housing balance. o. Implement home dispatching system where employees receive routing schedule by phone instead of driving to work. p. Develop a program to minimize the use of fleet vehicles during smog alerts (for business not subject to Regulation XV (now Rule 2202) or XII). q. Use low-emissions fleet vehicles: - TLEV - ULEV - LEV - ZEV r. Reduce employee parking spaces for those businesses subject to Regulation XV (now Rule 2202). s. Implement a lunch shuttle service from a worksite(s) to food establishments. t. Implement compressed work-week schedules where weekly work hours are compressed into fewer than five days. - 9/80 - 4/40 - 3/36 u. Develop a trip reduction plan to achieve 1.5 AVR for businesses with less than 100 employees or multi-tenant worksites. v. Utilize satellite offices rather than regular worksite to reduce VMT. w. Establish a home-based telecommuting program. x. Provide on-site child care and after-school facilities or contribute to off-site development within walking distance.	Applicant	Field Verification and review and include applicable and feasible rules as part of environmental document	1. LACDRP 2. LACDRP 3. Prior to Tentative Subdivision Map Approvals

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.10 AIR QUALITY (cont.)			
4.10-9. (cont.) y. Require retail facilities or special event centers to offer travel incentives such as discounts on purchases for transit riders. z. Provide on-site employee services such as cafeterias, banks, *etc.* aa. Establish a shuttle service from residential core areas to the worksite. ab. Construct on-site or off-site bus stops (*e.g.*, bus turnouts, passenger benches, and shelters). ac. Implement a pricing structure for single-occupancy employee parking and/or provide discounts to ridesharers. ad. Include residential units within a commercial project. ae. Utilize parking in excess of code requirements as on-site park-n-ride lots or contribute to construction of off-site lots. af. Any two of the following: - Construct off-site bicycle facility improvements, such as bicycle trails linking the facility to designated bicycle commuting routes, or on-site improvements, such as bicycle paths. - Include bicycle parking facilities, such as bicycle lockers and racks. - Include showers for bicycling employees' use. ag. Any two of the following: - Construct off-site pedestrian facility improvements, such as overpasses, wider sidewalks. - Construct on-site pedestrian facility improvements, such as building access which is physically separated from street and parking lot traffic and walk paths. - Include showers for pedestrian employees' use. ah. Provide shuttles to major rail transit stations and multi-modal centers. ai. Contribute to regional transit systems (*e.g.*, right-of-way, capital improvements, *etc.*). aj. Charge visitors to park. ak. Synchronize traffic lights on streets impacted by development. al. Reschedule truck deliveries and pickups to off-peak hours. am. Set up paid parking systems where drivers pay at walkup kiosk and exit via a stamped ticket to reduce emissions from queuing vehicles. an. Require on-site truck loading zones. ao. Implement or contribute to public outreach programs. ap. Require employers not subject to Regulation XV (now Rule 2202) to provide commuter information area.	Applicant	Field Verification and review and include applicable and feasible rules as part of environmental document	1. LACDRP 2. LACDRP 3. Prior to Tentative Subdivision Map Approvals

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.10 AIR QUALITY (cont.)			
4.10-9. (cont.)	Applicant	Field Verification and review and include applicable and feasible rules as part of environmental document	1. LACDRP 2. LACDRP 3. Prior to Tentative Subdivision Map Approvals
BUSINESS PARK USES			
aq. Provide preferential parking spaces for carpools and vanpools and provide 7'2" minimum vertical clearance in parking facilities for vanpool access.			
ar. Implement on-site circulation plans in parking lots to reduce vehicle queuing.			
as. Set up resident worker training programs to improve job/housing balance.			
at. Implement home dispatching system where employees receive routing schedule by phone instead of driving to work.			
au. Develop a program to minimize the use of fleet vehicles during smog alerts (for business not subject to Regulation XV (now Rule 2202) or XII).			
av. Use low-emissions fleet vehicles: - TLEV - ULEV - LEV - ZEV			
aw. Require employers not subject to Regulation XV (now Rule 2202) to provide commuter information area.			
ax. Reduce employee parking spaces for those businesses subject to Regulation XV (now Rule 2202).			
ay. Implement compressed work-week schedules where weekly work hours are compressed into fewer than five days. - 9/80 - 4/40 - 3/36			
az. Offer first right of refusal, low interest loans, or other incentives to employees who purchase or rent local residences.			
ba. Develop a trip reduction plan to achieve 1.5 AVR for businesses with less than 100 employees or multi-tenant worksites.			
bb. Provide on-site child care and after-school facilities or contribute to off-site development within walking distance.			
bc. Provide on-site employee services such as cafeterias, banks, *etc.*			
bd. Establish a shuttle service from residential core areas to the worksite.			
be. Construct on-site or off-site bus stops (*e.g.*, bus turnouts, passenger benches, and shelters)			

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.10 AIR QUALITY (cont.)			
4.10-9. (cont.)	Applicant	Field Verification and review and include applicable and feasible rules as part of environmental document	1. LACDRP 2. LACDRP 3. Prior to Tentative Subdivision Map Approvals
bf. Implement a pricing structure for single-occupancy employee parking and/or provide discounts to ridesharers.			
bg. Utilize parking in excess of code requirements as on-site park-n-ride lots or contribute to construction of off-site lots.			
bh. Any two of the following: - Construct off-site bicycle facility improvements, such as bicycle trails linking the facility to designated bicycle commuting routes, or on-site improvements, such as bicycle paths. - Include bicycle parking facilities, such as bicycle lockers and racks. - Include showers for bicycling employees' use.			
bi. Any two of the following: - Construct off-site pedestrian facility improvements, such as overpasses, wider sidewalks. - Construct on-site pedestrian facility improvements, such as building access which is physically separated from street and parking lot traffic and walk paths. - Include showers for pedestrian employees' use.			
bj. Provide shuttles to major rail transit stations and multi-modal centers.			
bk. Contribute to regional transit systems (*e.g.*, right-of-way, capital improvements, *etc.*).			
bl. Synchronize traffic lights on streets impacted by development.			
bm. Reschedule truck deliveries and pickups to off-peak hours.			
bn. Implement a lunch shuttle service from a worksite(s) to food establishments.			
bo. Require on-site truck loading zones.			
bp. Install aerodynamic add-on devices to heavy-duty trucks.			
bq. Implement or contribute to public outreach programs.			
STATIONARY SOURCE OPERATIONAL EMISSIONS			
RESIDENTIAL USES			
br. Use solar or low emission water heaters.			
bs. Use central water heating systems.			
bt. Use built-in energy-efficient appliances.			
bu. Provide shade trees to reduce building heating/cooling needs.			
bv. Use energy-efficient and automated controls for air conditioners.			
bw. Use double-paned windows.			
bx. Use energy-efficient low-sodium parking lot lights.			

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.10 AIR QUALITY (cont.)			
4.10-9. (cont.) **COMMERCIAL USES** by. Use lighting controls and energy-efficient lighting. bz. Use fuel cells in residential subdivisions to produce heat and electricity. ca. Orient buildings to the north for natural cooling and include passive solar design (*e.g.*, daylighting). cb. Use light-colored roofing materials to reflect heat. cc. Increase walls and attic insulation beyond Title 24 requirements. cd. Use solar or low emission water heaters. ce. Use central water heating systems. cf. Provide shade trees to reduce building heating/cooling needs. cg. Use energy-efficient and automated controls for air conditioners. ch. Use double-paned windows. ci. Use energy-efficient low-sodium parking lot lights. cj. Use lighting controls and energy-efficient lighting. ck. Use light-colored roofing materials to reflect heat. cl. Increase walls and attic insulation beyond Title 24 requirements. cm. Orient buildings to the north for natural cooling and include passive solar design (*e.g.*, daylighting). **BUSINESS PARK USES** cn. Provide shade trees to reduce building heating/cooling needs. co. Use energy-efficient and automated controls for air conditioning. cp. Use double-paned windows. cq. Use energy-efficient low-sodium parking lot lights. cr. Use lighting controls and energy-efficient lighting. cs. Use light-colored roofing materials to reflect heat. ct. Orient buildings to the north for natural cooling and include passive solar design (*e.g.*, daylighting). cu. Increase walls and attic insulation beyond Title 24 requirements. cv. Improved storage and handling or source materials. cw. Materials substitution (*e.g.*, use water-based paints, life-cycle analysis). cx. Modify manufacturing processes (*e.g.*, reduce process stages, closed-loop systems, materials recycling). cy. Resource recovery systems that redirect chemicals to new production processes.	Applicant	Field Verification and review and include applicable and feasible rules as part of environmental document	1. LACDRP 2. LACDRP 3. Prior to Tentative Subdivision Map Approvals

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.10 AIR QUALITY (cont.)			
4.10-10. All non-residential development of 25,000 gross square feet or more shall comply with the County's Transportation Demand Management (TDM) Ordinance (Ordinance No. 93-0028M) in effect at the time of subdivision. The sizes and configurations of the Specific Plan's non-residential uses are not known at this time and the Ordinance specifies different requirements based on the size of the project under review. All current provisions of the ordinance are summarized in Appendix 4.10.	Applicant	Include Requirement in Future environmental documents and/or check at Building Permit	1. LACDPW 2. LACDRP 3. Tentative Map Approval or Building Permit, as applicable
4.10-11. Subdivisions and buildings shall comply with Title 24 of the California Code of Regulations which are current at the time of development.	Applicant	Include Requirement in Future environmental documents and/or check at Building Permit	1. LACDPW, Building and Safety 2. LACDPW, Building and Safety 3. Tentative Map Approval or Building Permit, as applicable
4.10-12. Lighting for public streets, parking areas, and recreation areas shall utilize energy efficient light and mechanical, computerized or photo cell switching devices to reduce unnecessary energy usage.	Applicant	Include Requirement in Future environmental documents and/or check at Building Permit	1. LACDPW 2. LACDPW 3. Tentative Map Approval or Building Permit, as applicable
4.10-13. Any on-site subterranean parking structures shall provide adequate ventilation systems to disperse pollutants and preclude the potential for a pollutant concentration to occur.	Applicant	Include Requirement in Future environmental documents and/or check at Building Permit	1. LACDPW 2. LACDPW 3. Tentative Map Approval or Building Permit, as applicable
4.10-14. The sellers of new residential units shall be required to distribute brochures and other relevant information published by the SCAQMD or similar organization to new homeowners regarding the importance of reducing vehicle miles traveled and related air quality impacts, as well as on local opportunities for public transit and ridesharing.	Applicant	LACDRP Review of information package and distribution records	1. LA County Department of Regional Planning 2. LA County Department of Regional Planning 3. Prior to Issuance of Building Permit (Package) and Occupancy Permits (Records)

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.11 WATER RESOURCES			
4.11-1. The proposed Specific Plan shall implement a water reclamation system in order to reduce the Specific Plan's demand for imported potable water. The Specific Plan shall install a distribution system to deliver non-potable reclaimed water to irrigate land uses suitable to accept reclaimed water, pursuant to Los Angeles County Department of Health Standards.	Applicant	Subdivision Map Improvement Plan Check	1. LACDRP 2. LACDPW 3. Prior to Issuance of Building Permit(s)
4.11-2. Landscape concept plans shall include a palette rich in drought-tolerant and native plants.	Applicant	Preliminary Landscape Plan Review	1. LACDPW 2. LA County Fire Department or Parks and Recreation 3. Prior to Recordation of Final Map
4.11-3. Major manufactured slopes shall be landscaped with materials that will eventually naturalize, requiring minimal irrigation.	Applicant	Preliminary Landscape Plan Review	1. LACDPW 2. LA County Fire Department or Parks and Recreation 3. Prior to Recordation of Final Map
4.11-4. Water conservation measures as required by the State of California shall be incorporated into all irrigation systems.	Applicant	Architectural Plans	1. California Department of Conservation 2. LACDPW, Building and Safety 3. Prior to Issuance of Building Permit(s)
4.11-5. The area within each future subdivision within Newhall Ranch shall be annexed to the Valencia Water Company prior to issuance of building permits.	Applicant	CPUC Annexation Approval	1. CPUC 2. LACDPW, Building and Safety 3. Prior to Issuance of Building Permit(s)

