COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

"To Enrich Lives Through Effective and Caring Service"

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IN REPLY PLEASE
REFER TO FILE: W-0

July 29, 2004

The Honorable Board of Supervisors
County of Los Angeles
383 Kenneth Hahn Hall of Administration
500 West Temple Street
Los Angeles, CA 90012

Dear Supervisors:

LOS ANGELES COUNTY WATERWORKS DISTRICT NO. 40, ANTELOPE VALLEY
JOINT COMMUNITY FACILITIES AGREEMENT FOR
CITY OF PALMDALE COMMUNITY FACILITIES DISTRICT NO. 2003-1
SUPERVISORIAL DISTRICT 5
3 VOTES

IT IS RECOMMENDED THAT YOUR BOARD ACTING AS THE GOVERNING BODY OF THE LOS ANGELES COUNTY WATERWORKS DISTRICT NO. 40, ANTELOPE VALLEY:

Approve and instruct the Chairman to sign the enclosed Agreement (Exhibit "A") between the City of Palmdale and the Los Angeles County Waterworks District No. 40, Antelope Valley (District), which is legally required for a Community Facilities District (CFD) to finance water system improvements (Water Improvements) offered to the District to serve the City Ranch/Anaverde Development.

PURPOSE/JUSTIFICATION OF RECOMMENDED ACTION

The purpose of this action is to authorize the District to enter into an agreement with the City of Palmdale relating to Water Improvements, as defined by the Agreement, to allow these to be financed through the proposed CFD No. 2003-1. The District will agree to accept the transfer of ownership of the Water Improvements should they be constructed to meet all terms and conditions imposed by the District to enable the District to operate the Water Improvements. The Water Improvements are expected to be constructed by

the CFD for the purpose of providing water service to the City Ranch/Anaverde Development. The terms of the Agreement will determine the transfer of ownership of the Water Improvements, which will be financed by the CFD, and will not obligate the District to provide water service or relieve the developer from its obligations to deliver a reliable source of potable water to the development. The District shall only accept the Water Improvements after all terms, conditions, and standards imposed by the District are met.

Implementation of Strategic Plan Goals

This action is consistent with the County Strategic Goal of Service Excellence as it will assist the City of Palmdale in the formation of the CFD.

FISCAL IMPACT/FINANCING

This agreement will have no fiscal impact on the District. The District is not required to finance the Water Improvements or reimburse the CFD for the cost of any of the Water Improvements described in the Agreement.

FACTS AND PROVISIONS/LEGAL REQUIREMENTS

Because the CFD anticipates that the Water Improvements be owned and operated by the District, an agency other than the CFD, an agreement such as the enclosed Agreement is a requirement of Section 53316.2 of the California Government Code to allow the CFD to finance the Water Improvements with bonds issued by the CFD. The Agreement has been reviewed and approved as to form by County Counsel.

ENVIRONMENTAL DOCUMENTATION

The environmental impact study that relates to the Water Improvements was included in the City Ranch Environmental Impact Report (EIR). The City of Palmdale, who was the lead agency for the EIR, certified the EIR (Exhibit "B") on March 18, 1992, and adopted certain findings (Exhibit "C") contained therein with respect to environmental effects of the proposed project. In its role as the responsible agency, your Board must independently consider the environmental document prepared by the lead agency and reach your own conclusions regarding the environmental effect of the proposed Joint Community Facilities Agreement between the City of Palmdale and the District. After having done so, it is recommended that your Board determine that the EIR and environmental findings adequately address the environmental impact of the proposed agreement.

IMPACT ON CURRENT SERVICES (OR PROJECTS)

There will be no negative impact on current County services provided by the District.

CONCLUSION

Please return four approved copies of the Agreement, marked "LACWWD," City 1," "City 2," and "City 3," and two adopted copies of this letter. The copy of the Agreement marked "County" is for your files.

Respectfully submitted,

JAMES A. NOYES
Director of Public Works

GE:nm
BDL2164

Enc.

cc: Chief Administrative Office
County Counsel

JOINT COMMUNITY FACILITIES AGREEMENT

CITY OF PALMDALE
COMMUNITY FACILITIES DISTRICT NO. 2003-1
(ANAVERDE PUBLIC IMPROVEMENTS)

This Joint Community Facilities Agreement (the "Agreement") is by and between the City of Palmdale (the "City") and the Los Angeles County Waterworks District No. 40, Antelope Valley (the "Participating Agency").

RECITALS:

WHEREAS, the City Council of the City is undertaking proceedings to form the City of Palmdale Community Facilities District No. 2003-1 (Anaverde Public Improvements) and four improvement areas therein (collectively, the "CFD"), pursuant to the Mello-Roos Community Facilities Act of 1982, as amended (the "Act"), being Chapter 2.5 of Part 1 of Division 2 of Title 5, commencing at Section 53311, of the California Government Code, and the City intends to issue bonds of the City for one or more improvement areas of the CFD (the "Bonds") under the Act in order to finance the construction of various water system improvements (the "Water Improvements") necessitated by the proposed Anaverde development (the "Project") in the City; and

WHEREAS, the parties hereto expect that the Participating Agency may accept transfer of ownership and subsequently operate some of the Water Improvements upon their completion in compliance with the Participating Agency's terms and conditions for acceptance of such Water Improvements, and only if such Water Improvements are constructed to the full and complete satisfaction of the Participating Agency; and

WHEREAS, Section 53316.2 of the Act provides that a community facilities district may finance facilities to be owned or operated by an entity other than the agency that created the district, or services to be provided by an entity other than the agency that created the district, or any combination, only pursuant to a joint community facilities agreement or a joint exercise of powers agreement; and

WHEREAS the City and the Participating Agency now desire to enter into this Agreement to satisfy the requirements of Section 53316.2 of the Act.

AGREEMENT:

NOW, THEREFORE, in consideration of the foregoing and mutual covenants set forth below, the parties hereto do hereby agree as follows:

Section 1. Acceptance Pre-Conditions. The Participating Agency will, in its sole and absolute discretion, establish terms, conditions and standards for acceptance of any Water Improvements (collectively, the "Acceptance Pre-Conditions"). Nothing in this Agreement is intended to limit the Participating Agency's ability to establish or determine any Acceptance Pre-Condition. Therefore, the Participating Agency will have complete and absolute discretion in setting the Acceptance Pre-Conditions. The Participating Agency shall not have any liability whatsoever with respect to any work performed in connection with any Water Improvements; provided that this Agreement shall in no way limit any rights the Participating Agency may have against any persons or entities in respect of the acquisition or construction of any of the Water Improvements if the Participating Agency accepts title to and control over any such Water Improvements.

Section 2. Completion and Acceptance. Upon completion of construction of a Water Improvement and the satisfaction of all Acceptance Pre-Conditions to the full and complete satisfaction of the Participating Agency, the Participating Agency may, in its sole discretion and without any obligation whatsoever, accept dedication of such Water Improvement in accordance with its customary procedures, including, without limitation, imposing its rules and regulations applicable within its territorial jurisdiction, conditioned in any event upon the passage to the Participating Agency of fee title to such Water Improvement clear of all encumbrances not otherwise acceptable to the Participating Agency in its sole discretion. Prior to complete fulfillment of all Acceptance Preconditions and formal acceptance by the Participating Agency, acting through the Los Angeles County Board of Supervisors (the "Board Acceptance"), of a Water Improvement, the Participating Agency shall have no obligation to own or operate any Water Improvement or any liability relating thereto.

This Agreement shall create no obligation at any time for the City to own or operate any of the Water Improvements.

Section 3. Termination. Notwithstanding any other provision of this Agreement, this Agreement shall cease to be effective and shall terminate if the first series of the Bonds are not issued by December 31, 2005. If not earlier terminated pursuant to the preceding sentence, this Agreement shall terminate on December 31, 2014.

Section 4. No Obligation to Form CFD, Provide Water or Pay Bonds. The provisions of this Agreement shall in no way obligate the City or the Participating Agency to form the CFD or to construct any Water Improvement. Furthermore, this Agreement shall in no way obligate the Participating Agency to provide water service to the Project or to repay the Bonds. The Bonds will be limited obligations of the City for the CFD, payable solely from special taxes levied on property in the CFD and other amounts pledged under the documents providing for the issuance of the Bonds, and all such special taxes will be used by the City as specified in the proceedings to form the CFD. No amounts have been or will be pledged by the Participating Agency towards the repayment of the Bonds. This Agreement in no way binds the County of Los Angeles, a legal entity separate and apart from the Participating Agency.

Notwithstanding the foregoing, by their respective execution of this Agreement, the City and the Participating Agency each declare that this Agreement is beneficial to the residents to be served by the Water Improvements within their respective jurisdictions.

Section 5. Amendment. This Agreement may be amended at any time but only in writing signed by each party hereto.

Section 6. Entire Agreement. This Agreement contains the entire agreement between the parties hereto with respect to the matters provided for herein and supersedes all prior or contemporaneous agreements and negotiations between the parties hereto with respect to the subject matter of this Agreement.

* * * * * * * * * *

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by their respective officers, duly authorized, by the CITY OF PALMDALE on July 9, 2004, and by the LOS ANGELES COUNTY WATERWORKS DISTRICT NO. 40, ANTELOPE VALLEY, on _____, 2004.

LOS ANGELES COUNTY
WATERWORKS DISTRICT NO. 40,
ANTELOPE VALLEY

By: _____
Chairman, Board of Supervisors
of the County of Los Angeles
as governing body thereof

ATTEST:

VIOLET VARONA-LUKENS
Executive Officer of the
Board of Supervisors of the
County of Los Angeles

By: _____
Deputy

APPROVED AS TO FORM:

OFFICE OF THE COUNTY COUNSEL
County Counsel

By: _____
Deputy

CITY OF PALMDALE

By: _____
James C. Ledford, Jr., Mayor

ATTEST:

By: _____
for: Victoria L. Hancock, CMC, City Clerk

APPROVED AS TO FORM:

By: _____
Wm. Matthew Ditzhazy, City Attorney

CITY RANCH

ENVIRONMENTAL DOCUMENTS

EXHIBIT “B”
(ENVIRONMENTAL IMPACT REPORT)

EXHIBIT “C”
(ENVIRONMENTAL FINDINGS ADOPTED BY THE CITY OF PALMDALE)

CITY RANCH

EXHIBIT “B”

ENVIRONMENTAL IMPACT REPORT

CITY RANCH

EIR

CERTIFIED
MARCH 18, 1992

Book 1 of 2

TABLE OF CONTENTS

Section		Page
	SUMMARY	S-1
1.0	INTRODUCTION	1-1
2.0	PROJECT DESCRIPTION	2-1
2.1	Project Location	2-1
2.2	Project Objectives	2-1
2.3	Project Characteristics	2-1
2.4	Permits and Approvals	2-20
3.0	ENVIRONMENTAL SETTING	3-1
3.1	Regional Setting	3-1
3.2	Local Setting	3-3
4.0	CUMULATIVE PROJECTS DESCRIPTION	4-1
5.0	ANALYSIS OF ENVIRONMENTAL ISSUES	5-1
5.1	Overview	5-1
5.2	Land Use	5-3
5.3	Population	5-14
5.4	Housing	5-21
5.5	Earth (Geology)	5-26
5.6	Hydrology	5-65
5.7	Biology	5-82
5.8	Transportation	5-109
5.9	Air Quality	5-152
5.10	Noise	5-176
5.11	Aesthetics	5-187
5.12	Light and Glare	5-206
5.13	Energy	5-211
5.14	Electricity	5-215
5.15	Natural Gas	5-219
5.16	Water	5-222
5.17	Sewage Disposal	5-231
5.18	Solid Waste	5-238
5.19	Communications	5-242
5.20	Sheriff's Services	5-249
5.21	Fire and Emergency Medical Services	5-256
5.22	Schools	5-263

TABLE OF CONTENTS (Cont.)

Section		Page
5.23	Parks and Recreation	5-272
5.24	Road Maintenance	5-281
5.25	Archaeology	5-286
5.26	Paleontology	5-297
5.27	Electromagnetic Radiation	5-303
5.28	Hazardous/Toxic Materials	5-309
5.29	Antelope Valley Public Landfill	5-318
6.0	GROWTH-INDUCING IMPACTS	6-1
7.0	THE RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY	7-1
8.0	SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES WHICH WOULD RESULT FROM IMPLEMENTATION OF THE PROPOSED PROJECT	8-1
9.0	ALTERNATIVES	9-1
9.1	No Project	9-8
9.2	Reduced Residential Density	9-8
9.3	College Campus	9-11
9.4	Alternate Site A - Willow Springs	9-15
9.5	Alternate Site B - Quail Lake	9-19
9.6	Environmentally Superior Alternative	9-22
10.0	ORGANIZATIONS AND PERSONS CONSULTED	10-1
11.0	REFERENCES	11-1
12.0	MITIGATION MONITORING PLAN	12-1

APPENDICES

APPENDIX A - NOP and Initial Study
APPENDIX B - Responses to the NOP
APPENDIX C - Jobs/Housing Balance Analysis (Separate Volume)
APPENDIX D - Geotechnical Report (Separate Volume)
APPENDIX E - Hydrology Reports (Separate Volume)
APPENDIX F - Biology Reports (Separate Volume)
APPENDIX G - Technical Studies (Separate Volume)
APPENDIX H - Archaeology Report (Separate Volume)
APPENDIX I - Paleontology Report (Separate Volume)
APPENDIX J - Electromagnetic Radiation Reports (Separate Volume)
APPENDIX K - Hazardous/Toxic Materials Reports (Separate Volume)
APPENDIX L - Notice of Determination
APPENDIX M - City Council Resolution 92-58
APPENDIX N - Minutes of the City Council Meetings
APPENDIX O - City Council Staff Report

LIST OF FIGURES

Figure		Page
1.	Project Site Location	2-2
2.	Development Plan	2-3
3.	Phasing Plan	2-5
4.	Conceptual Grading Plan	2-7
5.	Conceptual Design for Planning Areas 5 and 10	2-10
6.	Conceptual Design for Planning Area 8	2-11
7.	Circulation Plan	2-13
8.	Street Cross-sections	2-14
9.	Conceptual Design for Planning Areas 1, 9 and 35	2-19
10.	Regional Setting	3-2
11.	Project Site Geomorphological Regions	3-4
12.	Cumulative Projects Locations	4-3
13.	Existing Land Uses	5-4
14.	City of Palmdale General Plan Land Use Designations	5-5
15.	County of Los Angeles General Plan Land Use Designations	5-7
16.	Existing County of Los Angeles and City of Palmdale Zoning	5-8
17.	Population Growth 1984-2010	5-15
18.	Comparison of Subregional, City of Palmdale and Project Population Growth	5-17
19.	Soils and Geology	5-27
20.	Local and Vicinity Faults	5-29
21.	Seismic Epicenters	5-34
22.	Liquefaction Potential and High Groundwater Areas	5-39
23.	Potential Slope Instability	5-42
24.	Potential Expansive Soil Areas	5-43
25.	Potential Hydroconsolidation Areas	5-44
26.	Restricted Use Zones	5-47
27.	Special Foundation Areas	5-56
28.	Flood Hazard Areas (Undeveloped Condition)	5-67
29.	Debris Potential Areas	5-68
30.	Hydrology-Undeveloped Site (50-year Rainfall)	5-71
31.	Flood Hazard Areas (Developed Condition)	5-73
32.	Hydrology-Developed Site (50-year Rainfall)	5-75
33.	Master Drainage Plan	5-76
34.	Conceptual Design for Low-flow Detention Basin	5-80
35.	Project Site Plant Communities	5-83
36.	Joshua Tree Locations	5-85
37.	Project Site Sensitive Plants	5-95
38.	Pierson's Morning Glory Mitigation	5-105
39.	Existing Circulation System	5-110
40.	Current Traffic Volumes	5-115
41.	Master Planned Circulation System	5-125
42.	Typical Street Cross-Sections (Palmdale)	5-126

LIST OF FIGURES (Cont.)

Figure		Page
43.	Project Traffic Assignment	5-132
44.	Year 2010 Daily Traffic Volumes Without City Ranch	5-135
45.	Study Intersections and Assumed Lane Configurations	5-137
46.	Year 2010 Traffic Volumes and Level of Service	5-138
47.	Project Traffic Contribution on Regional Network	5-144
48.	Traffic Analysis Zones for 2010 Areawide Traffic Study	5-150
49.	Southeast Desert Air Basin	5-153
50.	Surface Wind Summary Wind Roses - Palmdale Station	5-156
51.	Land Use Compatibility for Noise Exposure	5-178
52.	Noise Levels for Typical Construction Equipment Referenced to 50 feet	5-181
53.	Visual Features of the Project Site	5-180
54.	View Northward Over the Project Site from the Sierra Pelona Area of the Site	5-189
55.	View Across the Project Site From the Verde Ridge Area of the Site	5-190
56.	View Toward the Southern Boundary of the Project Site	5-191
57.	Off-Site Visual Analysis	5-193
58.	Conceptual Landscape Plan	5-195
59.	Bridge Road Entry Statement	5-197
60.	Avenue S Entry Statement	5-198
61.	Avenue S Streetscape	5-208
62.	Bridge Road Streetscape	5-209
63.	Existing Electric Lines	5-216
64.	Off-Site Water Plan	5-226
65.	On-Site Water Plan	5-227
66.	Sewer Plan	5-233
67.	Communication Lines	5-243
68.	Antelope Valley Sheriff Station Locations	5-250
69.	Fire Station Locations	5-257
70.	Hospital and Trauma Center Locations	5-258
71.	Existing and Proposed Schools	5-264
72.	Bicycle and Pedestrian Trail System	5-274
73.	Open Space and Recreation Concept	5-275
74.	Hazardous Materials Locations	5-310
75.	Potential Hazard Areas	5-313
76.	Location of Antelope Valley Public Landfill in Relation to Project Site	5-319

LIST OF FIGURES (Cont.)

Figure		Page
77.	Landfill Mitigation	5-324
78.	Alternative 2 - Reduced Residential Density	9-9
79.	Alternative 3 - College Campus	9-13
80.	Alternate Site Locations	9-16
81.	Alternative 4 - Alternate Site A: Willow Springs	9-18
82.	Alternative 5 - Alternate Site B: Quail Lake	9-20

LIST OF TABLES

Table		Page
1.	Cumulative Projects	4-2
2.	Project and Cumulative Population and Employment	5-18
3.	Building Permits Issued for New Homes in the City of Palmdale	5-22
4.	Characteristics of On-site Faults or Lineations Outside the San Andreas, Little Rock and Nadeau Fault Zone	5-31
5.	Significant Recorded Earthquakes in the Palmdale Area	5-36
6.	Modified Mercalli Intensity Scale of 1931 (1956 version)	5-37
7.	Sensitive Species Considered for City Ranch Specific Plan	5-91
8.	Level of Service Criteria	5-116
9.	Daily Roadway Capacity Estimates	5-118
10.	Current Daily Volume-to-Capacity Ratio and Level of Service Summary	5-120
11.	Existing Intersection Lane Geometrics	5-122
12.	Current Peak Hour ICU and LOS Summary	5-123
13.	Project-Related Unadjusted Trip Generation	5-129
14.	Adjusted Trip Generation Forecast	5-131
15.	Year 2010 Daily Traffic Volumes and Levels of Service	5-134
16.	Year 2010 ICU and LOS Summary	5-139
17.	Year 2010 Traffic Volume Projections	5-140
18.	Forecast Year 2010 Land Use	5-149
19.	Description of Selected Air Contaminants and Emission Comparisons	5-158
20.	Ambient Air Quality Standards	5-160
21.	Episodic Criteria	5-162
22.	Measured Ambient Air Quality Lancaster Monitoring Site 1985-1988	5-164
23.	Estimated Grading and Site Preparation Vehicle Emissions	5-168
24.	Project Generated and Estimated Buildout Emissions	5-169
25.	Cumulative Plus Project Estimated Emissions	5-174
26.	Existing Exterior Noise Exposure Levels Adjacent to Nearby Roadways	5-179
27.	Year 2000 Plus Project Exterior Noise Exposure Levels Adjacent to Area Roadways	5-183
28.	Proposed Project a Cumulative Estimated Daily Energy Use	5-213
29.	Proposed Project and Cumulative Daily Electrical Usage	5-217
30.	Proposed Project and Cumulative Daily Gas Consumption	5-220
31.	Proposed Project and Cumulative Daily Water Usage	5-224
32.	Proposed Project and Cumulative Sewage Generation	5-235

LIST OF TABLES (Cont.)

Table		Page
33.	Proposed Project and Cumulative Solid Waste Generation	5-240
34.	Proposed Project and Cumulative Sheriff's Officers to Population Ratios	5-251
35.	Proposed Project and Cumulative Student Generation	5-267
36.	City Park Space Requirements for the Proposed Project	5-278
37.	Archaeological Sites and Isolated Finds Found on the Project Site	5-288
38.	Comparison of Proposed Project and Alternatives	9-2

SUMMARY

S.1 Project Description

The proposed project consists of the development of the 1985-acre project site under a Specific Plan that would result in the construction of 5,200 dwelling units, 260,000 square feet of commercial space, and a 216-acre golf course with sites set aside for four elementary schools, five parks and a fire station. Approximately 404 acres of the project site would be set aside as natural open space.

S.2 Project Location

The project site is located in an unincorporated portion of the Antelope Valley area of Los Angeles County contiguous to the City of Palmdale approximately two miles west of the Antelope Valley Freeway (SR-14) along the southern edge of Elizabeth Lake Road, south of the intersection with 25th Street West.

S.3 Analysis of Environmental Issues

The following environmental issues were assessed in the EIR. The impacts associated with these issues are listed below:

LAND USE

Project Impacts

Development of the proposed project would transform the existing undeveloped site to a developed suburban site with up to 5,200 residential dwelling units (at a 2.62 units per gross acre density) comprised of a mix of single-family, townhouse and condominium units, along with 260,000 square feet of neighborhood commercial space, a golf course and clubhouse, hillside natural open space uses, and sites for four elementary schools, six public parks, and a fire station. Proposed uses would be compatible with other residential and mixed-used projects proposed in the project vicinity. Development of the proposed project would pose a potential land use conflict with regard to proximity of the proposed Antelope Valley Public Landfill expansion to the east.

Development of the proposed project would require the following approvals with regard to land use controls:

- The project site will need to be annexed into the City of Palmdale jurisdictional area. Annexation will include amending the City's sphere of influence boundary to include the entire project site.

- A General Plan Amendment will be necessary to formally incorporate the Specific Plan land use designations into General Plan Land Use Element.

- In order to establish site zoning, the project site will need to be prezoned to S (Specific Plan) with an overall limit of 5,200 permitted residential units.

- The project site will need to be subdivided into 38 planning area parcels.

- Certain uses within the Specific Plan (e.g., townhome and condo, recreational, commercial and community facilities) may also require Conditional Use Permits as delineated in the development regulations of the Specific Plan.

- Certain elements of the Specific Plan may require Site Plan Review.

- The Specific Plan will need to be adopted by City Council Ordinance.

- Amendments to the Specific Plan would require adoption by ordinance.

Without these approvals, project development would constitute a significant impact with regard to land use.

In addition to the required approvals listed above, the following actions may also be required as part of the permitting and approval process for the proposed project.

- California Department of Fish and Game Stream or Lake Alteration Agreement (per Section 1603 of the State Fish and Game Code) for alterations to the Anaverde and Amargosa Creeks.

- Army Corps of Engineers Section 404 Permit for the discharge of fill material into waters of the United States pursuant to the Clean Water Act of 1977, as amended, for any improvements made in the alkali meadow/transmontaine alkali marsh portions of Planning Area 13 south of the proposed City Ranch Road alignment and north of the California Aqueduct, designated to be within the jurisdiction of the Corps. (At a minimum, lost wetland acreage will be replaced in kind on a one-to-one acre basis.)

Mitigation Measures

Implementation of the following measures would reduce significant adverse project-related land use impacts to a level of "not significant":

- Obtain required land use approvals.

- The annexation process and time frame for annexation shall conform to the City of Palmdale and Los Angeles County Local Agency Formation Commission (LAFCO) provisions.

- The proposed Specific Plan will comply with the State Specific Plan and Municipal Code requirements (California Government Code, Title 7, Division 1, Chapter 3, Article 8, Sections 65450 through 65457 and City of Palmdale Specific Plan Guidelines).

- The proposed project shall comply with the site specific zoning and subdivision standards contained in the City Ranch Specific Plan and applicable City of Palmdale Zoning ordinances.

- The applicant shall cause to be prepared an annual monitoring report. The report shall evaluate compliance with the design guidelines and development standards of the City Ranch Specific Plan and the mitigation measures of the City Ranch Specific Plan Final EIR. The report shall be submitted to the Planning Director the first quarter of each year through the buildout of the project. In addition, aerial photos of the active construction areas of the project site will be taken and submitted to the Planning Director on a monthly basis during the construction process. The aerial photos shall be of a scale approved by the Public Works Department. Monitoring and verification of compliance with adopted Specific Plan development standards shall also be performed prior to subsequent approvals to determine if the proposed measures are achieving their intended purpose. Future discretionary approvals may include additional conditions based upon City staff review of the Annual Monitoring Report.

Unavoidable Adverse Impacts

Following implementation of the recommended mitigation measures, project impacts regarding land use would not be significant.

POPULATION

Project Impacts

Development of the proposed project would add approximately 14,040 persons to the project site. This population would be expected to create a proportional increase in demand for public services including schools, utilities, and health and social services. The proposed project would also create job opportunities. Total project-generated employment opportunities would number about 1,093 jobs. In addition, project development could indirectly create an impetus for increased employment activity in the Palmdale area. Because the City of Palmdale is planning for substantial population increase, the project's population increase is not considered significant. The population generated by this project will, however, contribute to cumulative vehicular traffic generation and the resultant secondary adverse air quality and noise impacts. (See discussions of noise and air quality impacts.)

Mitigation Measures

Mitigation Identified for Air Quality, Noise, Traffic and Public Services, are described in Sections 5.9, 5.10, 5.8, and 5.13 through 5.24 of this report. These mitigation measures address the significant population growth impacts.

Unavoidable Adverse Impacts

None.

HOUSING

Project Impacts

The proposed project would provide a range of housing types. The additional housing provided by the proposed project would increase the City's 1991 housing stock by 19 %. The jobs to housing ratio of the proposed project is 0.17. Thus, this project would continue the existing development trend in the area (housing intensive with few local job opportunities) and would not markedly support SCAG's goal of becoming more "jobs rich." Development of this project would further exacerbate the imbalance of jobs and housing in the area, thus encouraging longer trip lengths between home and the work place. In this context, the increased housing resulting from development of the proposed project can be considered significant impact.

Mitigation Measures

To mitigate the secondary impacts of the jobs/housing imbalance, the applicant shall implement the traffic and air quality mitigation measures listed in Sections 5.8 and 5.9 of this EIR.

Unavoidable Adverse Impacts

Development of the proposed project would contribute additional housing to an area which is already rich in housing but poor in employment opportunities. In the long run, additional housing construction in the area would provide a local workforce base which may serve to attract large employers to the Palmdale area. However, even after implementation of the recommended mitigation measures, the proposed project's "housing rich" JHR cannot be fully mitigated and remains a significant unavoidable adverse impact.

EARTH (GEOLOGY)

Project Impacts

Development of the project site would expose residents and users of the project site to geologic hazards associated with faulting, seismic shaking, liquefaction, seismic settlement, seismic ground failure and landslides. These potential impacts are considered significant.

Mitigation Measures

Implementation of the following measures would reduce impacts related to geologic hazards:

Surface Fault Rupture

- No structures intended for human habitation as previously defined shall be constructed in Restricted Use Zones I, II or III. Further specific fault hazard studies may reveal the existence of additional buildable areas within previously identified Restricted Use Zone areas.

- Special foundations have been recommended for select areas of the site adjacent to defined Restricted Use Zones (Figure 27 of the EIR). Special foundations should consist of more heavily reinforced foundations and concrete slabs. Actual design of the foundations should be determined by the project structural engineer as approved by the City Building and Safety Department.

- Each deed or other conveyance of Real Property shall include the following statement: "Portions of the City Ranch Specific Plan area are traversed by major traces of the San Andreas Rift Zone, a geologic feature capable of producing a magnitude 8.3 earthquake. The active fault zone has been identified by extensive site specific testing and analysis. All buildings are prohibited by the Specific Plan from being constructed across the trace of an active fault throughout the Specific Plan area. Due to the proximity of portions of the property to the San Andreas Fault, there is a higher risk of experiencing surface fault rupture than other locations not adjacent to an active fault. An active fault is any fault that has been determined to have experienced movement within the last eleven thousand (11,000) years." Additionally, where applicable, each disclosure statement and deed record shall contain language which denotes the possibility of building restrictions on residential additions for human occupancy on those parcels which are located in either the Special Seismic Foundation or Seismic Setback Zones.

Seismic Shaking

- Develop site specific earthquake response spectra for critical facilities such as water tanks, schools and the fire station which consider effects of ground shaking associated with events in the San Andreas Rift Zone. These reports are intended to provide specific engineering design criteria related to structural design and selection of building materials.

- All structures on the project site shall be designed in accordance with at least the minimum code standards for Seismic Zone 4 as described in the Los Angeles County Building Code.

- Structural and foundation designs, detailed drawings and specifications shall be incorporated into architect designs and construction plans. Specifications for the construction plans may include soil improvements or other remedial measures.

- The project geotechnical consultant shall perform grading observation and testing to confirm adherence to specifications and recommendations, and shall certify that all grading complies with the provisions of all approved plans and specifications, pursuant to the Los Angeles County Uniform Building Code (U.B.C.).

Liquefaction and Seismic Settlement

- A liquefaction study of the site shall include the following:

  - Subsurface exploration (by borings) to depths of thirty to forty feet below existing native soil grades in areas of known shallow groundwater. Relatively undisturbed soil samples should be obtained from the borings for determination of soil density and grain-size analysis. (A sufficient number of borings should be drilled to obtain a reasonable amount of knowledge relative to the soil conditions and depths to groundwater.)

- Testing to determine engineering characteristics of the soil shall include the following:

  - Soil sampling blowcounts, soil density measurements, and grain-size analysis to determine the susceptibility of the soil in shallow groundwater areas to liquefaction. Recommendations for remedial grading or foundation design shall be made for areas in which it is determined that liquefaction is a significant hazard. Typical recommendations may include deeper foundations, densification of the susceptible soils, or construction of subdrains.

- Tests and observations shall be performed by the project geotechnical consultant during grading operations to assure adherence to recommendations in identifie liquefaction hazard areas, and shall certify that all grading complies with t.

provisions of all approved plans and specifications pursuant to the Los Angeles County U.B.C.

Landslides

- Any hillside areas of the property where planned grading would result in artificial slopes greater than ten feet in height shall be evaluated specifically relative to slope stability by preparing the following geologic and geotechnical engineering studies:

  - Detailed geologic mapping of surface features in the areas of the proposed cut slopes.

  - Subsurface exploration with backhoe test pits and trenches to expose the shallow geologic conditions in and around the proposed graded areas.

  - Deep subsurface exploration with borings including small diameter auger borings or large diameter bucket borings at the specific cut slope locations. (It is suggested that the subsurface exploration be extended to depths at least equal to, and ideally greater than, the proposed depths of grading.)

  - Laboratory tests on the soils and rocks collected from the exploration programs for determination of density, moisture content, shear strength, and compaction characteristics.

  - Detailed engineering analyses utilizing the data obtained from the field exploration and laboratory testing programs relative to stability of the existing and planned graded slopes. Recommendations shall be provided for remedial grading to repair or replace any potential unstable slopes.

- The findings and recommendations of the Slope Stability Study shall be incorporated into construction plans and site grading activities, and a slope maintenance plan. Grading, slope maintenance, and construction plans shall be reviewed and approved by the City Engineer.

- The project geotechnical consultant shall be responsible to perform confirmatory tests and observations during grading to assure that the geotechnical recommendations are being followed and shall certify that all grading complies with the provisions of all approved plans and specifications, pursuant to the Los Angeles County U.B.C.

- Recommendations for slope planting and irrigation shall be prepared by a qualified landscape architect and reviewed by the City Planning Department and by the City Engineer. Approved plans by the City Engineer will be required prior to approval of a final map by Engineering.

- Temporary erosion control measures shall be employed as follows:

  - The surface of all slopes more than three (3) feet in vertical height shall be covered with North American Green S 150 or approved erosion control blankets or application of an approved latex soil binder included in a hydroseed mix designed for germinating with natural rainfall. This would consist of slope stabilizing, low water consuming grasses and ground covers. Installation shall conform to all manufacturer's specifications.

  - Erosion mitigation measures shall be performed to the satisfaction of the City of Palmdale Landscape Architect prior to the acceptance of rough grading.

- Permanent erosion control measures shall be employed as follows:

  - The surface of all slopes more than three (3) feet in vertical height shall be covered with North American Green S 150 approved equal erosion control blankets or be permanently landscaped and irrigated per approved landscape plans, and have obtained 80% coverage of groundwater. Installation shall conform to manufacturer's specifications.

  - The surface of all slopes more than three (3) feet in vertical height shall be protected against damage from erosion by planting with groundcover plants. Slopes exceeding fifteen (15) feet in vertical height shall also be planted with shrubs at not to exceed 10 feet on centers; or a combination of shrubs and trees at equivalent spacing, in addition to the groundcover plants.

- Planting need not be provided for cut slopes which are rocky in character and not subject to damage by erosion and any slopes protected against erosion damage by other methods when such methods have been specifically recommended by a soils engineer, engineering geologist or equivalent authority, and found to offer erosion protection equal to that provided by the planting specified in this section.

- All required landscaping and irrigation shall conform to the City of Palmdale's Slope Erosion Control Landscaping Standards.

- All planting and irrigation shall be installed to the satisfaction of the City of Palmdale Landscape Architect prior to the acceptance of final grading.

- All slope banks less than 30 feet in height within single-family residential lots shall be maintained by individual homeowners enforced through deed restrictions. Slopes in common open space areas of multi-family and attached single-family unit planning areas and slopes greater than 30 feet high in rear yards of private residential lots shall be maintained by homeowners associations. Slopes in landscape easements along public rights-of-way shall be maintained by a special City maintenance district. Slopes in park areas shall be maintained by the City. Where maintenance is to be provided by a maintenance district c

homeowner's association, said area shall have an easement recorded over it for access and maintenance purposes.

- Slope plantings and irrigation systems shall be maintained.

- Berms, swales or devices shall be provided at the top of cut or fill slopes to prevent surface waters from overflowing onto and damaging the face of the slope. Gutters or other special drainage controls shall be provided where the proximity of runoff from buildings or other structures is such as to pose a potential hazard to slope integrity.

- Manufactured down slopes to property lines shall be prohibited except for corner lot conditions. Where walls occur at the tops of slopes, access shall be provided to the homeowner or designated maintenance party to permit maintenance of slopes and landscaping.

- The drainage outlets shall be periodically inspected and cleaned of silt and debris.

- In accordance with California Department of Real Estate disclosure format and procedures, all potential buyers of residential lots containing slopebanks greater than 30 feet in height shall be notified of the condition.

Soils

- Soils engineering recommendations listed on pages 40-63 of the May, 1989 Buena Engineering report entitled "Preliminary Engineering Geotechnical Report, City Ranch Property" (Appendix D of the EIR) shall be strictly followed.

- Reshaping of the natural terrain to permit access and construction of facilities such as water tank sites, utility lines and easements, service roads, fire access, etc., shall be kept to a minimum in areas of greater than 25% slope.

- The geotechnical consultant shall control construction activities through confirmatory observations and testing and quality control procedures. Special attention must be given to the hydroconsolidation issue and specific plans for treating or removing the susceptible soils. Present recommendations appear adequate but may require reassessment depending on location specific conditions.

- For areas within "medium" or higher soil expansion potential (refer to Figure 24 of the EIR), post-tensioned foundations shall be required.

Seismic Ground Failure

- Prohibit construction of habitable structures in Restricted Use Zone I, and in Restricted Use Zones II and III, conduct in-grading inspections and identify

precautionary measures (e.g., enhance foundations, adjust building location slightly) where trench exposures show evidence of soil filled cracks alon lineaments or buried geologic contacts.