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.11 WATER RESOURCES (cont.)			
4.11-6. In conjunction with the submittal of applications for tentative tract maps or parcel maps which permit construction, and prior to approval of any such tentative maps, ~~Prior to recordation of any final subdivision map that allows construction,~~ and in accordance with the requirements of the Los Angeles County General Plan Development Monitoring System (DMS), as amended, Los Angeles County shall require the applicant of the map ~~subdivision~~ to obtain written confirmation from the retail water agency ~~that a~~ identifying the source(s) of water ~~source is~~ available to ~~supply~~ serve the map ~~subdivision~~ concurrent with need. If the applicant of such map ~~the subdivision~~ cannot obtain confirmation that a water source(s) is available for buildout of the ~~subdivision~~ map, the ~~subdivision~~ map shall be phased with the timing of an available water source(s), consistent with the County's DMS requirements.	Applicant	Written Confirmation of Water Availability	1. LACDPW 2. LACDPW 3. Prior to Recordation of Final Subdivision Maps
4.11-7. Prior to commencement of use, all uses of recycled water shall be reviewed and approved by the State of California Health and Welfare Agency, Department of Health Services.	Applicant	Plan Check	1. County Department of Health Services 2. LACDPW, Building and Safety 3. Prior to Issuance of Grading or Occupancy Permit(s) as applicable
4.11-8. Prior to the issuance of building permits that allow construction, the applicant of the subdivision shall finance the expansion costs of water service extension to the subdivision through the payment of connection fees to the appropriate water agency(ies).	Applicant	Payment of Connection Fees	1. CLWA/VWC 2. LACDPW, Building and Safety 3. Prior to Issuance of Building Permits

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.11 WATER RESOURCES (cont.)			
4.11-9. Pursuant to Public Resources Code §21081(a)(2), the County shall recommend that the Upper Santa Clara Water Committee (or Santa Clarita Valley Water Purveyors), made up of the Castaic Lake Water Agency, Los Angeles County Waterworks District No. 36, Newhall County Water District, Santa Clarita Water ~~Company~~ Division of CLWA and the Valencia Water Company, prepare an annual water report that will discuss the status of groundwater ~~levels~~ within the Alluvial and Saugus Aquifers, and State Water Project water supplies as they relate to the Santa Clarita Valley. The report will also include an annual update of the actions taken by CLWA to enhance the quality and reliability of existing and planned water supplies for the Santa Clarita Valley. In those years when the Committee or purveyors ~~does~~ not prepare such a report, the applicant at ~~his~~its expense shall cause the preparation of such a report that is acceptable to the County to address these issues. This annual report shall be provided to Los Angeles County who ~~may~~will ~~use~~ consider the report as part of ~~the~~ its local land use decision-making process. (To date, four such water reports have been prepared (1998, 1999, 2000 and 2001) and provided to both the County of Los Angeles and the City of Santa Clarita.)	Applicant	Receipt of Annual Report	1. Board of Supervisors 2. LACDRP 3. Prior to Recordation of Final Subdivision Maps

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.11 WATER RESOURCES (cont.)			
4.11-10. Pursuant to Public Resources Code §21081(a)(2), the County shall recommend that Castaic Lake Water Agency (CLWA), in cooperation with other Santa Clarita Valley retail water providers, continue to update the Urban Water Management Plan (UWMP) for Santa Clarita Valley once every five years (on or before December 31) to ensure that the County receives up-to-date information about the existing and planned water supplies in the Santa Clarita Valley. The County will consider the information contained in the updated UWMP in connection with the County's future local land use decision-making process. The County will also consider the information contained in the updated UWMP in connection with the County's future consideration of any Newhall Ranch tentative subdivision maps allowing construction. (*See*, **Mitigation Measure 4.11-15**, below.)	Applicant	Receipt of written identification of water service from retailer	1. Board of Supervisors 2. LACDRP 3. Prior to Recordation of Final Subdivision Maps
4.11-11. With implementation of the proposed Saugus ASR program, ASR wells shall be spaced so that adjacent non-project wells will not lose pumping capacity as a result of drawdown occurring during pumping of the ASR wells.	Applicant	Receipt of written report addressing proposed and existing well locations, and effects on adjacent wells	1. LACDPW 2. LACDPW 3. Concurrent with Submittal of Application for Saugus ASR Program

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.11 WATER RESOURCES (cont.)			
4.11-12. With implementation of the proposed Saugus ASR program, the ultimate number of ASR wells to be constructed shall be sufficient to inject the ultimate target injection volume of 4,500 acre-feet per year and withdraw the ultimate target withdraw volume of 4,100 acre-feet per year.	Applicant	Receipt of written report from ASR program engineer	1. LACDRPW 2. LACDRPW 3. Concurrent with Submittal of Application for Tentative Tract Maps which permit construction.
4.11-13. With implementation of the proposed Saugus ASR program, ASR wells shall be constructed in the following two general areas: (a) South of the Santa Clara River and west of Interstate 5. This location includes areas within the Newhall Ranch Specific Plan boundary. (This area is referred to as the "south ASR well field".); and (b) North of the Santa Clara River and west of Castaic Creek. (This location is referred to as the "north ASR well field".)	Applicant	Receipt of written report from ASR program engineer indicating well locations	1. LACDRPW 2. LACDRPW 3. Concurrent with Submittal of Application for Tentative Tract Maps which permit construction.
4.11-14. The Saugus Groundwater Banking/ASR program injection water must meet the water quality requirements of the State Regional Water Quality Control Board, Los Angeles Region. The water extracted for use on the Specific Plan site shall meet the Title 22 drinking water standards of the State Department of Health Services.	Applicant	Receipt of written report on water quality from ASR program engineer	1. LACDRPW 2. LACDRPW 3. Concurrent with Submittal of Application for Tentative Tract Maps which permit construction.

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.11 WATER RESOURCES (cont.)			
4.11-15. Groundwater historically and presently used for crop irrigation on the Newhall Ranch Specific Plan site and elsewhere in Los Angeles County shall be made available by the Newhall Land and Farming Company, or its assignee, to partially meet the potable water demands of the Newhall Ranch Specific Plan. The amount of groundwater pumped for this purpose shall not exceed 7,038 AFY. This is the amount of groundwater pumped historically and presently by the Newhall Land and Farming Company in Los Angeles County to support its agricultural operations. Pumping this amount will not result in a net increase in groundwater use in the Santa Clarita Valley. To monitor groundwater use, the Newhall Land and Farming Company, or its assignee, shall provide the County an annual report indicating the amount of groundwater used in Los Angeles County and the specific land upon which that groundwater was historically used for irrigation. For agricultural land located off the Newhall Ranch Specific Plan site in Los Angeles County, at the time agricultural groundwater is transferred from agricultural uses on that land to Specific Plan uses, The Newhall Land and Farming Company, or its assignee, shall provide a verified statement to the County's Department of Regional Planning that Alluvial aquifer water rights on that land will now be used to meet Specific Plan demand.	Applicant	Receipt of written identification of water service provider or applicant	1. Board of Supervisors 2. LACDRP 3. Prior to Recordation of Final Subdivision Maps
4.11-16. The agricultural groundwater used to meet the needs of the Specific Plan shall meet the drinking water quality standards required under Title 22 prior to use.	Applicant	Receipt of written report on water quality from ASR program engineer	1. LACDPW 2. LACDRP 3. Concurrent with Submittal of Application for Tentative Tract Maps which permit construction.

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.11 WATER RESOURCES (cont.)			
4.11-17. In conjunction with each project-specific subdivision map for the Newhall Ranch Specific Plan, the County shall require the applicant of that map to cause to be prepared a supplemental or subsequent Environmental Impact Report, as appropriate, pursuant to CEQA requirements. By imposing this EIR requirement on each Newhall Ranch tentative subdivision map application allowing construction, the County will ensure that, among other things, the water needed for each proposed subdivision is confirmed as part of the County's subdivision map application process. This mitigation requirement shall be read and applied in combination with the requirements set forth in revised **Mitigation Measure 4.11-6**, above.	Applicant	Preparation of supplemental or subsequent EIR	1. LACDRP 2. LACDRP 3. Concurrent with Approval of Application for Tentative Tract Maps which permit construction.
4.11-18. The storage capacity purchased in the Semitropic Groundwater Banking Project by the Newhall Ranch Specific Plan applicant shall be used in conjunction with the provision of water to the Newhall Ranch Specific Plan. The applicant, or entity responsible for storing Newhall Ranch water in this groundwater bank, shall prepare an annual status report indicating the amount of water placed in storage in the groundwater bank. This report shall be made available annually and used by Los Angeles County in its decision-making processes relating to build-out of the Newhall Ranch Specific Plan.	Applicant	Receipt of written report from applicant or entity storing Newhall Ranch water	1. LACDRP 2. LACDRP 3. Concurrent with Submittal of Application for Tentative Tract Maps which permit construction.

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.11 WATER RESOURCES (cont.)			
4.11-19. A Memorandum of Understanding (MOU) and Water Resource Monitoring Program has been entered into between United Water Conservation District and the Upper Basin Water Purveyors, effective August 20, 2001.[5] The MOU/Water Resource Monitoring Program, when executed, will put in place a joint water resource monitoring program that will be an effective regional water management tool for both the Upper and Lower Santa Clara River areas as further information is developed, consistent with the MOU. This monitoring program will result in a database addressing water usage in the Saugus and Alluvium aquifers over various representative water cycles. The parties to the MOU intend to utilize this database to further identify surface water and groundwater impacts on the Santa Clara River Valley. The applicant, or its designee, shall cooperate in good faith with the continuing efforts to implement the MOU and Water Resource Monitoring Program. As part of the MOU process, the United Water Conservation District and the applicant have also entered into a "Settlement and Mutual Release" agreement, which is intended to continue to develop data as part of an on-going process for providing information about surface and groundwater resources in the Santa Clara River Valley. In that agreement, the County and the applicant have agreed to the following: "4.3 Los Angeles County and Newhall will each in good faith cooperate with the parties to the MOU and will assist them as requested in the development of the database calibrating water usage in the Saugus and Alluvium aquifers over multi-year water cycles. Such cooperation will include, but not be limited to, providing the parties to the MOU with historical well data and other data concerning surface water and groundwater in the Santa Clara River and, in the case of Newhall, providing Valencia Water Company with access to wells for the collection of well data for the MOU.	Applicant	Review of Initial Study and subdivision maps	1. LACDRP 2. LACDRP 3. Concurrent with Submittal of Application for Tentative Tract Maps which permit construction.

[5] *See,* Appendix F to Final Additional Analysis [Memorandum of Understanding Between the Santa Clara River Valley Upper Basin Water Purveyors and United Water Conservation District, dated August 2001].