Flooding Potential

- Construct flood control channels along the main washes and maintain drainage diversion devices locally (e.g., under roads, engineered fills and along the Aqueduct).

- For the Aqueduct embankment failure event, construct protective berms to the elevation sufficient to control the design flooding event specified by the State for this area. In addition, the structures shall be elevated above the flooding levels by increasing the height of fills.

Groundwater

- Provisions shall be made for adequate drainage of the site both during construction and operational phases of the project. To avoid problems associated with rising groundwater levels in Planning Area 15, subsurface drainage (for example, gravel drains, herring bone drains or french drains) would be required.

- If required during construction, a dewatering or drainage diversion program shall be developed and implemented subject to review by the County of Lc Angeles Department of Public Works and/or the City of Palmdale as required by the City Engineer.

Unavoidable Adverse Impacts

Implementation of the recommended mitigation measures would reduce adverse geologic impacts, however, they would not eliminate all the significant impacts associated with geologic hazards. Geologic impacts are therefore considered unavoidable adverse impacts.

HYDROLOGY

Project Impacts

As part of the grading plan for the proposed project, building pads and roadways in areas situated within the existing 100-year floodplain of the Anaverde Creek will be raised above the 100-year floodzone and drainage will be channelized in these areas thereby eliminating 100-year flood hazards from the project site. However, following project development, portions of Planning Areas 2, 4, 9, 13 and 22 would be subject to flooding hazards from failure of the California Aqueduct. Any structures built in impacted portions of these park or golf course areas would be

damaged by flooding if an Aqueduct failure occurred. Of particular concern is the location of the golf course clubhouse. This is considered a significant impact.

Following project development, storm runoff for a 50-year storm event would increase by 9% over existing conditions A series of drainage improvements including closed conduits, open channels, earthen swales, debris basins, and flood control basins would be needed to adequately handle post-development runoff.

Post-development runoff could pick up and transport urban pollutants. Of particular concern is low flow non-storm runoff in which water volumes are low and pollutant concentrations high. The low flow non-storm runoff poses a danger to the wetland habitat which is in the path of existing and future runoff flows.

Mitigation Measures

The following mitigation measures would eliminate significant flooding/surface drainage impacts:

- Habitable structures and public facilities including the golf course clubhouse shall be constructed above the flood plain level determined by the 50-year Los Angeles County Capital Event. Water will be conveyed off-site via proposed storm drainage facilities.

- Building pads and roadways in areas which would be flooded in the event of a failure of the California Aqueduct (**Figure 31** of the EIR) shall be raised above the anticipated floodwater levels.

- All storm drainage improvements depicted on **Figure 32** of the EIR shall be implemented as part of the proposed project. This includes storm drains, channels, and detention and debris basins.

- Low flow containment system will need to be constructed to accommodate and evaporate urban runoff flows during the dry seasons to prevent deterioration of water quality in wetland areas and streams. (See **Figure 34** of the EIR for a conceptual design of the kind of low flow containment system.

- The proposed golf course will need to have a separate runoff collection system along City Ranch Road to direct flows away from the wetland area. This collection system shall be subject to the applicable laws for point source discharge of the Regional Water Quality Control Board.

- The applicant shall submit an Erosion Control Plan for each development application for review and approval by the City Engineer prior to issuance of grading permits. In addition, the applicant will demonstrate each development application complies with the provisions of any National Pollution Discharge Elimination System permit requirements that may be required by other

regulatory agencies. At the time of submittal of a development application for the golf course, the applicant shall provide for the controlled use of pesticides and fertilizers on the golf course by limiting the frequency and type of fertilizers/pesticides used and requiring application by qualified persons.

- Modifications to natural drainage courses shall conform to City, County, State, and Federal Law.

- Fencing shall be installed along constructed drainage channels, as appropriate, for safety purposes.

- Modification of drainage patterns will not be permitted across property lines without written consent of affected property owners.

- Final Subdivision Maps shall be accompanied by Drainage Improvement Plans prepared by a licensed Civil Engineer and approved by the City Engineer.

- In accordance with the California Department of Real Estate disclosure format and procedures, all potential purchasers of real property which is shown within the FEMA 100-year flood plain on the Flood Insurance Rate Maps most recently circulated by FEMA, shall be notified of the situation, regardless of whether the actual flood hazard has been abated by other methods. Also, the applicant shall contact FEMA as soon as possible after eliminating areas from the 100-year flood hazard zone to request modifications of the Flood Insurance Rate Maps. The applicant shall then diligently pursue revisions of the maps until the 100 year flood hazard zone as modified by the development is depicted on them.

Unavoidable Adverse Impacts

With the adoption of the proposed storm drainage plans and mitigation measures indicated, project impacts with regard to hydrology would not be significant.

BIOLOGY

Project Impacts

Construction of the proposed project would result in direct elimination of plant and wildlife habitat and consequently the loss of biological resources within areas of the project site where residential lots, streets, the golf course, commercial development, school, and community parks are intended. Two sensitive plants known to occur on the site, Peirson's morning glory and the short-joint beavertail cactus, would be disturbed as a result of project development. Grading to construct City Ranch Road may impact the east alkali meadow/transmontane alkali marsh habitat. As a result of project development, a large portion of the area of project site containing the Joshua tree woodland will be developed as a golf course (Planning Areas 4 and 13). Another portion of the Joshua tree woodland would be developed as a single-family residential area (Planning Area 8). The rest would be converted to community park space (Planning Areas 1 and 9) or would remain as natural open space (Planning Areas 2 and 7). The California juniper seedling area would be eliminated.

Development of the proposed project would result in the potential for impaired wildlife movements in an east-west direction along the foothills of the Sierra

Pelona and the San Andreas Rift Zone. Construction of the proposed project would result in a reduction of habitat for five sensitive animal species that utilize the project site. Loss of this sensitive species habitat would adversely impact these territorial species which rely upon large expanses of land for their home ranges. Project development would result in the loss of part of the raptor foraging habitat in the region which would directly affect the raptor species known to be on-site: sharp-shinned hawk, golden eagle and prairie falcon. A trapping effort to locate the Mojave ground squirrel indicated that it is not present on the project site.

Overall, implementation of the proposed project would result in fragmentation of the existing habitat of plants and animals into smaller discontinuous parcels. After a few years, the species diversity on the remaining fragments would be expected to decline. Impacts with regard to biological resources are considered significant. The preservation of approximately 404 acres of the project site as natural open space would allow maintenance of a portion of the existing biological habitat, and provide an area into which plants dislocated elsewhere on the project site can be transplanted.

Mitigation Measures

Implementation of the following measures would reduce project-related impacts to biological resources to an acceptable level:

Disturbance to or Loss of Sensitive Flora and Fauna

- Individuals of short-jointed beavertail in the impacted areas of Planning Areas 17 and 31 shall be transplanted into Planning Area 32. Similarly, those individuals impacted in Planning Areas 8 and 13 shall be transplanted into Planning Area 7. A written plan for such relocation shall be prepared and shall be subject to approval by the City Planning Department (which may require independent review) prior to site grading. The plan shall be prepared and implemented by a qualified horticulturist/botanist/restoration biologist, with thorough familiarity of the Antelope Valley region and demonstrated experience in transplantation of cacti.

- A portion of Planning Area 31 shall be transferred to Planning Area 32 in order to preserve approximately 40% of the known occupied extent of Peirson's morning-glory located therein. The boundaries of Planning Areas 31 and 32 shall be modified as shown on Figure 38 of the EIR.

- A written plan for seed collection from impacted individuals of Peirson's morning-glory located in the portion of Planning Area 31 which shall be disturbed, for subsequent redistribution into Planning Area 32 shall be subject to approval by the City Planning Department (may require independent review) prior to site grading. The plan shall be prepared and implemented by a qualified

botanist/horticulturist/restoration biologist, with thorough familiarity with the Antelope Valley region.

- The applicant shall consult with the Department of Fish and Game in order that potential impacts to Mohave ground squirrel may be addressed. If an endangered species permit is warranted, the permit must be completed and mitigation measures fully dedicated before issuance of a grading permit. Therefore, the consultation with CDFG will occur prior to issuance of any grading permit for the proposed project.

Alkali Meadows/Transmontane Alkali Marsh

- The land in Planning Area 13 south of the City Ranch Road alignment and north of the California Aqueduct property shall be set aside and designated as natural open space to preserve the east alkali meadow and transmontaine alkali marsh habitat.

- The City Ranch Road alignment shall avoid the wetland areas. Landscaping, grading, and irrigation along the south side of the segment of City Ranch Road adjacent to the wetlands shall be kept to a minimum.

- If avoidance of the alkali meadow/transmontane alkali marsh is impossible, permits and agreements under Section 404 of the Clean Water Act and under 1603 of the State Fish and Game Code will be required from the U.S. Army Corps of Engineers and the California Department of Fish and Game, respectively. At a minimum, lost wetland acreage will be replaced in kind on a one-to-one acre basis. Also, a mitigation and monitoring plan subject to CDFG approval, will be required in the event of any loss of alkali meadow/transmontane marsh habitat.

- Provisions will be made to divert low-flow surface runoff from entering the east alkali meadow/transmontane alkali marsh habitat. (See Hydrology Section Mitigation Measures.)

Native Plant Landscaping

- Native species such as California juniper, Great Basin sagebrush, four-winged saltbush, holly-leaf cherry (*Prunus ilicifolia*), and big-berry manzanita, and trees such as Joshua tree, Fremont cottonwood (*Populus fremontii*) and California sycamore (*Platanus racemosa*) for landscaping purposes to the maximum extent feasible. Use of these species may encourage some local wildlife species to continue to utilize the area. The construction of a golf course on the site provides an opportunity for a great number of native plants, particularly trees, to be incorporated into the project site. In addition to the encouragement of continued wildlife use of the area, all of these plants are drought tolerant.

Joshua Trees and California Junipers

- The applicant shall comply with all City of Palmdale policies regarding the preservation or transplantation of Joshua trees and California junipers on the project site.

- Development of Planning Areas 4, 8 and 13 shall include the preservation relocation of Joshua trees such that approximately two trees per acre graded shall be preserved or transplanted into suitable natural open space areas or

undisturbed areas of the golf course. As a result of this measure, approximately 398 trees would be preserved in Planning Areas 4, 8 and 13.

- California juniper seedlings located in Planning Areas 1, 9 and 10 shall be relocated to natural open space areas of the project site under the guidance of a certified botanist.

Natural Open Space Maintenance

- To preserve the biological integrity of the natural open space areas, measures shall be implemented assuring that off-road vehicles, ornamental or non-indigenous landscaping, domestic animals (especially dogs), hunting or other discharge of firearms, livestock grazing, plant, animal or rock collecting, pedestrian, equestrian or bicycle use off marked trails or at night are excluded from natural open space areas. This shall be accomplished by signing and the construction of exclusionary walls or fences. Provisions shall be made to maintain open space areas.

Unavoidable Adverse Impacts

Implementation of the recommended mitigation measures would reduce project impacts on biological resources on the project site to an acceptable level.

TRANSPORTATION

Project Impacts

Development of the proposed project is expected to generate approximately 49,970 daily trip-ends, of which 38,310 would have either an origin or a destination off-site (external trips). If the proposed project-related traffic volumes and the estimated 5% annual growth rate assumed in the traffic analysis conducted for this project are distributed onto the roadway system prior to construction of the off-site master-planned roadway improvements, project-related traffic impacts would be considered significant.

Mitigation Measures

Implementation of the following mitigation measures would reduce significant circulation impacts associated with the proposed project to a level of "not significant":

- All roadways shall be built out by the applicant to City approved roadway cross-sections per **Figure 42** of the EIR.

- The proposed internal cross-sections and circulation layout shall be subject to review and approval of the City Traffic Engineer during the development review process to insure compliance with City access and design standards.

- Collector roadways which cross Avenue S shall be signalized. The applicant shall be required to contribute funds on a pro rata basis toward the purchase and installation of the aforementioned traffic signals as determined by the City Traffic Engineer.

- Landscaping and signage on-site shall be low and shall not interfere with sight distances at the site access points or at internal intersections. Street lights and sidewalks shall be provided in accordance with City standards.

- Prior to future development application approvals, the Applicant will be required to submit a Transportation Demand Management Plan and a Focused Traffic Study for review and approval by the Director of Planning and the Traffic Engineer, as appropriate, to determine the necessary improvements for impacts generated by that project. These plans shall be prepared in accordance with the Los Angeles County Transportation Commission's Congestion Management Plan and the City's transportation analysis guidelines, the City's transportation plan, and the Engineering Design Standards. Necessary improvements shall be determined by the City Traffic Engineer, and shall include, but not be limited to, all on-site and off-site road improvements to achieve a Level of Service D (peak period) or better with ultimate traffic projections. On the basis of this and other studies, the developer will improve or fund a pro rata share of improvements. The developer shall pay appropriate traffic impact fees in accordance with City Ordinance 825, and all other fees for facilities and services that may be in place at the time of issuance of certificates of occupancy.

- The applicant shall participate in the construction of a park-and-ride facility to be located on- or off-site at a location within the Palmdale Southwest Planning Area designated by the City of Palmdale as determined by the City Traffic Engineer.

- The project applicant shall pay applicable traffic impact fees or provide improvements pursuant to future agreements with the City of Palmdale in lieu of fees as required by City Ordinance or Resolution.

- If, as a result of project impacts, the level of service falls below either the standards set by the Los Angeles County Transportation Commission's Congestion Management Plan, or the policies set by the City's General Plan, the applicant shall implement improvements or services necessary to bring the roadway segment into compliance. The Final Draft CMP, dated August 1991, includes SR-14 and Route 138, and identifies Sierra Highway as roadway requiring additional study.

- The applicant shall be required to contribute a pro-rata share of the cost of extension of Avenue S to Tierra Subida as determined by the City of Palmdale Traffic Engineer.

- Improvements to the portion of City Ranch Road east of Bridge Road shall be financed by the applicant and/or surrounding property developers as determined by the City of Palmdale Traffic Engineer.

Unavoidable Adverse Impacts

None.

AIR QUALITY

Project Impacts

Short-term Impacts - Significant short-term air quality impacts would primarily occur as a result of fugitive dust emissions generated during grading and construction activities and diesel emissions generated by heavy-duty construction vehicles.

Long-term Impacts - Development of the proposed project would result in the generation of approximately 2,943 pounds of carbon monoxide (CO), 955 pounds of nitrogen oxides (NOx), 199 pounds of particulates and 244 pounds of reactive organic gases (ROG). These long-term project-related mobile and stationary emissions would exceed South Coast Air Quality Management District (SCAQMD) daily emissions threshold criteria for all of these contaminants. Project stationary emissions alone exceed SCAQMDs suggested threshold for NOx only, while project mobile emissions exceed guidelines established for criteria air pollutants. Project-related air emissions are not expected to be reduced to non-significant levels in the long term. Odor and dust problems from the adjacent Antelope Valley Public Landfill to the east, would not be anticipated to create significant impacts at the project site. The proposed project would not be in conformance with SCAQMD's Air Quality Management Plan (AQMP) and therefore would be considered to have a significant adverse impact on air quality.

Mitigation Measures

In addition to the mitigation measures listed under Section 5.8, Traffic, 5.13 Energy, and 5.29 Antelope Valley Public Landfill, implementation of the following mitigation measures would reduce short-term construction-related impacts to a level of "not significant":

- South Coast Air Quality Management District Rule 403 (Fugitive Dust) shall be adhered to, to ensure the clean up of construction-related dirt on approach routes to sites within the project site.

- Building construction shall comply with energy use guidelines in Title 24 of the California Code of Regulations.

- Adequate watering techniques shall be employed to reduce by 50% construction-generated dust emissions.

- Diesel-powered construction equipment shall be preferred over gasoline-powered equipment to reduce exhaust emissions and reduce fuel evaporation and crankcase hydrocarbon emissions. Low sulfur diesel fuels shall be preferred in accordance with SCAQMD's Rule 431.

- Construction equipment shall be properly maintained and serviced to minimize exhaust emissions.

- Construction activities shall be suspended on days when ozone levels are high.

- Operations that tend to create fugitive dust shall be suspended during Stage 2 smog alerts in the project area.

- Grading activity, which creates dusty conditions, shall be suspended when, in the opinion of the City Engineer, local winds exceed acceptable levels. To validate wind velocities and/or rainfall amounts, the installation of a minimum of two remote weather stations in the vicinity of the project site's active grading areas will be required at locations determined by the City Engineer.

The following mitigation measures would reduce long-term operational impacts:

- The applicant shall implement all applicable air quality control measures listed in SCAQMD's 1989 AQMP as may be subsequently amended.

- Energy efficient street and parking lot lighting shall be required on-site to minimize power plant emissions.

- Pedestrian walkways shall be provided throughout the project site in order to encourage walking as an integral mode of transportation between school and residences.

- Bus turnouts shall be provided along major arterials as required by the City Traffic Engineer in order to facilitate use of public transit.

- Traffic signals installed in conjunction with development of the proposed project will be synchronized with other signals in the vicinity.

- The applicant shall participate in appropriate future trip reduction programs adopted by the City for future development applications.

- The project applicant shall submit a Transportation Demand Management Plan that will 1) create a City Ranch Transportation Management Association; 2) investigate the feasibility of developing a telecommuting center on site; and, 3) start a vanpool demonstration program for City Ranch residents. The plan will be submitted to the Planning Director prior to issuance of any certificates of occupancy for the proposed project.

- The project shall comply with all SCAQMD Rules and Regulations, including those pertaining to paving materials and architectural coatings. Specifically, use nonsolvent based, high-solid, or water based coating on buildings where feasible.

- In order to provide additional reductions in air emissions, the following list of mitigation measures was provided by the SCAQMD. Because these measures cannot be applied to all development applications that may be submitted for the City Ranch Specific Plan, each development application will be reviewed and those measures from the list which are deemed appropriate by the Planning Director will be applied to that development application.

  Minimize Construction Activity Emissions:

  - Schedule construct activity during off-peak hours and require a phased-schedule of construction to even out emissions peaks.
  - Remove silt by paving construction roads, sweeping streets, and washing trucks leaving construction site.
  - Suspend grading operations during first and second stage smog alerts.
  - Maintain construction equipment engines by keeping them tuned.
  - Use low-sulfur fuel for equipment.
  - Use existing power sources; avoid using temporary power generation.

  Reduce Construction-Related Traffic Congestion:

  - Provide rideshare and transit incentives for construction personnel.
  - Configure construction parking to minimize traffic interferences.
  - Minimize obstruction of through traffic lanes.
  - Provide a flagperson to guide traffic properly.
  - Schedule operations affecting traffic for off-peak hours.

  Limit Emissions from Vehicle Trips:

  - Establish telecommuting programs, alternative work schedules, and satellite work centers.
  - Schedule goods movements for off-peak traffic hours.
  - Provide local shuttle and regional transit systems, transit shelter, bicycle lanes, storage areas and amenities, and ensure efficient parking management.

- Provide dedicated turn lanes as appropriate.
- Work with cities/developers/citizens in the region to implement TDM goals.
- Ensure streamlined traffic synchronization.
- Provide park-and-ride facilities.
- Implement parking management at commercial facilities and other places attracting traffic.
- Provide preferential parking to high occupancy vehicles and shuttle services; and charge parking lot fees on low occupancy vehicles.
- Provide temporary roadway controls at peak-hours, such as one-way streets; and install directional traffic signs; and synchronize traffic signals to relieve congestion on surrounding streets; and manage street intersections to improve level of service.

Maximize Energy Conservation:

- Implement energy conservation measures beyond state and local requirements.
- Include energy costs in capital expenditure analysis.
- Landscape with native drought-resistant species to reduce water consumption and to provide passive solar benefits.
- Improve thermal integrity of buildings, and reduce thermal load with automated time clocks or occupant sensors.
- Introduce glazed windows, wall insulation, and efficient ventilation methods; install window-systems to reduce thermal gain and loss.
- Introduce energy efficient heating and other appliances.
- Incorporate appropriate passive solar design.
- Ensure sealing of all buildings.
- Control mechanical systems, or equipment with time clocks or computer systems.
- Implement waste separation and recycling programs."

Limit Emissions from Architectural Coatings and Asphalt Usage:

- Nonsolvent-based coatings should be used on buildings. Solvent-based coatings, if used, should minimize solvent emissions.
- Use of high-solid or water-based coatings should be encouraged.

Unavoidable Adverse Impacts

Development of the proposed project would add emissions to the already poor regional air quality. Implementation of the recommended mitigation measures would reduce emissions. However, because the Antelope Valley has been classified by the EPA as a non-attainment area under the federal Clean Air Act, operational emissions will add to an already critically polluted air basin. Therefore, the proposed project is anticipated to create unavoidable adverse impacts with regard to air quality.

NOISE

Project Impacts

Short-term Impacts - Project-related grading and construction activities would result in increased noise levels in areas adjacent to area access routes and on the project site. Construction and grading noise impacts are considered significant short-term impacts.

Long-term Impacts - Operation of the proposed project would result in increased noise levels on-site and in the surrounding area. This increase would primarily result from increased vehicular traffic and human-related activities on the site. The proposed project would generate an audible noise increase (greater than 3.0 decibels) along 25th Street West, 20th Street West, Elizabeth Lake Road (east and west of 25th Street West) and Avenue S. A potentially audible noise increase (greater than 1.0 dB(A)) could occur along Tierra Subida Avenue (north of Barrel Springs Road), Elizabeth Lake Road, (west of 10th Street West), Rayburn Road and Barrel Springs Road. As these roadways are master planned as either secondary or major highways, future off-site adjacent uses to these roadways must anticipate increased noise levels and are required, through the planning and design process, to mitigate current and future noise to acceptable levels. Significant noise level increases would result on Elizabeth Lake Road, Bridge Road and Avenue S (south of Elizabeth Lake Road). Unless site design measures are incorporated as part of the proposed project or attached as conditions of approval, significant on-site noise impacts could occur as a result of ultimate motor vehicle volumes on Avenue S and Elizabeth Lake Road and City Ranch Road.

Mitigation Measures

The following measures are proposed to reduce noise impacts during grading and construction to a level of "not significant":

- Construction activities adjacent to residential areas shall take place only between the hours of 6:30 a.m. and 8:00 p.m., Monday through Saturday, as specified by the City of Palmdale Noise Ordinance.

- Grading and construction equipment shall be stored at the project site.

- Repair of construction vehicles on-site shall be restricted to the same working hours stated above, 6:30 a.m. to 8:00 p.m., Monday through Saturday.

- All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers.

- Stationary equipment shall be placed such that emitted noise is directed away from sensitive noise receivers.

- Temporary noise attenuation barriers, such as walls and/or berms, shall be placed between construction areas and sensitive noise receivers.

The following site design measures are recommended to ensure that the ultimate noise exposure does not exceed 60 dB(A) CNEL in residential areas and 65 dB(A) CNEL at school sites to meet City of Palmdale normally acceptable noise standards. These measures would reduce operational noise impacts to a level of not significant:

- Reduction of intrusive noise levels in residential and school areas shall be accomplished through the incorporation of design measures or structural measures which will reduce noise levels to acceptable levels within the living or recreational portions (as defined by City) of any lot. The measures that may be utilized to reduce no impacts include, but are not limited to, placement of parking structures in such a manner as to act as a buffer, increasing the setbacks along the roadway, creation of landscaped berms, or construction of other barriers such as walls. The acceptable noise level CNEL which will be applied to future projects will be that level which is in place, either by ordinance, resolution or General Plan policy, at the time that future development applications are deemed complete.

- Carports and parking areas in multi-family residential areas shall be located adjacent to the heavily traveled roadways to create building setbacks and shield more sensitive uses.

- Multi-family structures shall be oriented away from adjacent roadways to insure that room arrangements, window size and placement, and balcony, roof and courtyard design minimize intrusive noise levels.

- Truck access, parking area design and air conditioning refrigeration units within commercial land uses shall be carefully designed and evaluated at more detailed levels of planning to minimize the potential for acoustic impacts to adjacent noise sensitive development.

- The design of the elementary schools shall locate administration buildings, noise-insulated structures (such as gymnasiums and auditoriums), locker facilities, parking areas and bus loading zones adjacent to roadways to buffer more sensitive uses such as classrooms and playgrounds.

Unavoidable Adverse Impacts

Provided the recommended mitigation measures are properly applied, construction and operation of the proposed project are not expected to create significant noise impacts on site.

AESTHETICS

Project Impacts

Development of the proposed project would transform the project site from an essentially undeveloped area to a largely suburban setting. The majority of the residential development would occur in the flatter portions of the project site along the Anaverde Valley. These areas would not be visible off-site. Following project development approximately 793 acres of the project site or more than 40% would supply visual open space opportunities by being developed as parks, golf course, open space, or natural open space. In addition, the school sites would also provide visual open space opportunities. Although the site would be substantially altered visually as a result of project development, areas of the project site that would be developed are not visually prominent. The ridgelines, the most prominent visual resources on the project site, would remain intact subsequent to project development. Therefore, in this respect, project impacts are not considered significant. However, as a result of project development, many areas of the project site would have views of the Antelope Valley Public Landfill located to the east. These views, if not properly shielded, can be considered offensive and therefore potentially significant.

Mitigation Measures

Implementation of the following mitigation measures would reduce the project's aesthetic impacts:

- All roadways within the project site shall be tree-lined and landscaped in accordance with City of Palmdale street design requirements and the streetscape guidelines provided in the Specific Plan.

- All new and relocated utility distribution lines shall be placed underground within developed areas.

- All storage, including cartons, containers or trash, shall be shielded from view within a building or area enclosed by a masonry wall not less than six (6) feet in height. No such area shall be located within fifty (50) feet of any residential area.

- Screening shall be required when the following abut residential uses:

  a) Loading areas;

  b) Visually obtrusive above-ground utility equipment and appurtenances;

  c) Antelope Valley Public Landfill

- A screen, as referred to above, may consist of two (2) of the following types:

  a) Walls: A wall shall consist of concrete, stone, brick, tile or similar type of solid masonry material a minimum of four (4) inches thick.

  b) Berms: A berm shall be constructed of earthen materials and it shall be landscaped.

  c) Fences, solid: A solid fence shall be constructed of masonry, wood or other materials a minimum thickness of two (2) inches and it shall form an opaque screen.

  d) Landscaping: Plant materials, when used as a screen, shall consist of densely planted evergreen plants.

- Screening established near intersections shall consider safe sight distances so that adequate visual conditions are maintained for pedestrians and drivers of motor vehicles.

- Rooftop mechanical equipment shall be fully screened from view.

- Landscaping, consisting of trees, shrubs, and/or ground cover, shall be installed and maintained subject to the following standards:

  a) Landscaping shall be required along all property lines abutting streets except where provided in landscape easements adjacent to rights-of-way. Minimum tree and shrub size shall be fifteen (15) gallon and spaced a minimum of 30 feet average.

  b) Landscaping shall be required along all property lines abutting residential uses.

  c) Planting shall be designed so as not to hinder sight distance at intersections.

d) Permanent irrigation facilities shall be provided for landscaped areas.

e) Landscaping shall be maintained by property owners in a neat, clean and healthy condition.

f) Areas of native vegetation within all open space and natural open space areas are exempted from the landscape standards identified above except they shall be maintained free from trash and debris. Fuel modification zones will be required where fire hazards warrant them.

- Residential structures shall be limited to 35 feet in height or two stories.

- The colors and textures of building materials shall blend with the landscape as set forth in Section VI, Design Guidelines of the City Ranch Specific Plan.

- All downdrains shall utilize colored concrete chosen to blend with the adjacent terrain. Downdrains shall be located in less visually prominent locations where practical. When this is not feasible, downdrains shall be aesthetically mitigated by the use of a combination of landscaping, rock, and screening, or may be diagonally angled down the slope when practical and when it will reduce the visual impact. These measures shall be designed to the satisfaction of the Director of Planning and City Engineer, and shall be reviewed for conformance at the Tentative Tract Map stage. Details of these conditions shall be indicated on the Tentative Tract Map.

- On-site water tanks shall be painted in earth tone colors.

- City Ranch Specific Plan grading standards shall be strictly adhered to, to avoid negative impacts with regard to hillside grading. The Specific Plan policies which govern grading design and may affect the aesthetics of the site are as follows:

  a) Major ridgelines shall be preserved. Specifically, the Sierra Pelona and Verde Ridge ridgelines shall be preserved in their existing states with ridgetop elevations retained at natural elevations.

  b) Large contiguous open spaces shall be preserved. Specifically, areas of natural slope above 45% which total over one-half acre in size and which are visible from off-site areas shall be preserved in their existing state. This condition occurs in Planning Areas 2, 7, 29 and 32.

  c) No construction shall be permitted in areas above 40% slope except for isolated pockets of steep slope which are not visually prominent, and only if required for reasons of health, safety, welfare, protection of property and for necessary public facilities. Isolated pockets of steep slope shall be defined as sloping areas up to 50 feet in height and up to 200 feet in horizontal length.

d) Grading design and site planning design shall consider the aesthetic impac of proposed slopes and structures as seen from off-site developed areas of the City of Palmdale, and shall employ measures to lessen the visual impacts to off-site areas if defined as sloping areas up to 50 feet in height and up to 200 feet in horizontal length.

e) Mass graded "mega pads" shall be prohibited. Design of residential subdivisions shall utilize grade breaks, curvilinear streets and smaller steps of grade change rather than single large slopes. The grading of the commercial site at Planning Area 3 may utilize a large graded pad design provided slope height does not exceed thirty (30) feet in height and provided the buildings are placed to provide nearly complete visual screening of slopes above twenty (20) feet in height.

f) Large manufactured slopes greater than three hundred feet in "visual length" shall be designed so as to simulate the curvature of a naturally shaped slope, or shall be blended into natural slopes by gradually adjusting the contours and slope orientation.

Unavoidable Adverse Impacts

As a result of implementation of the recommended mitigation measures, project impacts with regard to aesthetics will remain because implementation of the Ci Ranch Specific Plan will permanently transform the project site from its current undevelopment condition into a semi-urban environment. However, the ridgelines which are the most visually prominent features on the project site will be left intact.

LIGHT AND GLARE

Project Impacts

Development of the proposed project would result in the conversion of the night environment of the project site from that of a dark remote area to a lighted, suburbanized condition. Because development of the adjacent properties is anticipated to be concurrent with proposed project construction, project lighting impacts are not expected to be significant. However, if development of adjacent properties never occurs, development of the proposed project would cause significant impacts with regard to loss of existing nighttime darkness amenities. If surrounding property development occurs but only after proposed project development, temporary significant impacts would occur. South-facing windows of project site structures may create a source of glare. According to the streetscape plans for Avenue S and Bridge Road, a row of trees and dense landscaping would be planted in the parkway strip along the sides of these streets. This would reduce or site glare impacts for motorists. Because glare impacts would not create hazardc

conditions on surrounding roads and would not intrude on existing developments, glare impacts are not considered significant.

Mitigation Measures

While impacts are not considered significant with regard to light and glare, implementation of the following measures can reduce project-related light and glare impacts:

- All exterior lighting shall be designed and located to confine direct rays to the premises. A photometric lighting plan is required pursuant to Section 86.05 (9)(A)-(H) of the Palmdale Municipal Code.
- Maximum overall height of fixtures shall be not more than fourteen feet in, or adjacent to residential areas; and not more than twenty feet in non-residential areas.
- Fixtures shall possess sharp cut-off qualities at property lines.
- Low intensity downward focused street lamps shall be used in the southern portion of Planning Area 19A, the southern half of Planning Area 17, portions of Planning Area 28A above 15% grade and in all of Planning Area 31.
- No low pressure sodium lighting fixtures are allowed.
- Lights shall be shielded with internal silvering, external opaque reflectors or other comparable techniques.
- Flashing lights shall be prohibited.
- Lighting plans for athletic courts and fields shall be reviewed by the City of Palmdale Planning Department.
- Lighting intensity within commercial or multi-family planning areas shall be a minimum of one foot-candle, maintained.
- Where appropriate, landscaping shall be used to screen night lighting.

Unavoidable Adverse Impacts

The project will contribute to the cumulative loss of a dark nighttime sky which is considered an unavoidable adverse impact.

ENERGY

Project Impacts

Upon project completion, total energy demand for the proposed project would be approximately 973,000 million British Thermal Units (BTUs) daily. Energy impacts are not considered significant because the existing deliverable capacity for natural gas and electricity are adequate to supply the proposed project. In addition, almost unlimited solar energy is available at the project site for future use.

Mitigation Measures

While energy impacts are not considered significant, implementation of all energy conservation measures listed as mitigation measures in Sections 5.8 (Traffic), 5.9 (Air Quality), 5.14 (Electricity) and 5.15 (Natural Gas) of this report, and the following measures would reduce energy use at the project site:

- Energy efficient water heaters and space heating units, insulation, dual glazed windows and thermally efficient building materials shall be installed in all structures constructed on the project site.
- Structures and landscaping shall be situated to maximize solar access.
- Ventable windows shall be installed to maximize use of passive heating, cooling and air exchange.
- Restrictive water fixtures shall be installed as identified by the California Department of Water Resources.
- Encourage the placement of dwelling units to take full advantage of solar energy for natural heating and cooling in order to reduce the use of electricity and natural gas within the project area.

Unavoidable Adverse Impacts

None.

ELECTRICITY

Project Impacts

Development of the proposed City Ranch project would create an increased demand for approximately 99,975 kilowatt-hours of electricity daily. Southern California Edison (SCE) has determined that they have sufficient capacity to serve the proposed project. Therefore, proposed project impacts are not considered significant with regard to electricity use. The 12 kV distribution line crossing the southern portion of the project site may need to be realigned along Avenue S as a result of project development.

Mitigation Measures

Although impacts related to electricity use are not considered significant, implementation of the following measures would reduce electricity use:

- Installation of thermal insulation must meet or exceed the requirements of California Code of Regulations Title 24.
- Natural gas shall be used for space heating and cooking.
- Attic ventilation devices shall be installed.
- Windows and vents shall be used to provide room ventilation where possible.

With regard to the 12 kV line:

- Depending on project design, the 12 kV line crossing the southern portion of the project site may need to be removed or realigned. It shall be done so in accordance with SCE regulations.

Unavoidable Adverse Impacts

None.

NATURAL GAS

Project Impacts

Development of the proposed City Ranch project would require approximately 922,300 cubic feet of natural gas daily. The Southern California Gas Company has indicated that the proposed project can be served from the existing 4-inch main located one-quarter mile east of the project site along Elizabeth Lake Road at Foxholm Avenue without a significant impact on overall system quality, service to existing customers, or the environment. Extension of the main to the project site would be done and paid for by the Southern California Gas Company.

Mitigation Measures

Although the Southern California Gas Company has indicated that it would be able to supply the project's anticipated demand, the following mitigation measures are required to reduce natural gas consumption:

- Install thermal wall and ceiling insulations and double glazed windows that meet or exceed California Code of Regulations Title 24 insulation standards.
- Use pilotless ignition stoves, water heaters, dryers and heating/cooling units.
- Insulate gas water heaters with gas company approved insulated blankets.

Unavoidable Adverse Impacts

None.

WATER

Project Impacts

Estimated water consumption by the proposed project's combined uses is expected to be 5.22 million gallons of water per day. Approximately 1.25 million gallons per day of this amount would be required for irrigation. In order to supply and distribute the water necessary to support the proposed project's domestic, emergency and fire flow demands, the City Ranch property will need to be annexed into Los Angeles County Water Works District No. 34 (District 34) and water infrastructure extensions to and through the project site would be necessary. District 34 has indicated that they would be capable of delivering water necessary to serve the proposed project through existing and proposed supply facilities and irrigation water is available from an existing on-site non-potable water supply. However, without annexation into District 34 and the construction of necessary water infrastructure extensions, development of the proposed project would create significant impacts.

Mitigation Measures

Implementation of the following mitigation measures would reduce project impac. with regard to water to a level of "not significant":

- The City Ranch property shall be annexed into District 34.

- Following annexation into District 34, the applicant shall negotiate the provision of and financing for major infrastructure facilities (reservoir sites, transmission lines, pumping equipment, etc.) as part of a water system agreement with District 34.