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.11 WATER RESOURCES (cont.)			
4.11-19. (cont.) 4.4 Los Angeles County and Newhall further agree that the County of Los Angeles will be provided with, and consider, the then-existing data produced by the MOU's monitoring program in connection with, and prior to, all future Newhall Ranch subdivision approvals or any other future land use entitlements implementing the Newhall Ranch Specific Plan. If the then-existing data produced by the MOU's monitoring program identifies significant impacts to surface water or groundwater resources in the Santa Clara River Valley, Los Angeles County will identify those impacts and adopt feasible mitigation measures in accordance with the California Environmental Quality Act."	Applicant	Review of Initial Study and subdivision maps	1. LACDRP 2. LACDRP 3. Concurrent with Submittal of Application for Tentative Tract Maps which permit construction.

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.11 WATER RESOURCES (cont.)			
4.11-20. The Specific Plan applicant, or its successors, shall assign its acquired Nickel Water rights to the Valencia Water Company or Castaic Lake Water Agency (CLWA), and, in consultation with the Valencia Water Company, CLWA or their designee(s), the applicant shall ensure that the Nickel Water is delivered to the appropriate place of use necessary to serve the Newhall Ranch Specific Plan at the time of need, as determined by the County of Los Angeles through required SB221 and/or SB610 analyses for future subdivision map applications. Upon approval of the Specific Plan, the applicant, Valencia Water Company, CLWA or a designee, will take delivery of the Nickel Water, so that such water will be used, or stored for use, for the Specific Plan in future years. <u>To ensure that an adequate supply of water is available for the Specific Plan over the long-term, the decision of whether or not the Nickel Water agreement should be extended or otherwise canceled cannot occur without first obtaining CLWA's concurrence. If the applicant, or its designee, seeks to not extend the Nickel Water agreement beyond its initial 35-year term, or seeks to cancel said agreement prior to the expiration of its initial 35-year period, or the expiration of the 35-year option period, if exercised, then the applicant, or its designee, must obtain written concurrence and that concurrence must include findings to the effect that other equivalent water supplies are available at a comparable cost and that non-extension or cancellation of the agreement will not impact the water supplies of Newhall Ranch and the rest of the Santa Clarita Valley.</u>	Applicant	Verify during review of Initial Study and subdivision maps	1. LACDRP 2. LACDRP 3. Concurrent with Submittal of Application for Tentative Tract Maps which permit construction.
4.11-21. The applicant, in coordination with RWQCB staff, shall select a representative location upstream and downstream of the Newhall Ranch Specific Plan and sample surface and groundwater quality. Sampling from these two locations would begin upon approval of the first subdivision map and be provided annually to the RWQCB and County for the purpose of monitoring water quality impacts of the Specific Plan over time. If the sampling data results in the identification of significant new or additional water quality impacts resulting from the Specific Plan, which were not previously known or identified, additional mitigation shall be required at the subdivision map level.	Applicant	Water quality sampling in coordination with RWQCB staff	1. LACDRP 2. LACDRP/RWQCB 3. Concurrent with Approval of the first Subdivision Map which permits construction, and annually thereafter.

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.11 WATER RESOURCES (cont.)			
4.11-22. Beginning with the filing of the first subdivision map allowing construction on the Specific Plan site and with the filing of each subsequent subdivision map allowing construction, the Specific Plan applicant, or its designee, shall provide documentation to the County of Los Angeles identifying the specific portion(s) of irrigated farmland in the County of Los Angeles proposed to be retired from irrigated production to make agricultural water available to serve the subdivision. As a condition of subdivision approval, the applicant or its designee, shall provide proof to the County that the agricultural land has been retired prior to issuance of building permits for the subdivision.	Applicant	Receipt of written report from applicant	1. LACDRP 2. LACDRP 3. Concurrent with Submittal of Application for Tentative Tract Maps which permit construction.

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.12 WASTEWATER DISPOSAL			
4.12-1. The Specific Plan shall reserve a site of sufficient size to accommodate a water reclamation plant to serve the Newhall Ranch Specific Plan.	Applicant	Specific Plan Review	1. LA County Department of Regional Planning 2. LA County Department of Regional Planning 3. Prior to Final Approval of Specific Plan
4.12-2. A 5.8 to 6.9 mgd water reclamation plant shall be constructed on the Specific Plan site, pursuant to County, State and Federal design standards, to serve the Newhall Ranch Specific Plan.	WRP Applicant	Review of WRP Construction Plans	1. CSDLAC 2. CSDLAC 3. Prior to Demand for First Phase or WRP Capacity
4.12-3. The Conceptual Backbone Sewer Plan shall be implemented pursuant to County, State and Federal design standards.	Applicant (Project Engineer)	Review of Tentative Map	1. LACDPW 2. LACDPW 3. Prior to Approval of Tentative Maps
4.12-4. Prior to recordation of each subdivision permitting construction, the applicant of each subdivision shall obtain a letter from the new County sanitation district stating that treatment capacity will be adequate for that subdivision.	Applicant	Review Final Subdivision Map	1. CSDLAC 2. LACDPW 3. Prior to Recordation of Each Final Subdivision Map
4.12-5. All facilities of the sanitary sewer system will be designed and constructed for maintenance by the County of Los Angeles Department of Public Works and the County Sanitation Districts of Los Angeles County, and/or the new County sanitation district or similar entity in accordance with their manuals, criteria, and requirements.	Applicant (Project Engineer)	Review Final Subdivision Plans	1. CSDLAC, LACDPW 2. CSDLAC, LACDPW 3. Prior to Recordation of Each Final Subdivision Map
4.12-6. Pursuant to Los Angeles County Code, Title 20, Division 2, all industrial waste pretreatment facilities shall, prior to the issuance of building permits, be reviewed by the County of Los Angeles Department of Public Works, Industrial Waste Planning and Control Section and/or the new County sanitation district, to determine if they would be subject to an Industrial Wastewater Disposal Permit.	Applicants for Such Industrial Facilities	Plan Check Review	1. LACDPW 2. LACDPW 3. Prior to Issuance of Building Permits
4.12-7. Each subdivision permitting construction shall be required to be annexed into the Los Angeles County Consolidated Sewer Maintenance District.	LACDPW	Review of Final Sewer Plans	1. LACDPW 2. LACDPW 3. After County Acceptance of Sewer Improvements

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.13 NATURAL GAS			
4.13-1. All development within the Specific Plan area shall comply with the Energy Building Regulations adopted by the California Energy Commission (Title 24 of the California Administrative Code), as applicable.	Applicant/Future Owners and Operators within project	Plan Check Field Verification	1. LACDPW, Building and Safety 2. LACDPW, Building and Safety 3. Prior to Issuance of Occupancy Permit(s)
4.13-2. A letter from Southern California Gas Company (SCGC)or other gas provider is to be obtained prior to recordation of all future subdivisions stating that service can be provided to the subdivision under recordation.	Applicant	Receipt of Letter from Gas Provider	1. LACDRP 2. LACDRP 3. Prior to Recordation of Final Maps
4.13-3. The Specific Plan is to meet the requirements of SCGC in terms of pipeline relocation, grading in the vicinity of gas mains, and development within SCGC easements. These requirements would be explicitly defined by SCGC at the future tentative map stage.	Applicant (Construction Contractor)	Receipt and implementation of Such Requirements from SCGC	1. LACDPW, Building and Safety 2. LACDPW, Building and Safety 3. Grading and Construction Operations
4.13-4. All potential buyers or tenants of property in the vicinity of SCGC transmission lines are to be made aware of the line's presence in order to assure that no permanent construction or grading occurs over and within the vicinity of the high-pressure gas mains.	Applicant	Include in Sale/Lease Disclosure Documents	1. LACDRP 2. LACDRP 3. Prior to Issuance of Occupancy Permits

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.14 ELECTRICITY			
4.14-1. All development within the Specific Plan area shall comply with the Energy Building Regulations adopted by the California Energy Commission (Title 24 of the California Administrative Code), as applicable.	Applicant	Plan Check Field Verification	1. LACDPW, Building and Safety 2. LACDPW, Building and Safety 3. Prior to Issuance of Occupancy Permit(s)
4.14-2. Southern California Edison (SCE)or other energy provider is to be notified of the nature and extent of future development on the Specific Plan site prior to recordation of all future subdivisions.	Applicant	Receipt of Notification to Energy Provider	1. LACDRP 2. LACDRP 3. Prior to Recordation of All Subdivisions
4.14-3. All future tract maps are to comply with SCE or other energy provider guidelines for grading, construction, and development within SCE easements.	Applicant (Construction Contractor)	Plan Check Field Verification	1. LACDPW, Building and Safety 2. LACDPW, Building and Safety 3. Prior to Final Tract Map Approvals and Verify Prior to Issuance of Occupancy Permits
4.14-4. Electrical infrastructure removals and relocations are to be coordinated between the Specific Plan engineer and SCE or other energy provider as each tract is designed and constructed.	Applicant (Specific Plan Engineer)	Receipt of Verification of Such Consultations	1. LACDPW 2. LACDPW 3. Prior to Final Tract Map Approval and During Construction
4.14-5. All future tract maps are to be reviewed by Los Angeles County to ensure adequate accessibility to SCE or other energy provider facilities as a condition of their approvals.	Applicant	Plan Check	1. LACDPW 2. LACDPW 3. Prior to Final Tract Map Approval
4.14-6. Upon transfer of the High Country Special Management Area to another entity for long-term maintenance, continued and adequate access to all SCE facilities in the High Country Special Management Area is to be ensured within the transfer agreement.	Applicant	Review of Transfer Agreement	1. LA County Department of Regional Planning 2. LA County Department of Regional Planning 3. Upon Transfer of High Country SMA

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.15 SOLID WASTE DISPOSAL			
4.15-1. Each future subdivision which allows construction within the Newhall Ranch Specific Plan shall meet the requirements of all applicable solid waste diversion, storage, and disposal regulations that are in effect at the time of subdivision review. Current applicable regulations include recycling areas that are: • compatible with nearby structures; • secured and protected against adverse environmental conditions; • clearly marked, and adequate in capacity, number and distribution; • in conformance with local building code requirements for garbage collection access and clearance; • designed, placed and maintained to protect adjacent developments and transportation corridors from adverse impacts, such as noise, odors, vectors, or glare; • in compliance with Federal, State, or local laws relating to fire, building, access, transportation, circulation, or safety; and • convenient for persons who deposit, collect, and load the materials.	Applicant	Include in Future Subdivision Design and/or environmental documents for Tentative Maps	1. LACDPW, Waste Management Division 2. LACDPW, Waste Management Division 3. Prior to Tentative Map Approval
4.15-2. Future multi-family, commercial, and industrial projects within the Specific Plan shall provide accessible and convenient areas for collecting and loading recyclable materials. These areas are to be clearly marked and adequate in capacity, number, and distribution to serve the development.	Applicant	Include in Future Subdivision Design and/or environmental documents for Tentative Maps	1. LACDPW, Waste Management Division 2. LACDPW, Waste Management Division 3. Prior to Tentative Map Approval
4.15-3. The first purchaser of each residential unit within the Specific Plan shall be given educational or instructional materials which will describe what constitutes recyclable and hazardous materials, how to separate recyclable and hazardous materials, how to avoid the use of hazardous materials, and what procedures exist to collect such materials.	Applicant	Review of Information Package and Distribution Records	1. LACDRP 2. LACDRP 3. Prior to Issuance of Building Permit (Package) and Occupancy Permits (Records)
4.15-4. The applicant of all subdivision maps which allow construction within the Specific Plan shall comply with all applicable future State and Los Angeles County regulations and procedures for the use, collection and disposal of solid and hazardous wastes.	Applicant	Include in Future Subdivision Design and/or environmental documents for Tentative Maps	1. LACDPW, Waste Management Division 2. LACDPW, Waste Management Division 3. Prior to Tentative Map Approval

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.16 EDUCATION			
4.16-1. The Specific Plan developer shall reserve five elementary schools sites, one junior high school site and one high school site, of 7 to 10, 20 to 25, and 40 to 45 acres in size, respectively, depending upon adjacency to local public parks and joint use agreements.	Applicant	Tentative Tract Map Subdivision Review	1. LA County Department of Regional Planning 2. LA County Department of Regional Planning 3. Prior to Final Approval of Tentative Tract Maps
4.16-2. The developer of future subdivisions which allow construction will comply with the terms and conditions of the School Facilities Funding Agreement between The Newhall Land and Farming Company and the Newhall School District.	Applicant	Verification of Compliance from School District	1. Newhall School District 2. LACDPW, Building and Safety 3. Prior to Issuance of Residential Building Permits
4.16-3. The developer of future subdivisions which allow construction will comply with the terms and conditions of the School Facilities Funding Agreement between The Newhall Land and Farming Company and the William S. Hart Union High School District.	Applicant	Verification of Compliance from School District	1. WSHUHSD 2. LACDPW, Building and Safety 3. Prior to Issuance of Residential Building Permits
4.16-4. The developer of future subdivisions which allow construction will comply with the terms and conditions of the School Facilities Funding Agreement between The Newhall Land & Farming Company and the Castaic Union School District.	Applicant	Verification of Compliance from School District	1. Castaic Union School District 2. LACDPW, Building and Safety 3. Prior to Issuance of Residential Building Permits
4.16-5. In the event that School District boundaries on the Specific Plan site remain unchanged, prior to recordation of all subdivision maps which allow construction, the developer of future subdivisions which allow construction is to pay to the Castaic Union School District the statutory school fee for commercial/industrial square footage pursuant to Government Code Sections 65995 and 65996, unless a separate agreement to the contrary is reached with the District.	Applicant	Payment of Fees	1. Castaic Union School District 2. LACDPW, Building and Safety 3. Prior to Issuance of Building Permits

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.17 POLICE SERVICES			
4.17-1. As subdivision maps are submitted to the County for approval in the future, the applicant shall incorporate County Sheriff's Department design requirements (such as those pertaining to site access, site security lighting, *etc.*) which will reduce demands for Sheriff's service to the subdivisions and which will help ensure adequate public safety features within the tract designs.	Applicant	Plan Check Field Verification	1. LA County Sheriff's Department 2. LA County Sheriff's Department 3. Prior to Final Map Approvals and Verify Prior to Issuance of Occupancy Permits

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.18 FIRE SERVICES AND HAZARDS			
4.18-1. At the time of final subdivision maps permitting construction in development areas that are adjacent to Open Area and the High Country SMA, a Wildfire Fuel Modification Plan shall be prepared and submitted for approval by the County Fire Department. The Wildfire Fuel Modification Plan shall include the following construction period requirements: (a) a fire watch during welding operations; (b) spark arresters on all equipment or vehicles operating in a high fire hazard area; (c) designated smoking and non-smoking areas; and (d) water availability pursuant to County Fire Department requirements. The wildfire fuel modification plan shall depict a fuel modification zone in conformance with the Fuel Modification Ordinance in effect at the time of subdivision. Within the zone, tree pruning, removal of dead plant material and weed and grass cutting shall take place as required by the County Forester. Fire resistant plant species containing habitat value may be planted in the fuel modification zone.	Applicant	Receipt and Review of Wildfire Fuel Modification Plan	1. LA County Fire Department 2. LA County Fire Department 3. Prior to Approval of Final Maps
4.18-2. Each subdivision and site plan for the proposed Specific Plan shall provide sufficient capacity for fire flows of 1,250 gallons per minute (gpm) at 20 pounds per square inch (psi) residual pressure for a two hour duration for single family residential units, and 5,000 gpm at 20 psi residual pressure for a five-hour duration for multi-family residential units and commercial/retail uses, or whatever fire flow requirement is in effect at the time of subdivision and site plan approval.	Applicant	Field Verification of Required Fire Flows	1. LA County Fire Department 2. LA County Fire Department 3. Prior to Issuance of Occupancy Permits
4.18-3. Each subdivision map and site plan for the proposed Specific Plan shall comply with all applicable building and fire codes and hazard reduction programs for Fire Zones 3 and 4 that are in effect at the time of subdivision map and site plan approval.	Applicant	Field Verification	1. LA County Fire Department 2. LA County Fire Department 3. Prior to Issuance of Occupancy Permits

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.18 FIRE SERVICES AND HAZARDS (cont.)			
4.18-4. The developer will provide funding for three fire stations to the Consolidated Fire Protection District of Los Angeles County (the "Fire District") in lieu of developer fees. The developer will dedicate two fire station sites for the two fire stations located in Newhall Ranch. The Fire District will dedicate the site for the fire station to be located at the Del Valle Training Facility. Each fire station site will have a building pad consisting of a net buildable area of one acre. If the cost of constructing the three fire stations, providing and dedicating the two fire station sites, and providing 3-engines, 1 paramedic squad and 63 percent of a truck company exceeds the developer's developer fee obligation for the Newhall Ranch development as determined by the Fire District, the Fire District will fund the costs in excess of the fee obligation. Two of the three fire stations to be funded by the developer will not exceed 6,000 square feet; the third fire station to be funded by the developer will not exceed 8,500 square feet. The Fire District, will fund the cost of any space/square footage of improvement in excess of these amounts as well as the cost of the necessary fire apparatus for any such excess square footage of improvements. The cost of three fire engines, a proportionate share of a truck and one squad to be provided by the developer will be determined based upon the apparatus cost at the time the apparatus is placed in service. The Fire District and the developer will mutually agree to the requirements of first-phase protection requirements based upon projected response/travel coverage. Such mutual agreement regarding first-phase fire protection requirements ("fire protection plan") and the criteria for timing the development of each of the three fire stations will be defined in a Memorandum of Understanding between the developer and the Fire District. Delivery of fire service for Newhall Ranch will be either from existing fire stations or one of the three fire stations to be provided by the developer pursuant to this section. Prior to the commencement of the operation of any of the three fire stations, fire service may be delivered to Newhall Ranch from existing fire stations or from temporary fire stations to be provided by the developer at mutually agreed-upon locations, to be replaced by the permanent stations which will be located within the Newhall Ranch development. The developer and the Fire District will annually review the fire protection plan to evaluate development and market conditions and modify the Memorandum of Understanding accordingly.	Applicant	Execute "Fire Protection Plan" Agreement Monitor Adequacy of Fire Prevention Services	1. LA County Fire Department 2. LA County Fire Department 3. Prior to Approval of First Final Subdivision Map Subdivision Map Review Process

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.19 LIBRARIES			
4.19-1. The developer will provide funding for a maximum of two libraries (including the site(s), construction, furniture, fixtures, equipment and materials) to the County Librarian. The developer will dedicate a maximum of two library sites for a maximum of two libraries located in Newhall Ranch in lieu of the land component of the County's library facilities mitigation fee, in accordance with the provisions of Section 22.72.090 of Section 2 of Ordinance No. 98-0068. The actual net buildable library site area required and provided by the developer will be determined by the actual size of the library building(s), the Specific Plan parking requirements, the County Building Code, and other applicable rules. The total library building square footage to be funded by the developer will not exceed 0.35 net square feet per person. The developer's funding of construction of the library(s) and furnishings, fixtures, equipment and materials for the library(s) will be determined based on the cost factors in the library facilities mitigation fee in effect at the time of commencement of construction of the library(s). Prior to County's issuance of the first residential building permit of Newhall Ranch to the developer, the County Librarian and the developer will mutually agree upon the library construction requirements (location, size, funding and time of construction) based upon the projected development schedule and the population of Newhall Ranch based on the applicable number of average persons per household included in the library facilities mitigation fee in effect at the time. Such mutual agreement regarding the library construction requirements ("Library Construction Plan") and the criteria for timing the completion of the library(s) will be defined in a Memorandum of Understanding between the developer and the County Librarian. Such Memorandum of Understanding shall include an agreement by the developer to dedicate sufficient land and pay the agreed amount of fees on a schedule to allow completion of the library(s) as described below. The developer's funding for library facilities shall not exceed the developer's fee obligation at the time of construction under the developer fee schedule.	Applicant	Review of Memorandum of Understanding and Library Construction Plan	1. LA County Library 2. LACDPW 3. Prior to Issuance of First Residential Building Permit

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase

4.19 LIBRARIES (cont.)

If two libraries are to be constructed, the first library will be completed and operational by the time of County's issuance of the 8,000th residential building permit of Newhall Ranch, and the second library will be completed and operational by the time of County's issuance of the 15,000th residential building permit of Newhall Ranch. If the County Librarian decides that only one library will be constructed, the library will be completed and operational by the time of County's issuance of the 10,000th residential building permit of Newhall Ranch.

No payment of any sort with respect to library facilities will be required under Section 2.5.3.d. of the Specific Plan in order for the developer to obtain building permits for nonresidential buildings.

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
4.20 PARKS, RECREATION AND TRAILS			
4.20-1. Development of the Newhall Ranch Specific Plan will provide the following acreages of parks and Open Area: • Ten public Neighborhood Parks totaling 55 acres; • Open Areas totaling 1,106 acres of which 186 acres are Community Parks, • High Country Special Management Area of 4,214 acres, • River Corridor Special Management Area of 819 acres, • a 15-acre Lake, • an 18-hole Golf Course, and • a trail system consisting of: - Regional River Trail, - Community Trails, and - Unimproved Trails.	Applicant	Subdivision Review for Compliance with Specific Plan	1. LA County Department of Regional Planning 2. LA County Department of Regional Planning 3. Processing of Tentative Subdivision Maps
4.20-2. Prior to the construction of the proposed trail system, the project applicant shall finalize the alignment of trails with the County Department of Parks and Recreation.	Applicant	Verification of Consultation of Department of Parks and Recreation	1. LACDRP 2. LA County Department of Parks and Recreation 3. Prior to Issuance of Grading Permit for Trails
4.20-3. Trail construction shall be in accordance with the County of Los Angeles Department of Parks and Recreation trail system standards.	Applicant	Trails Plan Review Field Verification	1. LA County Department of Parks and Recreation 2. LA County Department of Parks and Recreation 3. Prior to Approval of Trail Plans and Verify Upon Construction Completion
4.21 POPULATION, HOUSING AND EMPLOYMENT			
4.21-1. The Los Angeles County General Plan and the Santa Clarita Valley Area Plan shall be amended by Los Angeles County to accommodate the Newhall Ranch Specific Plan.	Applicant	General Plan Amendment	1. Board of Supervisors 2. LACDRP 3. Final Specific Plan Approval