- All water infrastructure extensions and improvements shall be constructed by the applicant as depicted on Figures 64 and 65 of the EIR and described in the Project Impacts subsection of the Water section of the EIR, and as required by Waterworks District #34.

Interior Water Consumption Reduction Measures:

- Install a pressure regulator on all water services and maintain a building water pressure of 40 pounds per square inch or less;

SOLID WASTE

Project Impacts

Development of the proposed project would generate an estimated 54,019 pounds of solid waste per day, plus additional amounts of grass, leaf and other vegetative materials as a result of regular maintenance of the proposed parks and golf course. Full development of the proposed project represents approximately a 7.7% increase in the quantity of waste currently deposited at Antelope Valley Public Landfill. Solid waste impacts are not considered significant because of existing and potential landfill capacities available at the Antelope Valley Public Landfill.

Mitigation Measures

Although impacts related to solid waste disposal are not considered significant, implementation of the following measures would help to reduce solid waste generation:

- On-site source separation for commercial uses.
- "Curbside" recycling programs should be implemented to reduce the amount of solid waste brought to the Antelope Valley Public Landfill. The recycling program should focus on paper, glass, aluminum, tin, plastics and other recyclables.
- Where applicable, the applicant shall comply with the provisions of the City's Source Reduction and Recycling Element and the City's Household Hazardous Waste Element after those elements are adopted by the City Council.

Unavoidable Adverse Impacts

In the event that expansion of the Antelope Valley Landfill does not occur in a timely manner, the project, along with the other surrounding developments would contribute to cumulative impacts to solid waste disposal.

COMMUNICATIONS

Project Impacts

In order to service the project site, telephone and cable TV infrastructure would have to be brought out to the project site via communication line extensions. According to Pacific Bell, who serve the site, telephone service can be supplied to the project site without effecting existing levels of service. Therefore, project impacts with regard to telephone service are not considered significant. Jones Intercable TV who provide cable television service to the project site, have indicated that they would be able to provide service to the project site following annexation of the site

into the City of Palmdale. Project impacts with regard to cable television service are not considered significant. As a result of project construction, the AT&T-C high capacity transcontinental communication line easements on the project site may be encroached upon. Disturbance to these lines could damage the lines or cause unanticipated interruption of AT&T's long distance telephone service. This is considered a potentially significant impact.

The project site is in a location that is presently outside the range of the current radio communications systems which serve the City. This system is used for daily radio communications as well as for emergency communications for City employees. If this condition is not remedied, this could represent a potentially significant impact to public health and safety. However, the required mitigation measures will minimize this impact to less than significant levels.

Mitigation Measures

Implementation of the following protective measures would enable AT&T to protect the existing communication system(s), permit future growth and in most cases allow AT&T to make repairs without having to damage streets, landscaping, parks, fencing, trees, etc. and would reduce impacts on the AT&T's high capacity transcontinental communication lines to a level of "not significant":

- No work may take place within the boundaries of the AT&T-C easements without prior written approval.

- Any lowering of lines required to maintain the proper depth of cover shall be at the developer's expense.

- A dedicated easement for access to all splices, manholes, valves and load points is required. This access shall be shown on the final plot plans and be of size and width sufficient to permit the passage of AT&T maintenance and construction vehicles.

- The developer may be required to expose the existing communications systems and place spare ducts (4 inch PVC pipe) alongside the existing system and cover the duct and system with concrete top protection at various locations within the development. Long runs may require the installation of pull pits and dedicated access to them.

- The AT&T-C easement boundary should be either the common boundary between the lots, if in side or back yards, or located within a lot in such a manner as to present the minimum exposure to future building additions and other hazards. Whenever possible, the system(s) should be located under a sidewalk area with the remaining easement width in the street.

- The AT&T-C easement description may be broad and may encumber or cloud a large area of a proposed development. In these cases AT&T-C may stake the system(s) location so the developer can survey the line and provide a certified survey and legal description. AT&T-C may then amend the easement and remove the broad description to satisfy the requirement of lenders, title companies, city planning and zoning agencies, etc.

- Structures shall not be permitted in the AT&T-C easement. This includes walls, concrete slabs, buildings, patios, etc. In the event of an emergency restoration of the communications system, the removal of unauthorized structures will be at the property owner's expense.

- Other utility easements (longitudinal) shall not be dedicated or plotted within the boundary of the AT&T-C easement. All crossings to be made by water lines, sewers, gas, power, etc., need to be planned well in advance to arrange for proper clearances and protective measures. The crossing utility shall coordinate all crossings with AT&T-C prior to any construction.

- In those areas where AT&T-C consents to streets, curbs, parkways, sidewalks, parks, open space or other public use, AT&T-C would continue to require and maintain an easement and right-of-way for all the purposes for which the easement was acquired.

- Preliminary plot plans showing the easement and the proposed uses should be submitted to AT&T-C for approval prior to the preparation and filing of final plot plans. Four (4) copies of all plot plans, preliminary and final grade plans and any other engineering data affecting the easement shall be provided to AT&T-C as soon as possible.

- The developer shall provide their pro-rata share towards the implementations of the findings of the radio communications needs study currently being prepared by the City. This may include providing a site for the constructions of a radio repeater, construction of the repeater, or providing funding for the acquisition and construction of such improvements, as determined necessary by the City's Emergency Services Coordinator.

Unavoidable Adverse Impacts

None.

SHERIFF'S SERVICES

Project Impacts

According to the Los Angeles County Sheriff's Department, thefts of construction materials can be expected during the construction phase of the project. This short-

term impact is not considered significant. Based on area averages, implementation of the proposed project could increase the number of calls for police response by 5.1%. The Sheriff's Department has indicated that they have a need for a station in the project vicinity due to existing and anticipated growth in the area. Development of a station in Palmdale would double the Antelope Valley area's Sheriff's staff and would greatly improve the area's officer-to-population ratio. In addition, development of the station would reduce emergency calls response times in the Palmdale area. However, until expansion of Sheriff's facilities is accomplished, development of the proposed project and cumulative projects may have a significant impact on their services.

Mitigation Measures

The following measures are required to reduce the demands on the Sheriff's Department:

- During the construction phase of the project, the developer shall assist the Los Angeles County Sheriff's Department in preventing crime by providing adequate fencing, security, lighting, and access for Sheriff's Department personnel, as determined appropriate by the Los Angeles County Sheriff's Department.

- Proper street and address signs will be required for easy identification of locations in emergencies. Street signs and dwelling numbers will be installed prior to occupancy as each phase of project is developed.

- Proper street and address signs will be required for easy identification of locations in emergencies. Street signs and dwelling numbers will be installed prior to occupancy as each phase of project is developed.

- Landscape features shall be designed so as not to conceal potential criminal activities around residences, commercial buildings, and parking areas.

- Security devices, such as deadbolt locks on doors, should be installed in all residences.

- Review of the project site plan shall be conducted by the Sheriff's Department prior to final approval of the project in order to assure that all concerns of the Sheriff's Department are met.

There are no additional feasible mitigation measures which can be placed on this project to alleviate significant project-related impacts to sheriff services.

Unavoidable Adverse Impacts

Development of the proposed project, as well as development of the other projects in the vicinity of the project site, could result in a significant impact on police services should the cost of providing Sheriff's services become prohibitively expensive in the future as to cause a reduction in manpower, facilities or services to the community as a whole.

FIRE AND EMERGENCY MEDICAL SERVICES

Project Impacts

The project area is located within Fire Zone 4 (high fire hazard). The addition of approximately 14,040 new residents to the project site is expected to result in an increase to the number of fire and paramedic calls received by the Fire Department and exposure to high fire hazards. According to the Los Angeles County Fire Department, fire protection service for the proposed project appears to be adequate. The County Fire Department is currently creating a developer fee mechanism to provide funding for additional Fire Department facilities. As part of the City Ranch Specific Plan Development Plan, a one-acre site at the intersection of Avenue S and Bridge Road is being set aside to accommodate a fire station. Development of a fire station on the site would provide adequate local emergency medical response and fire fighting services on-site.

Mitigation Measures

Although project impacts on the Fire Department are not considered significant, the following measures are required to reduce demands on the Fire Department:

- The applicant shall provide a fire station in Planning Area 34, a 12,500-gallon per minute pumper and a fully equipped paramedic squad as determined by the Los Angeles County Fire Department. The applicant shall work with the Los Angeles County Fire Department to determine the final siting of the fire station in Planning Area 34.

- Water line placements and extensions shall ensure the delivery of 1,250 gallons per minute of fire flow for a two-hour duration at 20 pounds per square inch residual pressure with 150,000 gallons storage in the residential areas and 5,000 gallons per minute at 20 pounds per square inch residual pressure with 1,500,000 gallons of storage for a five hour duration in the commercial areas.

- Fire hydrants shall be located a maximum of 600 feet apart.

- Smoke detectors shall be installed in all residential structures.

- Fire sprinkler systems shall be installed in all commercial and public structures.

- Roof materials shall be made of fire retardant materials such as clay tile, concrete tile or fire resistant composite shingles. No wood shake shingles or wood materials will be permitted.

- Access to all portions of the structures must be provided for the Fire Department.

- Driveways shall be a minimum of 26 feet wide. Cul-de-sacs shall have a maximum length of 750 feet and a minimum turning radius of 32 feet.

- Fire safety design, adequacy of access, fire flow and hydrant placement plans shall be reviewed by the County Fire Department Subdivision Committee prior to approval of tentative subdivision maps by the City.

Because the project site is located within Fire Zone 4 (high fire hazard), the following mitigation measures are required to reduce the potential loss of life and property in the event of a large fire:

- Natural vegetation shall be cleared within a 30-foot radius from all structures. No flammable vegetation shall be placed within the 70 feet beyond the 30-foot line. To achieve this, the branches of all trees shall be trimmed to remain off the ground and leaf litter shall be collected from the grounds.

- Common open space areas in residential and commercial planning areas shall be landscaped with fire resistant plants native to California.

Unavoidable Adverse Impacts

None.

SCHOOLS

Project Impacts

Development of the proposed project would increase the number of school children in all three school districts serving the project site. Based upon student generation factors provided by the individual school districts, a total of 4,544 students are estimated to be generated by this project. The proposed project includes the designation of four elementary school sites, three located in Westside Union School District and one in the Palmdale School District. In the Palmdale District portion of the project site, it is expected that the anticipated 431 elementary students generated by the proposed project could be accommodated in the proposed on-site school. The 114 6-8th grade students in Palmdale District would attend Juniper Intermediate School which is already 175 students over capacity. Project development would, therefore, have a significant impact with regard to intermediate schools in the Palmdale School District. In the Westside Union District area of the site, the 1,829 elementary school students generated by the proposed project could be accommodated in the three proposed on-site elementary schools in that district. An estimated 610 6-8th grade students would most likely attend the proposed new Hill View Intermediate School or other off-site intermediate schools. It is not certain at this time whether or not there will be remaining capacity in the Westside Union District intermediate schools at the time of the proposed project completion. Therefore, project impacts with regard to the Westside Union School District

also considered potentially significant. The 1,560 9-12th grade students generated by the proposed project are considered to create a significant impact on the Antelope Valley Union High School District because of their contribution to the need for two additional high schools in the Highland High School attendance area of which the project site is a part.

Mitigation Measures

In order to reduce the significant and potentially significant adverse impacts with regard to schools to a level of "not significant", the following measures are required.

- (a) Palmdale School District: The developer shall comply with the terms of the agreement, dated October 8, 1990, between the developer and the Palmdale School District as mitigation for impacts caused by development of the project on the Palmdale School District. The terms of that agreement are as follows:

  (i) Participate in the Mello Roos Community Facilities District created by the Palmdale School District for financing school construction.

  (b) Westside Union School District: The developer shall comply with the terms of the agreement, dated January 22, 1992, between the developer and the Westside Union School District as mitigation for impacts caused by development of the project on the Westside Union School District. The terms of that agreement are as follows:

  (i) refer to agreement attached to this Exhibit.

  (c) Antelope Valley Union High School District:

  The Developer shall provide the following mitigation to the District, in order to provide its contribution to the District's fifty (50) percent share of funding a new high school to serve the City Ranch Specific Plan area, pursuant to Government Code Section 65995 and Education Code Section 17700 et. seq. (School Facility Funding Law):

  (i) Mello-Roos Development Fees.

  The applicant shall participate in a Mello-Roos Community Facilities District which will fund up to 50% of the cost of that portion of the school necessary to serve the City Ranch project based upon a student generation factor of .2 pupils per single family dwelling. Only residentially zoned property for which a building permit has been issued will be subject to the annual tax. The District may increase this annual tax by no more than 2% in each year. In lieu of paying an annual special tax, a property owner

may prepay the annual special tax at the time a building permit is issued on the property. A fee equal to $1.30 per square foot of habitable residential construction shall serve to prepay the special tax. This fee shall be subject to an annual adjustment pursuant to increases or decreases in the School Construction Cost Index of the Office of Local Assistance with January 1, 1992 as the base. This prepayment fee shall be reduced to $1.20 per square foot if the school site is not located within Planning Area 3A of the Ritter Ranch Specific Plan.

(ii) Other Development Fees.

In addition to the fees specified in subparagraph (i) above, Developer shall pay to the District a fee of twenty-six cents ($.26) per gross leasable square foot of commercial construction prior to the issuance of each commercial building permit. All such fees shall be subject to annual adjustment pursuant to increases or decreases in the School Construction Cost Index of the Office of Local Assistance with January 1, 1992 as the base.

(iii) Site Preparation Expenses.

In the event that a high school is constructed in Planning Area 3A of the Ritter Ranch Specific Plan, and the site preparation work for a school to be located on that site, including provision of access to Elizabeth Lake Road and utilities, exceeds the amount of $4,650,000, the Developer shall pay the District fifty (50) percent of the District's costs for such work over $4,650,000, not to exceed a total of $350,000.

Unavoidable Adverse Impacts

None.

PARKS AND RECREATION

Project Impacts

The City Ranch Specific Plan designates six park sites totaling 159.3 acres (38.3 acres of which are buildable), a 216-acre golf course, and approximately 404 acres of natural open space. The Specific Plan also includes off-street bicycle paths and a 3.5 mile looped combined pedestrian/hiking/mountain biking trail and vista point opportunities. According to the Specific Plan, all six parks sites shall be dedicated to

the City of Palmdale for parkland credit. The City Department of Parks and Recreation standards requires a total of 88.62 acres of park space to be developed as part of proposed project development. The proposed project park acreage exceeds this standard by over 70 acres. However, several of the park sites contain development constraints and may not, therefore, qualify for full parkland dedication requirement credit. Impacts regarding to parks and recreation are considered potentially significant.

Mitigation Measures

Implementation of the following measures would reduce impacts with regard to parks and recreation to a level of "not significant."

- The applicant shall dedicate and construct the improvements for the proposed community, and neighborhood park facilities shown in the Specific Plan as approved by the Director of Parks and Recreation.
- The relocation of the Northside Trail shall be approved by the County Department of Parks and Recreation.
- Trails shall be designed to connect to existing and proposed trails on adjacent parcels.
- Design of Planning Areas located along the bicycle and hiking trails shall incorporate extensions and connections to the trail system. Each Planning Area adjacent to designated trails shall provide a minimum of two (2) connections to these trails at safe locations. Said connections shall be indicated on Tentative Tract Maps filed for all such Planning Areas. This shall include Planning Areas 1, 3, 4, 9, 12, 14, 15, 16, 17, 19A, 20, 21, 23, 24, 27, 28A, 30A, 32 and 33.
- The configuration, trail widths and clear areas adjacent to the trails must be designed to allow Sheriff and emergency vehicular access, but shall prohibit other non-emergency motor vehicle use.
- As set forth in the Development Standards of the City Ranch Specific Plan, the development of recreational uses are subject to the Site Plan Review provisions.
- Drought tolerant and native plant materials shall be used for park and golf course landscaping.
- Fertilizer and pesticide use shall be controlled in golf course area.
- Exhibit 16 of the Final Specific Plan will be amended to include an equestrian staging area in Planning Area 1, and if feasible, an equestrian staging area in Planning Area 18, and an equestrian trail through the powerline easement. Trails planned in the City Ranch Specific Plan will be coordinated with those planned for the Ritter Ranch Specific Plan. Future developments adjacent to this project will be required to coordinate with the trails shown on the trails plan adopted for City Ranch.

Unavoidable Adverse Impacts

None.

FACILITIES MAINTENANCE

Project Impacts

Development of the project will result in the creation 159 acres of parks, 15 acres of parkway, 56 miles of streets, 7.5 miles of trails and 20 acres of flood control basins which will be maintained by the City of Palmdale. This represents a significant increase in the City's maintenance responsibilities. The mitigation measures proposed will reduce the impacts from project maintenance to less than significant levels.

The development of the City Ranch will significantly increase the City's street drainage, parkway and park maintenance liability. A part of these costs will be offset by an increase in the City's general fund revenue generated by the development, however, the increases will not be sufficient to meet the maintenance costs created by the development. In addition to the maintenance costs, maintenance support facilities to serve the project site and surrounding developments will be needed in the vicinity of the project.

Development of the proposed project would include the construction of an internal landscaped roadway network. After the City of Palmdale has formally accepted the proposed streets as public streets, any additional road maintenance necessary on public streets within City Ranch, will be the responsibility of the City of Palmdale Department of Public Works. Project development is anticipated to increase the need for winter snow removal, roadway tree-trimming and street-sweeping services for the internal roadways. According to the City Department of Public Works, impacts with respect to providing additional tree-trimming service are not considered significant. By the year 2000, it is anticipated that the City Department of Public Works will also be responsible for all other road maintenance activities including snow removal, and street sweeping services. Therefore impacts with regard to Facilities Maintenance are considered potentially significant.

Mitigation Measures

There are no feasible mitigation measures which can be placed on this project to alleviate significant project-related impacts to existing maintenance facilities.

Unavoidable Adverse Impacts

The impacts to facilities maintenance will be partially mitigated by increases in the City's General Fund generated by the development. However, full mitigation of maintenance impacts by the project is determined to be infeasible, due to the inconsistency of such requirement with previous development project approvals within the City.

ARCHAEOLOGY

Project Impacts

Development of the proposed project would disturb two significant archaeological sites and one significant historical site located on the project site. This is considered a significant adverse impact.

Mitigation Measures

The following mitigation measures would enable the proper removal and preservation of cultural materials found on the project site:

- All work will be done under the supervision of a qualified archaeologist.
- Excavation of 100% of Loci A through C as described in the Phase II Archaeological Assessment (July, 1991) shall be conducted at LAn-949. It is estimated that approximately 500 cubic meters of cultural deposit will have to be removed. An excavation plan detailing strategy and research goals shall be submitted to the City of Palmdale for review prior to excavation activities.
- At least a 4 x 4 meter square unit at the approximate center of the deposit at LAn-1756 and at LAn-1757 shall be excavated.
- If preservation of the site at LAn-1758H is not feasible, a Phase III Salvage Program shall be conducted. The Phase III Salvage Program shall include full excavation of the stone enclosure and machine excavation of six 4 x 4 meter units placed in a pattern across the site. All backdirt from the units shall be screened through 1/4-inch mesh.
- In the event that future development would adversely affect the cupule boulders (LAn-1767 and LAn-1768) or the bedrock milling feature (LAn-1772), it is recommended that they be carefully removed and relocated elsewhere on the

subject property. An archaeologist shall be consulted to arrange for relocation of these boulders if removal is necessary.

- The location of significant historic and archaeological resources shall be recorded with the Archaeological Information Center at the UCLA.

- Significant historic and archaeological materials recovered in the field shall be delivered to the collection an appropriate archaeological repository.

- The following sites which were augered require additional testing for subsurface deposits: LAn-1746, LAn-1747, LAn-1748, LAn-1749, LAn-1750, LAn-1752, LAn-1753, LAn-1756, LAn-1772, LAn-1774, LAn-1767 and LAn-1768. At least one additional 1x1 meter test unit needs to be excavated at each of these sites, within site areas with the greatest densities of surface artifacts. These excavations are important to determine whether auger testing has missed subsurface deposits and to get a clearer, vertically-controlled picture of such deposits and their depositional context.

The following important petroglyph, bedrock mortar, and rock ring sites were not subject to any subsurface testing. They need to be tested through excavation of a minimum of one 1x1 meeter units utilizing 1/8" screen in the immediate vicinity of these features: LAn-1767, LAn-1768, LAn-1759, LAn-1760, LAn-1761, LAn-1762, LAn-1763, LAn-1765, LAn-1766, LAn-1769, LAn-1770, LAn-1771. The "hunting blind" sites are important structures whose function needs to be determined through further testing.

The important apparent habitation site, LAn-949, should be avoided through realignment of the proposed roadway. However, in the event that avoidance is not possible, salvage of the site shall be performed in accordance with an excavation plan.

The important apparent habitation site, LAn-949, should be avoided through realignment of the proposed roadway. However, in the event that avoidance is not possible, salvage of the site shall be performed in accordance with an excavation plan. Excavation of 100 percent of Loci A through C as described in the Phase II Archaeological Assessment (July, 1991) shall be conducted at LAn-949. It is estimated that approximately 500 cubic meters of cultural deposit will have to be removed. The excavation plan detailing strategy and research goals shall be submitted to the City of Palmdale for review and approval prior to excavation activities. In addition, this excavation plan shall contain a subregional analysis of the archaeological sites within and immediately adjacent to City Ranch to provide a basis for significance determinations. As part of the subregional analysis, a research design that would set standards for future work in the vicinity of the City Ranch project shall be proposed. The subregional analysis of the archaeological sites may be prepared in cooperation with other adjacent property owners, as approved by the Planning Director.

Those sites, not listed above, which contained surface artifacts but were only auger tested shall be tested with at least one standard test unit per site. The testing program shall be submitted to the City Planning Department for review and approval prior to commencement. In addition, untested cupule sites, rock rings and hunting blinds shall also be tested in this manner. Any additional mitigation recommended as a result of the additional testing shall be required as mitigation measures for initial and subsequent development applications, as appropriate.

Relocation of cupule boulders must be done under the direction of a qualified archaeologist who will give careful attention to orientation of the boulders. The boulders shall be moved prior to site disturbance in their immediate vicinity to a location approved by the Planning Director. Since context will be lost, some shall be relocated to a repository approved by the Planning Director where they can be used for educational purposes. Representative artifacts should be displayed at this repository.

The work described above shall be performed by a qualified archaeologist, retained by the applicant and approved by the Planning Director. Because the introduction of residents into the area will result in the degradation of archaeological sites, required testing shall be completed and approved by the Planning Director prior to recordation of the first parcel map or tract map for the project.

Unavoidable Adverse Impacts

Development of the proposed project would disturb the portions of the site containing archaeological site LAn-949, LAn-1756/1757 and LAn-1758H. Although disturbance of these sites is considered significant, implementation of the recommended mitigation measures would reduce these impacts to a level of "not significant."

PALEONTOLOGY

Project Impacts

Direct significant adverse impacts to paleontologic resources would result from ground-disturbing activities associated with development of the City Ranch Specific Plan. Grading activities in areas containing rock units of high paleontological importance have the potential to disturb or bury fossil sites, as well as fossiliferous and potentially fossiliferous rocks, and would result in the loss of fossil specimens and associated geologic data. In addition, fossiliferous rock in these areas would become permanently unavailable for future investigation of fossil remains. Potentially significant indirect adverse impacts could occur as a result of collection of fossil remains by construction personnel, rock hounds, and amateur and commercial collectors. This could result in the loss of specimens and data.

Mitigation Measures

Implementation of the following mitigation measures would reduce impacts to paleontological resources:

- A paleontologist, approved by the City of Palmdale Planning Department shall submit a program for paleontologic resource recovery and preservation to the City of Palmdale Planning Department for approval prior to issuance of the development permit. Prior to initiation of construction, the paleontologist shall conduct a field survey of exposures of the late Miocene fossil leaf-bearing rock unit on the project site to document locations of previously unrecorded fossil sites. All sites shall be plotted on a topographic map of the project site. Representative plant fossils shall be collected from each site. The paleontologist shall excavate those sites, including any previously recorded sites, having the

highest potential for yielding comparatively well preserved and taxonomically diverse plant assemblages. If necessary, the applicant will supply a backhoe an operator to further expose a fossil site for hand excavation.

- The paleontologist shall collect rock samples from selected locations (including recorded fossil sites) and horizons (particularly paleosols and other fine-grained rocks) in the rock units of high and unknown paleontologic importance to process for smaller fossil remains. Each sample shall contain up to 1,000 pounds of rock. If fossil remains are found during processing, up to 5,000 pounds of rock shall be collected from the fossil-bearing rock unit and processed.

- Following completion of these tasks, the paleontologist shall prepare a report summarizing the results of the preconstruction phase of the mitigation program presenting an inventory and describing the significance of any accessioned fossil remains. The report shall be submitted to the City of Palmdale Planning Department.

- During the construction phase, the paleontologist shall monitor grading and any other ground-disturbing activity in areas underlain by rock units of high paleontologic importance on a full-time basis, moderate and unknown importance on a half-time basis and low importance on a quarter-time basis as identified in the pre-construction field survey. If more than 25,000 cubic yards of rock are moved per day, the level of monitoring effort shall be doubled Monitoring shall consist of visually inspecting fresh exposures of rock for large fossil remains and, where appropriate, dry screening excavated spoils for smaller vertebrate remains. Grading in areas underlain by rock units of no importance shall not be monitored except in the immediate vicinity of a fossil site.

- If larger fossil remains are uncovered by ground disturbance, the paleontologist shall divert the ground-disturbing activity away from the fossil site until the remains have been removed and a 1,000 pound rock sample has been collected. Grading of the fossil-bearing bed in the immediate vicinity of the site shall be monitored on a full-time basis. If sufficient sites are discovered in any rock unit during construction, earth-moving activities in the entire area underlain by this rock unit shall be monitored on a full-time basis.

- If fossil remains are found during grading by construction crews (including in areas underlain by rock units of low paleontologic importance), grading activities on the fossil site shall be stopped and the paleontologist shall be called to the site immediately to remove the remains. If sufficient sites are discovered, grading activities at the fossil site shall be submitted on a full-time basis.

- During grading, the paleontologist shall collect 1,000-pound rock samples from selected locations and stratigraphic levels (particularly paleosols or other fine-grained rocks) to process for small mammal and other microvertebrate remains Additional 5,000-pound rock samples shall be collected from any productiv

sampling site, including any site discovered as a result of dry screening by the monitor, for processing. The grading contractor may be needed to assist in removing rock samples to an adjacent location for initial processing. Sampling sites shall be documented on the topographic map of the plan area.

- Both before and after construction, the paleontologist shall conduct the initial processing (wet and/or dry screening) of the rock samples for small age-diagnostic mammal remains and other microvertebrate specimens while on-site. The resulting concentrate shall be transported to a museum facility. If sufficient fossil sites and remains are found in a rock of unknown paleontological importance, this unit shall be reclassified as moderately or highly important. If no remains are recovered, this rock unit shall be reclassified as being of low paleontological importance.

- During grading, the paleontologist shall collect all identifiable vertebrate and plant remains. All fossil sites shall be plotted on the topographic map of the project site.

- All fossil remains collected before and during construction shall be prepared, identified, catalogued, curated and accessioned into the collection of a designated repository, such as the Vertebrate Paleontology Section of the Natural History Museum of Los Angeles County (LACM). Accompanying notes, maps, and photographs shall also be filed at the repository.

- Following completion of these tasks, the paleontologist shall prepare a report summarizing the results of the construction phase of the mitigation program and presenting an inventory and describing the significance of any accessioned fossil remains. The report shall be submitted to the City of Palmdale Planning Department and shall signify completion of the paleontologic mitigation program. Because development of the proposed project is phased, separate reports may be required to summarize mitigation for certain fossil sites.

- Subsequent to construction, the applicant shall allow future access to and investigation and excavation of these exposed rocks, particularly at any fossil site set aside from development, by qualified paleontologists approved by the LACM to ensure fossil remains are recovered. (If paleontologists do not recover these fossil remains, the fossils and associated scientific data might be lost to weathering and erosion or to unauthorized fossil collecting.)

Unavoidable Adverse Impacts

While the mitigation measures proposed would reduce adverse impacts associated with development of the project site, they do not necessarily insure that all direct and indirect adverse environmental impacts on paleontologic resources caused by development of the City Ranch project site would be reduced to an insignificant level and that all remains would be preserved. Unavoidable or residual impacts

may still remain. Fossil remains and associated geologic data, recorded and possibl unrecorded fossil sites, and fossiliferous rocks may be lost to or made inaccessible b ground-disturbing activities; covering with fill, pavement, or structures; and unauthorized fossil collecting.

ELECTROMAGNETIC RADIATION

Project Impacts

The proximity of the high-tension electric lines to proposed residential Planning Areas 16, 17 and 19A and elementary school site (Planning Area 19B), could result in potential health risks to residents and users within these planning areas. Health risks associated with active recreational activity in close proximity to high-tension electric lines are unknown. Active recreational uses such as softball and soccer fields are proposed within the power line easements in Planning Area 18. These impacts are considered potentially significant. Noise from transmission lines is expected to affect areas outside high-tension transmission line easements. Depending upon atmospheric conditions, this noise may be a moderate to severe nuisance.

Mitigation Measures

Implementation of the following mitigations would reduce impacts associated with the high-tension electric lines:

- Residential areas abutting transmission line rights-of-way shall be separated by continuous six-foot-high non-conductive fencing.

- In accordance with California Department of Real Estate disclosure format and procedures, all potential buyers of real property within City Ranch within 500-feet of an easement containing a 220 kV or higher voltage electric transmission line shall be notified of the proximity to the easement and conditions regarding proximity.

- Active recreational uses shall be prohibited within the 220 kV and 500 kV power line easements in Planning Area 18.

- All residential units constructed along the perimeter of high-tension power line easements shall use double glazed windows on all sides that face these lines to minimize noise effects generated by the electrical transmission lines.

- The location of the proposed elementary school sites shall reflect the recommended guidelines of the California Department of Education regarding buffer zones between school site locations and high voltage power lines.

Unavoidable Adverse Impacts

As proposed, the Specific Plan would locate a park within and residential uses adjacent to high-tension power line easements. In addition, an elementary school is proposed near the easement. If in the future a clear link between proximity to high-tension electric lines and deleterious health effects is determined, impacts would be considered unavoidable adverse impacts.

HAZARDOUS/TOXIC MATERIALS

Project Impacts

Without proper remediation and clean up procedures, hazardous materials found on the project site including partially filled jugs of chlordane, partially filled cans of paint, paint thinner, herbicides, roofing tar and DDT concentrate, septic systems and gasoline and oil contaminated soils could create health risks to project construction workers and potential site residents. Any exposure of hazardous materials to a human population may be considered significant.

Mitigation Measures

Implementation of the following mitigation measures would reduce impacts to a level of "not significant."

- Septic systems shall be abandoned prior to grading operations in areas where they are located. Septic systems shall be cleaned and abandoned in accordance with Title 28, Chapter 11, Section 1119 of The Los Angeles County Health and Safety Code. A permit for this action will be required by the Los Angeles County Department of Public Works Building and Safety Division in Lancaster.

- Soil testing shall be conducted in all areas where hazardous/toxic materials were found. Soils contaminated with hydrocarbons (gas and oil spillage), specifically at the former underground storage tank site (Location A) and soil stained area (Location D) on the east side of the ranch compound, shall be removed and disposed of at a facility authorized to accept hazardous waste from the site prior to grading operations within the specified area. Soil removal shall be supervised by a qualified hazardous waste scientist. The final quantity of soil to be removed shall be determined. Contaminated soil shall be transported and disposed of in accordance with all applicable hazardous waste disposal regulations. A manifest, a formal document verifying receipt by an authorized hazardous waste facility of soils contaminated with hydrocarbons or other hazardous wastes shall be provided to the County Department of Public Works. A closure report verifying complete removal of contaminants from the site shall be provided to the County Department of Public Works. Both shall be approved prior to the acceptance of dedication.

- An additional study determining the lateral and vertical extent of soil contamination and the possible impact on groundwater shall be prepared for the former site of the underground fuel storage tank.

- Empty or partially full containers of pesticides, herbicides, and veterinary supplies (Locations B and C) shall be reviewed by a qualified hazardous waste scientist to determine which are considered hazardous as determined by state, county, or local statutes. Hazardous materials and hazardous waste shall be disposed of in accordance with all applicable hazardous waste disposal regulations.

- Hazardous materials in the disposal area at Location G, Figure 74 of the EIR shall be analyzed for chemical composition, removed and taken to a facility licensed to accept such material. Soil samples shall be examined in this area to ascertain whether soil has been impacted by manifested disposed contaminants. If the other disposal areas are excavated, a manifest for the contaminated soils and a site closure report shall be provided to the County Public Works Department prior to the acceptance of dedication.

- Wells on the property not used for irrigation or other non-potable uses shall be abandoned and sealed to eliminate the potential for degradation of ground water beneath the site in accordance with the requirements set forth in California Department of Water Resources Bulletin 71-88. Well destruction will require permitting through the Los Angeles County Department of Health Services, and possibly the local water agency.

- Refuse from disposal areas E and F (Figure 74 of the EIR) shall be collected and disposed of at an appropriate disposal site.

- The storage building near Location B which was not inspected on the site investigation and whose contents are, therefore, unknown, shall be opened and evaluated by a qualified site investigator. The contents of the building shall be inventoried and analyzed for potential health hazards. If hazardous materials are identified, appropriate remediation measures shall be implemented. All local, county, state and federal regulations shall be applied to ensure proper disposal of any hazardous material that may be found. If hazardous materials are found at this location, a manifest and a site closure report shall be provided to the County Department of Public Works prior to the issuance of a building permit.

Unavoidable Adverse Impacts

Implementation of the recommended mitigation measures would reduce project impacts regarding hazardous/toxic materials to a level of "not significant."

ANTELOPE VALLEY PUBLIC LANDFILL

Project Impacts

Development of the proposed project would bring developed uses up to the boundary of the Antelope Valley Public Landfill's proposed expansion area. This area would abut a 1,270 foot length of Planning Area 13 (golf course) north of City Ranch Road. A portion of residential Planning Area 8 would be within 1,000 feet of the landfill expansion boundary. This is considered a significant adverse impact.

Mitigation Measures

Implementation of the following measures would reduce project impacts to a level of "not significant."

- The applicant shall keep all residential development a minimum of 1,000 feet west of the proposed landfill expansion boundary in accordance with the City of Palmdale's proposed Solid Waste Management Plan. The southeast corner of Planning Area 8 would need to be in the landfill buffer area and kept free of residential development (Figure 77 of the EIR). Prior to development occurring within Planning Area 8, a permanent easement which includes land within 1,000 feet of the northwest and southwest corners of the landfill expansion area shall be recorded. Within this easement, the construction of residences shall be prohibited.

- To minimize dust and visual impacts, the applicant shall provide a landscape buffer of mature vegetation along the common boundary line with the Antelope Valley Public Landfill and along the boundary of Planning Area 8 or any other residential properties that may be affected.

- In accordance with California Department of Real Estate disclosure format and procedures, all potential buyers purchasing real estate in City Ranch located within 1,200 feet of the landfill boundary shall be notified of that circumstance.

Unavoidable Adverse Impacts

Implementation of the recommended mitigation measures and effective enforcement of landfill-associated mitigation procedures should reduce landfill impacts to a level of "not significant."

LIBRARY SERVICES

Project Impacts

National library standards provided by the City Librarian recommend 2.5 volumes per capita, 0.5 staff per thousand population and an area of 0.8 square feet per capita. The library needs for the City Ranch project, using these standards and a household size of 2.7 persons per dwelling unit, is 35,100 volumes, 7 staff persons, and 11,232 square feet of library facility. The adjoining Ritter Ranch Specific Plan area will be required to construct a branch library facility, 16,000 square feet in size. Therefore, a branch facility in the City Ranch project would be redundant. However, the applicant could provide a pro-rata share of funding for upgrading the main library or assist in the construction of the branch library proposed on the Ritter Ranch project. The location of the branch facility in the Ritter Ranch project with expanded library facilities at the main library would provide adequate library services for the City Ranch Specific Plan residents.