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
ADDITIONAL CONDITIONS OF APPROVAL			
(a) Require the applicant to submit a signed statement, filed concurrently with the filing of any departmental development application, obligating the applicant to disclose to the Department of Regional Planning the existence of any endangered or threatened species that are known or suspected to exist on the subject property.	Applicant	Verify during review of Initial Study and subdivision maps	1. LACDRP 2. LACDRP 3. Concurrent with Submittal of Application for Tentative Tract Maps which permit construction.
(b) Require the applicant to report to the Department of Regional Planning the results of all on-site biological surveys within thirty (30) days after completion of the survey work.	Applicant	Report containing results of all on-site biological surveys within thirty (30) days after completion of the survey work.	1. LACDRP 2. LACDRP 3. As necessary
(c) Require the applicant to schedule a consultation meeting between the Department of Regional Planning, the applicant and environmental consultant(s) to discuss the results of the survey work, and to ensure public disclosure of the survey results in the required environmental documentation for the proposed project.	Applicant and Environmental Consultant(s)	Meeting after field surveys	1. LACDRP 2. LACDRP 3. As necessary
(d) Clean sediment, periodically removed from debris basins within or outside the Specific Plan, may be placed into the Santa Clara River area as approved by the Department of Public Works (DPW) and other applicable regulatory agencies, as determined by DPW.	Applicant	Verify need annually, document to LACDPW	1. LACDPW 2. LACDPW 3. As necessary after installation of buried bank stabilization
(e) Prior to approval of the first subdivision map which permits construction, a report will be provided by the applicant which evaluates methods to recharge the Saugus Aquifer within the Specific Plan, including the identification of appropriate candidate land areas for recharge. The report shall be subject to approval by the Department of Public Works (DPW) and other applicable regulatory agencies, as determined by DPW.	Applicant	Report to LADPW	1. LACDPW 2. LACDPW 3. Prior to approval of the first subdivision map which permits construction

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
ADDITIONAL CONDITIONS OF APPROVAL (cont.)			
(f) All purchasers of homes within any subdivision in the Newhall Ranch Specific Plan are to be provided with a disclosure statement in the purchase/sales documentation making the purchaser(s) aware that the parking and storage of recreational vehicles on the purchased home/lot must satisfy the standards established by the County of Los Angeles and/or as contained in the Conditions Covenants and Restrictions (CC&Rs), whichever is more restrictive.	Applicant, or seller of home/lot if not the Applicant	Provision of Disclosure Statement	1. LACDRP 2. LACDRP 3. At the time a home/lot is sold
(g) Salt Creek Condition. Upon approval of the first tract map adjacent to Ventura County in the Oak Valley Village of the Newhall Ranch Specific Plan, the applicant has agreed to grant to the public in perpetuity the approximately 1,517 acres of land encompassing the Salt Creek watershed in Ventura County. The applicant, or its designee, shall satisfy this condition by dedicating said land in fee and/or by conservation easement, as determined by the County in its sole discretion, to the joint powers authority, which is responsible for overall recreation and conservation of the Newhall Ranch High County Special Management Area (SMA). Said land shall be managed in conjunction with and in the same manner as the High Country SMA.	Applicant or its Designee	Upon approval of first tract map adjacent to Ventura County in Oak Valley Village of the Specific Plan	1. LACDRP 2. LACDRP 3. As necessary
~~(f)~~ (h) Consultant Disclosure Statements. Upon approval of the Specific Plan and in connection with the submittal of additional environmental documentation for the Newhall Ranch project, each consultant preparing, or participating in a study or investigation for, that additional documentation, shall provide a disclosure statement to the Director of Planning, signed under penalty of perjury, stating that they have disclosed to County staff all relevant environmental information and data obtained during their work, including, but not limited to, all information regarding the presence of any endangered, threatened or candidate species.	Applicant or its Designee	Upon approval of Specific Plan and in connection with submittal of additional environmental documentation for the project	1. LACDRP 2. LACDRP 3. As necessary
(i) Peer Review/Funding. Upon approval of the Specific Plan, the applicant is directed to provide sufficient funding on an annual basis to allow the Department of Regional Planning to retain a consultant, or to compensate its own consultants, for purposes of conducting a peer review, as determined necessary by the Department, of all additional environmental documentation submitted for further environmental review by the applicant's consultant(s) or sub-consultant(s).	Applicant or its Designee	Upon approval of Specific Plan and on an annual basis thereafter	1. LACDRP 2. LACDRP 3. As necessary

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
ADDITIONAL CONDITIONS OF APPROVAL (cont.)			
(j) Annual Staff Report Requirement. The applicant or its designee shall provide the Department of Regional Planning with an annual status report throughout the construction phases stating the number of residential units constructed, the square footage of all commercial and industrial buildings completed, and the dates of dedication or completion for all required infrastructure and community amenities. This reporting requirement shall be contained in the Newhall Ranch Specific Plan and the Specific Plan Mitigation Monitoring Plan.	Applicant or its Designee	Annual report throughout all construction phases	1. LACDRP 2. LACDRP 3. As necessary
(k) Setback Standards. The Specific Plan shall contain a setback provisions requiring that, if the County's general setback standards in place at the time building permits are obtained for the Newhall Ranch project phases are more stringent than the existing standards contained in the Specific Plan, then the more stringent setback standards shall be applied.	Applicant or its Designee	County Planning staff review at issuance of building permits	1. LACDRP 2. LACDRP 3. As necessary

(Water Reclamation Plant)

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
5.1 GEOTECHNICAL AND SOILS RESOURCES			
5.0-1. Prior to construction of the water reclamation plant, prepare a detailed geotechnical report that will outline the geotechnical performance requirements for placing and compacting the fill at the water reclamation plant site and along on-site sewer line alignments to ensure that none of the wastewater conveyance or treatment facilities would be subject to hazards caused by expansive soils. Construction of wastewater conveyance and treatment facilities shall comply with the requirements identified in the report.	WRP Operator (Geotechnical Engineer)	Grading Plan Check Field Verification	1. WRP Operator 2. WRP Operator 3. Prior to Building and Verify During WRP Construction
5.0-2. Should any expansive soils be encountered during grading operations, they shall not be placed nearer the finished surface than 8 feet below the bottom of the subgrade elevation. If expansive materials are encountered at subgrade elevation in cut areas, the soils shall be removed to a depth of 8 feet below the subgrade surface and the excavated area backfilled with nonexpansive, properly compacted soils. These depths are subject to revision depending upon the expansive potential measured during grading.	WRP Operator (Geotechnical Engineer)	Field Verification	1. WRP Operator 2. WRP Operator 3. During Grading Operations
5.0-3. Prior to grading of the WRP site and the associated sewer lines, a detailed geotechnical performance report is to be prepared and approved by the WRP Operator, which will assess liquefaction potential along sewer line alignments, and which will identify design measures for potential liquefaction hazards. WRP collection and treatment facilities construction is to comply with the measures identified in the performance report.	WRP Operator (Geotechnical Engineer)	Approval of Detailed Geotechnical Performance Report Field Verification	1. WRP Operator 2. WRP Operator 3. Prior to Grading and Verify During WRP Construction

ACOE - U.S. Army Corps of Engineers
CIWMB - California Integrated Waste Management Board
CSDLAC - County Sanitation Districts of Los Angeles County
FCD - Flood Control Division
LACFPD - Los Angeles County Fire Protection District
LACDPW - Los Angeles County Department of Public Works
RWQCBLAR - Regional Water Quality Control Board, Los Angeles Region
SCAQMD - South Coast Air Quality Management District
USFWS - U.S. Fish and Wildlife Service

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
5.1 GEOTECHNICAL AND SOILS RESOURCES (cont.)			
5.0-4. All water reclamation plant structures and facilities are to be constructed according to Uniform Building Code standards for the appropriate Seismic Risk Zone (Zone 4).	WRP Operator (Structural Engineer)	Plan Check Field Verification	1. WRP Operator 2. WRP Operator 3. Prior to Initial Operation
5.0-5. If the height of the fill exceeds the shear strength of such saturated soils, settlement and ground failure could occur, resulting in damage to structures and/or injury to people. Potentially consolidatible materials are to be properly removed and the fill material is to be properly compacted and protected against the erosive effects of storm and River flows.	WRP Operator (Geotechnical Engineer)	Grading Plan Check Field Verification	1. WRP Operator 2. WRP Operator 3. During Grading Operations
5.0-6. All fills, unless otherwise specifically designed, are to be compacted to at least 90 percent of the maximum dry unit weight as determined by ASTM Designation D 1557-91 Method of Soil Compaction. (R.T. Frankian & Associates, 19 September 1994, Appendix I)	WRP Operator (Geotechnical Engineer)	Field Verification	1. WRP Operator 2. WRP Operator 3. During Grading Operations
5.0-7. No fill is to be placed until the area to receive the fill has been adequately prepared and approved by the Geotechnical Engineer. (R.T. Frankian & Associates, 19 September 1994, Appendix I)	WRP Operator (Geotechnical Engineer)	Field Verification	1. WRP Operator 2. WRP Operator 3. During Grading Operations
5.0-8. Fill soils are to be kept free of all debris and organic material. (R.T. Frankian & Associates, 19 September 1994, Appendix I)	WRP Operator (Geotechnical Engineer)	Field Verification	1. WRP Operator 2. WRP Operator 3. During Grading Operations

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
5.1 GEOTECHNICAL AND SOILS RESOURCES (cont.)			
5.0-9. Rocks or hard fragments larger than 8 inches are not to be placed in the fill without approval of the Geotechnical Engineer, and in a manner specified for each occurrence. (R.T. Frankian & Associates, 19 September 1994, Appendix I)	WRP Operator (Geotechnical Engineer)	Field Verification	1. WRP Operator 2. WRP Operator 3. During Grading Operations
5.0-10. Rock fragments larger than 8 inches are not to be placed within 10 feet of finished pad grade or the subgrade of roadways or within 15 feet of a slope face. (R.T. Frankian & Associates, 19 September 1994, Appendix I)	WRP Operator (Geotechnical Engineer)	Field Verification	1. WRP Operator 2. WRP Operator 3. During Grading Operations
5.0-11. When moisture content of the fill material is too low to obtain adequate compaction, water is to be added and thoroughly dispersed until the soil is approximately 2 percent over optimum moisture content. (R.T. Frankian & Associates, 19 September 1994, Appendix I)	WRP Operator (Geotechnical Engineer)	Field Verification	1. WRP Operator 2. WRP Operator 3. During Grading Operations
5.0-12. When the moisture content of the fill material is too high to obtain adequate compaction, the fill material is to be aerated by blading or other satisfactory methods until the soil is approximately two percent over optimum moisture content. (R.T. Frankian & Associates, 19 September 1994, Appendix I)	WRP Operator (Geotechnical Engineer)	Field Verification	1. WRP Operator 2. WRP Operator 3. During Grading Operations
5.0-13. Surface runoff from the future graded areas is not to run over any natural, cut, or fill slopes. (Allan E. Seward Engineering Geology, 19 September 1994, Inc., p. 20)	WRP Operator (Civil Engineer and Construction Superintendent)	Field Verification	1. WRP Operator 2. WRP Operator 3. During Grading Operations