Mitigation Measures

There are no feasible mitigation measures which can be placed on this project to alleviate significant project-related impacts to library services.

Unavoidable Adverse Impacts

Development of the proposed project will contribute to cumulative significant adverse impacts to library services.

S.4 Cumulative Impacts

Development of the proposed project would create cumulative impacts with regard to:

LAND USE- The currently rural Leona Valley and Anaverde Valley area would be transformed to that of a suburban setting.

POPULATION - Areawide population would increase by approximately 49,531 persons which would almost double Palmdale's existing population.

HOUSING - Cumulative development would increase housing by approximately 18,500 dwelling units. The resultant cumulative areawide jobs/housing ratio would remain heavily jobs poor.

GEOLOGY - Increased numbers of persons would be exposed to the high seismically-related geologic hazards of the area. Increased numbers of persons could be injured by an earthquake event in this area as a result.

BIOLOGY - Cumulative development would result in a significant loss of biological habitat and diversity in the region.

AIR QUALITY - Cumulative development would result in significant short-term (construction) and long-term (operational) impacts.

NOISE - Noise levels on and along surface streets in the project vicinity would increase as a result of cumulative projects development. The most significant increases would occur on Elizabeth Lake Road and Avenue S. Sensitive receptors such as residences and schools may be significantly impacted.

AESTHETICS - Irreversible losses of open space vistas would result from cumulative project development. Developed areas replacing the open space areas would be visible over substantial distances. These impacts are considered significant.

LIGHT AND GLARE - Cumulative development would result in the irreversible loss of a dark nighttime sky. This is considered a significant cumulative impact.

ENERGY - Energy use would increase by 3.3 billion BTU's daily as a result of cumulative project development.

WATER - Water demand would increase by approximately 11 million gallons per day. This is 25% of future AVEK supply capacity.

SOLID WASTE - As a result of cumulative development, solid waste generation would increase by 201,663 pounds daily. This is a 16.6% increase over the amoun currently deposited at the Antelope Valley Public Landfill.

FIRE AND EMERGENCY MEDICAL SERVICES - Cumulative development would impact the services of the Fire Department and emergency medical treatment services. All new developments are required to provide for appropriate fire protection facilities in an amount proportionate to the demand created by the development. Cumulative impacts on fire and emergency medical services are therefore not considered significant.

SCHOOLS - As a result of cumulative development, Westside Union School District enrollment would increase by 289%; Palmdale School District enrollment would increase by 207% and Antelope Valley Union High School District would experience 68% enrollment growth.

PARKS AND RECREATION - Unless cumulative projects provide adequate on-site recreational facilities in accordance with City of Palmdale and County of Los Angeles park space requirements, cumulative projects development would increase pressure on existing City and County park space which is already deficient.

ARCHAEOLOGY - Cumulative development may contribute to the overall loss of archaeological resources in the area.

PALEONTOLOGY - Cumulative development may contribute to progressive loss c fossiliferous rocks and fossil sites in the region.

S.5 Effects Found Not to be Significant

The Initial Study for the proposed project (see Appendix A of the EIR) determined that the proposed project would not have a potentially significant effect on the environment with regard to Natural Resources or Housing. Because Natural Resources was not identified by the Initial Study as an area of concern, it was not analyzed in this EIR. Housing issues were analyzed per the direction of City staff subsequent to the issuance of the Initial Study.

S.6 Areas of Controversy

The City of Palmdale Planning Department has identified the following areas of concern regarding development of the proposed project:

WATER RESOURCES

Concern: That continued growth in the Palmdale area, such as that anticipated by the development of the proposed project, could jeopardize water service provision to existing customers.

Discussion: While the proposed project would increase demand for water resources in the area, the water supplier in the area, LACWD No. 34, have indicated their ability to serve the site based on existing and proposed supply facilities. In addition, available on-site non-potable water resources could provide all of the irrigation water needed for the proposed golf course and parks thereby reducing potable water demand.

TRAFFIC

Concern: The direct and cumulative traffic impacts associated with project development especially with regard to the off-site circulation network.

Discussion: The traffic analysis for the proposed project reveals that project-generated traffic will not have a direct or cumulative adverse impact on the local circulation network provided off-site master planned roadway improvements identified in the City's General Plan area constructed prior to project buildout.

LOSS OF NATURAL OPEN SPACE

Concern: The rapid conversion of open space in the Palmdale area to suburban use.

Discussion: While project development would result in the conversion of the project site to a largely residential setting, approximately 404 acres of the project site area proposed to remain as natural open space. In addition, the proposed project includes 159 acres of proposed public parks and over 216 acres of golf course space. This accounts for approximately 40% of the project site acreage. Proposed school sites would provide additional open space resources. While visual open space would still be available, biological habitat would be greatly reduced.

ANTELOPE VALLEY PUBLIC LANDFILL

Concern: The proximity of the Antelope Valley Public Landfill to the project site.

Discussion: The landfill is currently located .6 miles east of the project site. An application has been filed by the landfill operator to expand the landfill boundary up to the eastern boundary of the project site north of City Ranch Road, alongside a portion of the proposed golf course. While proximity of the proposed expansion to the project site does pose potential land use conflicts, implementation of the mitigation measures recommended in this EIR and in the EIR for the proposed landfill expansion would reduce impacts to a level of not significant.

HILLSIDE DEVELOPMENT

Concern: Hillside areas of the project site could be developed such that proposed development may conflict with the intent of a hillside management ordinance

currently being drafted by the City which is expected to recommend limiting hillside development to slopes of 25% or less.

Discussion: The grading standards proposed in the City Ranch Specific Plan recommend limiting grading of natural hillsides to slopes of less than 25% except for reasons of public health, safety, welfare, protection of property and provision of necessary public facilities. Grading design guidelines prohibit construction in areas of greater than 25% slope except for areas which are not visually prominent. These standards and guidelines conflict with a policy of the City of Palmdale's proposed hillside management ordinance that recommends no grading in areas above 25% slope. This issue would have to be resolved between the applicant and the City Engineer prior to approval of the proposed project, if the ordinance is passed.

S.7 Alternatives

The following alternatives to the proposed project were assessed in the EIR:

Alternative 1 - No Project

Under the "No Project" alternative, the proposed project would not be developed and the project site would remain in its present undeveloped condition. The central portion of the project site would continue to be used for cattle grazing and hazardous materials currently found on the site would not be removed. However, the potential project-related impacts discussed in Section 5.0 of this report would not occur.

Alternative 2 - Reduced Residential Density

Under this alternative, the 1,985-acre project site would be developed in a manner similar to the proposed project but with reduced residential density and some land use changes. Under this alternative, 3,120 dwelling units would be developed on a total of approximately 900 acres of the project site. Overall residential density across the entire project site would be 1.57 dwelling units per gross acre. Four neighborhood commercial sites are identified on the Alternative 2 site plan. Retail building space would total 300,000 square feet. Office space would total 285,000 square feet. Employment opportunities on-site would increase, resulting in a more balanced jobs to housing ratio (JHR) of 0.70 (the future regional balanced JHR is 0.72). Alternative 2 would include increased amounts of natural open space as compared to the proposed project. Natural open space acreage will total 462.2 acres, open space 122.6 acres, parks 167.6 acres and golf course 157.1 acres. A total of two elementary school sites are designated in Alternative 2. One site would support a 600 student school on 10 acres. The other would support 800 students on 17.1 acres. This alternative includes a 1-acre fire station site as in the proposed project development.

Alternative 3 - College Campus

Under the "College Campus" alternative, the proposed project would not be developed and the project site would be used instead as a campus for a four-year college. Development of this project would require an amendment to the General Plan to allow a college campus use. The University of California Irvine Campus which closely matches the size of the project site developable acreage was used as a model for this alternative. Land use of the college would be distributed in 32 Planning Areas. The core of the campus would be situated in the central portion of the project site and would contain the five major academic Quads including Biological Sciences, Engineering, Physical Sciences, Social Science, Health Sciences and Humanities and Fine Arts. Two planning areas totaling approximately 25 acres of the project site would accommodate university facilities such as the central plant, public services and facilities management. Three planning areas totaling nearly 87 acres will house joint university and private sector projects. Three commercial areas totaling approximately 54 acres of the project site are intended to accommodate student-oriented and on-site faculty and staff retail uses and activities. One 37-acre planning area is designated for mixed-use facilities which would include research and development, support commercial and residential uses. Forty acres of the project site would be used for campus playing fields, tracks and sports stadiums. Buildings on the site may house indoor pools, courts and locker rooms. A total of 1,573 dormitory rooms and 200 apartments would be provided for undergraduates in complexes 2-10 stories high. Graduate student/married student housing would be provided in apartment buildings. A total of 862 graduate/married student units would be provided. Additional housing would be provided for faculty and staff in the form of 80 mobile homes, 100 apartments, 18 condominiums, and 281 single-family detached homes. Two planning areas totaling 172 acres are proposed as park sites which could be developed with ball fields, tennis courts and other improvements. Almost 600 acres of the campus would be comprised of natural open space suitable for hiking trails and equestrian trails.

Alternative 4 - Alternate Site A: Willow Springs

Under this alternative, all components of the proposed project would be developed on a 2,185-acre parcel of land in Willow Springs near the City of Rosamond, California. Willow Springs is located in the southwest portion of the Antelope Valley in Kern County. The project site currently consists of an undeveloped desert vegetation area, with commercial agriculture and mineral resource management area land use designations. Overall site topography slopes less than five percent from 3,000 feet down to 2,400 feet above mean sea level. Flash flooding from intermittent streams can occur on the relatively flat terrain of the project site. High-tension electric lines cross the southeast corner of the project site. Overall residential density at the Willow Springs site is 2.38 dwelling units per gross acre which is similar to the 2.62 units per gross acre proposed for the City Ranch site. As in the proposed City Ranch site plan, one commercial area is in the north-central portion of the site and the other is in the southeast corner. A total of 321.5 acres of

the project site are set aside as natural open space. The golf course occupies approximately 255 acres. Four parks occupy a total of 166.5 acres of the project sit A 97-acre open space area is provided between the electric line easements and area that would contain habitable structures. Four elementary school sites are provided on the Willow Springs site plan. Each school site is approximately 10 acres in size and would provide space for approximately 600 students. This alternative includes a 1-acre fire station site as in the proposed project development.

Alternative 5 - Alternate Site B: Quail Lake

Under this alternative, all components of the proposed project would be developed on a 2,136-acre parcel near Quail Lake in North Los Angeles County. This alternate project site is located at the intersection of Interstate Highway 5 and State Highway 138 south of Gorman in the Tejon Pass area. The Quail Lake project site consists of moderately rugged hillside terrain separated by a broad alluvial valley. Drainage in the portion of the site south of State Highway 138 flows northerly toward the valley portion of the site. Drainage in the northwestern end of the property flows downslope in all directions from a prominent hill. Vegetation on the site is predominantly chaparral with oak trees on the northerly facing slopes and canyon bottoms. Eight planning areas would be designated for residential use on a total of 783.5 acres for a density of 5.42 dwelling units per acre. Overall residential density is 2.43 per gross acre which is similar to the density of the proposed project. The buildable area of one of the planning areas is constrained by liquefaction potential and would require site-specific engineering studies and mitigation prior to development. Buildings in a second planning area would require 50-foot setback from all faults. Building pads in a third planning area would need to be raised to avoid the 100-year flood plain. Two of the residential planning areas contain oak tree groves and other sensitive vegetation. Therefore, two commercial areas on the Quail Lake development plan comprising 260,000 square feet of retail space. All commercial activity would be located on the southern tip of the project site bounded by Interstate 5. Open space, park and golf course development is planned for the area of the project site within the Alquist-Priolo special studies zone. Additional natural open space area is designated in the planning areas containing tree groves, chaparral vegetation, liquefaction constraints and slide zones. Another open space planning area contains some land within the 100-year flood plain. Four elementary school sites are provided on the Quail Lake site plan. Each school site will be approximately 10 acres in size and accommodate approximately 600 students each. The sites are dispersed throughout the project site in order to serve all areas of the project site containing residential development. This alternative includes a 1-acre fire station site as in the proposed project development. The Quail Lake development plan contains an existing electric utility substation. This is located in the Alquist Priolo Special Study area.

Environmentally Superior Alternative

In general, the environmentally superior alternative is the alternative which causes the least adverse impacts to the project site and the surrounding environment. Of the alternatives presented other than the "no project" alternative, Alternative 2 - reduced residential density would create the least impacts. It would generate less population and therefore less vehicle trips, air pollutant emissions, mobile noise, students, utility and public service use and would expose less people to the geologic and hydrologic hazards associated with the project site. In addition, development of Alternative 2 would eliminate significant impacts with regard to housing, biological resources, and proximity of schools, parks and residential uses to the high-tension electric lines and would leave less unavoidable adverse impacts than would the proposed project.

S.8 Issues to be Resolved

The proposed project would have greater environmental impacts than the reduced residential alternative identified in this EIR. It is, therefore, up to the City Council and Planning Commission to decide whether or not to approve the proposed project or to choose the environmentally preferred alternative.

1.0 INTRODUCTION

This Environmental Impact Report (EIR) analyzes the potential environmental impacts associated with the development of the City Ranch Specific Plan. The Specific Plan proposes to develop a largely residential community with single- and multi-family residential units, neighborhood commercial space, a golf course, public parks, and open space areas. The Specific Plan also proposes to make sites available for elementary schools, and a fire station. The project site is a 1,985-acre site located in the unincorporated area of Los Angeles County adjacent to the City of Palmdale. Annexation of the project site into the jurisdiction of the City of Palmdale is proposed. The purpose of this EIR is to provide information to assist the City of Palmdale Planning Commission, City Council, other governmental agencies and the public-at-large in their consideration of the environmental implications of development of the proposed project.

This EIR has been prepared in accordance with the environmental impact report preparation requirements established under the California Environmental Quality Act (CEQA) of 1970 as amended. State of California Office of Planning and Research CEQA guidelines were strictly followed along with advice and guidance from the City of Palmdale Planning Department. The principal objectives of CEQA are that the environmental review process be a public one, and that the EIR be an informational document that will inform members of the general public, City decision-makers and technical reviewers about the environmental impacts associated with implementation and operation of the proposed project. EIR's are also required to describe mitigation measures to reduce significant adverse impacts and to develop reasonable alternatives which may reduce impacts while achieving the objectives of the proposed project.

In accordance with CEQA Guidelines, the City of Palmdale prepared an Initial Study for the proposed project and solicited agency comments through a Notice of Preparation (Appendix A). The Initial Study and comments received in response to the NOP (Appendix B) determined the technical focus of this EIR.

Subsequent to the preparation of this Draft Environmental Impact Report and in accordance with CEQA requirements, a 45-day public review period and review process will be initiated for the Draft EIR. Public comments on the Draft EIR will be formally heard and considered. Copies of this document are available for public review at both the Palmdale Central Library, 700 East Palmdale Boulevard and at the City of Palmdale, Department of Planning, 38306 9th Street East.

2.0 PROJECT DESCRIPTION

2.1 PROJECT LOCATION

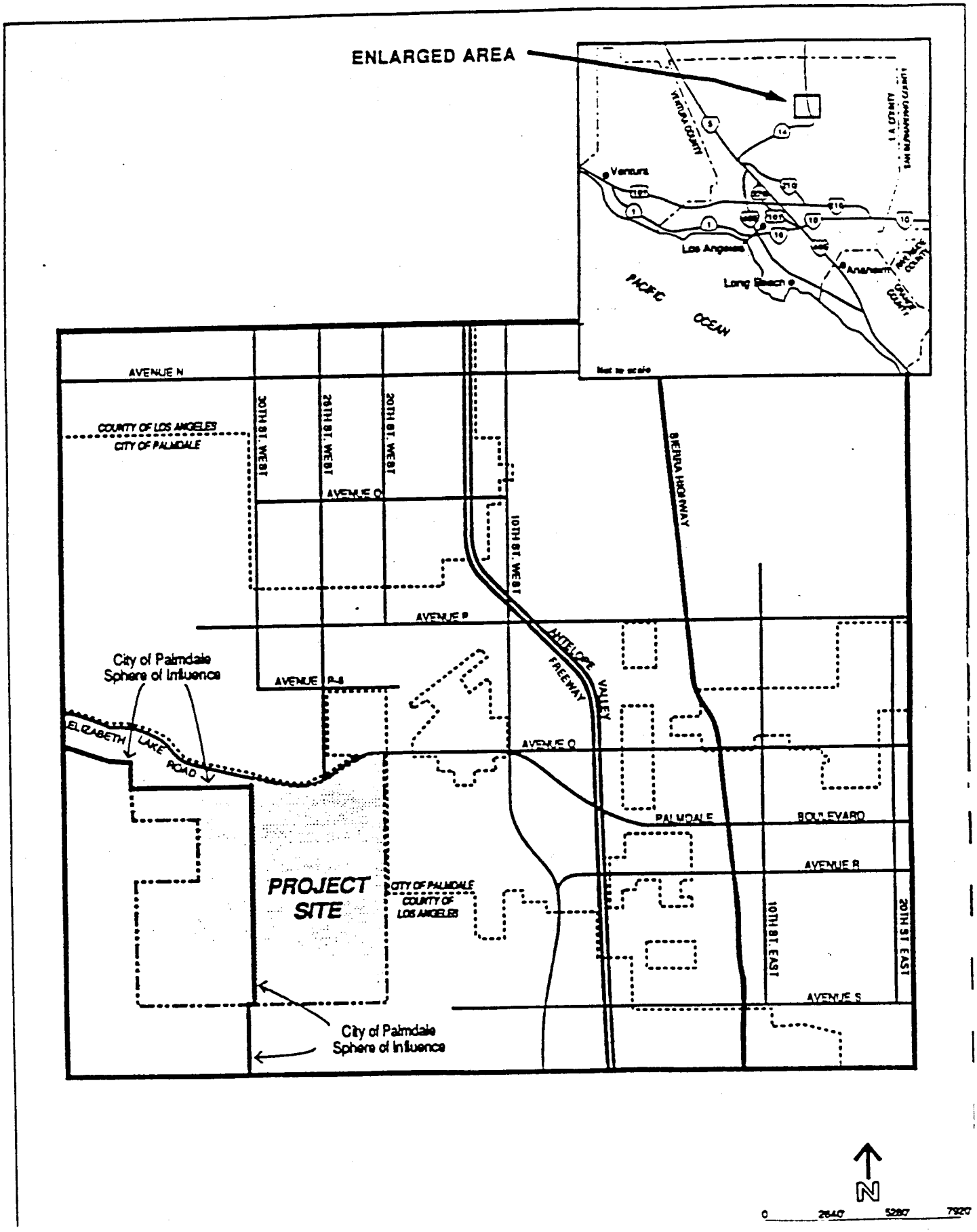
The project site is a 1,985-acre parcel located in an unincorporated portion of the Antelope Valley area of Los Angeles County contiguous to the City of Palmdale. A portion of the project site is located within the sphere of influence of the City of Palmdale. An annexation application and sphere of influence amendment have been filed with the City of Palmdale. The annexation application will be processed through the Los Angeles County Local Agency Formation Commission (LAFCO). The site is located approximately two miles west of the Antelope Valley Freeway (SR-14) along the southern edge of Elizabeth Lake Road, south of the intersection with 25th Street West. **Figure 1** shows the location of the project site.

2.2 PROJECT OBJECTIVES

The applicant proposes to develop the site under a Specific Plan that would result in th construction of 5,200 residential units with supporting commercial, school, fire department, and recreational uses. Approximately 404 acres of the project site, containing the prominent ridgelines, would be set aside as natural open space. The purpose of the Specific Plan is to serve as a planning tool to create a comprehensive approach to the development of the City Ranch property consistent with the goals and policies of the City of Palmdale General Plan. The City Ranch Specific Plan Development Standards are intended to operate in conjunction with the City of Palmdale Municipal Code.

2.3 PROJECT CHARACTERISTICS

The City Ranch Specific Plan divides the 1,985-acre project site into 35 planning areas classified by the proposed primary use (i.e., single-family development, open space/golf course, etc.). The proposed development plan is provided in **Figure 2**. The


ENLARGED AREA
Ventura
Los Angeles
Long Beach
Anaheim
PACIFIC
OCEAN
Not to scale
AVENUE N
COUNTY OF LOS ANGELES
CITY OF PALMDALE
30TH ST. WEST
25TH ST. WEST
20TH ST. WEST
AVENUE Q
10TH ST. WEST
SIERRA HIGHWAY
AVENUE P
City of Palmdale
Sphere of Influence
AVENUE P-8
ANTELOPE VALLEY FREEWAY
ELIZABETH LAKE ROAD
AVENUE Q
PALMDALE BOULEVARD
AVENUE R
PROJECT SITE
CITY OF PALMDALE
COUNTY OF LOS ANGELES
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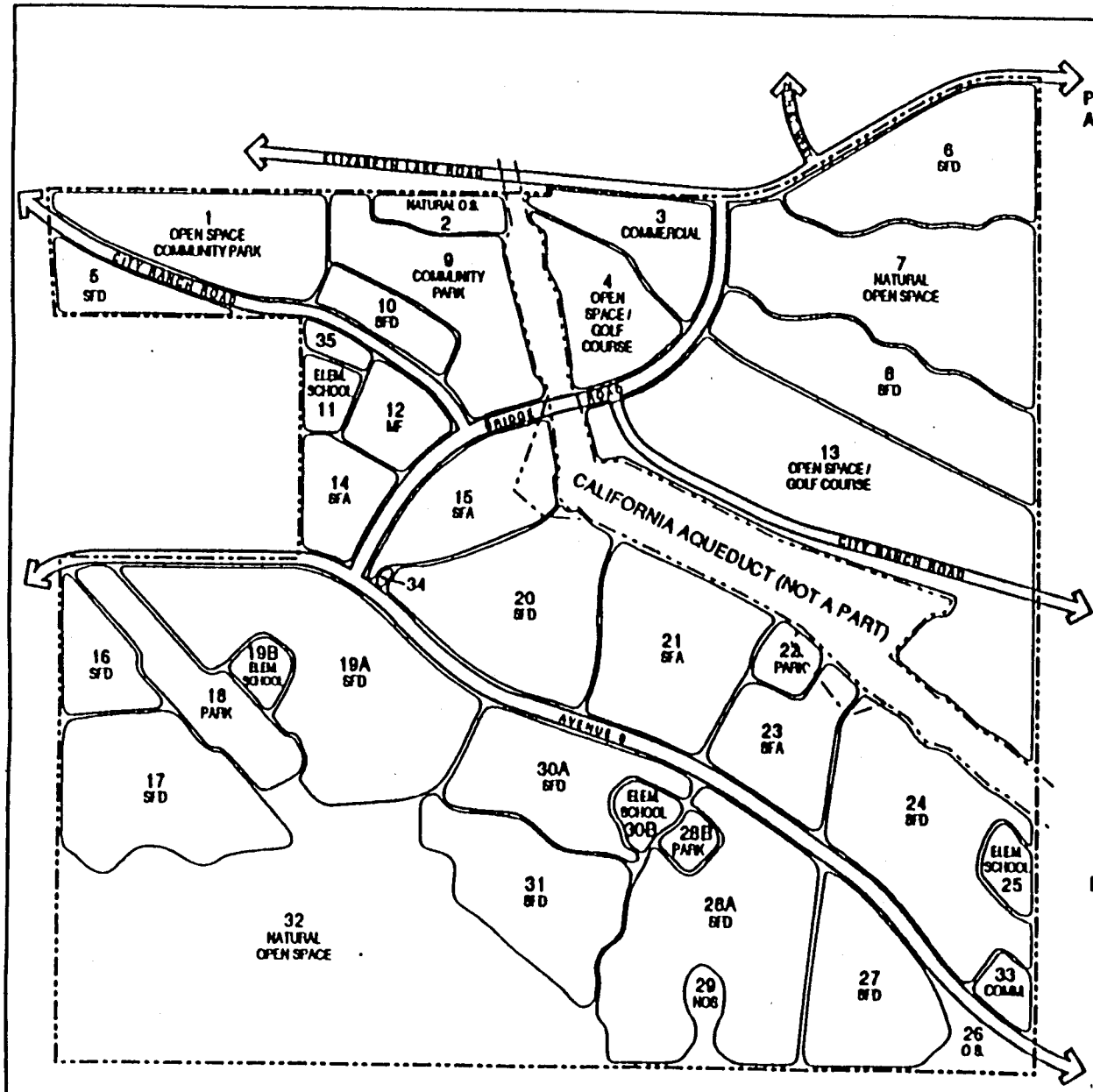

LEGEND

PLANNING AREA	LAND USE	GROSS ACRES	NET BUILDABLE ACRES	PERMITTED UNITS
1	OPEN SPACE/COMM. PARK	55.3	2.9	
2	NATURAL OPEN SPACE	12.7		
3	COMMERCIAL	32.1	31.3	
4	OPEN SPACE/GOLF COURSE	36.0	1.9	
5	SINGLE FAMILY DETACHED	22.2	15.0	81
6	SINGLE FAMILY DETACHED	68.8	68.8	292
7	NATURAL OPEN SPACE	100.0		
8	SINGLE FAMILY DETACHED	72.9	66.4	277
9	COMMUNITY PARK	51.9	10.8	
10	SINGLE FAMILY DETACHED	21.8	11.7	53
11	ELEMENTARY SCHOOL	9.0	9.0	
12	MULTIPLE FAMILY	21.6	19.6	313
13	OPEN SPACE/GOLF COURSE	179.6		
14	SINGLE FAMILY ATTACHED	26.1	26.1	260
15	SINGLE FAMILY ATTACHED	42.4	37.1	371
16	SINGLE FAMILY DETACHED	28.6	25.6	96
17	SINGLE FAMILY DETACHED	70.3	58.8	236
18	PARK	33.3	9.6	
19A	SINGLE FAMILY DETACHED	119.6	113.1	479
19B	ELEMENTARY SCHOOL	9.0	9.0	
20	SINGLE FAMILY DETACHED	77.4	77.4	328
21	SINGLE FAMILY ATTACHED	68.1	68.1	633
22	PARK	10.0	10.0	
23	SINGLE FAMILY ATTACHED	39.8	39.8	370
24	SINGLE FAMILY DETACHED	90.7	90.7	368
25	ELEMENTARY SCHOOL	10.0	10.0	
26	OPEN SPACE	14.5		
27	SINGLE FAMILY DETACHED	55.2	53.1	199
28A	SINGLE FAMILY DETACHED	116.5	99.1	423
28B	PARK	5.0	5.0	
29	NATURAL OPEN SPACE	9.0		
30A	SINGLE FAMILY DETACHED	53.6	52.0	224
30B	ELEMENTARY SCHOOL	8.0	8.0	
31	SINGLE FAMILY DETACHED	61.4	46.4	199
32	NATURAL OPEN SPACE	282.7		
33	COMMERCIAL	10.0	10.0	
34	FIRE STATION	1.0	1.0	
35	OPEN SPACE/COMM. PARK	3.8		
	ROADWAYS	55.1		
		1,985.0		5,200

PROJECT SUMMARY	GROSS ACRES	% OF SITE
COMMERCIAL	42.1	2.1%
OPEN SPACE	14.5	0.7%
NATURAL OPEN SPACE	404.4	20.4%
OPEN SPACE/GOLF COURSE	215.6	10.9%
PARKS	159.3	8.0%
RESIDENTIAL	1,057.6	53.2%
SCHOOLS	36.0	1.8%
ROADWAYS (ARTERIALS)	55.1	2.8%
FIRE STATION	1.0	0.1%
	1,985.0	100%

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Envicom M Graphic

Source: Ci ch Specific Plan, 1991
Almeida Planning

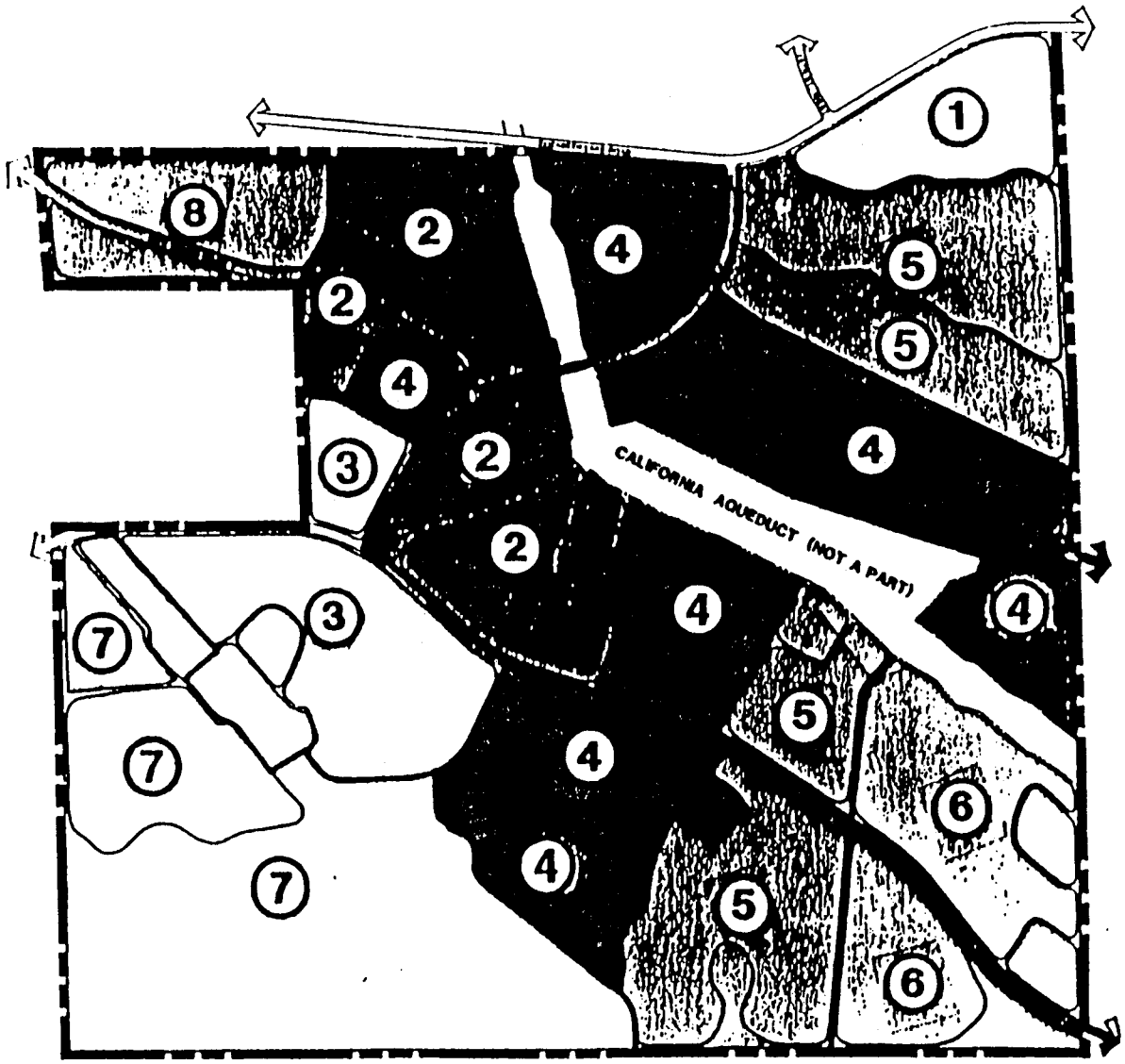
overall development approach is to locate residential development in the central portions of the site where they would be relatively hidden from developed areas of the City. Large portions of the site are designated to provide various forms of open space. These open space areas include areas containing significant landforms (such as hillsides and ridgelines where the slope is above 25% grade), seismic hazard areas, and environmentally-sensitive areas. Compatibility between land uses is addressed by the gradual transition of densities and uses from open space through single-family detached to single-family attached and multi-family residential development. Schools, parks and open spaces are situated adjacent to residential areas to provide visual relief and recreational opportunities within safe walking distances to homes. Distribution of the proposed land uses is as follows:

Land Use	Acres	% of Site
Residential	1,057	53
Commercial	42	2
Roadways	55	3
Schools	36	2
Parks	159	8
Golf Course	216	11
Open Space	15	1
Natural Open Space	404	20
Fire Station	1	0
Total	**1,985.0**	**100.0**

The project is proposed to be built in eight phases (**Figure 3**). Total project buildout is anticipated by the year 2000.

Grading

The overall grading approach for the proposed project is to place higher density uses on the flatter portions of the site, thereby lessening grading difficulty and impacts, and to set aside large contiguous areas of sloping land as permanent natural open space where very little grading and no residences are permitted. Though the majority of residential



LEGEND

1. FIRST PHASE
2. SECOND PHASE
3. THIRD PHASE
4. FOURTH PHASE
5. FIFTH PHASE
6. SIXTH PHASE
7. SEVENTH PHASE
8. EIGHTH PHASE

NOTE:
PHASING SUBJECT TO CHANGES AND ADJUSTMENTS

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0 1000' 2000' 3000'

SOURCE: City Ranch Specific Plan, 1991
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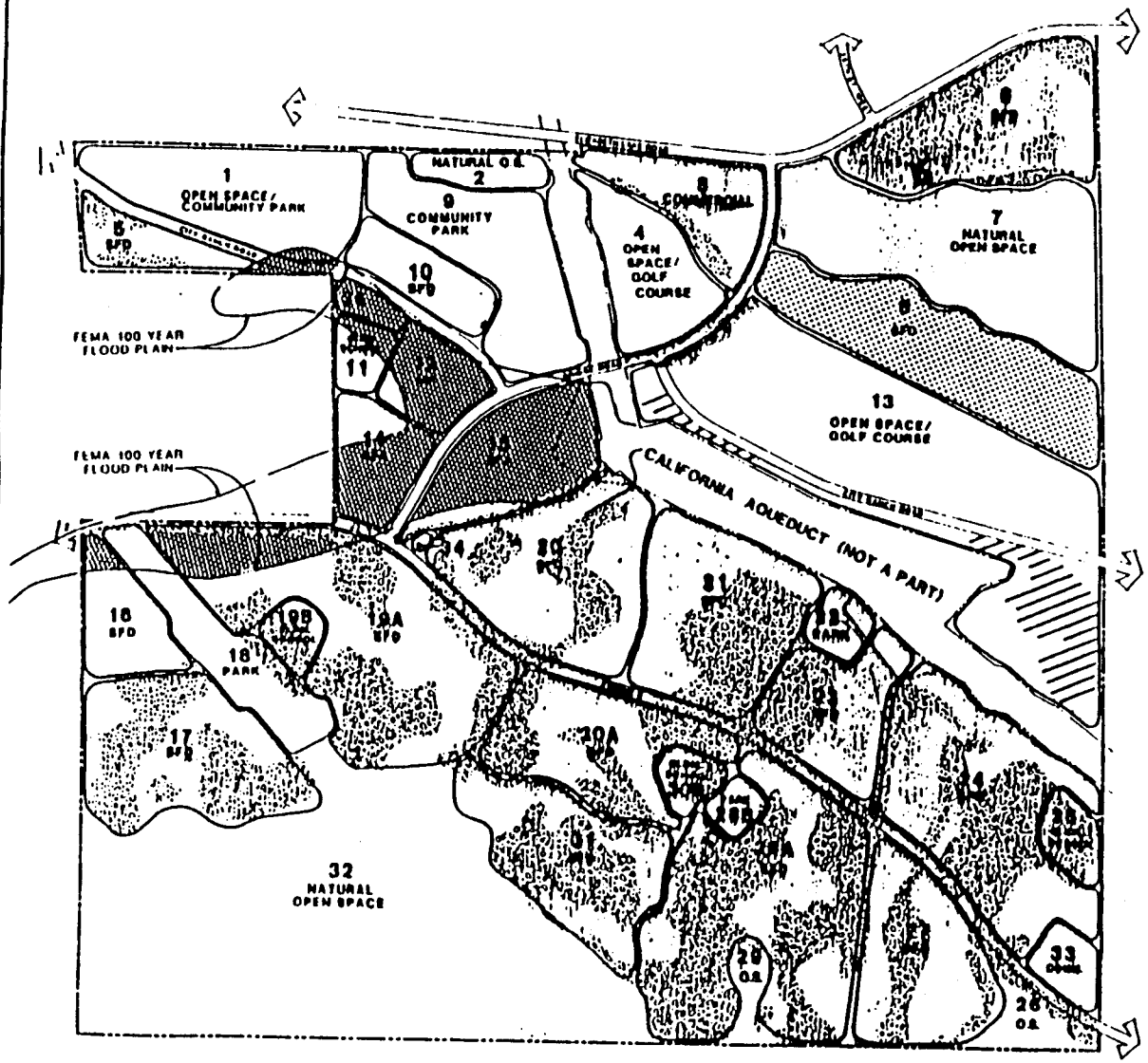
and commercial areas (except for portions of Planning Areas 3, 6, 8, 17, 27, 28A and 31) have gentle slopes below six percent grade, the majority of the sites within residential, commercial, school, park and golf course planning areas will require grading. The areas proposed to be graded are shown on the Conceptual Grading Plan (Figure 4). It is anticipated that grading will occur by phases over the 10-year construction period.

The grading concept for City Ranch can be divided into three categories: 1) areas of little or no grading; 2) grading necessary for roadway access, flood control, accommodation of fill generated by off-site regional improvements, or other similar reasons; and 3) grading to create properly-draining streets and buildable sites. Grading will be balanced on-site.

Planning Areas 2, 7, 29 and 32 are proposed to have little or no grading. Grading in these areas shall primarily be permitted only to satisfy health, safety, general welfare and similar circumstances including construction and access to water tanks and flood control basins, and to establish hiking and equestrian trails. A very small portion of Planning Area 7 along the Bridge Road entry to the project site will be graded to incorporate the project entry statement. The majority of these Planning Areas will remain in their natural condition.

Grading associated with major and minor arterial roads will occur adjacent to all planning areas which abut Elizabeth Lake Road, Avenue S, City Ranch Road and Bridge Road. This includes the majority of the development areas. For this reason, enlarged landscape easements of 10 to 30 feet are proposed to accommodate grade differences to be gradually transitioned at 3:1 slopes or flatter, rather than consistent 2:1 slopes throughout.

Planning Areas 5, 10, 11, 12, 14, 15, 16, 20, 21, 22, 23, 24, 25, 28B, 30A, 30B, 33 and 35 which contain flat or gently sloping terrain averaging between two and five percent in slope are proposed to be graded so as to provide efficient drainage, elimination of a 100-year flood plain, efficient sanitary sewer operation and balanced cut and fill within the



LEGEND

- FILL AREA
- FILL AREA TO REMOVE FLOOD HAZARD
- NATURAL UNDISTURBED AREA
- FILL FROM PROPOSED AMARGOSA BASIN OR DESIGNED FOR BALANCED CUT AND FILL
- CUT AREA
- WETLAND AREA
- LIMITED TO MODERATE GRADING

NOTE:
ESTIMATED GRADING QUANTITY FOR THE ENTIRE PROJECT IS APPROXIMATELY 4,000 CUBIC YARDS PER GROSS ACRE AVERAGE, BALANCED ON-SITE.

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0 900' 1800' 2700'

SOURCE: City Ranch Specific Plan, 1991
de Almeida Planning

CONCEPTUAL GRADING PLAN

phases. Within these planning areas, grading is anticipated to average less than 5,000 cubic yards per acre. These planning areas will be subject to general grading standards applicable to conventional development.

Planning Areas 1, 3, 4, 6, 8, 9, 10, 13, 17, 18, 19A, 19B, 26, 27, 28A and 31 contain some portions which have natural slopes between 10 and 25 percent. Grading of these areas is estimated to average 6,500 cubic yards per acre. Portions of these planning areas which are below 15 percent in average slope shall conform to general grading standards. Areas above 25% slope will be subject to more stringent standards.

Fill operations are anticipated to occur in Planning Area 8 to accommodate excess fill material generated by the construction of Amargosa Creek improvements to the north. The intent is to fill the central portion of Planning Area 8 running east/west by "day-light filling." Slopes created by the fill will be less than 30 feet in height except for up to three locations where slopes will be between 30 to 50 feet high.

Residential

Approximately 1,057 acres of the project site are proposed for residential uses. Overall residential density across the entire project site will be 2.62 dwelling units per gross acre. The residential mix is proposed as follows:

Single-family detached	3,253 units
Single-family attached	1,634 units
Multiple-family	313 units
Total	**5,200 units**

- Single-family Detached - Planning Areas 5, 6, 8, 10, 16, 17, 19A, 20, 24, 27, 28A, 30A and 31 are designated as areas to be developed with single-family detached units. Planning Areas 17 and 31 will contain some large lot sizes (approximately 10,000 square feet) in order to accommodate curvilinear street design within sloping portions of these planning areas.

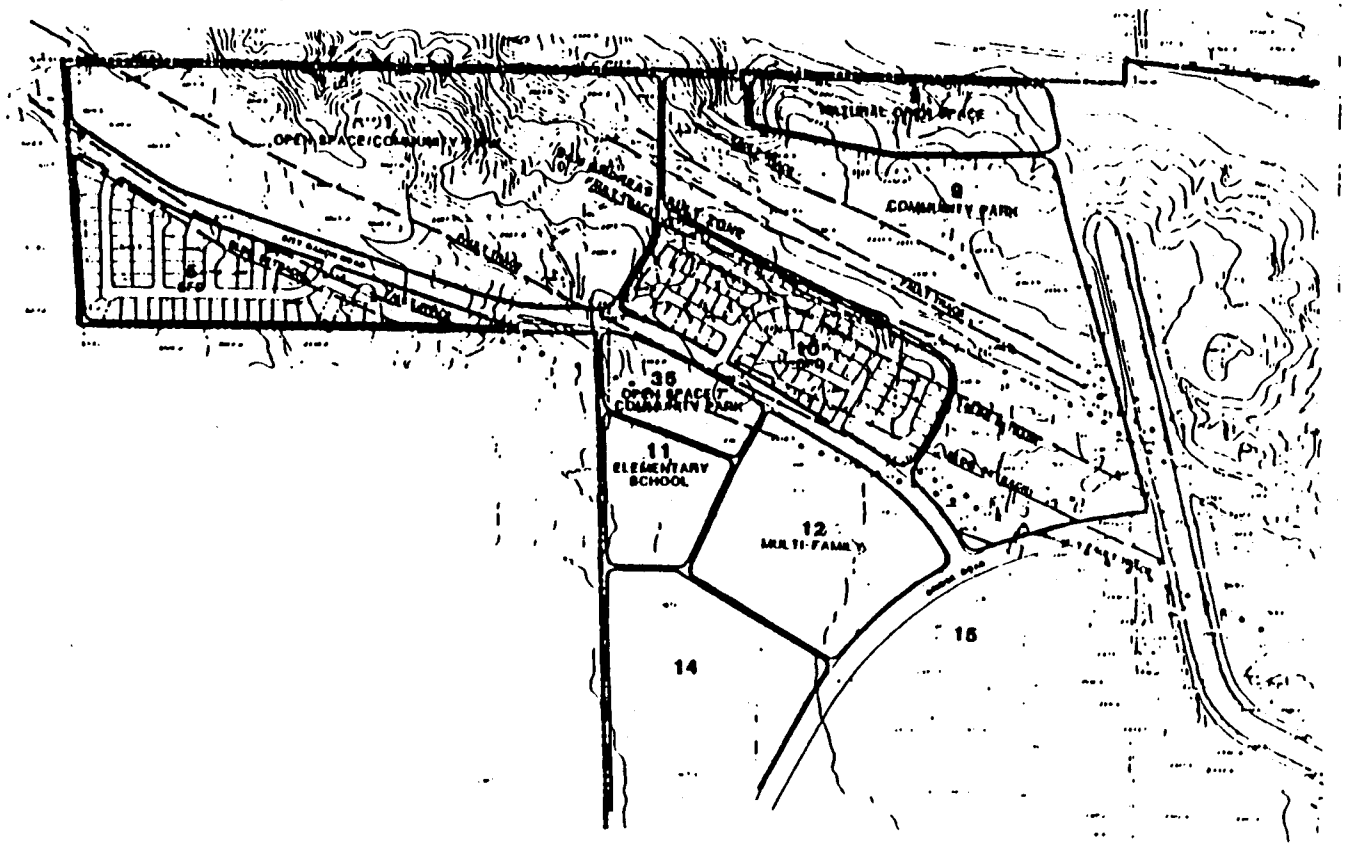
Portions of Planning Areas 5, 8, and 10 are in Fault Hazard Restricted Use Zones Buildings in these planning areas will incorporate setbacks from areas o probable rupture to provide sufficient safety margins for habitable structures. Figures 5 and 6 depict how buildings would be sited to avoid hazards associated with probable ground rupture. Approximately 15.0 acres of Planning Area 5, approximately 11.7 acres of Planning Area 10 and approximately 66.4 acres of Planning Area 8 are buildable. The intent is to place recreation, landscaping, open space, streets and other non-habitable uses in the Restricted Use Zones. No habitable structures will be built in Restricted Use Zones.

- Single-family Attached - Planning Areas 14, 15, 21 and 23 are designated as areas to be developed at 8 to 10 dwellings per gross acre. The intended housing types in this area are typically described as two attached units (duplexes) on fee ownership lots, three or more attached units (townhomes), clustered detached single-family homes with a condominium form of common space ownership and other housing types of a similar nature and density.

- Multi-family Residential - Planning Area 12 is designated for multiple-family use. Density is proposed at approximately 10.1-16.0 dwellings per gross acre and the intended housing types to be constructed include townhomes, condominiums and stacked units.

Commercial

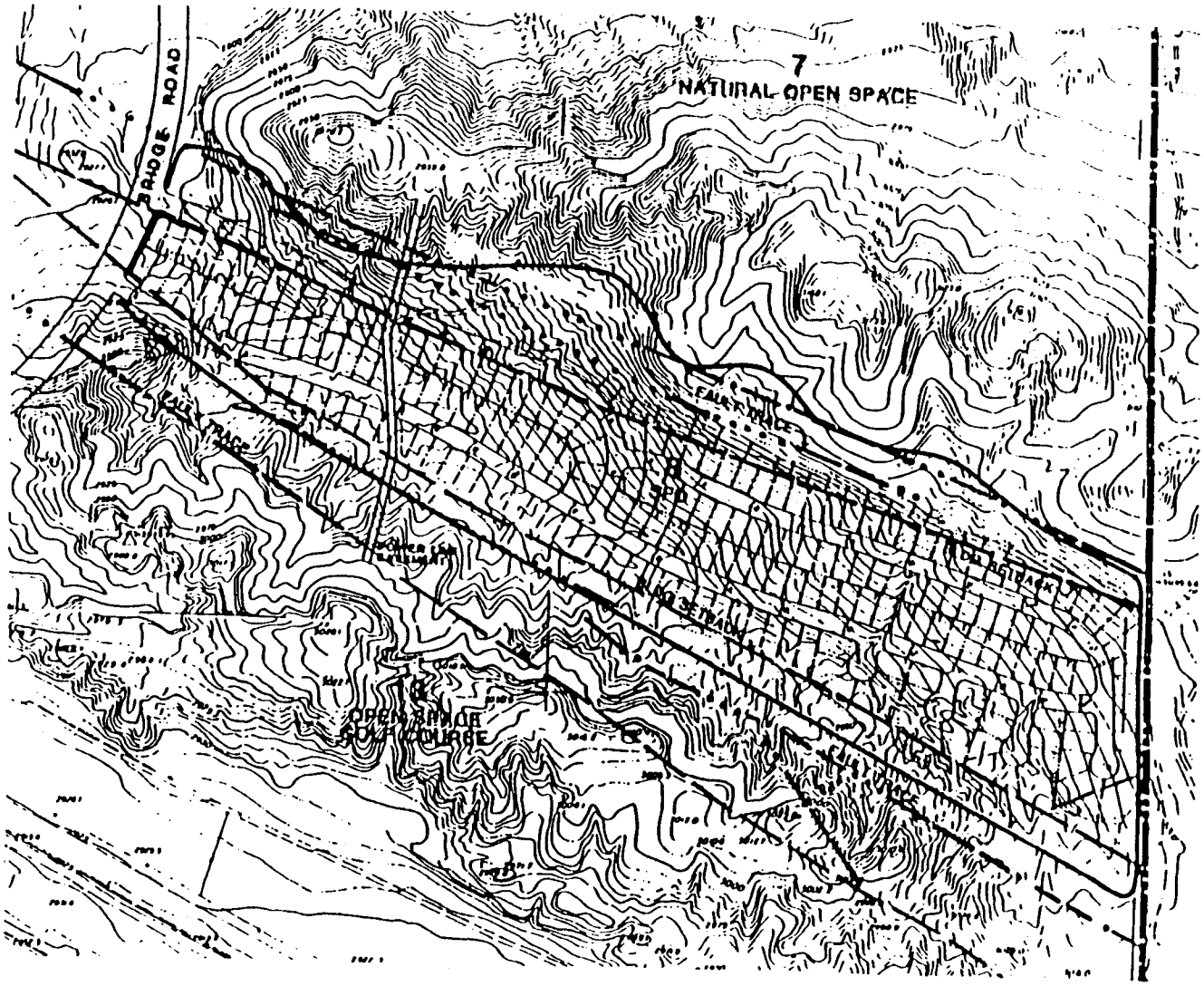
Two neighborhood commercial sites are identified as part of the City Ranch Development Plan. Planning Area 3 is an approximately 32-acre area adjacent to Elizabeth Lake Road, and Planning Area 33 is an approximately 10-acre site along Avenue S at the southeast corner of the project site.



SOURCE: City Ranch Specific Plan, 1991
Azeka de Almeida Planning

CONCEPTUAL DESIGN FOR PLANNING AREAS 5 AND 10

FIGURE
5



SOURCE: City Ranch Specific Plan, 1991
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CC PTUAL DESIGN - PLANNING ARE

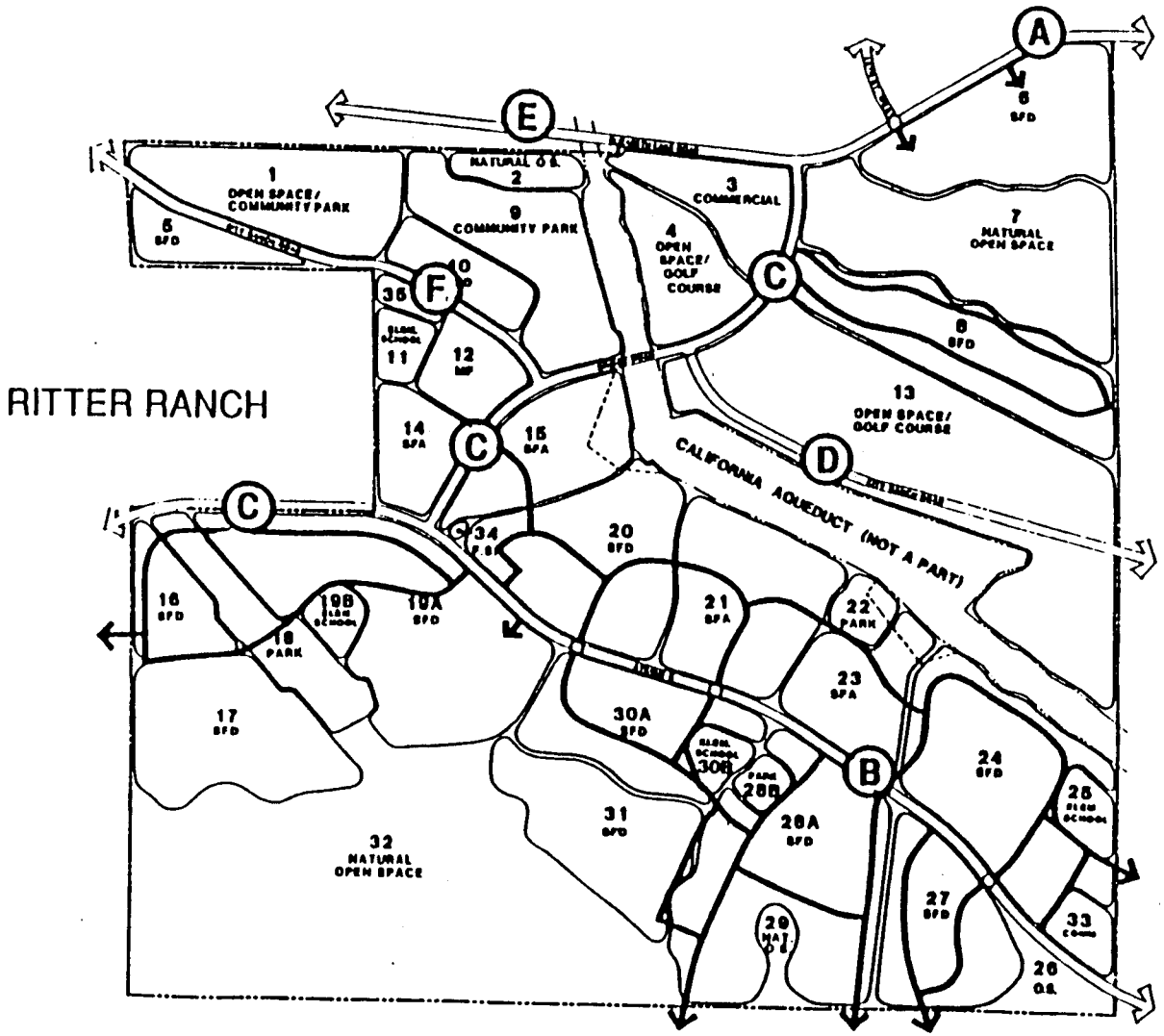
Planning Area 3, with an estimated total of 151,000 gross square feet of floor space, is designed to accommodate two of three anchor uses, such as a major chain discount department store, a home improvement store and/or a supermarket or drug store at opposite ends of the planning area. Approximately 30% of Planning Area 3 is restricted from the construction of habitable structures due to faults. This portion of Planning Area 3 will be limited to landscaping, parking, loading and temporary storage areas, and other non-habitable structural uses.

Planning Area 33, located in the southeast corner of the project site, will contain approximately 109,000 gross square feet of floor space. This area will accommodate a primary anchor (such as a drug store or supermarket) with multiple smaller tenants (dry cleaner, take-out restaurant, video rental, or specialty retail business).

Roadways

The project site will be served by four major arterial roadways. Elizabeth Lake Road will provide regional access to the site. Avenue S will serve as the major internal roadway through the site, traversing the City Ranch Specific Plan area in an east-west orientation. Bridge Road will provide a primary connection between Elizabeth Lake Road and the center of City Ranch. A secondary east-west arterial road (City Ranch Road) through the project site will be required to link properties to the west of the project site to Tierra Subida Avenue two miles east of the site. In addition to arterial roads, collector streets, local residential streets, and cul-de-sacs will serve the project site (Figure 7). Street standards for project roadways are depicted in Figure 8.

- Elizabeth Lake Road - Elizabeth Lake Road is currently a two-lane undivided roadway along the northern boundary of the City Ranch property. It is proposed to be realigned and improved as part of the City's Assessment District 90-1 in conformance with the City of Palmdale's street design requirements to permit design speed and sight distances appropriate for a major arterial road. Elizabeth



SOURCE: City Ranch Specific Pain, 1991
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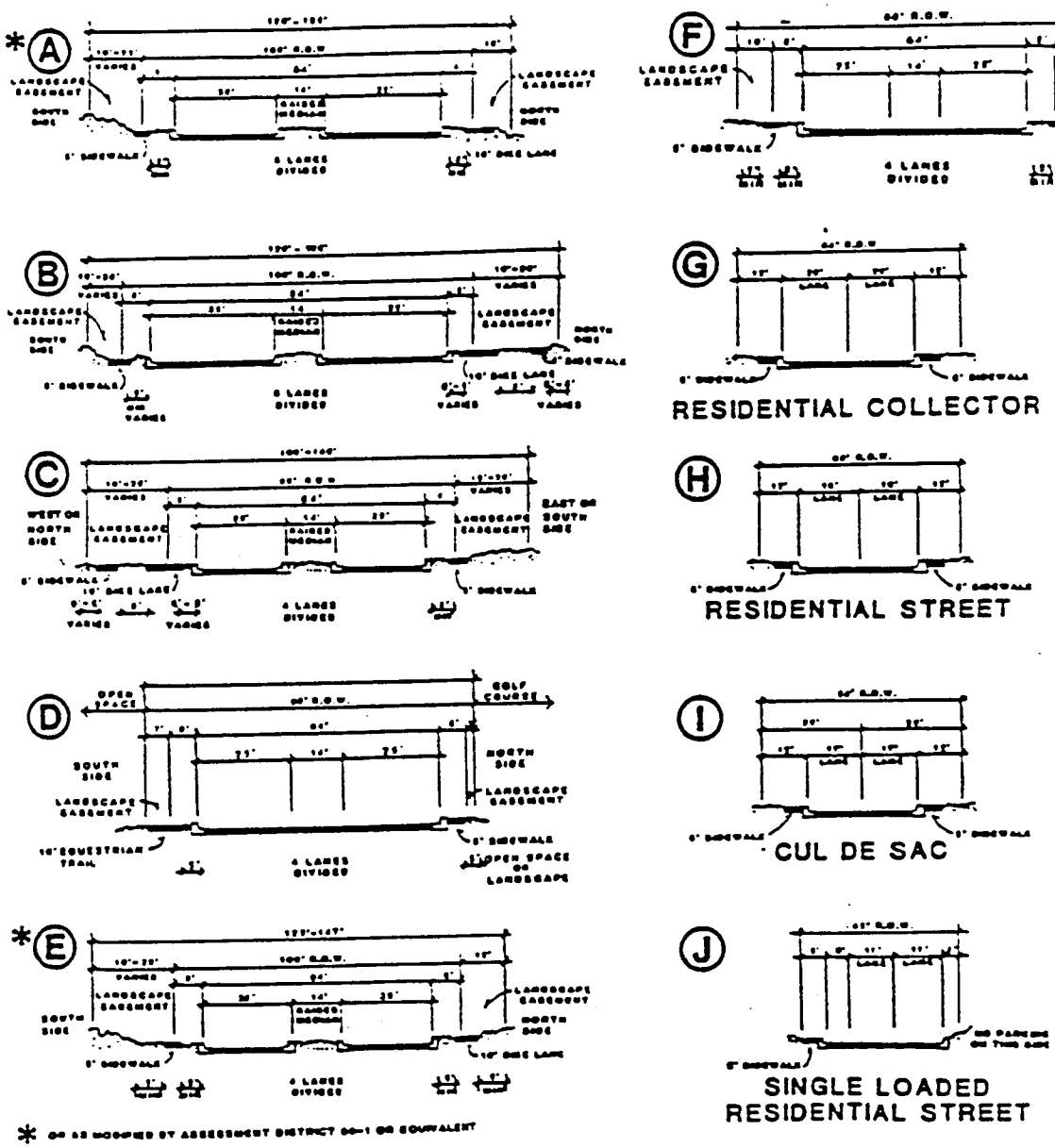


NOTE: LOCATIONS OF SECTIONS G, H, I, AND J ARE NOT SHOWN. THESE WILL BE DESIGNATED INTO INDIVIDUAL SUBDIVISIONS.

SOURCE: City Ranch Specific Plan, 1991
Azeka de Almeida Planning

Lake Road is designated as a major highway on the Master Plan of Highways with a designated 100-foot right-of-way and 84-foot paved roadway width. The City of Palmdale Traffic Engineer has determined that east of Bridge Road, ultimate traffic capacity will need to be accommodated by a 6-lane road with a 100-foot minimum right-of-way. West of Bridge Road, traffic would decrease such that four lanes would supply adequate capacity. East of Bridge Road, Elizabeth Lake Road will be 84 feet wide with a 14-foot wide raised median and 35 feet of pavement on either side. West of Bridge Road, Elizabeth Lake Road will be 64 feet wide with a 14-foot wide raised median and 25 feet of pavement on either side. Landscape easements east of Bridge Road adjacent to the right-of-way width include landscaping, and a 10-foot off-road bicycle path on the north side. The overall Elizabeth Lake Road corridor width varies between 120 and 135 feet east of Bridge Road, and between 122 and 147 feet west of Bridge Road, including landscape easements. A full 5-foot-wide sidewalk will be constructed along the south side of Elizabeth Lake Road.

- Avenue S - Avenue S is designated as a major highway with a 100-foot right-of way. As the major roadway through the City Ranch property, Avenue S is proposed as an enhanced thoroughfare with a landscaped median and landscape easements greater than 10-feet wide along both sides of the right-of-way. This expanded landscape easement area is intended to provide the visual and functional greenbelt through the project site. East of Bridge Road, the street right-of-way for Avenue S includes a width of 100 feet, with a 14-foot-wide raised, landscaped median and 35 feet of paving on each side of the median. West of Bridge Road, Avenue S reduces to an 80-foot right-of-way with a 14-foot-wide median and 25 feet of paving on each side of the median. In addition to these rights-of-way, a varying-width landscape easement of 10 to 30 feet is proposed on each side of the street throughout the project site to permit wide enhanced streetscapes. On the north side of the street, the landscape easement includes a 10-foot-wide bike lane. Five-foot-wide sidewalks are proposed on both sides of the street.

- Bridge Road - Bridge Road which also serves as a primary spine throughout the project site will provide a connection from Avenue S to Elizabeth Lake Road. Bridge Road is designed as a four lane arterial with 80 feet of right-of-way with a 14-foot-wide raised median and 25 feet of paving on each side. A four-lane bridge with a raised median, bicycle lanes and sidewalks will be constructed across the California Aqueduct. The design of Bridge Road closely parallels that of Avenue S.

- City Ranch Road - From the eastern boundary of the project site the City Ranch road will roughly parallel the existing City Ranch Road alignment northwesterly through Planning Area 13 until Bridge Road. The roadway will then continue west of the bridge across the California Aqueduct. From Bridge Road, the road will continue northwesterly between Planning Areas 9 and 12, 10 and 12, 10 and 35, then between Planning Areas 1 and 5 to the northwest corner of the project site. City Ranch Road will be constructed as part of the proposed project and dedicated to the City of Palmdale. The road will consist of an 80-foot right-of-way with a 14-foot-wide street median and 64 feet of pavement curb-to-curb.

- Collector Streets - Residential two lane collector streets will be incorporated into residential planning areas within 64-foot rights-of-way. These streets will be required at all points where two-lane access to arterial roads occur. Four four-way collector street intersections have been designated at approximately 1/4 mile intervals along Avenue S. Preliminary locations and configurations of the collector streets are indicated in Figure 7. These roads are conceptual with respect to alignments. Precise alignments to street sections, horizontal and vertical street design standards shall conform to applicable City of Palmdale standards at the time of individual planning area tentative tract map design as approved by the City Traffic Engineer.

- Residential Streets - Standard residential streets as well as cul-de-sacs and single-loaded streets are intended to be incorporated into the design of individua residential tracts.

- Adjacent Property Access - Access to the "Sagebrush" property directly adjacent to the south boundaries of Planning Areas 27 and 28A shall be provided by three residential collector streets through either Planning Areas 27 or 28A. The locations of the three tentative points of access to the Sagebrush property are shown on Figure 7. Major roadway access to the proposed "Ritter Ranch" property directly to the west shall be via City Ranch Road and Avenue S. Collector street access shall be provided to the proposed Ritter Ranch property through Planning Area 17.

Schools

A total of four elementary school sites (one 8-, two 9- and one 10-acre site) are proposed within the project site to accommodate children living within the Specific Plan area. According to the Development Plan, school sites will be located in Planning Areas 11, 19B, 25 and 30B. Three schools will be within the Westside Union School District and one within Palmdale School District.

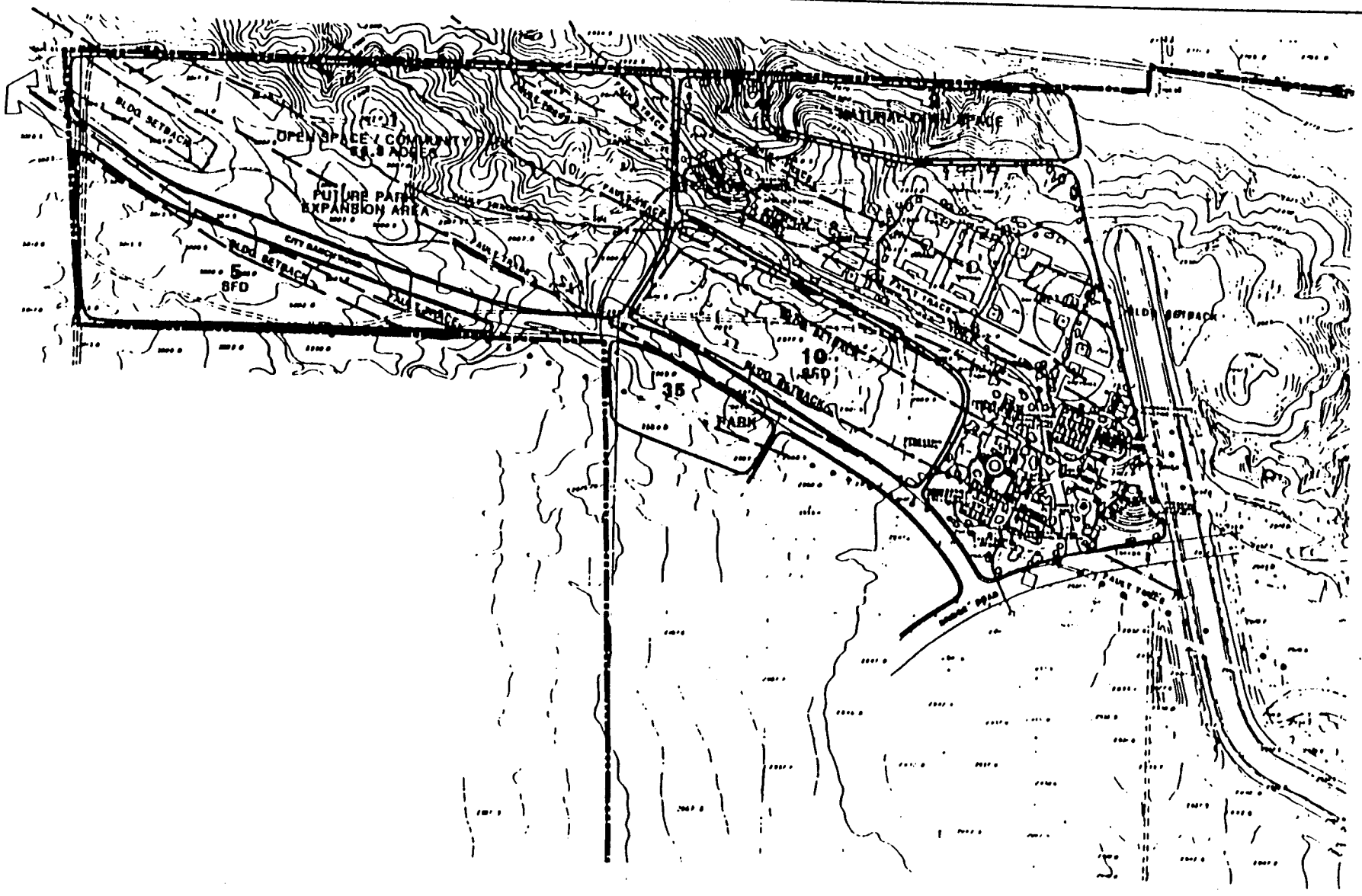
Recreation

Proposed recreational land uses include six parks, a golf course, and trails. Planning Areas 18, 22 and 28B (48 acres total) are proposed as neighborhood park sites. Each neighborhood park site will include opportunities for active play areas (softball, basketball, tot lots, etc.) and passive use areas (picnic tables, open turf). Planning Areas 1, 9 and 35 (111 acres total) are proposed as community park sites. All neighborhood and community park sites shall be fully improved and offered to the City of Palmdale for dedication.

The majority of Planning Areas 1 and 9 and all of Planning Area 35 are designated as seismically Restricted Use Zone I areas (where habitable structures are prohibited) These areas are, however, suitable for construction of community facilities such as lighted ball fields, picnic areas, soccer fields, basketball, tennis, volleyball, and other hardcourts, and parking lots. The community parks contain approximately 13.7 acres of buildable area which can accommodate facilities such as a gymnasium, multi-purpose rooms, a pool and poolhouse, restrooms and park offices. No community buildings shall be built within areas falling within Restricted Use Zone I (see **Figure 9**).

An approximately 216-acre regulation 18-hole golf course is planned for Planning Areas 4 and 13. The golf course is intended to include a driving range, practice greens, clubhouse and parking areas. The clubhouse is anticipated to be sited in Planning Area 4. Approximately 1.9 acres of buildable land are available for construction of the clubhouse in this planning area. The proposed golf course is intended to be a privately-owned facility open to public for public use. Future City Ranch road will traverse the golf course in Planning Area 13.

In addition, a system of off-street bicycle paths, pedestrian trails, equestrian riding trails, and hiking/mountain bicycle trails have been designed into the overall plan for City Ranch. Off-street bicycle paths are proposed along Avenue S, Bridge Road, Elizabeth Lake Road. Two staging areas are proposed along Avenue S to provide trail rest areas and parking for hikers and bicyclers. Trails will interconnect the residential areas to open space areas, parks, schools, commercial centers and the golf course. These trails connect to the expanded landscape along Bridge Road and Avenue S. A hiking/mountain bicycle trail traverses open space Planning Areas 29 and 32 and connects to a looped pedestrian hiking trail system west of the California Aqueduct. The North-side Equestrian Trail, an existing County trail, currently traversing the site, will be relocated on-site to be compatible with proposed uses.



SOURCE: City Ranch Specific Plan, 1991
a de Almeda Planning

CONCEPTUAL DESIGN FOR PLANNING AREAS 1, 9 AND 35

FIG

Open Space

Planning Area 26 (14.5 acres total) is designated as an open space area. It will contain the Avenue S project entry statement. After construction of the entry statement, the rest of the area will be landscaped and maintained as open space. According to the City Ranch Specific Plan, Planning Area 26 may contain future access roads and improvements for utility easements.

Approximately 404 acres of the project site are proposed to be designated as natural open space (Planning Areas 2, 7 and 32). These areas for the most part contain the higher elevations and natural ridgelines of the project site where slopes exceed 25 percent. These areas, visually the most prominent of the project site, will provide space for preservation of natural habitat, native desert vegetation and opportunities for hiking, bicycling and equestrian trails. Additionally, passive recreation areas and/or vista points to scenic resources may be provided. A small portion of Planning Area 7 will contain the Bridge Road entry statement. The natural open space and open space planning areas shall be offered to the City of Palmdale for dedication.

Fire Station

The City Ranch property will include a one-acre fire station site within Planning Area 34 east of the intersection of Avenue S and Bridge Road. The site is located and sized in accordance with the Los Angeles County Fire Department requirements. The fire station site shall be conveyed to the Los Angeles County Fire Department or dedicated to the County of Los Angeles.

2.4 PERMITS AND APPROVALS

The City Ranch EIR is intended to be used as the environmental review document by the following agencies for their permitting/approval processes. The following permits and approvals described in detail in Land Use Section 5.2 are required in order to

implement the proposed project.

- Annexation of the project site into the City of Palmdale. Annexation would include amending the City's "sphere of influence" boundary to include the entire project site. This annexation procedure will be processed through the Los Angeles County Local Agency Formation Commission (LAFCO).

- Adoption of the City Ranch Specific Plan by City Council ordinance.

- Pre-zone of the project site as SP (Specific Plan) by City Council ordinance.

- General Plan Amendment to redesignate the land use designations depicted on the Land Use map of the City of Palmdale General Plan by City Council ordinance.

- Subdivision of the project site into 38 planning area parcels by Planning Commission approval.

- California Department of Fish and Game Stream or Lake Alteration Agreements (per Section 1603 of the State Fish and Game Code) for alterations to the Anaverde and Amargosa Creeks.