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
5.2 FLOOD			
5.0-14. Runoff from future pads and structures is to be collected and channeled to the street and/or natural drainage courses via non-erosive drainage devices. (Allan E. Seward Engineering Geology, Inc., 19 September 1994, p. 20)	WRP Operator (Civil Engineer and Construction Superintendent)	Field Verification	1. WRP Operator 2. WRP Operator 3. During Grading Operations
5.0-15. Water is not to stand or pond anywhere on the graded pads. (Allan E. Seward Engineering Geology, Inc., 19 September 1994, p. 20)	WRP Operator (Civil Engineer and Construction Superintendent)	Field Verification	1. WRP Operator 2. WRP Operator 3. During Grading Operations
5.0-16. Prepare and implement a County-approved erosion control plan to be implemented during the construction of the WRP.	WRP Operator (Civil Engineer)	Approval of Erosion Control Plan Field Verification	1. WRP Operator 2. WRP Operator 3. Prior to Grading and Verify During Grading Operations
5.0-17. All on- and off-site flood control improvements necessary to alleviate flood hazards and provide proper drainage controls are to be constructed to the satisfaction of the County of Los Angeles Department of Public Works, FCD.	WRP Operator (Civil Engineer)	Field Verification	1. LACDPW, FCD 2. WRP Operator 3. Prior to Issuance of Occupancy Permits
5.0-18. All necessary permits or letters of exemption from the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, California Department of Fish and Game, and the Regional Water Quality Control Board for WRP-related development are to be obtained.	WRP Applicant	Receipt of Permits	1. ACOE, CDFG, and RWQCBLAR 2. WRP Applicant 3. Prior to Grading
5.0-19. Conditional Letters of Map Revision (CLOMR) relative to adjustments to the 100-year FIA flood plain are to be obtained by the applicant after the proposed drainage facilities are constructed.	WRP Operator (Civil Engineer)	Receipt of CLOMR	1. LACDPW, FCD 2. WRP Operator 3. Upon Completion of Facilities
5.0-20. Prior to grading, a Final Hydrology Plan, a Final Drainage Plan, and a Final Grading Plan (including an Erosion Control Plan, as required) are to be prepared by the applicant and approved by the Department of Public Works, where applicable, to ensure that no significant erosion, sedimentation, or flooding impacts would occur during or after site development.	WRP Applicant (Civil Engineer)	Approval of Final Hydrology Plan, Final Drainage Plan, Final Grading Plan	1. LACDPW 2. FCD 3. Prior to Grading

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
5.3 CULTURAL/PALEONTOLOGICAL RESOURCES			
5.0-21. No significant impact to cultural or paleontological resources are anticipated from construction of the WRP. However, should such resources be found during site grading, a professional archaeologist or paleontologist will be retained to evaluate the significance of the finding and to identify appropriate methods of preserving or cataloguing any significant resources.	WRP Operator (Archaeologist and/or Paleontologist)	Include Measure in WRP Specifications Field Verification	1. LA County Department of Regional Planning 2. WRP Operator 3. Verify During Grading Operations
5.4 AGRICULTURAL RESOURCES			
No mitigation measures are available that could reduce the impact of conversion of prime agricultural land to an urban use to less than significant.			

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
5.5 ENVIRONMENTAL SAFETY			
5.0-22. Design and operate the WRP in accordance with an NPDES Permit that must be obtained from the California Regional Water Quality Control Board, Los Angeles Region.	WRP Operator	Approval of WRP Design and Operation Plans by RWQCBLAR Field Verification	1. RWQCBLAR 2. WRP Operator 3. Prior to Issuance of Construction Permits and Verify During WRP Operation
5.0-23. Prepare and implement worker safety programs in accordance with Cal-OSHA requirements.	WRP Operator	Review of Worker Safety Program Field Verification	1. Cal-OSHA 2. WRP Operator 3. Prior to and During WRP Operation
5.0-24. Prepare and implement preventive and contingency plans for controlling accidental discharges of wastewater or chemicals used and stored at the WRP, and for minimizing the effects of such events. Such plans shall be integrated into the CSDLAC's overall preventive (fail-safe) and contingency (emergency response) plans and programs.	WRP Operator	Approval of Plans Field Verification	1. Los Angeles Co. Fire Department 2. WRP Operator 3. Prior to and During WRP Operation
5.0-25. A Stormwater Pollution Prevention Plan (SWPPP) shall be prepared and implemented, in accordance with the U.S. Environmental Protection Agency's Industrial Stormwater Permit.	WRP Operator	Review of SWPPP Field Verification	1. RWQCBLAR 2. WRP Operator 3. Prior to and During WRP Operation

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
5.5 ENVIRONMENTAL SAFETY (cont.)			
5.0-26. Any industrial wastewater that may be produced from manufacturing, commercial processing operations, acute care medical facilities and laboratories, etc., that would be allowed in the Commercial, Mixed-Use or Business Park land use designations as regulated by the Specific Plan, shall comply with the Wastewater Ordinance of the County Sanitation Districts of Los Angeles County (April 1, 1972, as amended November 1, 1989). A permit from the CSDLAC would be required for any such facility to allow discharge into the Newhall Ranch sewer system.	Business Owners in Commercial, Mixed Use, or Business Park Land Use Designations	Review of Building Plans	1. WRP Operator 2. WRP Operator 3. Prior to Issuance of Building Permit
5.0-27. Prepare and implement an "Integrated Emergency Response Plan" (IERP). The IERP provides procedures for personnel medical emergencies, evacuation procedures and mitigation and abatement procedures for hazardous chemicals. The plan must conform to multiple regulatory requirements, including Title 8 §3220, Emergency Action Plan, §3221, Fire Prevention Plan, §5192 Emergency Response to Hazardous Substances Releases, and Title 22, §66265.50-66265.56, Contingency Plan and Emergency Procedures.	WRP Operator	Review of IERP Field Verification	1. Los Angeles Co. Fire Department 2. WRP Operator 3. Prior to and During WRP Operation
5.0-28. Biosolids treatment and disposal methods shall meet California Title 22, Division 4.5, Chapter 11, Article 3, which contains Toxicity Characteristic Leaching Procedure (TCLP) and Soluble Threshold Limit Concentration (STLC) limits.	WRP Operator	Review of Construction Plans Laboratory Testing	1. RWQCBLAR 2. WRP Operator 3. Prior to and During WRP Operation
5.0-29. Obtain permits to construct and operate all new sources of air toxic emissions, at each stage of WRP development, and whenever any new sources are added or replaced, pursuant to SCAQMD Regulation XIV.	WRP Operator	Review of SCAQMD Permits	1. SCAQMD 2. WRP Operator 3. Prior to Issuance of Construction Permits and During WRP Operation

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
5.6 BIOTA			
5.0-30. Comply with permit requirements established by the California Department of Fish and Game, the U.S. Army Corps of Engineers, and/or the U.S. Fish and Wildlife Service, relative to removal and replacement of riparian habitat.	WRP Applicant	Obtain Required Permits Field Verification	1. CDFG, ACOE 2. WRP Operator 3. During Monitoring Period Specified in Permits
5.0-31. Obtain and implement an NPDES construction permit to avoid significant erosion or sedimentation impacts.	WRP Operator	Receipt of NPDES Permit(s) Field Verification	1. RWQCBLAR 2. WRP Operator 3. Prior to and During Grading and Construction
5.0-32. Comply with permit requirements of Federal, State and regional agencies with jurisdiction over discharge of reclaimed water to the Santa Clara River relative to potential impacts on the River's biological values.	WRP Operator	Field Verification Laboratory Testing	1. RWQCBLAR 2. WRP Operator 3. During WRP Operation

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
5.7 VISUAL QUALITIES			
5.0-33. To soften views of the reclamation plant from SR-126, provide vegetation, walls, fencing, and/or other appropriate techniques and combinations of techniques. Walls and fencing shall comply with the Specific Plan Design Guidelines.	WRP Operator	Field Verification	1. LA County Department of Regional Planning 2. WRP Operator 3. Prior to Operation
5.0-34. Landscaping themes shall be consistent with the themes developed for adjacent Business Park development to provide visual continuity and minimize contrast between the WRP facilities and their surroundings.	WRP Operator	Field Verification	1. LA County Department of Regional Planning 2. WRP Operator 3. Prior to Operation
5.0-35. Place, orient and shield light fixtures to illuminate only those areas where it is needed and to prevent stray light from spilling off site.	WRP Operator	Field Verification	1. LA County Department of Regional Planning 2. WRP Operator 3. Prior to Operation

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
5.8 TRAFFIC/ACCESS			
5.0-36. If SR-126 is still a two-lane highway at the time of WRP construction, a construction traffic management plan shall be prepared and implemented. This plan shall address site access, staging and storage areas, hours of construction, work crew parking, warning and traffic control signs and devices, flag men, temporary detouring, etc., as appropriate, to avoid a significant impact on SR-126.	WRP Operator (Construction Superintendent)	Approval of Construction Traffic Management Plan Field Verification	1. WRP Operator 2. WRP Operator 3. Prior to and During Grading and Construction Activities
5.0-37. An encroachment permit shall be obtained from Caltrans, for access to the plant site from SR-126.	WRP Applicant	Receipt of Encroachment Permit(s)	1. Caltrans 2. WRP Applicant 3. Prior to Grading
5.9 NOISE			
5.0-38. All construction activity occurring on the water reclamation plant site shall adhere to the requirements of the "County of Los Angeles Construction Equipment Noise Standards", County of Los Angeles Ordinance No. 11743.	WRP Operator	Field Verification Using Noise Monitor	1. LA County Dept. of Health Services 2. WRP Operator 3. During Grading and Construction
5.0-39. Limit all construction activities occurring near occupied residences to between the hours of 6:30 A.M. and 8:00 P.M., and exclude all Sundays and legal public holidays, pursuant to County Construction Section standards.	WRP Operator	Field Verification	1. LA County Dept. of Health Services 2. WRP Operator 3. During Grading and Construction
5.0-40. All operational activity occurring on the water reclamation plant site shall adhere to the requirements of the "County of Los Angeles Exterior Noise Standards for Stationary and Point Noise Sources," pursuant to §12.08.390 of County of Los Angeles Ordinance No. 11743.	WRP Operator	Periodic Field Verification Using Noise Monitor	1. LA County Dept. of Health Services 2. WRP Operator 3. During WRP Operation

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
5.10 AIR QUALITY			
CONSTRUCTION IMPACTS			
The proposed WRP would be subject to SCAQMD Rule 403, which prohibits emissions of fugitive dust from any active operation, open storage pile, or disturbed surface areas from remaining in the atmosphere beyond the property line of the emission source. The builder of the plant would be required to implement dust control measures for each fugitive dust source type, to prevent visible roadway dust from being deposited more than 50 feet from any property access road, and to remove all visible roadway dust deposited upon public paved roadways as a result of active operations at the conclusion of each work day. The following mitigation measure is recommended to implement this rule:			

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
5.10 AIR QUALITY (cont.)			
5.0-41. Prepare and implement a fugitive dust emission control plan which conforms to the requirements of SCAQMD Rule 403. The plan shall include the following specific measures and be submitted to the SCAQMD for review and approval: a. Apply approved non-toxic chemical soil stabilizers according to manufacturer specifications to all inactive construction areas (previously graded areas inactive for four days or more). b. Replace ground cover in disturbed areas as quickly as possible c. Enclose, cover, water twice daily, or apply approved soil binders to exposed piles (i.e., gravel, sand, dirt) according to manufacturer's specifications. d. Water active grading sites at least twice daily. e. Suspend all excavating and grading operations when wind speeds (as instantaneous gusts exceed 25 mph). f. Provide temporary wind fencing with 50 percent or less porosity along the perimeter of sites that have been cleared or are being graded. g. All trucks hauling dirt, sand, soil or other loose materials are to be covered or should maintain at least two feet of freeboard (i.e., minimum vertical distance between top of the load and the top of the trailer), in accordance with Sections 23114 of the California Vehicle Code. h. Install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash off trucks and any equipment leaving the site each trip. i. Sweep streets at the end of the day if visible soil material is carried over to adjacent roads, (recommend water sweepers using reclaimed water if readily available). j. Apply water three times daily or chemical soil stabilizers according to manufacturer's specifications to all unpaved parking or staging areas or unpaved road surfaces k. Enforce maximum traffic speed limits of 15 mph on all unpaved roads. l. Where appropriate, pave all construction access roads at least 100 feet onto the site from the main road.	WRP Operator	Approval of Fugitive Dust Emission Control Plan Field Verification	1. SCAQMD 2. WRP Operator 3. Prior to Grading and During Construction