- Army Corps of Engineers Section 404 permit for the discharge of fill material into waters of the United States pursuant to the Clean Water Act of 1977, as amended, for any improvements made in the portions of Planning Area 13 south of the proposed City Ranch Road alignment and north of the California Aqueduct, designated to be within the Corps' jurisdiction.

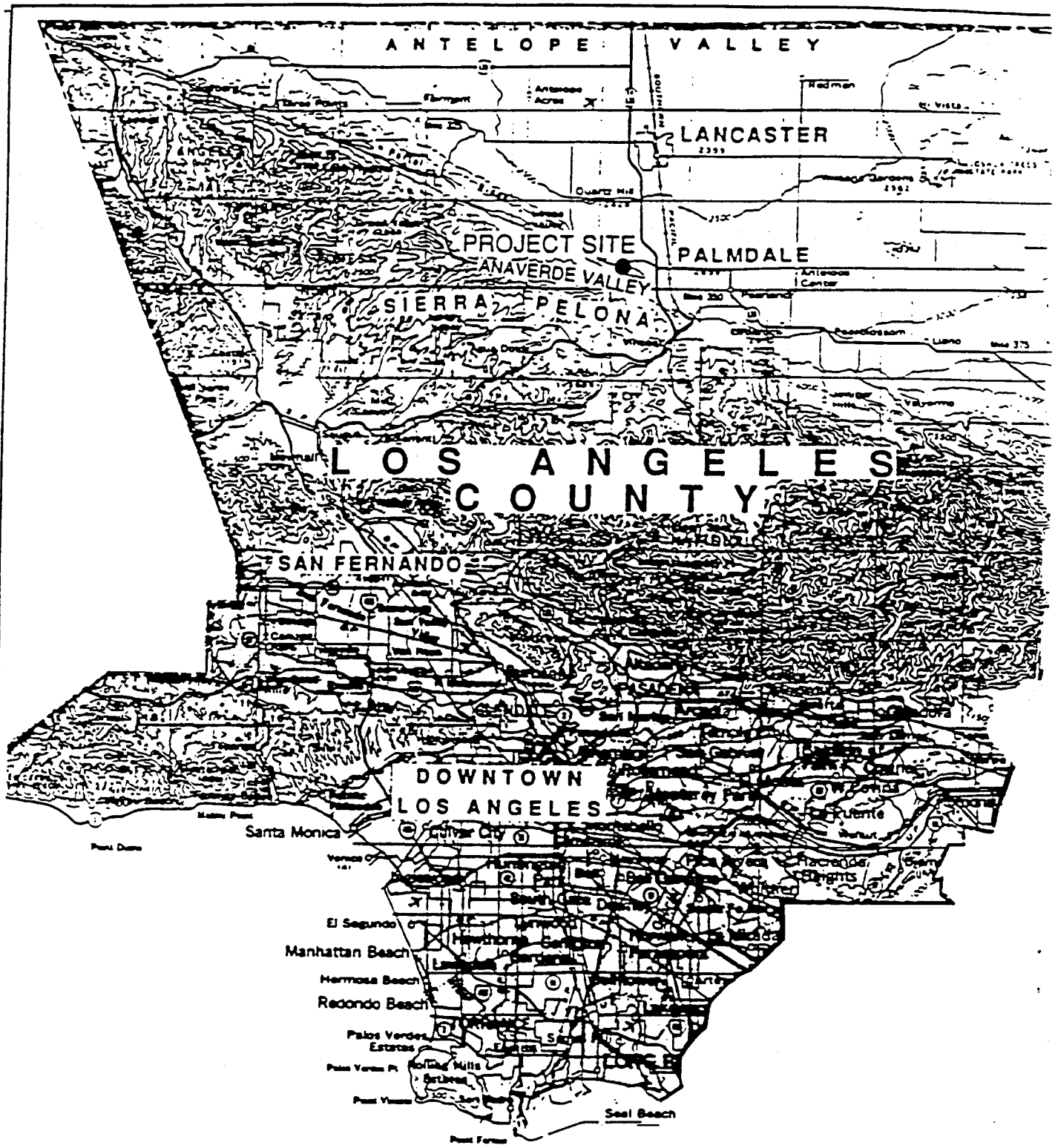
3.0 ENVIRONMENTAL SETTING

3.1 REGIONAL SETTING

The City Ranch property is located in the unincorporated Antelope Valley area of Los Angeles County west and south of the City of Palmdale boundary. The project site is located about 65 miles from downtown Los Angeles, and is situated at the southern edge of the Mojave Desert, within and adjacent to the northern foothills of the Sierra Pelona. The Sierra Pelona is a part of the Transverse Ranges which extend in a southeast-northwest direction across much of southern California (Figure 10). The project site is situated five miles west of the Palmdale Regional Airport. Surrounding communities include the Acton, Leona Valley and Anaverde communities of the County of Los Angeles and the City of Lancaster.

At the project site, the Transverse Ranges are separated from the Mojave Desert by the Anaverde Valley and the San Andreas Rift Zones. The San Andreas Rift Zone, which is up to several miles wide in places, is evident in the landscape south of Palmdale with classic fault features and geologic structure. This zone extends from the Gulf of California to Cape Mendocino in northern California. Numerous faults within the San Andreas Rift Zone lie north and south of the main San Andreas fault. These include the Little Rock, Cemetery, Nadeau, and abundant subsidiary faults. There is evidence of movement in the last 11,000 years; therefore, these faults are considered active by geologists.

The Antelope Valley area is going through a rapid transition from a rural and agricultural setting to a suburban region. Because of limited employment opportunities, Palmdale serves as a "bedroom community" to the Los Angeles Basin employment area. Palmdale is considered one of the fastest growing cities in California according to the Center for Continuing Study of the California Economy (1989 Annual Survey). Recently, Tentative Tract Maps have been filed and approved for residential



LEGEND

● PROJECT SITE

—·— LOS ANGELES COUNTY BOUNDARY

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Envicom Corporation L

REGIONAL SETTING

FIGURE 10

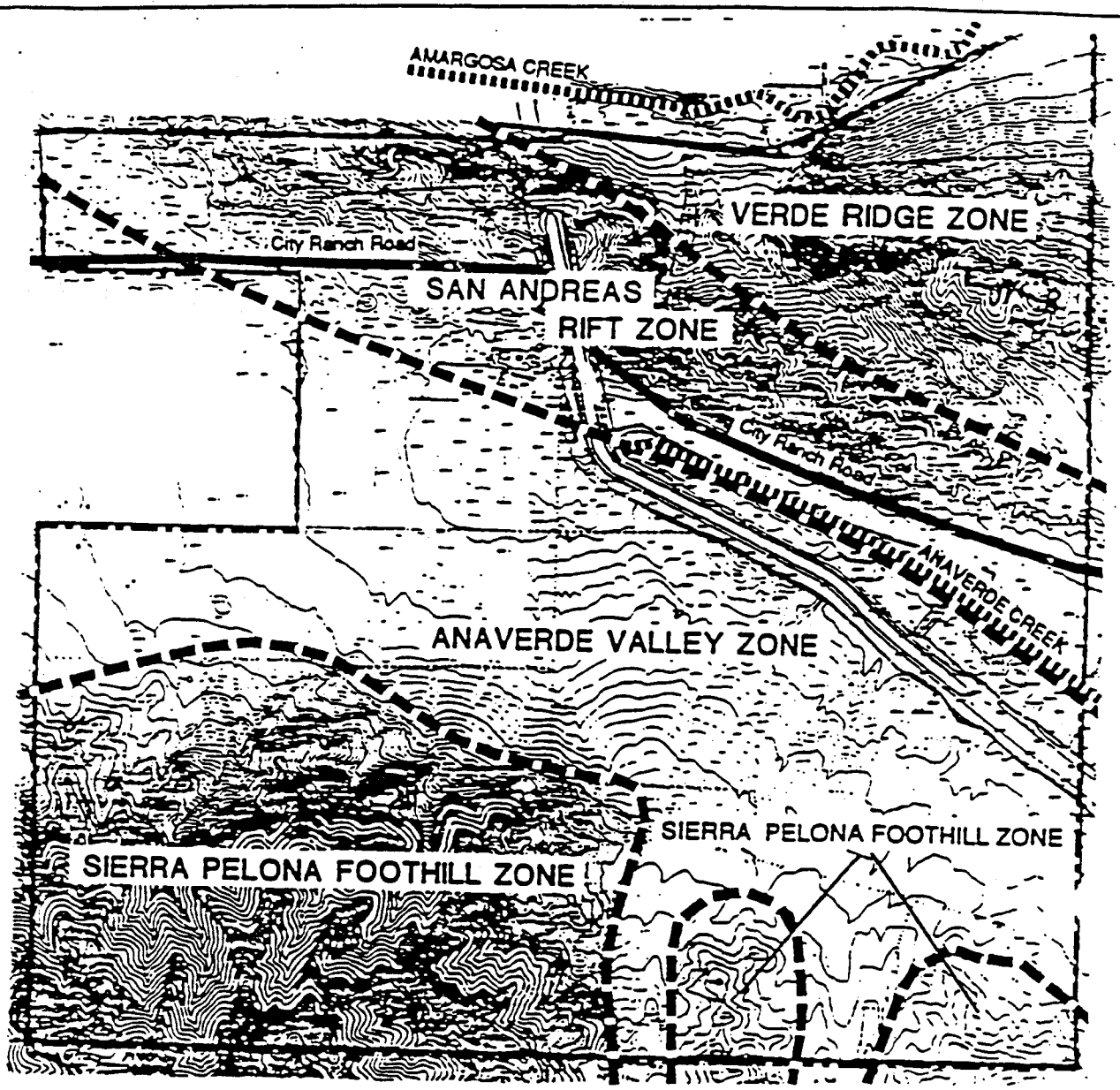
boundaries of the City Ranch site.

3.2 LOCAL SETTING

The 1,985-acre (approximately 3.1 square mile) project site is located on the south side of Elizabeth Lake Road approximately two miles west of the Antelope Valley Freeway (SR-14) (**Figure 1**). Access to the site is currently from a paved loop road off Elizabeth Lake Road, 1,300 feet west of the T- intersection with 25th Street West. The access loop road includes a 2-lane bridge across the Aqueduct. The California Aqueduct traverses the project site. Built in the late 1960s, the California Aqueduct occupies approximately 116 acres of land within the boundaries of the project site. However, this acreage is not part of the project site. Five sets of high-tension Southern California Edison electric transmission lines traverse the southern portion of the project site. Additionally, two above ground Southern California Edison distribution lines cross the project site (one through the southern portion of the site and one along the aqueduct). Two buried AT&T high capacity transcontinental communications lines cross the project site (one from the north to south in the eastern portion of the project site, the other across the site's southeast corner).

The northeastern and southwestern portions of the site are characterized by gentle slopes that gradually exceed 25 percent natural gradient. Total relief on the property is approximately 1,000 feet with the highest elevation at the southwesterly ridgeline and the lowest point along Elizabeth Lake Road at 25th Street West.

The project site comprises four distinct geomorphic zones, the San Andreas Rift Zone and Verde Ridge on the north, the Anaverde Valley floor in the center, and the Sierra Pelona foothills on the south. Each of the zones depicted in **Figure 11** is described in the following paragraphs.



LEGEND

PROJECT SITE BOUNDARY

ZONE BOUNDARY LINE

N

0 900' 1800'

SOURCE: Kenneth Wilson,
Engineering and Environmental Geology,
1990

PROJECT SITE GEOMORPHIC ZONES

FIGURE 11

The northern portion of the site consists of the San Andreas Rift Zone and two prominent slopes of the Verde Ridge Zone with an intervening parallel valley. Within these areas, slopes range from very steep (4:1 or greater) along the ridge flanks to flat within the valley floors. Elevations range between 2,670 feet above sea level near Elizabeth Lake Road to 3,180 feet at the Verde Ridge. The northern portion of the project site contains a drainage tributary to the Amargosa Creek (to the north of the project site). This drainage is usually dry. The southern portion of this zone is dominated by the Anaverde Creek, an easterly trending drainage course which normally has surface water several months of the year. In the valley between the San Andreas Rift Zone and Verde Ridge, drainage flows to the northwest towards Amargosa Creek. The southern ridge is very rugged as a result of severely eroding drainages and associated escarpments.

The Anaverde Valley floor spans the central portion of the project site from southeast to west. The central portion of the site consists of relatively flat alluvial fan surfaces with intervening drainage courses of the Anaverde Creek. The alignment of the creek roughly parallels that portion of the California Aqueduct also located in the Anaverde Valley section of the site.

Several decades of agricultural use in the Anaverde Valley have had an effect on present vegetation types. Ground cover in the Anaverde Valley Zone consists almost exclusively of dry grasses, including some "volunteer" cereal species. Today, the valley floor is divided into fields by fencing and dirt roads. The City Ranch facilities, which include two houses, a wooden barn with outbuildings, two hay barns, an office, a very large propane tank, two silos, and a water tank are concentrated in a complex in the north-central area of the valley. To the east, across the Aqueduct, are a mobile home, barn, stable, and water tank which represent additional ranch facilities. Numerous corrals form a network around the facilities.

The southern portion of the site consists of the northern flank of the Sierra Pelona. This is an area of steep mountain slopes with deeply incised drainage courses. The highest

point on the property is found in the Sierra Pelona foothill zone. The 3,845-foot elevation is located at the southwestern portion of the project site. From there, the mountain increase in elevation as one moves south, finally attaining a height of 4,725 feet at Harold Beacon, about two miles south of the southern boundary.

Existing vegetation on the project site consists of desert woodland, Great Basin sagebrush scrub, alkali meadow, transmontaine alkali marsh and wild grass pastureland. Native desert plants including California junipers and Joshua trees are located along the northeastern faces of the hillsides. A California juniper seedling area is situated in the north-central portion of the project site west of the California Aqueduct. The northern slopes of the southern ridge also contain stands of manzanita. The vegetation in the foothill zone is dominated by grasses interspersed with occasional buckwheat and yucca plants.

4.0 CUMULATIVE PROJECTS DESCRIPTION

The California Environmental Quality Act (Government Code Section §15355) defines "cumulative impacts" as two or more individual effects that, when considered together, are considerable or compound other environmental impacts. The cumulative impacts are the changes in the environment that result from the incremental impact of development of the proposed project and other nearby projects. For example, traffic impacts of two projects in close proximity may be insignificant when analyzed separately, but could have a significant impact when the projects are analyzed together. Cumulative impact analysis allows the EIR to provide a reasonable forecast of future environmental conditions and to more reasonably gauge project effects.

The project site is located within the unincorporated area of Los Angeles County within the sphere of influence of the City of Palmdale. There are 50 other projects either proposed, approved or under construction within a one mile radius of the project site: 5 commercial projects, 41 residential projects, one mixed-use commercial/residential project, one mixed use residential/public library/school project, a high school and elementary school and an 85-acre landfill expansion. This EIR examines the cumulative impacts of simultaneous development of these projects and the proposed project.

The set of projects used for cumulative impact analysis in this EIR was developed from discussions with the City of Palmdale Planning Department and from a printout of all proposed projects in the Antelope Valley area of Los Angeles County (September, 1991). **Table 1** lists these projects and **Figure 12** shows their locations. Cumulative impacts are discussed within each of the specific impact analysis discussions in Section 5.0, Analysis of Environmental Issues. Construction of the cumulative projects would add 5,143,496 square feet of commercial space, and 13,165 residential units, a high school, a middle school, 6 elementary schools, a public library, and increased landfill space to the Palmdale area.

Table 1

City Ranch
Cumulative Projects List

City of Palmdale

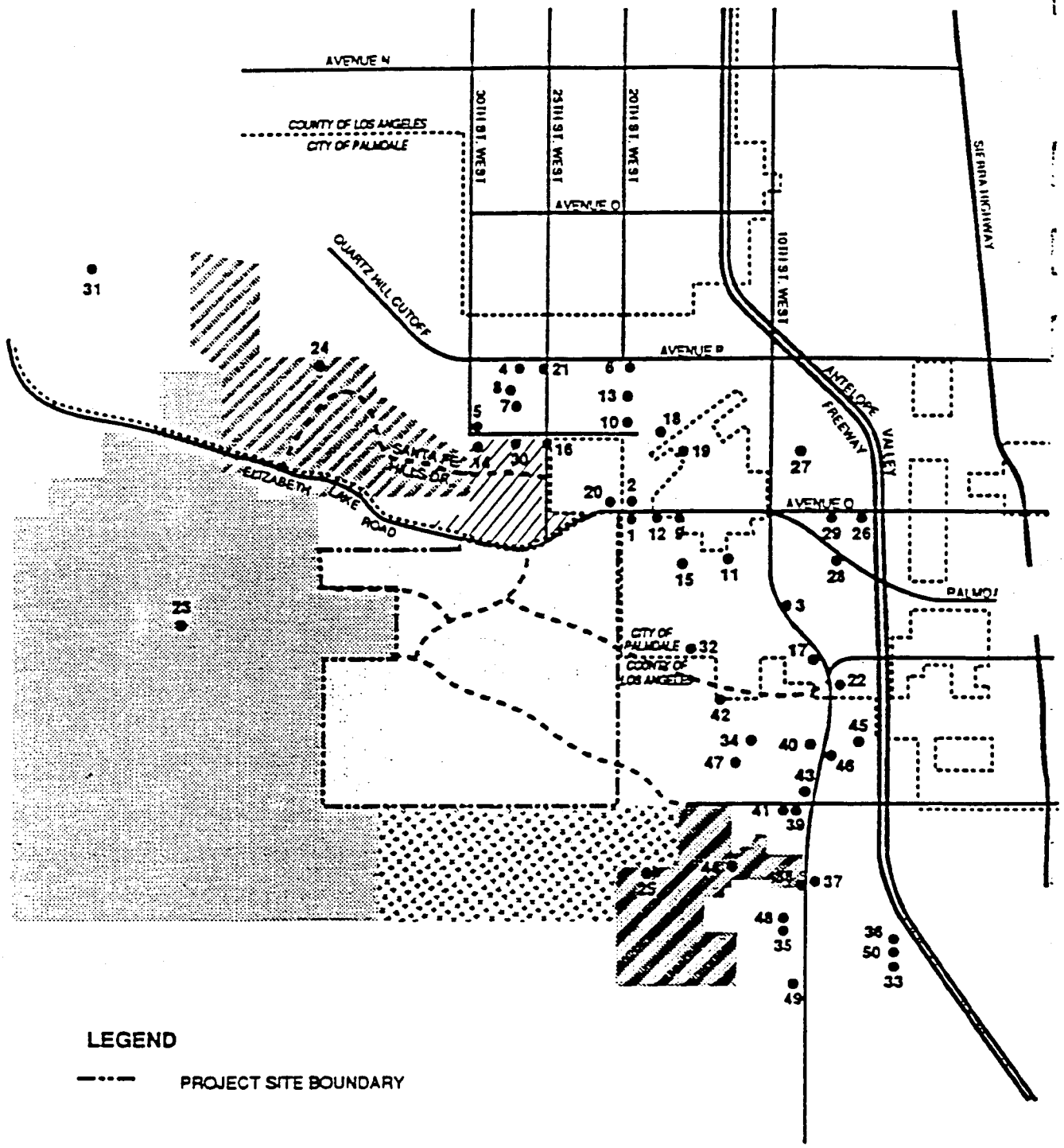
Map No.	Case No.	Location	Use	Size
1	TT44526	Southeast corner of 20th St. West and Elizabeth Lake Road	SFR	156 units
2	TT44573	Northeast corner of Avenue Q and 20th St. West	SFR	233 units
3	TT45291	South of Avenue Q-8 along Tierra Subida	SFR	94 units
4	TT45364	Southeast corner of Avenue P and 25th St. West	SFR	38 units
5	TT45365	Northeast corner of Avenue P-8 and 30th St. West	SFR	344 units
6	TT45573	South of Avenue P & east of 20th St. West	SFR	167 units
7	TT45742	Northeast corner of Avenue P-* and 25th St. West	SFR	42 units
8	TT45743	West of 25th St. West & south of Avenue P.	SFR	86 units
9	TT45916	South of Elizabeth Lake Road & east of 15th St. West	SFR	35 units
10	TT46017	Northeast corner of 20th St. West & Avenue P-8	SFR	57 units
11	TT46123	Sagetree and Yucca Tree	SFR	118 units
12	TT46368	South of Elizabeth Lake Road between 15th St. West & 20th St. West	SFR	37 units
13	TT46430	East of 20th St. West & south of Avenue P-4.	SFR	84 units
14	TT46452	Southeast corner of Avenue P-8 & 30th St. West	SFR	446 units
15	TT46454	Southwest corner of Date Palm & 15th St. West	SFR	125 units
16	TT47062	Southwest corner of 22nd St. West & Avenue P-8	SFR	43 units
17	TT47911	Southwest corner of 5th St. West & Tierra Subida	SFR	34 units
18	TT48014	North of Amargosa Creek & east of the alignment of 17th St. West	SFR	90 units
19	TT48032	Northeast corner of Dianron & Mesquite	SFR	37 units
20	TT48664	Northwest corner of Elizabeth Lake Road & 20th St. West	SFR	591 units
21	TT50317	Southwest corner of Avenue P & 22nd St. West	SFR	10 units
22	CUP 90-03	Southeast corner Tierra Subida & Rayburn Road	MFR	30 units
23	Ritter Ranch		SFR	7200 units
			Comm	3,179,880 sq. ft.
			Schools	5,270,760 sq. ft.
24	Santa Fe Specific Plan		SFR	1105 units
			MFR	80 units
			Schools	68,000 sq. ft.
25	Valley Ranch		SFR	1133 units
			Comm	50,000 sq. ft.
26	49263	Southwest corner of Avenue Q & Antelope Valley Freeway	Comm	304,920 sq. ft.
27	49556	Between 5th St. West & 10th St. West & Avenue Q & Avenue P-8	Comm	1,045,440 sq. ft.
28	CUP 09-10	South of Palmdale Blvd. & east of 5th St. West	Comm	108,920 sq. ft.
29	auto mall		Comm	450,000 sq. ft.
30	Highland High School	Southwest corner of Avenue P-8 & 25th St. West	School	192,000 sq. ft.
	elementary school	adjacent to high school	School	75,000 sq. ft.
31	Lane Prop		SFR	365 units
32	Landfill		Landfill	85 acres

County Projects

33	48307	Southeast corner of Lakeview and El Camino	SFR	68 units
34	89237	West of 10th St. West, between R-8 and Avenue S	SFR	24 units
35	35117	Barrel Springs & Camares	SFR	37 units
36	20647	Northeast corner of El Camino and S-14	SFR	4 units
37	48308	Northeast corner of Tierra Subida & Hacienda	SFR	15 units
38	21985	N/S Hacienda, west of Tierra Subida	SFR	2 units
39	45950	East of Camares, south of Avenue S	SFR	9 units
40	90375	Tierra Subida between R-8 & R-12	SFR	13 units
41	21140	Avenue S between Tierra Subida & Camares	SFR	4 units
42				
43	45982	North of Avenue S & east of 7th St. West	SFR	22 units
44	49361	Sierra Ancha & Tovey Rd.	SFR	7 units
45	43198	Southwest corner of R-8 & 3rd West	SFR	82 units
46	49954	Tierra Subida & Avenue R-8 & R-12	SFR	13 units
47	47528	West side of 10th St. West between R-8 & Avenue S	SFR	24 units
48	35117	Barrel Springs & Camares	SFR	37 units
49	90395	Shaner Rd. between 6th St. West & Camares	SFR	2 units
50	17851	Southeast corner of El Camino and S-14	SFR	2 units

Cumulative Project Summary

Residential	
Single-Family Dwellings	13,065 units
Multi-Family Dwellings	110 units
Commercial	5,143,496 sq. ft.
Public Library	16,000 sq. ft.
Schools	5,605,760 sq. ft.
Landfill	85 acre expansion



LEGEND

PROJECT SITE BOUNDARY

SOURCE: Palmdale City of Planning Department

Envicom Macintosh

CUMULATIVE PROJECTS LOCATIONS

FIGURE 12

5.0 ANALYSIS OF ENVIRONMENTAL ISSUES

5.1 OVERVIEW

Format of Analysis

The following potential impact areas were identified in the Initial Study for this project. The Initial Study and the Notice of Preparation for this project are included as Appendix A of this report.

- Land Use
- Population
- Housing
- Earth (Geology)
- Water (surface water runoff and flooding [Hydrology])
- Plant and Animal Life
- Transportation and Circulation (Traffic and Circulation)
- Air Quality
- Noise
- Aesthetics
- Light and Glare
- Public Services (Fire, Police, Schools, Parks and Recreation, and Road Maintenance)
- Utilities (Electricity, Natural Gas, Communications, Water, Sewers, Storm Drainage, and Solid Waste)
- Energy
- Cultural Resources (Archaeology and Paleontology)
- Human Health (Hazardous Waste, Electromagnetic Radiation and the Antelope Valley Public Landfill)

Impact analysis of each issue is presented in five subsections as described below:

- Existing Conditions - This subsection provides information describing the existing conditions on, or surrounding, the project site which may be subject to change as a result of development of the proposed project.

- Project Impacts - This subsection provides information on the characteristics of the proposed project which would have an effect with regard to the environmental concern, the nature and extent to which the project is expected to change the existing environment, and whether or not project impacts meet or exceed the threshold levels of significance.

- Mitigation Measures - This subsection identifies specific measures which will be imposed on the applicant to reduce adverse impacts.

- Cumulative Impacts - This subsection discusses the combined effects of development of the proposed project and other nearby projects, which are proposed, approved for development, or under construction. Development of these cumulative projects in conjunction with proposed project development may have an impact beyond that of development of any one project alone.

- Unavoidable Adverse Impacts - This subsection identifies the residual effects of proposed project development which would result even after mitigation mea sures have been applied.

5.2 LAND USE

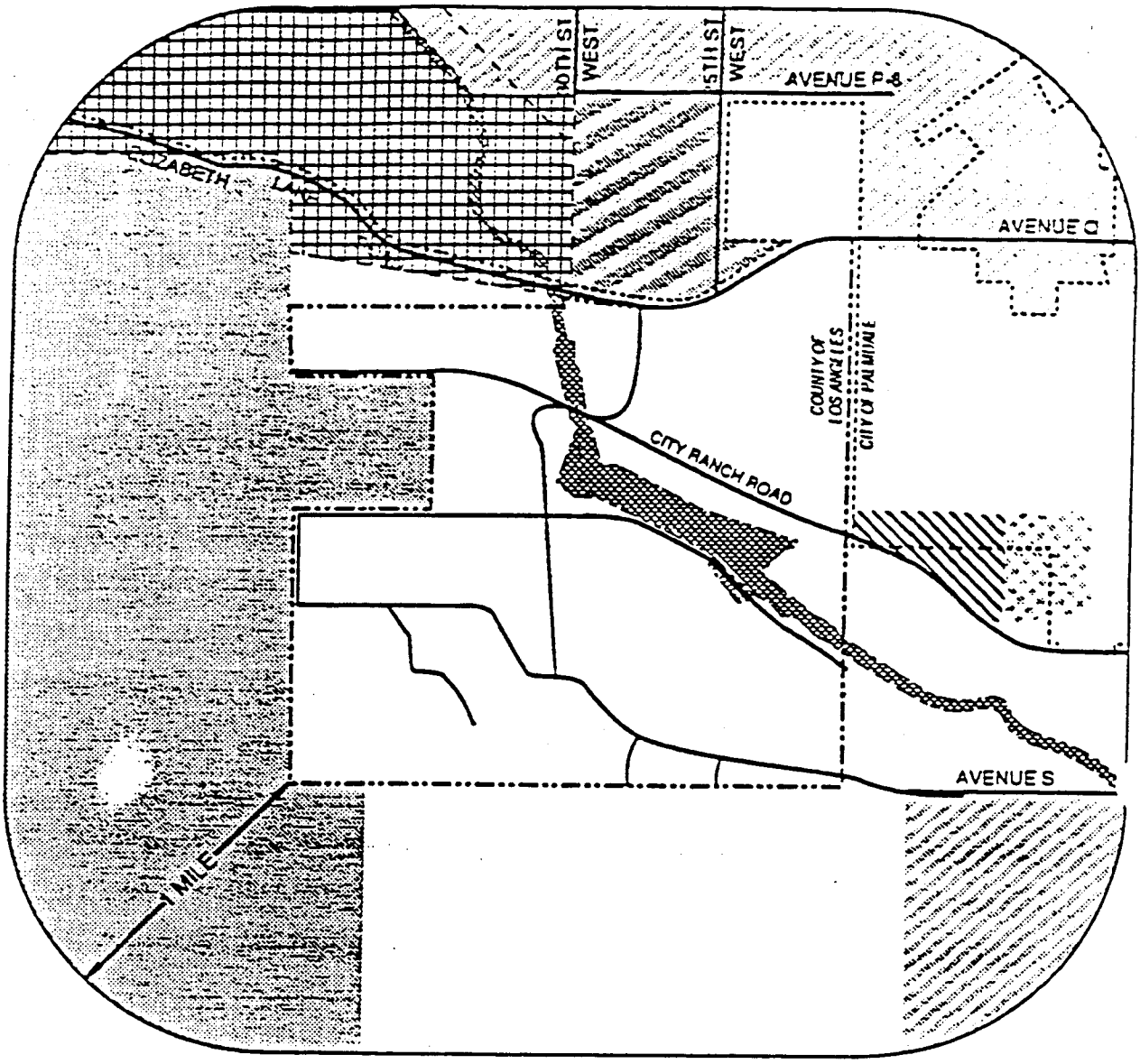
5.2.1 Existing Conditions

The project site is located in an unincorporated area of Los Angeles County adjacent to and partially within the sphere of influence of the City of Palmdale. Predominant uses in this area have, until recently, been agricultural and undeveloped. The area is presently undergoing a transition from a rural to a suburban setting. The Ana Verde residential community of Los Angeles County is located southeast of the project site and is subdivided into minimum lot sizes of 2.5 acres. Tract map applications have been approved for residential and school projects for parcels located north and northeast of the project site. Active project proposals are on file for properties south and west of the project site.

The Antelope Valley Public Landfill is located approximately 2/3 miles east of the central portion of the project site. An application to expand the landfill by 85 acres would bring the landfill boundary up to the project site along the central portion of the eastern boundary north of the present City Ranch Road alignment (**Figure 13**).

The central portion of the project site, used as a dairy farm from the 1920s to the late 1950s, was used for cattle grazing until late 1990. Approximately eight farm buildings and ancillary structures previously used for the dairy farm are located in the central portion of the project site. The remainder of the site contains several dirt roads and undeveloped hillside areas.

The City of Palmdale General Plan Land Use Element designates the project site (**Figure 14**) to be developed with the following: 1,110 acres of residential uses; commercial, golf course and park uses on a total of 356 acres; and 519 acres of open space. A total of 5,200 dwelling units would be permitted to be built on the project site equating to a maximum density of 2.62 du/ac. The City of Palmdale is currently in the process of updating its General Plan. It is assumed that the Land Use Element which will be



LEGEND

- PROJECT SITE BOUNDARY
- EXISTING RESIDENTIAL
- UNDEVELOPED
- ANTELOPE VALLEY PUBLIC LANDFILL
- PROPOSED SPECIFIC PLAN
- CATTLE GRAZING
- PROPOSED LANDFILL EXPANSION
- CALIFORNIA AQUEDUCT
- SUBDIVISION UNDER CONSTRUCTION
- EXISTING ROADS (unpaved)

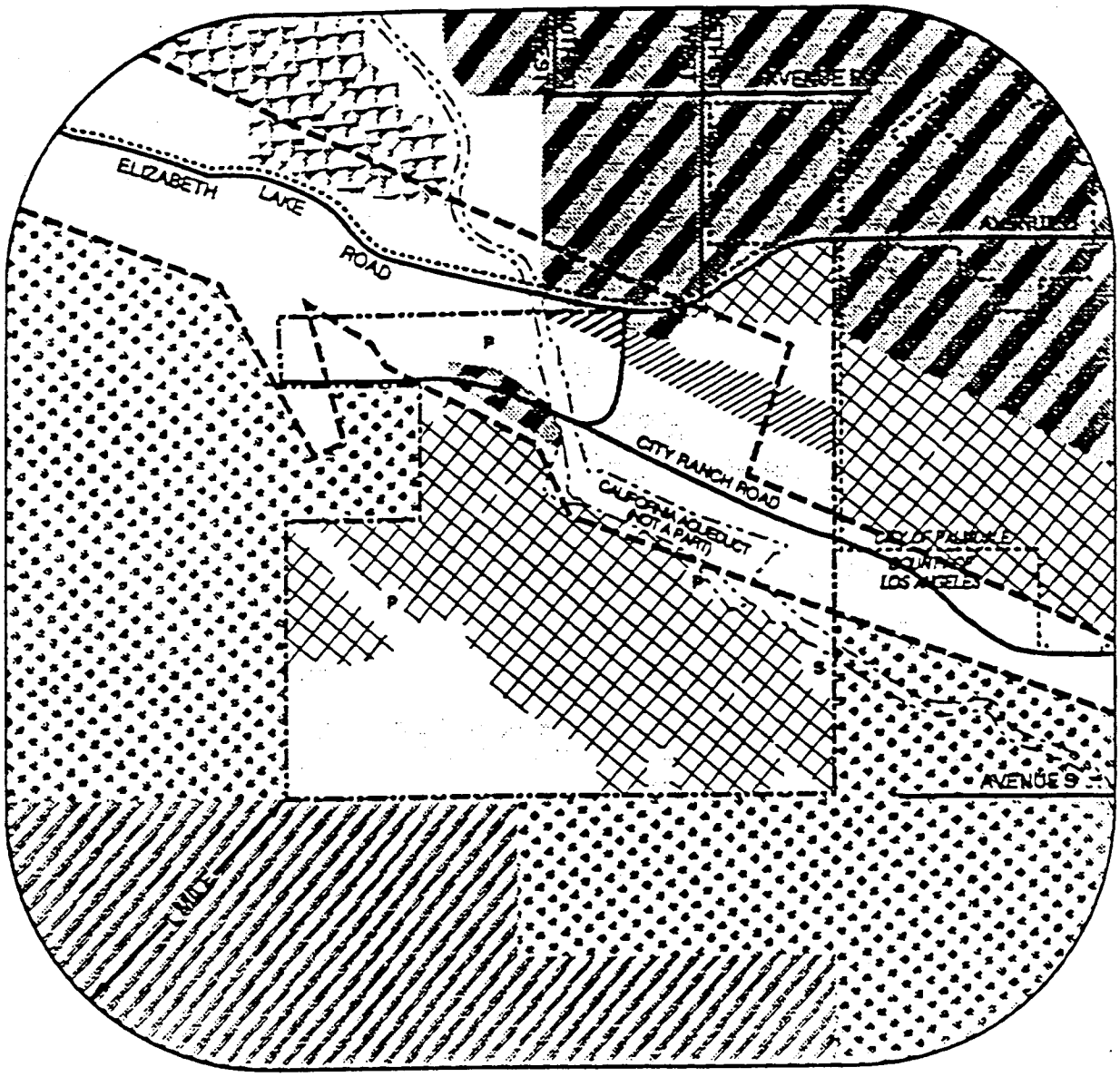
N

0 1650 3300

Envicom Macintosh

EXISTING LAND USES

FIGURE 13



LEGEND

- PROJECT SITE BOUNDARY
- ALQUIST-PRIOLO ZONE
- CITY RANCH SPECIFIC PLAN (3 du/acre)
- SANTA FE SPECIFIC PLAN (3 du/acre)
- URBAN RESIDENTIAL (3.1-6.1 du/acre)
- SUBURBAN RESIDENTIAL (1-2 du/acre)
- S SCHOOL
- NON-URBAN (1 du/10 acres)
- OPEN SPACE
- NOT DESIGNATED IN CITY OF PALMDALE GENERAL PLAN
- COMMUNITY COMMERCIAL
- URBAN MEDIUM (6.2-10 du/acre)
- P PARK

N

0 1650' 3300' 6600'

Envicom Macintosh Graphic

Source: City of Palmdale Planning Department

CITY OF PALMDALE GENERAL PLAN
LAND USE DESIGNATIONS

FIGURE 14

updated as part of this process will not change the density designation. The Plan Update is expected to go before the City Council for approval in late 1991.

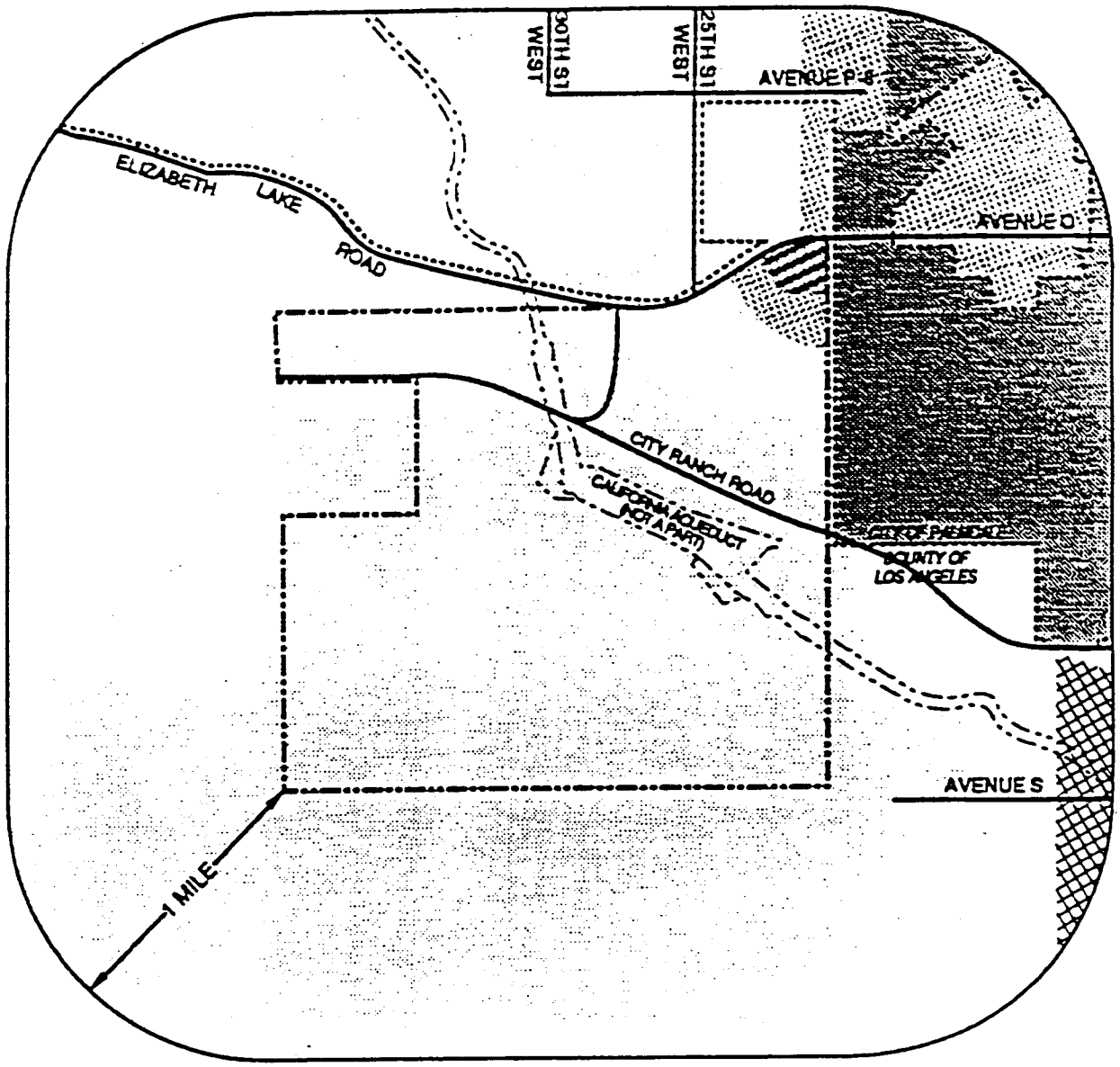
The site is designated in the County's Antelope Valley Areawide General Plan as "Non-Urban I" except for two small areas at the extreme northeast corner of the site. One is designated as "Urban II" and the other as "Commercial". The "Non-Urban I" designation allows 0.5 dwelling unit per acre, and the "Urban II" designation allows 6.6 units per acre (**Figure 15**). The "Urban II" area covers about 25 acres, the "Commercial" area approximately ten. Existing designations would permit a total of about 1,140 dwelling units to be built on the project site and assuming a one-quarter lot coverage for structures, about 109,000 square feet of commercial space.

The San Andreas Rift Zone, which encompasses approximately 20% of the site, is designated as a County Seismic Safety Management Area (Los Angeles County, 1986). This designation recommends low density residential and local commercial uses as long as no primary structures lie across the trace of the fault.

The site is currently zoned A-2-2 according to the Los Angeles County Zoning Ordinance. This zone allows heavy agricultural uses and a two-acre minimum residential lot size (**Figure 16**). County zoning would permit the development of 992 dwelling units on the project site.

5.2.2 Project Impacts

Section 3 of the City Ranch Specific Plan describes how the Specific Plan conforms to the existing City of Palmdale General Plan on a policy-by-policy basis. In this Specific Plan section, each applicable General Plan is presented along with a statement of how the Specific Plan conforms to that policy. Through this analysis, the Specific Plan concludes that it is in conformance with the City's existing General Plan.



LEGEND

- PROJECT SITE BOUNDARY
- CITY OF PALMDALE (NO COUNTY DESIGNATIONS)
- URBAN II (to 6.6 du/acre)
- NON-URBAN I (to .5 du/acre)
- NON-URBAN II (to 1 du/acre)
- COMMERCIAL

N

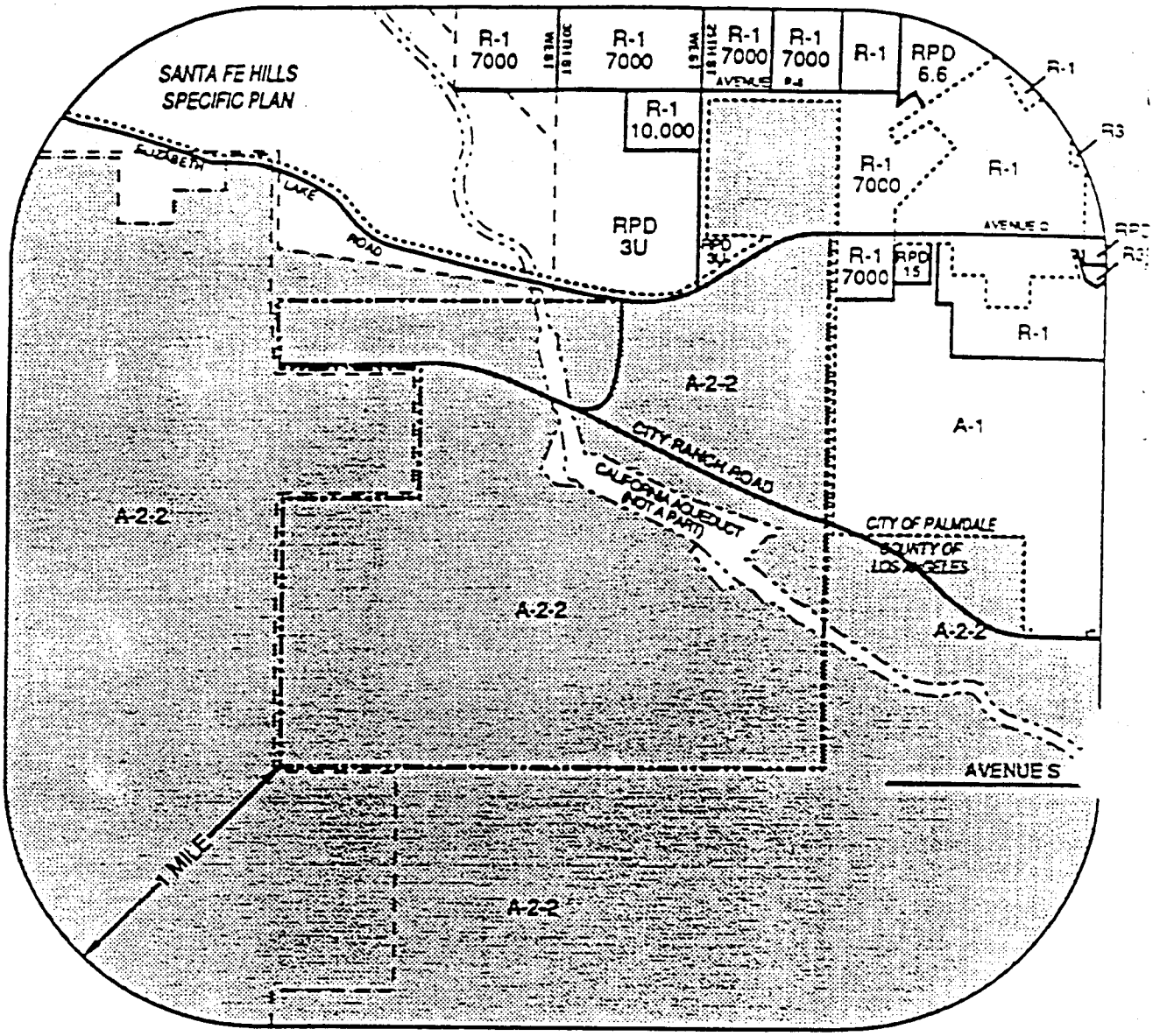
0 1650' 3300' 6600'

Envicom Macintosh Graphic

Source: County of Los Angeles Department of Regional Planning
Proposed Antelope Valley Area land Use Policy Map, January, 1986

COUNTY OF LOS ANGELES GENERAL PLAN LAND USE DESIGNATIONS

FIGURE 15



LEGEND

PROJECT SITE BOUNDARY

CITY OF PALMDALE

R1	RESIDENTIAL SINGLE FAMILY
RPD	RESIDENTIAL PLANNED DEVELOPMENT
R3	REDSIDENTIAL MULTIPLE FAMILY
CPD	COMMERCIAL PLANNED DEVELOPMENT
A-1	LIGHT AGRICULTURE

LOS ANGELES COUNTY

A-2-2	HEAVY AGRICULTURE 2 ACRE MINIMUM LOT SIZE

N

0 1650 3300

Envicom Macintos

SOURCE: City Ranch Specific Plan, 1991
Azeka de Almeida Planning

EXISTING COUNTY OF LOS ANGELES AND CITY OF PALMDALE ZONING

FIGURE 16

Development of the proposed project would transform the existing undeveloped site to a developed suburban site with up to 5,200 residential dwelling units (at a 2.62 units per acre density) comprised of a mix of single-family, townhouse and condominium units, along with 260,000 square feet of neighborhood commercial space, a golf course and clubhouse, hillside natural open space uses, and sites for four elementary schools, six public parks and a fire station. Proposed uses would be compatible with other residential and mixed-use projects proposed for the project vicinity with the exception of the Antelope Valley Public Landfill. The Specific Plan proposes residential land uses in the southeast corner of the project site which are designed to be compatible with the surrounding existing residential uses in that area (i.e., the Anaverde community). To the southwest, the Specific Plan proposes to leave a large natural open space area contiguous to the undeveloped hillside areas to the south. The northern portion of the site will also be developed with uses compatible to the tracts adjacent to them. The Specific Plan proposes uses along its western boundary which are compatible with the proposed uses of Ritter Ranch Specific Plan to the west.

Development of the proposed project in such close proximity to the proposed Antelope Valley Public Landfill expansion area may result in a conflict of land uses due to potential incompatibility. This is discussed further in Section 5.29, Antelope Valley Public Landfill. In addition, single-family homes are proposed within the area designated by the County as within the Seismic Safety Management Area. The Plan indicates, however, that no homes or residential lots will lie across fault traces. Because no primary structures will lie across fault traces and because residential densities are generally low in the Seismic Management Area, the proposed project is considered to be consistent with this designation.

Development of the proposed project would require several approvals with regard to land use controls. Without these approvals, project development would constitute a significant impact with regard to land use. Necessary approvals are discussed below.

It is anticipated that the project site will be annexed into the City of Palmdale jurisdictional area. An annexation application has been filed with the City of Palmdale for processing through the Los Angeles County Local Agency Formation Commission (LAFCO). Annexation would include amending the City's sphere of influence boundary to include the entire project site.

The proposed project will be processed as a Specific Plan under the regulations of the City of Palmdale Zoning Ordinance and the Palmdale General Plan Land Use Element. The proposed project will also be subject to the City's Specific Plan Guidelines and State General Plan Guidelines. The Specific Plan will need to be adopted by City Council Ordinance. The intent of the Specific Plan is to provide land use policies and development regulations to govern the development of the City Ranch property. The proposed City Ranch Specific Plan, which would serve as a Master Plan of development, is intended to function as both a land and zoning regulatory plan.

The proposed Specific Plan proposes 5,200 dwelling units which is compatible with the City's current Land Use Element's designation of 5,200 dwelling units maximum for the site; the plan also contains the basic uses identified for the site. However, the proposed Specific Plan includes additional uses, such as a fire station, and arranges the uses in a different manner than currently designated by the Land Use Element. Therefore, a General Plan Amendment will be necessary to formally redesignate the proposed Specific Plan land use designations and locations into General Plan Land Use Element.

In anticipation of the proposed annexation into the City of Palmdale, in order to establish site zoning, an application has been submitted to the Palmdale Planning Commission and City Council to prezone the site to SP (Specific Plan) with an overall limit of 5,200 permitted residential units.

The City Ranch Specific Plan will be implemented through a series of Tentative Subdivision Maps to subdivide the entire site into the 38 planning area parcels designated on the Development Plan. Subsequently, in conjunction with the phasing plan, each

parcel or parcels designated for development purposes will have a Tentative Subdivision Map submitted to create developable lots or parcels. All of the Tentative Subdivision Maps will be followed by Final Maps at the appropriate times for phased development. The Tentative Subdivision and Final Maps shall be consistent with the City of Palmdale Subdivision Ordinance and the State Subdivision Map Act.

Certain uses within the Specific Plan (e.g., residential planned development, recreational, commercial and community facility plans) may also require Conditional Use Permits delineated in the development regulations of the Specific Plan. Certain elements of the Specific Plan may also require Site Plan Review. Amendments to the Specific Plan would require adoption by ordinance.

Additional Actions

In addition to the required approvals listed above, the following actions may also be required as part of the permitting and approval process for the proposed project.

- California Department of Fish and Game Stream or Lake Alteration Agreements (per Section 1603 of the State Fish and Game Code) for alterations to the Anaverde and Amargosa Creeks.

- U.S. Army Corps of Engineers Section 404 Permit for the discharge of fill material into waters of the United States pursuant to the Clean Water Act of 1977, as amended, for any improvement made in the alkali meadow/transmontaine alkali marsh portions of Planning Area 13 south of the proposed City Ranch Road alignment and north of the California Aqueduct, determined to be within the Corps' jurisdiction. (At a minimum, lost wetland acreage will be replaced in kind on a one-to-one acre basis.)

- Development of the site would result in a change in use from existing agricultural uses to a suburban use. The increase in population on the site will result in a number of impacts to public services, infrastructure, air quality, traffic and noise (these impacts are discussed more fully in other sections of this EIR; see Sections 5.4, 5.8, 5.9, 5.10, 5.13, 5.14, 5.15, 5.16, 5.17, 5.18, 5.19, 5.20, 5.21, 5.22, 5.23, and 5.24). In addition, physical development of the site will result in loss of biological resources, loss of archaeological resources, topographic changes and increased erosion, among other things (these impacts are also discussed elsewhere in the EIR; see Sections 5.5, 5.6, 5.7, 5.11, 5.12, 5.25, and 5.26).

5.2.3 Mitigation Measures

Implementation of the following measures would reduce significant adverse project-related land use impacts to a level of not significant:

- Obtain required land use approvals.

- The annexation process and time frame for annexation shall conform to the City of Palmdale and Los Angeles County Local Agency Formation Commission (LAFCO) provisions.

- The proposed Specific Plan will comply with the State Specific Plan and Municipal Code requirements (California Government Code, Title 7, Division 1, Chapter 3, Article 8, Sections 65450 through 65457 and City of Palmdale Specific Plan Guidelines).

- The proposed project shall comply with the site specific zoning and subdivision standards contained in the City Ranch Specific Plan and applicable City of Palmdale Zoning ordinances.

- The applicant shall cause to be prepared an annual monitoring report. The report shall evaluate compliance with the design guidelines and development standards of the City Ranch Specific Plan and the mitigation measures of the City Ranch Specific Plan Final EIR. The report shall be submitted to the Planning Director the first quarter of each year through the buildout of the project. In addition, aerial photos of the active construction areas of the project site will be taken and submitted to the Planning Director on a monthly basis during the construction process. The aerial photos shall be of a scale approved by the Public Works Department. Monitoring and verification of compliance with adopted Specific Plan development standards shall also be performed prior to subsequent approvals to determine if the proposed measures are achieving their intended purposed. Future discretionary approvals may include additional conditions based upon City staff review of the Annual Monitoring Report.

5.2.4 Cumulative Impacts

Development of the proposed and cumulative projects will transform the character of the presently mostly rural Leona Valley and Anaverde Valley areas to that of a suburban setting. As a result of anticipated cumulative development, undeveloped and agricultural land will be lost. Some of these areas are designated as agricultural opportunity areas according to the Antelope Valley Areawide General Plan. If the projects in the unincorporated Los Angeles County area within the sphere of influence of the City of Palmdale are annexed into the City of Palmdale, the area within the City's jurisdictional boundary would greatly increase. This would create secondary impacts of increased burdens on City public services.

5.2.5 Unavoidable Adverse Impacts

Following implementation of the recommended mitigation measures, project impacts regarding land use would not be significant. However, the project will contribute to significant cumulative land use impacts including loss of open space.

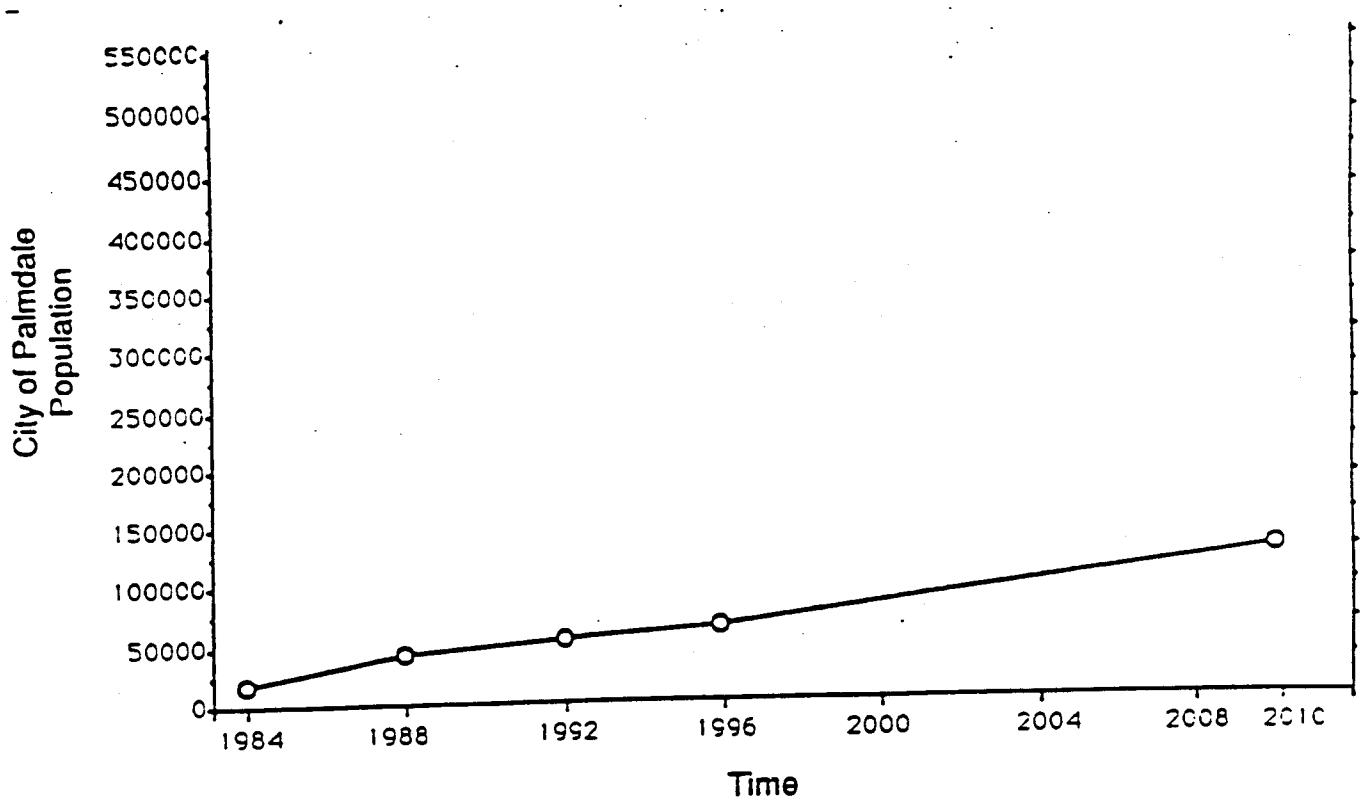
5.3 POPULATION

5.3.1 Existing Conditions

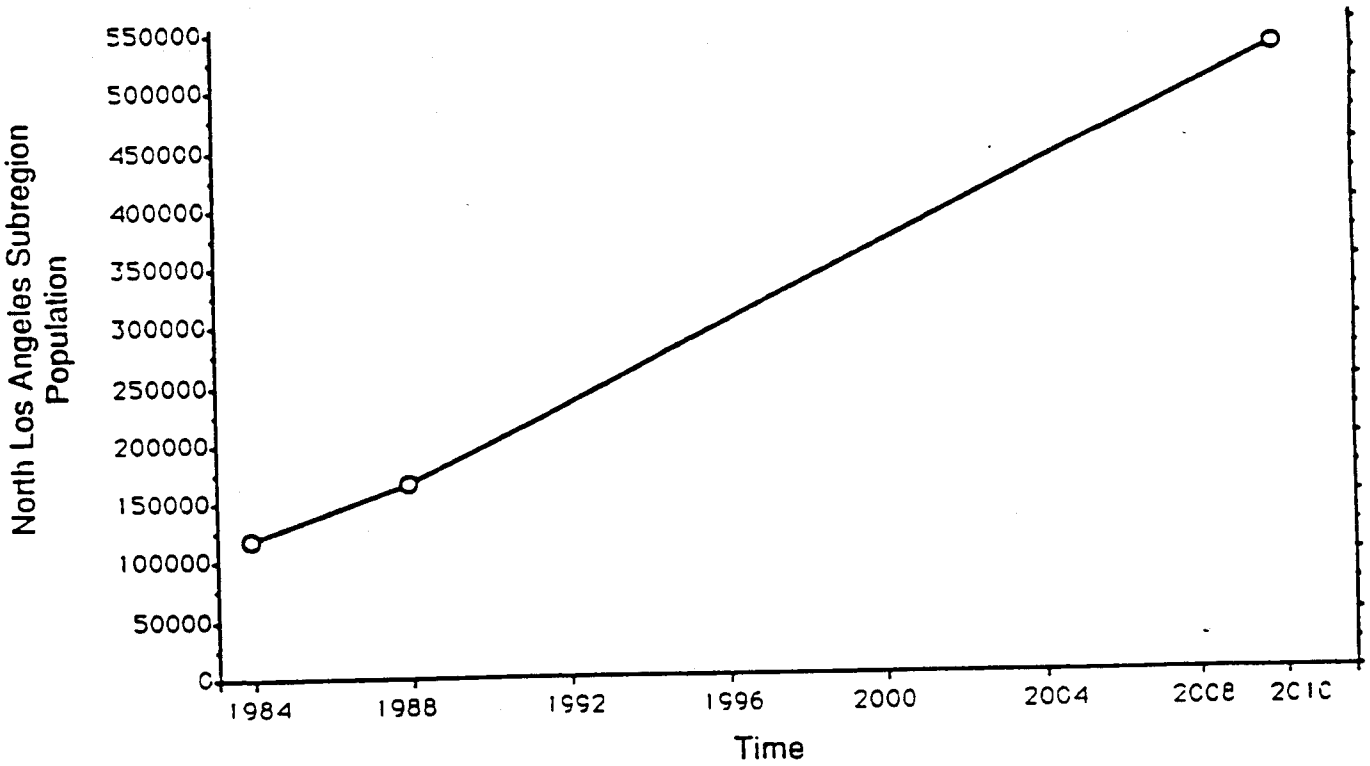
According to the most recent survey prepared by the Center for the Continuing Study of the California Economy, Palmdale is one of the fastest growing cities in the State. This rapid population growth is depicted graphically in **Figure 17**. The 1991 resident population of Palmdale was estimated to be 78,046 (California Department of Finance, 1991). The Southern California Association of Governments (SCAG) has estimated that the North Los Angeles subregion, which includes Palmdale, Lancaster and all unincorporated portions of the Antelope Valley, had a 1988 population of 165,700. SCAG's projected subregional population for the year 2010 is 529,600 people (Figure 17).

The most recent complete survey of employment within the Antelope Valley area in 1990 and revealed a total employment base of approximately 72,930 jobs (Gobar, 1990). The employment-to-population ratio (EPR), which describes the number of local jobs to residents, was 0.30 for the Antelope Valley region in 1990. This ratio was low in comparison to Los Angeles County's ratio of 0.52. SCAG's 1984 baseline employment for the Antelope Valley (RSA 10) was approximately 13,540 (SCAG, 1987). SCAG forecasts additional growth of about 25,000 jobs between 2000 and 2010.

A study of the City's General Plan was undertaken by Economics Research Associates (ERA) to determine the implications on growth as a result of proposed land use scenarios (December 1987). This study indicates that, depending on the rate of population growth, Palmdale will support a work force of between 18,170 to 25,560 by the year 2000 based on a projected City population ranging from 58,140 to 78,360 by that year.



Source: Derived from City of Palmdale General Plan Update



Source: Derived from SCAG Growth Management Plan

POPULATION GROWTH 1984 - 2010

FIGURE 17

The resulting EPR based on these projections would range from 0.31 to 0.33. These projections indicate that Palmdale's employment opportunities will remain at relatively low levels over the next decade.

5.3.2 Project Impacts

Development of the proposed project will add 5,200 dwelling units to the area, resulting in a resident population of approximately 14,040 persons*. The project-related population increase is compared graphically to City and subregional projected growth for the years 1984-2010 in **Figure 18**. This figure indicates the phased nature of the project whose buildout is expected to occur by 2000. The population of the North Los Angeles subregion is projected to grow at a rate of 7.4% annually while the population of the City of Palmdale is expected to grow at a rate of 4.8% annually (SCAG, 1987). Throughout its development phases, the project will represent a relatively consistent proportion of the City's total population. However, as indicated on the graph, the project will contribute a lesser portion of the subregional population by the year 2010. By 2000, when the project is completed, the proposed project population will represent approximately 20% of the projected population of Palmdale. This population can be expected to create a proportional increase in demands for public services including schools, utilities, and health and social services. The population generated by this project will, however, contribute to additional vehicle traffic causing secondary adverse air quality and noise impacts. All of these impacts are discussed in more detail in other sections of this EIR.

The proposed project will also create job opportunities (**Table 2**). Two portions of the project site area (totaling 42.1 acres) have been designated for neighborhood commercial uses with a total of 260,000 gross square feet of retail space. Assuming one

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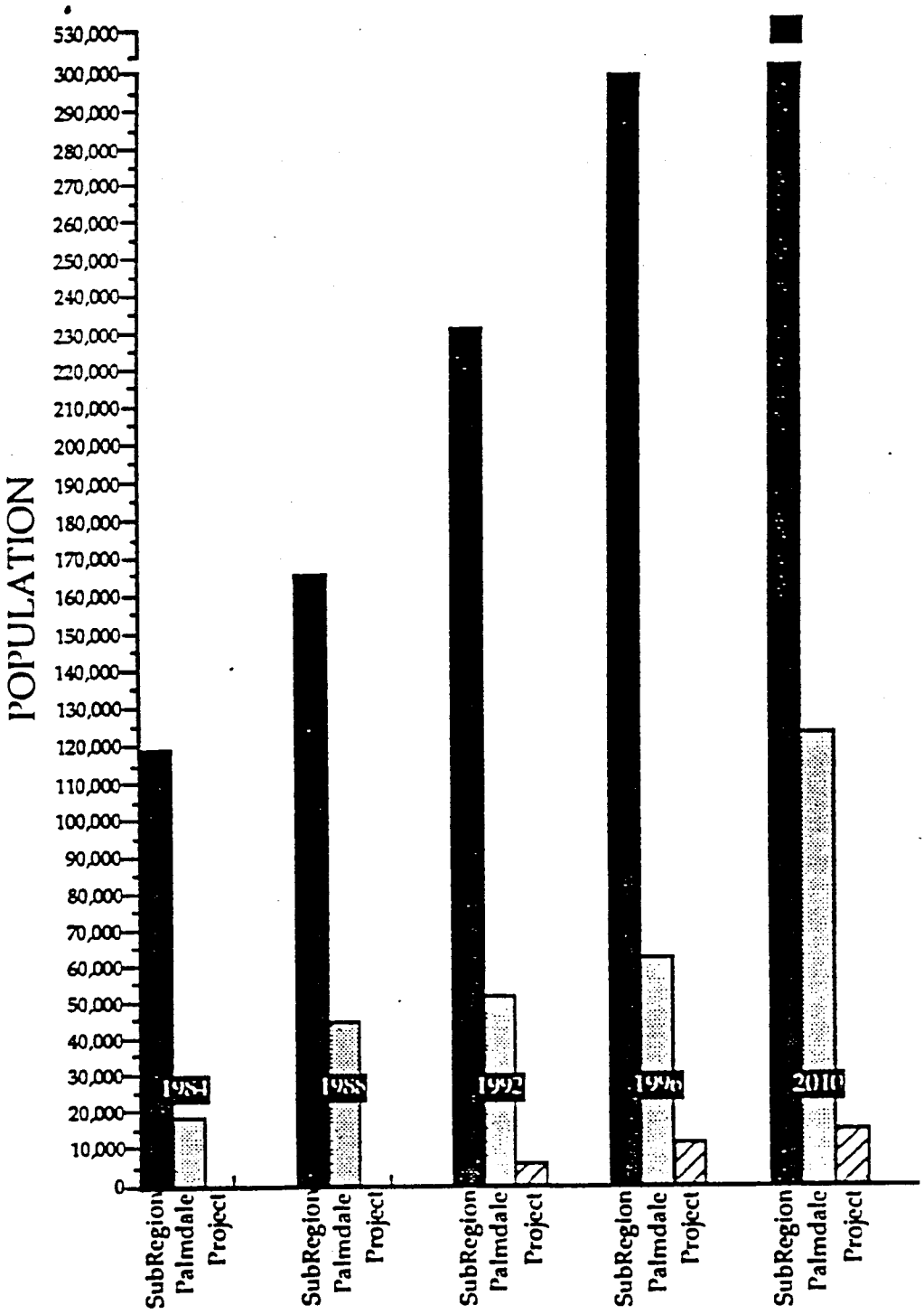
* Proposed project population was estimated using the population ratio provided by the California Department of Finance (2.7 persons per household).



Source: California Department of Finance Estimates (1984-1989)
City of Palmdale General Plan Update (1987)
Southern California Association of Governments Growth Management Plan (1989)
City Ranch Specific Plan (1991)

COMPARISON OF SUBREGIONAL, CITY OF PALMDALE AND PROJECT POPULATION GROWTH

FIGURE 18

TABLE 2

Proposed Project and Cumulative Population and Employment

Land Use	Population[1]	Employment Opportunities
Proposed Project		
Residential		
5,200 dwelling units	14,040	
Commercial		
260,000 sq.ft. retail		531[2]
Schools - 4 elementary		
2,400 student capacity		231[3]
Recreation		
159.3 acres of Park Space		32[4]
215.6 acre Golf Course		91[5]
Fire Station		4[6]
Subtotal Proposed Project	**14,040**	1,093 *
Cumulative Projects		
Residential		
13,145 dwelling units	35,491	
Commercial		
7 dealership auto centers		840[7]
4,693,496 sq.ft. retail		9,578[2]
Schools - 6 elementary, 1 middle school and 1 high school		
6,300 student capacity (estimated total)		606[3]
Public Library		
16,000 sq.ft.		10
Land Fill		
85 acre expansion		
Subtotal Cumulative Projects	**35,491**	**11,034**
Total Cumulative Population and Employment	**49,531**	**11,923**

1. Assumes 2.7 persons per dwelling unit (City of Palmdale).
2. Assumes one employee per 490 sq.ft. (Urban Land Institute, 1986).
3. Assumes one employee per 10.4 students (derived from Westside Union School District).
4. Assumes one employee per five acres of park (City of Palmdale Recreation Department).
5. Assumes 0.125 maintenance employees per acre and 64 clubhouse employees.
6. County of Los Angeles Fire Department.
7. Assumes 120 employees per dealership.

*The proposed project employment has been adjusted upward to 1,093 jobs.

employee per 490 square feet (Urban Land Institute, 1986), these commercial areas will generate an estimated 531 employees. Many of these retail jobs are likely to be service jobs. The proposed project also includes the construction of four elementary schools. Assuming one employee per 10.4 students (Westside Union High School District), a total of 231 employees would be needed to operate the four schools. One hundred thirteen (113) employees are estimated to be generated as a result of development of the various on-site recreational facilities. In addition, the on-site fire station would add about 4 additional employment opportunities (County of Los Angeles Fire Department, 1990). Total project-generated employment opportunities would, therefore, number about 1,093 jobs.*

Project development also could create some impetus for increased employment activity in the Palmdale area for professional services in fields such as medicine, law, and accounting; in personal services such as housekeeping, day care, and dry cleaning; in home improvement and maintenance fields such as gardening, painting, plumbing, electrical work, carpentry, and pool maintenance, as well as numerous other indirect commercial and entertainment job opportunities.

5.3.3 Mitigation Measures

Mitigation identified for Air Quality, Noise, Traffic and Public Services, are described in Sections 5.9, 5.10, 5.8, and 5.13 through 5.24 of this report. These mitigation measures address the significant population growth impacts.

5.3.4 Cumulative Impacts

Development of the cumulative projects will result in a residential population increase of approximately 35,491 persons and will potentially generate an estimated 11,034 additional jobs (Table 2). When the cumulative projects and the proposed project are combined, a total of approximately 49,531 additional residents and 11,923 jobs will result.

*The proposed project employment has been adjusted upward to 1,093 jobs.

This growth represents a 63% increase over the City's 1991 population and a 16% increase from the Region's 1990 employment base. The proposed project represents 28% of this total cumulative population and 27% of the total cumulative employment force. The cumulative project's EPR of 0.24 is "jobs poor". However, employment in Palmdale and the immediately surrounding areas is anticipated to increase to between 12,000 to 32,000 jobs by the year 2010 (Economic Research Associates, 1987).

Other impacts of population, including impacts to public serviced, infrastructure, air quality, traffic and noise, are discussed in other sections of this EIR (See Sections 5.4, 5.8, 5.9, 5.10, 5.13, 5.14, 5.15, 5.16, 5.17, 5.18, 5.19, 5.20, 5.21, 5.22, 5.23, and 5.24). Mitigation for these impacts are also provided in these sections of the document.

5.3.5 Unavoidable Adverse Impacts

None.

5.4 HOUSING

5.4.1 Existing Conditions

The housing stock in the City of Palmdale is estimated to be 27,670 dwelling units (California Department of Finance, 1991). The Housing Element of the Palmdale Draft General Plan Update estimates that housing stock in the City will need to increase to 34,802 by the year 1994 to accommodate anticipated population growth.

Between 1984 and 1990, 20,124 building permits were issued for new homes in the City of Palmdale (Table 3). In 1989 alone, 6,869 building permits were issued.