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
5.10 AIR QUALITY (cont.)			
The proposed WRP would be subject to SCAQMD Rule 1113 which prohibits persons from supplying, selling, applying, or soliciting the application of architectural coatings which do not meet specific emissions thresholds. The following mitigation measures address this rule:			
5.0-42. Building materials, architectural coatings, and cleaning solvents used in developing the WRP shall comply with all applicable SCAQMD rules and regulations.	WRP Operator	Provide List of Materials, Coating, Solvents That Comply with SCAQMD Rules and Regulations Field Verification	1. SCAQMD 2. WRP Operator 3. Prior to Issuance of Permit to Construct and Verify During Construction
5.0-43. The application of architectural coatings shall occur via hand application or spray equipment that emits volatile organic compound emissions at rates which are comparable to High Volume, Low Pressure (HVLP) spray equipment (i.e., equipment which is operated at an air pressure between 0.1 and 10 pounds per square inch).	WRP Operator	Field Verification	1. SCAQMD 2. WRP Operator 3. During Construction

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
5.10 AIR QUALITY (cont.)			
5.0-44. Building construction shall utilize low-polluting construction materials and coatings (i.e., bricks, stones, pre-coated or naturally colored materials, water-based paints or similar types of coating materials containing relatively low levels of volatile organic compounds) to the greatest extent feasible.	WRP Operator	Provide List of Construction Materials and Coatings with VOC Ratings Field Verification	1. SCAQMD 2. WRP Operator 3. Prior to Permit to Construct and Verify During Construction
Emission reductions resulting from the imposition of the mitigation measures listed above have been quantified wherever possible pursuant to the methodology in the SCAQMD's CEQA Air Quality Handbook. The following discussion provides a quantification of emission reductions associated with the grading of the WRP site. A quantification of emission reductions due to the remaining construction measures have not been completed since the information necessary to conduct such an analysis, per SCAQMD methodologies, is not available at this time. However, substantial emission reductions would also result from these non-quantified construction mitigation measures.			
Grading activities associated with the WRP are predicted to generate approximately 1,744.0 pounds of PM_{10} per day. The application of non-toxic soil stabilizers, the replacement of ground cover, and the wetting down of graded areas, as identified above in Mitigation Measure 5.0-41 would each reduce these emission by approximately 30 percent, 15 percent, and 34 percent, respectively. The combined percentage reduction for these measures is calculated by progressively applying the percentage reduction attributable to an individual mitigation measure to the net emissions resulting from the application of the preceding mitigation measure. When this occurs, the reduction that these three measures would provide is 60.7 percent, which equates to 1,058.6 pounds of dust per day. Net emissions of approximately 685.4 pounds per day would continue to exceed the SCAQMD's recommended threshold of 150.0 pounds per day.			

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
5.10 AIR QUALITY (cont.)			
OPERATION IMPACTS			
5.0-45. Comply with SCAQMD Regulation IX, Subpart O, which establishes specific air quality performance standards for wastewater treatment plants.	WRP Operator	Periodic Field Verification	1. SCAQMD 2. WRP Operator 3. During WRP Operation
5.0-46. Provide odor control equipment, covers, seals, etc., at all locations where odorous gases could be released into the atmosphere; implement managerial controls, including routine monitoring of control equipment and regular field surveys of surrounding areas; and conduct a complaint response program that achieves resolution to odor complaints within thirty minutes of receiving a complaint.	WRP Operator WRP Operator	Plan Check Approval of Complaint Response Program Field Verification	1. SCAQMD 2. WRP Operator 3. During WRP Design and Operation
5.0-47. Obtain permits to construct and operate all new sources of criteria air pollutants, at each stage of WRP development, and whenever any new sources are added or replaced, pursuant to SCAQMD Regulation XIII.	WRP Operator	Receipt of SCAQMD Permits	1. SCAQMD 2. WRP Operator 3. Prior to Issuance of Building Permits and Whenever New Sources are Added or Replaced
5.0-48. Obtain permits to construct and operate all new sources of air toxic emissions at each stage of WRP development, and whenever any new sources are added or replaced, pursuant to SCAQMD Regulation XIV.	WRP Operator	Receipt of SCAQMD Permits	1. SCAQMD 2. WRP Operator 3. Prior to Issuance of Permit to Construct and Whenever New Sources are Added or Replaced
5.0-49. Comply with the provisions of Title V of the Federal Clean Air Act, relative to maximum, facility-side toxic air emissions.	WRP Operator	Field Verification	1. SCAQMD 2. WRP Operator 3. During WRP Operation

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
5.11 WATER RESOURCES			
5.0-50. The site of the proposed water reclamation plant shall be annexed to the Valencia Water Company prior to issuance of building permits for the WRP.	WRP Operator	Annexation	1. CPUC 2. WRP Operator 3. Prior to Water Reclamation Plant Construction
5.0-51. Prior to construction of the proposed water reclamation plant, the WRP operator shall demonstrate water availability for both construction and operation demands.	WRP Operator	Receipt of VWC Will-Serve Letter	1. LA County Department of Regional Planning 2. WRP Operator 3. Prior to Grading

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
5.12 WASTEWATER DISPOSAL			
5.0-52. A new County sanitation district shall be formed to administer operation of the Newhall Ranch water reclamation plant. The district shall encompass the entire Newhall Ranch Specific Plan site.	WRP Operator	Approval of District Formation	1. Los Angeles County Board of Supervisors 2. WRP Operator 3. Prior to Issuance of WRP Grading Permit
5.0-52(b) The applicant shall initiate a request to the new County sanitation district formed for the Newhall Ranch Specific Plan site to adopt an ordinance prohibiting the installation and use of self-regenerating water softeners within the new sanitation district prior to connection of the first residential unit to the sanitary sewer system.	Specific Plan Applicant	Upon Filing of Construction Permit(s) for Water Reclamation Plant	1. Los Angeles County Board of Supervisors 2. Los Angeles County Department of Regional Planning 3. Prior to Issuance of WRP Grading Permit
5.0-53. The Newhall Ranch water reclamation plant shall be designed and operated to satisfy the requirements of Title 22 of the California Administrative Code, which regulates reuse of reclaimed water.	WRP Operator	Plan Check Field Verification	1. RWQCBLAR 2. WRP Operator 3. Prior to Issuance of Construction Permits and Verify During WRP Operation
5.0-54. The Newhall Ranch water reclamation plant shall be designed and operated to satisfy the California Regional Water Quality Control Board, Los Angeles Region discharge limits for reclaimed water discharged to the Santa Clara River and for the irrigation of landscaped areas.	WRP Operator	Plan Check Field Verification	1. RWQCBLAR 2. WRP Operator 3. Prior to Issuance of Construction Permits and Verify During WRP Operation
5.0-55. The Newhall Ranch water reclamation plant shall obtain a National Pollutant Discharge Elimination System permit from the California Regional Water Quality Control Board, Los Angeles Region for reclaimed water discharged to the Santa Clara River and for the irrigation of landscaped areas.	WRP Operator	Receipt of NPDES Permit(s)	1. RWQCBLAR 2. WRP Operator 3. Prior to Issuance of Construction Permits
5.0-56. All facilities of the sanitary sewer system will be designed and constructed for maintenance by the County of Los Angeles Department of Public Works and County Sanitation Districts of Los Angeles County, and/or the new County sanitation district or similar entity in accordance with their manuals, criteria, and requirements.	Applicant (Civil Engineer)	Review of Final Sewer Plans Field Verification	1. LACDPW and WRP Operator 2. LACDPW and WRP Operator 3. Prior to Acceptance for Maintenance

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
5.13 NATURAL GAS			
5.0-57. WRP design shall comply with the Energy Building Regulations adopted by the California Energy Commission (Title 24 of the California Administrative Code).	WRP Operator	Plan Check	1. WRP Operator 2. WRP Operator 3. Prior to Water Reclamation Plant Construction
5.14 ELECTRICITY			
5.0-58. Plant design shall comply with the Energy Building Regulations adopted by the California Energy Commission (Title 24 of the California Administrative Code).	WRP Operator	Plan Check	1. WRP Operator 2. WRP Operator 3. Prior to Water Reclamation Plant Construction
5.15 SOLID WASTE DISPOSAL			
5.0-59. The operators of the water reclamation plant shall ensure that all solid waste diversion, storage, and disposal requirements that are in effect at the time the WRP is constructed, including AB 939 and all others, will be implemented so that the waste generated by the WRP will not impede the County's waste reduction and diversion requirements during construction and operation.	WRP Operator	Field Verification	1. WRP Operator 2. WRP Operator 3. During WRP Construction and Operation
5.16 EDUCATION			
No impact on schools would result from construction or operation of the WRP; therefore, no mitigation measures are required or recommended.			

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
5.17 POLICE SERVICES			
5.0-60. If construction of the WRP occurs while SR-126 is still a two-lane highway, a construction traffic management plan shall be prepared and implemented. This plan shall address site access, staging and storage areas, hours of construction, work crew parking, warning and traffic control signs and devices, flag men, temporary detouring, etc., as appropriate.	WRP Applicant (Construction Superintendent)	Approval of Construction Traffic Management Plan Field Verification	1. WRP Operator 2. WRP Operator 3. Prior to and During Grading and Construction Activities
5.0-61. Consult with the CHP and the Sheriff's Department to incorporate measures into the risk management and prevention plan to optimize their abilities to provide assistance in the event of a hazardous materials incident at the operating WRP site.	WRP Operator	Incorporate CHP and Sheriff's Department Comments in RMPP	1. Cal-EPA 2. WRP Operator 3. Prior to Water Reclamation Plant Operation
5.0-62. Prepare and implement worker safety programs in accordance with Cal-OSHA requirements.	WRP Operator	Review of Worker Safety Program Field Verification	1. Cal-OSHA 2. WRP Operator 3. Prior to and During WRP Operation
5.0-63. Prepare and implement an "Integrated Emergency Response Plan" (IERP). The IERP provides procedures for personnel medical emergencies, evacuation procedures and mitigation and abatement procedures for hazardous chemicals. The plan must conform to multiple regulatory requirements, including Title 8 §3220, Emergency Action Plan, §3221, Fire Prevention Plan, §5192 Emergency Response to Hazardous Substances Releases, and Title 22, §66265.50-66265.56, Contingency Plan and Emergency Procedures.	WRP Operator	Review of IERP Field Verification	1. Los Angeles Co. Fire Department 2. WRP Operator 3. Prior to and During WRP Operation

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
5.18 FIRE SERVICES AND HAZARDS			
5.0-64. If construction of the WRP occurs while SR-126 is still a two-lane highway, a construction traffic management plan shall be prepared and implemented. This plan shall address site access, staging and storage areas, hours of construction, work crew parking, warning and traffic control signs and devices, flag men, temporary detouring, etc., as appropriate.	WRP Applicant (Construction Superintendent)	Approval of Construction Traffic Management Plan Field Verification	1. WRP Operator 2. WRP Operator 3. Prior to and During Grading and Construction Activities
5.0-65. Consult with the Fire Department and its Hazardous Materials Unit to incorporate measures into the risk management and prevention plan, to optimize its abilities to respond to a hazardous materials incident at the operating WRP site.	WRP Site Designer/ Engineer	Incorporate Fire Department Comments in RMPP	1. Cal-EPA 2. WRP Operator 3. Prior to Water Reclamation Plant Operation
5.0-66. Prepare and implement worker safety programs in accordance with Cal-OSHA requirements.	WRP Operator	Review of Worker Safety Program Field Verification	1. Cal-OSHA 2. WRP Operator 3. Prior to and During WRP Operation
5.0-67. Prepare and implement an "Integrated Emergency Response Plan" (IERP). The IERP provides procedures for personnel medical emergencies, evacuation procedures and mitigation and abatement procedures for hazardous chemicals. The plan must conform to multiple regulatory requirements, including Title 8 §3220, Emergency Action Plan, §3221, Fire Prevention Plan, §5192 Emergency Response to Hazardous Substances Releases, and Title 22, §66265.50-66265.56, Contingency Plan and Emergency Procedures.	WRP Operator	Review of IERP Field Verification	1. Los Angeles Co. Fire Department 2. WRP Operator 3. Prior to and During WRP Operation

Mitigation Measures/Conditions of Approval	Party Responsible for Implementing Mitigation	Monitoring Action	1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase
5.19 LIBRARIES			
No adverse library impacts have been identified; therefore no mitigation measures are required.			
5.20 PARKS, RECREATION AND TRAILS			
5.0-68. A fence shall be constructed along the southern perimeter of the WRP site to prevent access to the WRP from the Regional River Trail.	WRP Operator	Field Verification	1. Los Angeles Co. Department of Regional Planning 2. WRP Operator 3. Prior to Water Reclamation Plant Operation
5.21 POPULATION, HOUSING AND EMPLOYMENT			
No significant population, housing, or employment impacts have been identified; therefore, no mitigation measures are required.			

5.0 LIST OF PREPARERS, ORGANIZATIONS AND PERSONS CONSULTED

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6) AUSTIN FOUST ASSOCIATES
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GLOSSARY

TERM	DEFINITION
Accelerated Rate Projection	Method to project future water demand based on a review of occupied household data and service connections over time.
Aggradation	To raise the level of by deposition of sediment.
Alluvial Aquifer	A layer of permeable rock, sand, or gravel that absorbs water and allows it free passage through the small openings between the rock composed of Alluvium.
Alluvial Deposits or Alluvium	The fragmented and unconsolidated material transported and then deposited by a river, consisting of clay, silt, sand and gravel.
Ammonium Perchlorate	Salt used in the manufacture of rocket propellant.
Appurtenant Facilities	Additional related facilities that accompany the primary facility.
Aquatic Invertebrates	Aquatic animals that lack a backbone or spinal column.
Aqueduct	A channel or pipe for carrying water from a remote source.
Aquifer	A layer of permeable rock, sand, or gravel that absorbs water and allows it free passage.
Areal Extent	A measure of dominance that defines the degree to which above ground portions of plants cover the ground surface.
Arterial Road	A major transportation route from which local routes branch.
Assimilative Capacity	Capacity to incorporate and digest solid or fluid foreign material.
Avian Species	Bird species.
Bedrock Outcrop	The solid rock that underlies gravel, soil or other superficial matter, covered by surface deposits such as Alluvium.
Biological Carrying Capacity	The capacity of a particular habitat with reference to the maximum number of organisms the habitat can normally support.
Brackish Water	Water that contains too much salt to be drinkable, but not enough to be classified as seawater (salt content ranges from 0.5%-1.7%).
Brine	Water containing large amounts of salt.
Buffer	Something that reduces the shock of impact.
Buried Bank Stabilization	Flood control technique using buried soil cement to protect property from erosive forces.
Cementation	The process by which unconsolidated sediments are bonded by siliceous, calcareous, or ferruginous minerals to form sedimentary rock.
Channelization	Directing or guiding along a course.
Chaparral	Evergreen vegetation of the lower flanks of the Coastal and Santa Lucia ranges of southern California. Notably resistant to fire damage.
Coliform Count	Count of bacteria that normally inhabit the colon.
Colonization	The foundation of a group of similar organisms that live or grow together.
Confluence	The point of juncture for the flowing together of 2 or more streams.

TERM	DEFINITION
Conglomerate	A sedimentary rock consisting of rounded fragments of rock debris cemented within a matrix of finer material and formed by the compaction of certain coastal and riverine sediments.
Conjunctive-Use	The coordinated operation of multiple water supplies to achieve improved supply reliability.
Conspecifics	Belonging to the same species.
Contiguous Adjacent Area	Adjacent area that shares a common boundary.
Contingency Plan	Fortuitous Plan.
Conveyance Capacity	Ability to transport.
Conveyance Facilities	Facilities designed for transporting material.
Cordon	An encircling line.
Desalination Water	The removal of dissolved salts from sea water in order to make it potable.
Desiccated Wetland	A wetland that has dried out, the moisture has been removed.
Disaggregated	The water demands must be differentiated into indoor (potable) demands, outdoor potable demands and outdoor demands that can be met with non-potable water.
Disced	Land cultivated with a disc harrow or similar implement.
Discretionary Action	An action taken based on one's own judgement and freedom to choose.
Dispersal	Dissemination.
Downgradient	Rate of regular descent.
Drawdown	A lowering of the water level in a reservoir or other body of water.
Drawup	A raising of the water level in a reservoir or other body of water.
Drought Contingency Planning	Planning for the possible event of a drought.
DWRSIM Model	Model developed by DWR to forecast CLWA water supply under various meteorological and land use changes as well as regulatory constraints.
Econometric Method	The application of statistical methods to the study of data.
Effluent	Contaminants, usually liquid and typically harmful, that enter the environment via an industrial, agricultural, or sewage plant outlet.
Encroachment	Intruding upon.
Entitlement	Legal ability to use.
Ephemeral	Having a very short life cycle.
Evapotranspiration	The total loss of water as a result of transpiration from plants and the evaporation of water from soil, rock, and surface water bodies.
Excised Channel	A channel that has been removed.
Extraction Capability	Ability to remove.
Extrapolation Method	Method of estimating or projecting the value of something beyond a given series, for example, extension of a line of a graph beyond calculated points.
Flood Flows	Water flow from inundation of the land surface by water.
Fluvial	Related to or inhabiting a stream.
Forage	Search for provisions or food.

TERM	DEFINITION
Genetic Continuity	The retention of genetic information in plants and animals.
Greenbelt	A zone designed for the purpose of restricting indiscriminate outward extension of an urban area and originally designed to secure a permanent recreation area for local residents.
Groundwater Banking/ Conjunctive-Use Storage	Coordinated operation of multiple water supplies to achieve improved supply reliability.
Groundwater Table Level	The upper surface of the ground water or that level below which the soil is saturated with water. It is at least 6 inches thick and persists in the soil for more that a few weeks.
Herbaceous Annuals	Plant community composed of herbs that germinate from seed, grow to maturity and produce new seed within one year.
Home Range	The area within which the individual of a species normally lives.
Hydro-geologic	Of the science that deals with subsurface waters and with related geologic aspects of surface water.
Hydrologic Area	An area that is inundated or has saturated soils within a specified range of frequency and duration of inundation and soil saturation.
Impermeable	Water or air is unable to move through the soil profile.
Interfingered Beds	Beds that are graded or pass material from one into another though a series of interpenetrating wedge-shaped layers.
Intermittently Depressed	Falls or decreases at intervals.
Interruptible	Able to break the progress of or stop.
Ion Exchange	Reversible exchange of ions contained in a crystal for different ions in solution without destroying crystal structure or disturbing electrical neutrality.
Lenticular	Having the appearance of a double convex lens, circular in outline, convex on both sides.
Linear Distance	Distance measured in a straight line.
Monoculture	Cultivation of a single crop on a given acreage.
Natal Site	Birth site.
Percolation	The descent of water through soil layers due to the influence of gravity.
Perennial Yield	The maximum quantity of water that can be withdrawn from a groundwater resource under a given set of conditions without causing an undesirable result.
Permeability	A soil characteristic that enables water or air to move through the profile, measured as the number of inches per hour that water moves downward through the saturated soil. The rate at which water moves through the least permeable layer governs soil permeability.
Permeable	A soil characteristic that enables water or air to move through the profile, measured as the number of inches per hour that water moves downward through the saturated soil. The rate at which water moves through the least permeable layer governs soil permeability.
Porosity	The amount of space between soil particles or rock grains, usually expressed as the ratio of the volume of space between soil particles to the total volume of a soil or rock sample.

TERM	DEFINITION
Primary Wildlife Corridor	Primary means of passageway for wildlife migration or movement.
Raptor	Bird of prey.
Regional Wildlife Corridor	Passageway for regional wildlife migration or movement.
Ridgeline	A long narrow elevation line, usually sharp crested with steep sides.
Riparian	Of or on the bank of a natural course of water.
Riverine	Of or pertaining to rivers.
Sandbar	A ridge of sand built up by currents in a river.
Savannah	Tropical vegetation community in which grasses and sedges predominate.
Scour	To clear, dig, or move by powerful current of water.
Sedimentation/Deposition	Soil particles and rock fragments transported and deposited by rivers, glaciers, sea and wind.
Siltstone	A fine grain mineral material formed from erosion of rock fragments and deposited by rivers and lakes.
Storage Coefficient	Measure of ability to store water.
Subsidence	Something that has sunk to the bottom of a liquid or moved to a lower level.
Subsurface Flows	Water flow in the zone below the surface.
Symbiotic	Refers to a mutually advantageous relationship.
Transect	A line which is drawn along which observations are made at some interval.
Transmissivity	Ability to spread/propagate.
Tributary	A river or stream flowing into a larger river or stream.
Turnback Pool	Excess water returned by the SWP Water Contractors.
Understory	Underlying layer of vegetation.
Vertical Hydraulic Conductivity	The rate of flow of water in gallons per day through a cross section of one square foot under a unit hydraulic gradient at the prevailing temperature or adjusted for a temperature of 60 degrees F.
Water-Bearing Sediments	Solid fragments of rock that have the ability to bear water.
Watershed	Source streams or headwaters that flow into different river systems.

ACRONYMS

ACOE	U.S. Army Corps of Engineers
ADT	Average Daily Traffic
AFY	Acre-Feet Per Year
ASR	Aquifer Storage and Recovery
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
cfs	Cubic Feet per Second
CLWA	Castaic Lake Water Agency
CNPS	California Native Plant Society
CO	Carbon Monoxide
CPUC	California Public Utilities Commission
CSDLAC	County Sanitation Districts of Los Angeles County
DHS	Department of Health Services
DMS	Development Monitoring System
DWR	State Department of Water Resources
EIR	Environmental Impact Report
FEMA	Federal Emergency Management Agency
IRWD	Irvine Ranch Water District
ISEP/ISEP+	Ion Separation/Ion Separation Plus
LOS	Level of Service
mg/l	Milligrams per Liter
mgd	Million Gallons per Day
msl	Mean Sea Level
NOP	Notice of Preparation
NPDES	National Pollutant Discharge Elimination System
ppm	Parts Per Million by Volume
Qcap	County Capital Storm Event
RMP	Resource Management Plan
RWQCB	Regional Water Quality Control Board
SCAQMD	South Coast Air Quality Management District
SCVCTM	Santa Clarita Valley Consolidated Traffic Model
SEA	Special Management Area
SEATAC	Significant Ecological Area Technical Advisory Committee
SMA	Special Management Area
SMFS	Successional Mulefat Scrub
SWP	State Water Project
SWRCB	State Water Resources Control Board
TMDL	Total Maximum Daily Load
UWCD	United Water Conservation District
UWMP	Urban Water Management Plan
V/C	Volume to Capacity
VCTC	Ventura County Transportation Commission
VCTM	Ventura Countywide Traffic Model
WDR	Water Discharge Requirements
WRP	Water Reclamation Plant