Eighty-three percent (83%) of the new home building permits issued between 1984 and 1990 were for single-family homes. This indicates that Palmdale is attracting and supporting a growing market for single-family housing. According to the Palmdale Board of Realtors (September, 1991) the median selling price of new and used single-family homes combined was $141,548. Palmdale home prices are lower than the Los Angeles county-wide median housing price of $190,500.00 (Los Angeles Times, 9/29/91; Dataquick Information Systems).

The housing vacancy rate in Palmdale during the 1990 Census was estimated to be 10.03%. The overall housing vacancy rate in Los Angeles County was estimated to be 5.49% (L.A. County Department of Regional Planning, 1991). The high vacancy rate in Palmdale is attributed to availability of recently built single-family homes. In addition, multi-family units are slow in renting because single-family house purchase costs in the area are generally considered affordable.

The most recent year in which accurate estimates of both jobs and housing units are available in 1987. The housing stock in Palmdale in 1987 was 13,983 dwelling units (California Department of Finance); local employment in that year was approximately 10,000 jobs (SCAG, 1990). Therefore, the local jobs to housing ratio (JHR) in 1987 was

TABLE 3

Building Permits Issued for New Homes
in the City of Palmdale

Year	Single-family[1] Units	Multi-family Units	Total
1984	1,255	395	1,650
1985	1,564	1,007	2,571
1986	1,577	1,205	2,782
1987	2,168	366	2,534
1988	2,929	213	3,142
1989	6,747	122	6,869
1990	552	24	576
Total	**16,792**	**3,332**	**20,124**

1. Includes single-family attached and detached.

Source: City of Palmdale Building and Safety Department, August 1991.

0.71.

Edwards Air Force Base, located in Kern County, approximately 13 miles northeast of the project site is the largest single employer in the Antelope Valley area. The Base itself provides about 10,000 military jobs, and 3,000 civilian employment opportunities (Edwards Air Force Base, 1990). Associated with the Base are more than a dozen major aerospace employers including NASA, Lockheed, Rockwell International, Northrop, General Dynamics, Rocketdyne, ITT, Boeing, McDonnell Douglas, Computer Sciences, etc. With an average employment base of 2,000 jobs per employer, these firms provide nearly an additional 30,000 local employment opportunities (Lancaster Chamber of Commerce, 1990). Together with the associated aerospace industry employers, the Air Force Base provides approximately 43,000 local job opportunities.

In order to evaluate Palmdale's local JHR, it can be compared to the JHR of the surrounding area. The Cities of Palmdale and Lancaster, as well as immediately surrounding communities, are located in an area identified by the Southern California Association of Governments (SCAG) as the North Los Angeles Subregion. SCAG estimates that North Los Angeles subregional housing stock in 1988 was 64,900 dwelling units. SCAG projects that housing stock in this area will grow to 235,000 dwelling units by the year 2010. The subregion's JHR in 1984 was 0.71 which is the same as Palmdale's JHR in 1987. This JHR is considered "housing rich" as compared to the entire SCAG region's 1984 (balanced) JHR of 1.27. SCAG projects that by the year 2010, the North Los Angeles subregion will decrease its JHR to 0.54. This is considered even more "jobs poor" in comparison to the entire SCAG region's future year 2010, "balanced" JHR of 1.22.

The Regional Growth Management Plan (February, 1989) recommends that the North Los Angeles subregion return to a JHR of 0.72 by 2010 in order to reach SCAG's regional jobs/housing balance goals. This means that jurisdictions within the North Los Angeles subregion need either to limit housing growth or to look at ways to encourage increased employment opportunities in the subregion.

Because Kern County is not within SCAG's regional planning area, the Edwards Air Force Base employment center is not factored into SCAG's JHR projections. It is, however, likely that this employment center does provide job opportunities to residents of the North Los Angeles subregion. Factoring of this employment center into the subregional JHR would reflect a more balanced local JHR.

5.4.2 Project Impacts

The proposed City Ranch project includes the construction of 5,200 dwelling units: 3,253 single-family detached; 1,634 single-family attached; and 313 multi-family units. Development of the proposed project would provide a range of housing types. Development of the Specific Plan could provide housing for employees of the Edwards Air Force Base employment center. The additional housing provided by the proposed project would increase the City's 1991 housing stock by 19 percent.

The proposed project will create 1,093 direct job opportunities and numerous indirect employment opportunities (See Population, Sectic 5.3) and therefore, will create a project-wide JHR of .21. Althoug.. the subregion is trending towards a JHR of 0.54, SCAG is seeking to boost job growth in the subregion to bring the JHR to 0.72. As a result, the proposed project's impacts on the jobs/housing balance for the subregion can also be described in terms of the jobs shortfall tha: it will contribute to subregionally. Utilizing procedures drafted by SCAG in their document Guidance for Implementation of Conformity Procedures, March, 1990, (Appendix C) the number of jobs which should be associated with the proposed project is 1,248. The proposed projec only provides 1,093 jobs, which is 155 jobs short of SCAG's goal. Therefore, the project's impacts on the subregion's jobs/housing balanc is considered to be significant. This analysis indicates that developr of the proposed project would continue the development trend of the are (housing intensive with few local job opportunities) and would not markedly support SCAG's goal of becoming more "jobs rich." Development of this project will therefore further exacerbate the imbalance of jobs and housing in the area, thus encouraging longer trip lengths between home and the work place. In this context, the

increased housing resulting from development of the proposed project can be considered a significant impact.

5.4.3 Mitigation Measures

To mitigate the secondary impacts of the jobs/housing imbalance, the applicant shall implement the traffic and air quality mitigation measures listed in Sections 5.8 and 5.9.

5.4.4 Cumulative Impacts

Development of the cumulative projects listed in Section 4.0 will result in the construction of 13,145 additional dwelling units in the local area (Table 1). When the cumulative projects are combined with the proposed project, a cumulative total of 18,345 units will be constructed. The proposed project represents 28% of this total. The cumulative projects include the construction of public and private services which have the potential to generate employment. However, the JHR of the cumulative projects (proposed project plus cumulative projects) remains jobs poor at 0.65. The cumulative housing increase of 18,345 dwelling units is within SCAG's projected 1988-2010 subregional increase of 157,700.

5.4.5 Unavoidable Adverse Impacts

The proposed project would contribute additional housing to an area which is already rich in housing but poor in employment opportunities. In the long run, additional housing construction in the area would provide a local workforce base which may serve to attract large employers to the Palmdale area. However, even after implementation of the recommended mitigation measures, the proposed project's "housing rich" JHR cannot be fully mitigated and remains a significant unavoidable adverse impact.

5.5 EARTH (GEOLOGY)

A report prepared by Buena Engineers entitled "Preliminary Geotechnical Engineering Report," City Ranch Property, Elizabeth Lake Road and 25th Street West, Palmdale, Los Angeles County, California, May 8, 1989, amended August 24, October 13, November 16 and December 7, 1989, and April 19 and August 31, 1990, was used in the preparation of the following section. The full text appears in Appendix D.

5.5.1 Existing Conditions

City Ranch is located in the western Antelope Valley. For general discussion purposes, the site can be divided into four geomorphologic zones (Figure 11): 1) the Sierra Pelona area consisting of rock outcrops above about 3,100 feet elevation in the south and southwest portions of the project site; 2) the Anaverde Valley comprising areas below 3,100 feet elevation and south of the San Andreas Rift Zone; 3) the San Andreas Rift Zone marked by the main San Andreas fault and including the Little Rock and Nadeau faults; and 4) the Verde Ridge area northeast of the San Andreas Rift Zone. Geologic materials within the site boundaries range in age and composition from pre-Tertiary metamorphic and granitic bedrock to Tertiary sandstone and shale, lower Quaternary alluvium (older alluvium) and Holocene alluvium (younger alluvium) (Figure 19).

The Sierra Pelona area consists of the pre-Tertiary Pelona schist, a structurally complex schist having distinct foliation. The rock is highly weathered, soft-to-moderately hard in outcrop and moderate-to-very hard at depth (Buena Engineers, 1989). Local landslides have been noted in exploratory trenches and at one location on the edge of the property. The Sierra Pelona outcrops are sometimes draped with other soil and rock material.

Younger and older alluvium predominate in the Anaverde Valley south of the San Andreas Rift Zone. Younger alluvium is more abundant in the northwest section of the valley.

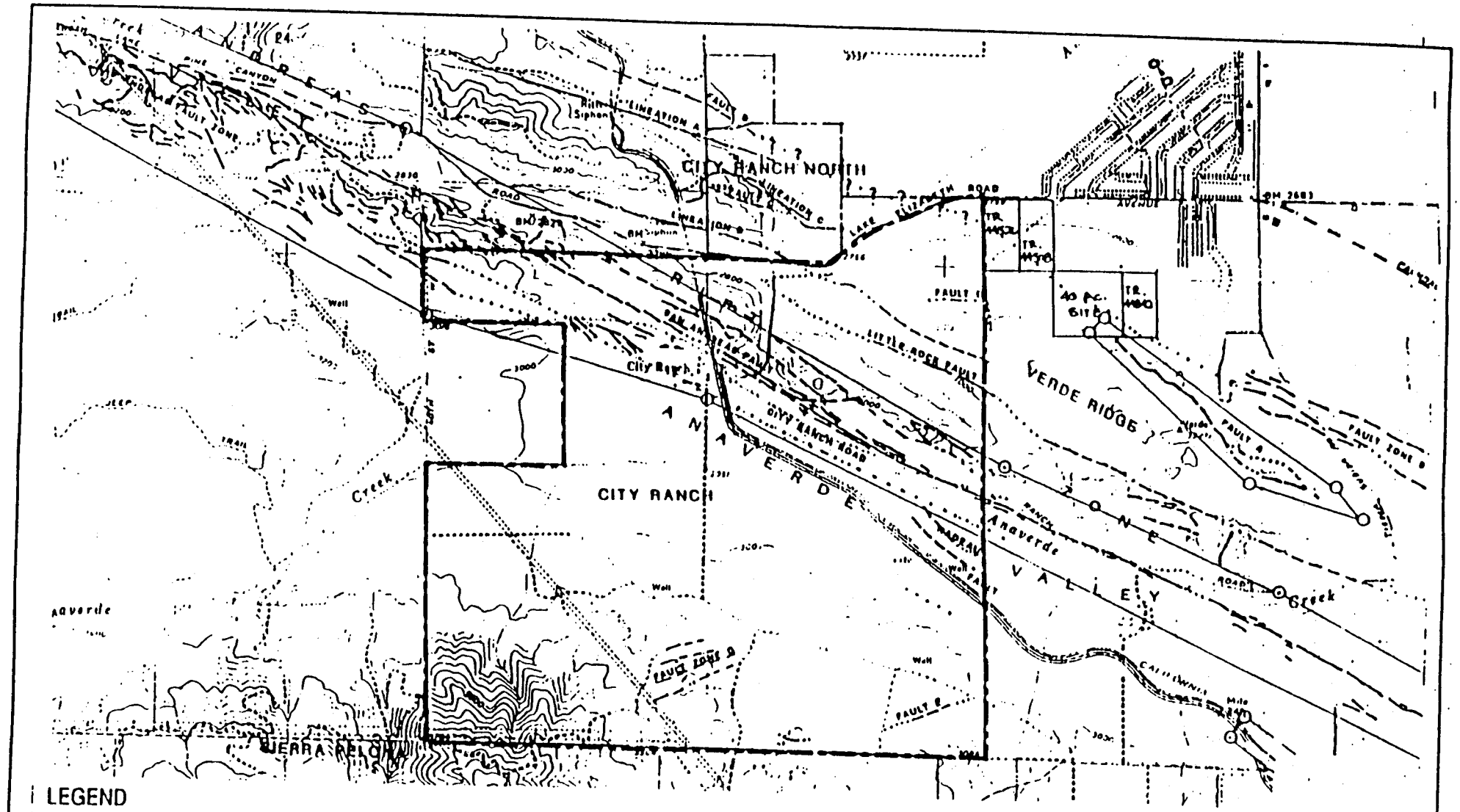
The San Andreas Rift Zone, the dominant structural feature in the area, controls the landscape as well as the distribution of geologic materials. Structural features include recently active to inactive faults, bedding, foliation, jointing and folding. The San Andreas Rift Zone is within the northern one-third of the site and trends from northwest to southeast. Younger Quaternary alluvium and Quaternary Harold Formation and Nadeau gravels predominate in the northwestern portion of the Rift Zone. Quaternary alluvium and the Tertiary Anaverde Formation shales and arkose predominate in the southeastern portion of the zone.

North of the San Andreas Rift Zone, in the Verde Ridge area, younger alluvium predominates with outcrops of the pre-Tertiary Holcomb quartz monzonite with older alluvium also being present. Holcomb quartz monzonite is present in and adjacent to the Little Rock fault zone near Verde Ridge, and is also found in contact with younger and older alluvium in the Nadeau fault zone. The above deposits often contain abundant sand and gravel which has been used locally for aggregate.

Faulting

The San Andreas Rift Zone dominates considerations at the project site in regards to both ground rupture and shaking potential. This fault zone overshadows the other faults and credible earthquakes in the region. The central section of the San Andreas fault from the Carrizo Plain to Cajon Pass is capable of producing maximum credible earthquakes of 8.3 magnitude and significant surface rupture. Parallel auxiliary faults (e.g., Little Rock, Nadeau) also show evidence of geologically recent fault activity.

Numerous other faults and lineations (outside the zones discussed above) have been mapped, or inferred to exist, based on aerial photographic interpretation, field mapping or the work of others. **Figure 20** shows the location of the local faults. Each of these faults, with the exception of two have proven to be inactive or nonexistent within the



LEGEND

- PROJECT SITE BOUNDARY
- FAULT: DASHED WHERE APPROXIMATE, DOTTED WHERE CONCEALED
- AIR PHOTO LINEATION
- BOUNDARY OF ALQUIST-PRIOLO SPECIAL STUDIES ZONE

Source: Preliminary Geotechnical Engineering Report, May 1989
P Engineers, Inc.

N

0 1350' 2700' 4050'

Envicom Corporation Graphic

LOC. AND VICINITY FAULTS

site boundaries and the potential for ground rupture from movement on these faults is considered nil. The specific characteristics of these local faults and lineations are summarized in **Table 4**. The two faults classified as potentially active are Fault D and Lineation B; each has offset older Quaternary alluvium.

A subsurface exploration program was carried out by Buena Engineers (1989, 1990) to assess the location of potentially hazardous faults and to document the age of last movement on known or suspected faults. **Figure 19** shows trench and test pit locations as well as site geologic conditions.

The main San Andreas Rift Zone encompasses approximately 20 percent of the overall site. It is characterized by classic features indicating its recent activity, e.g., sag ponds, closed depressions, linear ridges and valleys, aligned saddles and offset drainage channels. Movement in the rift zone has been mainly right lateral strike slip (one side moved relatively to the right with little vertical movement) with probable significant vertical movement locally. Offset drainage channels within the site boundaries indicate an average of 10 to 13 feet of horizontal movement in the 1857 Fort Tejon earthquake event (magnitude of 8.2) (Buena Engineers, 1989). Evidence suggests a maximum horizontal displacement of about 30 feet near Parkfield, California and approximately 10 feet in Palmdale during the Fort Tejon earthquake. The distance between individual fault segments within the zone varies from 50 to 800 feet but more commonly is from 100 to 300 feet. Most traces are throughgoing, i.e., continuous as a single trace or merge with others to trend continuously along the zone. In only a few cases do major and minor traces seem to terminate abruptly within the zone.

The San Andreas Rift Zone is designated within the Alquist-Priolo Special Studies Zones (APSSZ) (**Figure 20**). The APSSZ Act signed into law in 1972 requires that areas delineated as special studies zones (having active or potentially active faults) are subject to regulation for certain development projects. The APSSZ Act defines active faults as those that have been determined to have displacement within the last 11,000 years. Development and construction permits will not be issued for projects within the San

TABLE 4

Characteristics of On-Site Faults or Lineations Outside the San Andreas, Little Rock and Nadeau Fault Zones

Designation	Approximate Location	Mapped Length	Youngest Offset Formation	Structural Attitude	Comments/Activity
Fault A	Trend toward NE corner of site; may merge with FZ-B	Not on-site 4,800' overall	Pre-Qoa	WNW dip unknown	Possible offsets alluvium 3,300 feet southeast of the site; inactive based on site data.
Fault Zone B	Avenue R and Tierra Subida (off-site)	5,000' not on site	Anaverde Fm and granitic	NW dip unknown	SE of the site; inactive based on off-site data.
Fault C	North site on City Ranch north	Not on-site 1,600' overall	Portal schist; pre-Qal	WNW dip unknown	-
Fault D	Anaverde Valley north of Little Rock Fault Zone	900' on-site	Qoa; pre-Qal	EW dip unknown	Movement pre-Holocene; but considered potentially active on site.
Fault Zone E	Sierra Pelona SE corner of site	1,700' on-site	Pelona schist; pre-Qoa (100,000 years) fan surface	ENE, vertical	Zone of clay gouge, deformed schist and undeformed paleo B horizon over projected trace; inactive based on site data.
Fault Zone F	Sierra Pelona S edge	600' on-site	Pelona schist; pre-Qoa (100,000) fan surface	NW-SE dip 54 NE	Shearing, soil fillings, offset foliation; inactive based on site data.
Fault Zone G	Sierra Pelona S Central	1,800' on-site	Pelona schist; pre-paleo B horizon and pre-Qoa (100,000 years) fan surface	NE-SW, vertical to 51 NW	Sheared bedrock, deep soil fillings, caliche in gouge zones and undeformed paleo B horizon over projected trace; inactive based on site data.

Qoa = ol[illegible] Quaternary alluvium
Qal = y[illegible] Quaternary alluvium

TABLE 4 (Cont.)

Designation	Approximate Location	Mapped Length	Youngest Offset Formation	Structural Attitude	Comments/Activity
Lineation 1	SE corner of site, 1,400' S of Aqueduct	Unknown	Unknown	Unknown	Subtle geomorphic expression; not evident in T-44, therefore considered inactive on site.
Lineation 2	Trends E-W at S margin of site	550'	Unknown	Unknown	Considered inactive on site.
Lineation 3	S margin of site sub-parallel to Fault Zone "G" in Anaverde Valley	Unknown	Unknown	Unknown	Apparently crosses undisturbed Qoa fan surface; inactive based on site data.
Lineations 4-8	In Sierra Pelona, SW portio of site	Unknown	Unknown	Unknown	Joint controlled; follows radial drainage; inactive based on site data.
Lineations 9 & 10	Anaverde Valley south of San Andreas Fault Zone	9=1,500' on-site 10=3,520' on-site	Pre-Qoa and paleo B horizon (100,000 years)	NW-SE, near vertical (?)	Not evident in T-21, T-23 or T-45; differential erosion, inactive based on site data.
Lineation A	North of site trends toward NE corner	5,100 off-site to NW	Pre-Qoa	NW-SE, dip unknown	Projects toward site from City Ranch north; inactive based on off-site data.
Lineation B	Trends NW from south side of Verde Ridge through City Ranch north off-site	4,000' on-site 8,100' overall	Qoa; pre-Qsw	WNW, dip 155 in T-39	Lineation off-site links up with unnamed on-site fault; T-39 shows quartz monzonite thrust over Qoa; potentially active based on site data.
Lineation C	Trends toward site from NW on City Ranch north.	2,200' off-site	Unknown	NW-SE, dip unknown	Trenching on City Ranch north "indicates no active faults"; considered inactive.

Source: Buena Engineers "Preliminary Geotechnical Engineering Report, City Ranch Property," May, 1989.

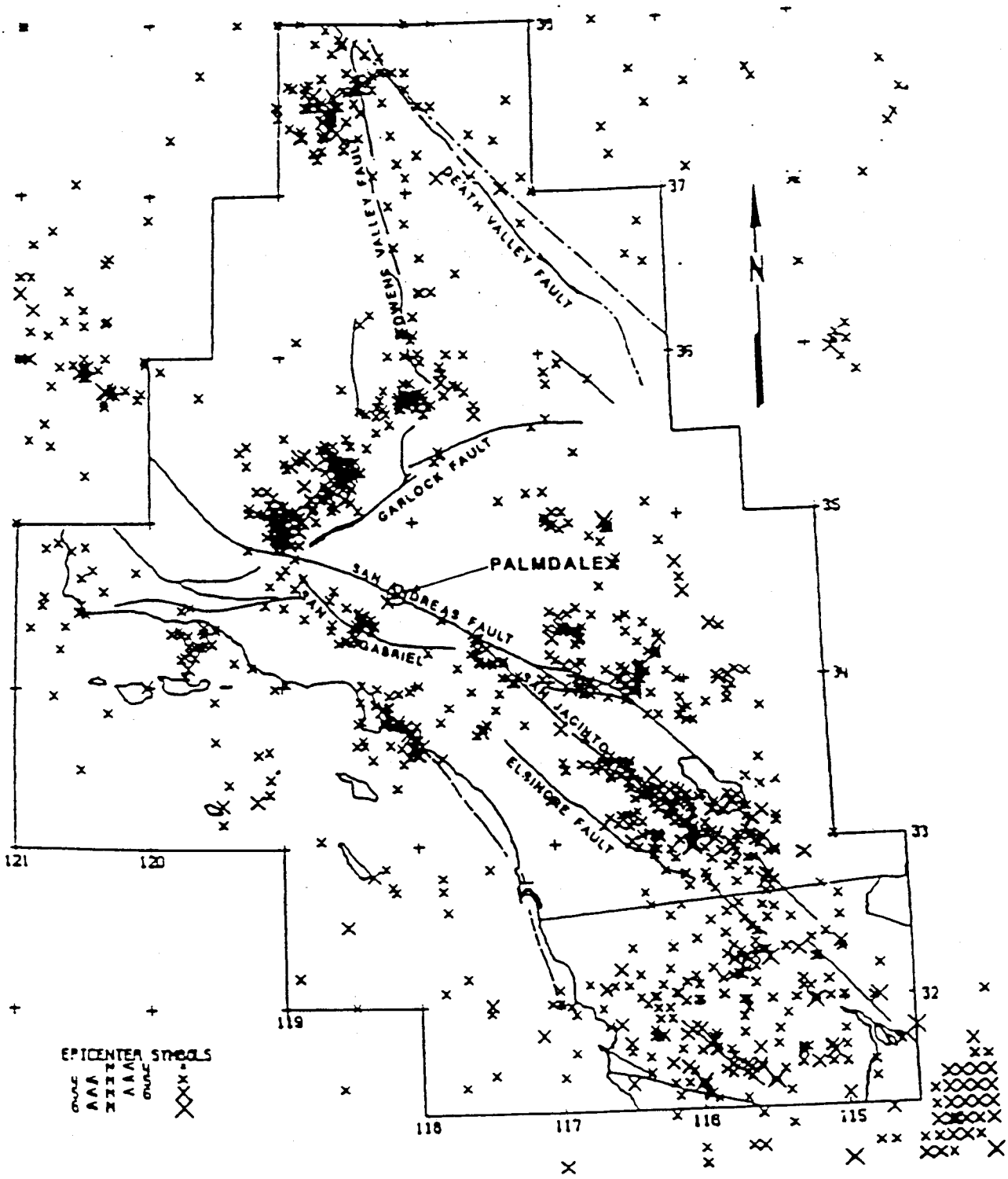
Andreas Rift Zone until it is demonstrated that the sites are not underlain by known active faults. The San Andreas Rift Zone has been designated as a "Seismic Safety Management Area" by the Los Angeles County General Plan, 1986. This designation recommends very low density residential use and local commercial use (provided no primary structures lie across the trace of the fault) in this area.

The Little Rock fault zone is typified by a series of steeply dipping strike slip faults and shallow thrust and normal faults generally subparallel to the San Andreas Rift Zone. Within the project site, the Little Rock fault zone consists of two subparallel segments extending nearly continuously through the site. Based on exploratory trenching within the site, the Little Rock fault on the project site is considered "potentially active". The fault apparently terminates to the northwest between trenches T-24 and T-42 with more active faulting apparently shifting to the south along the San Andreas Rift Zone.

The Nadeau fault zone is expressed as a discreet entity at the eastern site boundary north of the California Aqueduct and south of the San Andreas Rift Zone. It extends t the northwest and apparently either merges into the Rift Zone or terminates north of trench T-46. Dip angles on the faults vary from vertical to 33 degrees. In Trench T-46 the youngest materials offset are younger Quaternary alluvium faulted against the older Quaternary-age Harold Formation.

Seismic Shaking

Severe seismic shaking is a factor that must be considered throughout the entire Los Angeles County area including the Palmdale-Antelope Valley because of the many active and potentially active faults in the region. An evaluation of past earthquake activity in the area, was made by Buena Engineers (1989) considering faults which could detrimentally affect the project site during strong shaking events. Regional seismic activity for the years 1932-72 is shown in Figure 21.



1932 THROUGH 1972. EVENTS EQUAL OR GREATER THAN MAGNITUDE-4

SOURCE: Preliminary Geotechnical Engineering Report, May 1989
Buena Engineers, Inc.

SEISMIC EPICENTERS

FIGURE 21

Very little activity has occurred on the segment of the San Andreas in the area of the site since the 1857 Fort Tejon earthquake (M=8.2) severely shook the region. The mc prominent earthquakes to affect the site since that time are the M=8.2 Owens Valley earthquake of 1872, the M=7.7 Arvin-Tehachapi in 1952 and the M=6.5 San Fernando earthquake of 1971 (**Table 5**). These events generated intensities (Modified Mercalli Intensity Scale) of VI to VIII (**Table 6**) at the site (Buena Engineers, 1989).

Although recorded seismicity near the site has been low, there are many faults nearby which are potentially active and could produce significant seismic shaking at the project site (**Table 5**). The San Andreas Rift Zone has the potential for the largest earthquake and has a recurrence interval (average 145 years) which makes it the design basis fault given the types of structures proposed. Maximum credible earthquake magnitudes along the San Andreas Fault could register as high as 8.3 on the Richter scale. A summary of the main seismic shaking parameters estimated for the project site related to the San Andreas fault are as follows:

Maximum Credible Earthquake Richter Magnitude	8.3
Maximum Credible Bedrock Acceleration (g=force of gravity)	+0.70g
Estimated Repeatable Peak Ground Acceleration	0.50g
Estimated Modified Mercalli Intensity	VIII-IX

Bedrock acceleration values of 0.50-0.70 g are considered significant for purposes of design. This is reflected in the empirical descriptions found in **Table 4**.

Liquefaction Potential

Liquefaction is the loss of soil strength (and therefore bearing capacity) of saturated cohesionless soil generally as a result of seismic shaking. Earthquake-induced liquefaction occurs when a saturated, low-relative density, granular deposit loses (under earthquake loading) strength or stiffness due to increased pore water pressure and tends to act like a liquid for short periods of time during an earthquake event. Low liquefaction potential exists on-site along a northwest to southeast orientation roughl·

TABLE 5

Significant Recorded Earthquakes in the Palmdale Area

Earthquake (Fault)	Distance to Epicenter (Miles)	Earthquake Magnitude*	Estimated Intensity at the Site**	Date
Fort Tejon (San Andreas)	43	8.2	VIII	1857
Owens Valley (Sierra Nevada-Owens Valley)	141	8.2	VI	1872
Arvin-Tehachapi (White Wolf)	58	7.7	VII	1952
San Fernando (San Fernando)	17	6.5	VI	1971
Whittier	37	6.1	IV	1987

Anticipated Bedrock Accelerations

Fault/ Epicenter	Maximum Credible Earthquake*	Maximum Credible Bedrock Acceleration(g)	Estimated Repeatable Peak Ground Acceleration(g)	Nearest Distance to Site (Miles)
San Andreas	8.3	+0.70	0.5	0
White Wolf	7.7	0.10	0.1	53
San Fernando	6.5	0.12	0.1	24
Garlock	7.7	0.18	0.1	33
San Gabriel	7.0	0.25	0.2	19
Helendale	7.5	0.10	0.1	50

Source: Buena Engineers "Preliminary Geotechnical Engineering Report, City Ranch Property," May, 1989.

* Richter Magnitude.

** Modified Mercalli Scale.

TABLE 6

Modified Mercalli Intensity Scale of 1931[1], (1956 version)[2]

Masonry A, B, C, D. To avoid ambiguity of language, the quality of masonry, brick or otherwise, is specified by the following lettering.

Masonry A. Good workmanship, mortar, and design; reinforced, especially laterally, and bound together by using steel, concrete, etc.; designed to resist lateral forces.

Masonry B. Good workmanship and mortar; reinforced, but not designed in detail to resist lateral forces.

Masonry C. Ordinary workmanship and mortar; no extreme weaknesses like failing to tie in at corners, but neither reinforced nor designed against horizontal forces.

Masonry D. Weak materials, such as adobe; poor mortar; low standards of workmanship; weak horizontally.

I.	Not felt. Marginal and long-period effects of large earthquakes.
II.	Felt by persons at rest, on upper floors, or favorably placed.
III.	Felt indoors. Hanging objects swing. Vibration like passing of light trucks. Duration estimated. May not be recognized as an earthquake.
IV.	Hanging objects swing. Vibration like passing of heavy trucks; or sensation of a jolt like a heavy ball striking the walls. Standing motor cars rock. Windows, dishes, doors rattle. Glasses clink. Crockery clashes. In the upper range of IV wooden walls and frame creak.
V.	Felt outdoors; direction estimated. Sleepers waxened. Liquids disturbed, some spilled. Small unstable objects displaced or upset. Doors swing, close, open. Shutters, pictures move. Pendulum clocks stop, start, change rate.
VI.	Felt by all. Many frightened and run outdoors. Persons walk unsteadily. Windows, dishes, glassware broken. Knickknacks, books, etc., off shelves. Pictures off walls. Furniture moved or overturned. Weak plaster and masonry D cracked. Small bells ring (church, school). Trees, bushes shaken visibly, or heard to rustle.
VII.	Difficult to stand. Noticed by drivers of motor cars. Hanging objects quiver. Furniture broken. Damage to masonry D, including cracks. Weak chimneys broken at roof line. Fall of plaster, loose bricks, stones, tiles, cornices also unbraced parapets and architectural ornaments. Some cracks in masonry C. Waves on ponds; water turbid with mud. Small slides and caving in along sand or gravel banks. Large bells ring. Concrete irrigation ditches damaged.
VIII.	Steering of motor cars affected. Damage to masonry C; partial collapse. Some damage to masonry B; none to masonry A. Fall of stucco and some masonry walls. Twisting, fall of chimneys, factory stacks, monuments, towers, elevated tanks. Frame houses moved on foundations if not bolted down; loose panel walls thrown out. Decayed piling broken off. Branches broken from trees. Changes in flow or temperature of springs and wells. Cracks in wet ground and on steep slopes.
IX.	General panic. Masonry D destroyed; masonry C heavily damaged; sometimes with complete collapse; masonry B seriously damaged. General damage to foundations. Frame structures, if not bolted, shifted off foundations. Frames racked. Serious damage to reservoirs. Underground pipes broken. Conspicuous cracks in ground. In alluviated areas sand and mud ejected, earthquake fountains, sand craters.
X.	Most masonry and frame structures destroyed with their foundations. Some well-built wooden structures and bridges destroyed. Serious damage to dams, dikes, embankments. Large landslides. Water thrown on banks of canals, rivers, lakes, etc. Sand and mud shifted horizontally on beaches and flat land. Rails bent slightly.
XI.	Rails bent greatly. Underground pipelines completely out of service.
XII.	Damage nearly total. Large rock masses displaced. Lines of sight and level distorted. Objects thrown into the air.

[1]Original 1931 version in Wood, H. O., and Neumann, F., 1931, Modified Mercalli intensity scale of 1931: *Seismological Society of America Bulletin*, v. 53, no. 5, p. 878-887

[2]1956 version prepared by Charles F. Richter, *in Elementary Seismology*, 1958, p. 137-138, W. H. Freeman & Co.

Modified Mercalli intensity scale of 1931[1] (1956 version)[2]

SOURCE: Preliminary Geotechnical Engineering Report, May 1989
Buena Engineers, Inc.

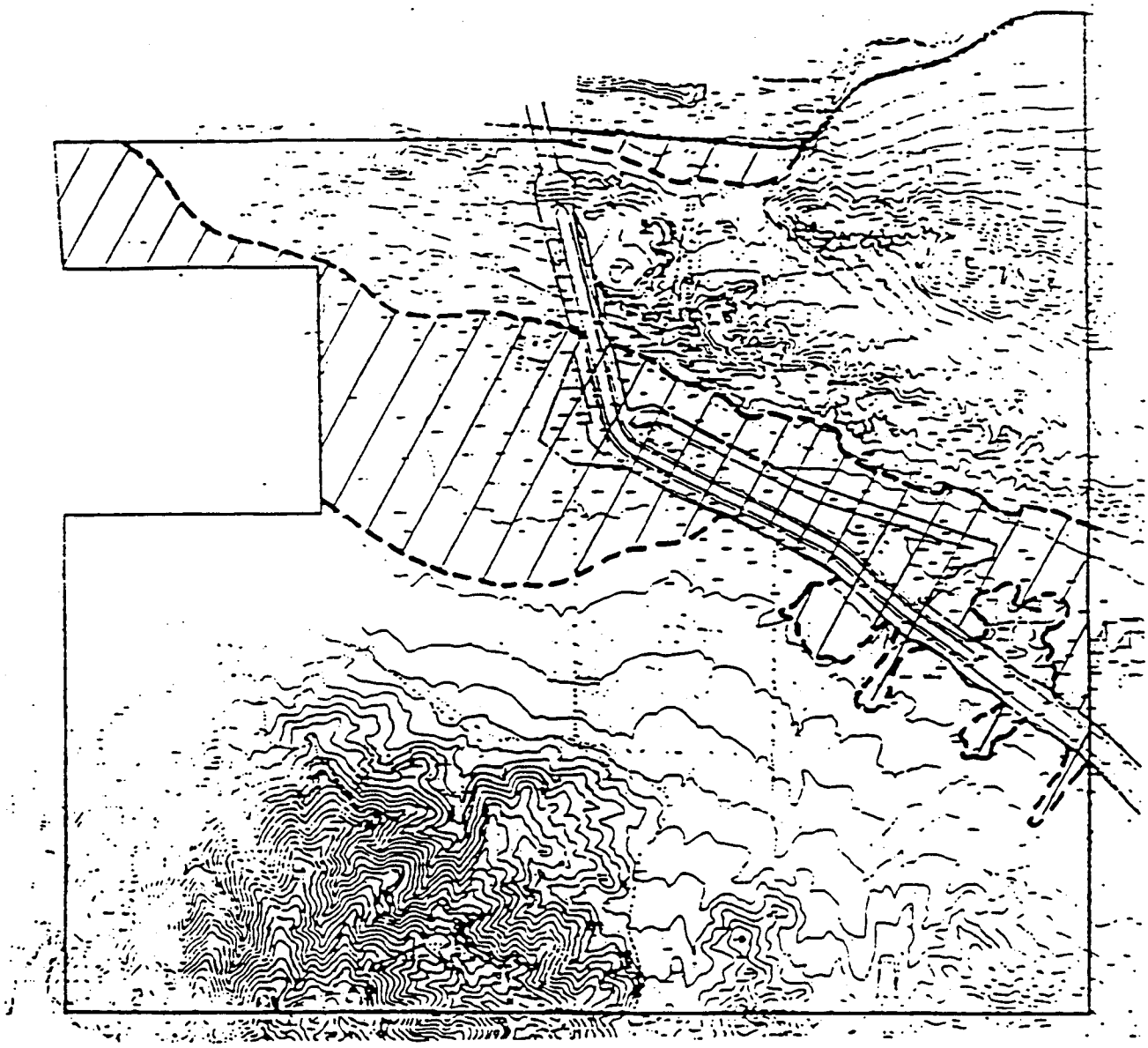
coinciding with the flood plain of the Anaverde Creek (Figure 22) (Buena Engineers, 1989). Sand samples from two borings on the site indicate the water table is within 30 feet of the ground surface at those locations. The depth to groundwater south of the former City Ranch compound may be as shallow as 10 feet. At the seasonal high level, the water table lies 7 to 8 feet below ground at the eastern side of the property and about 37 feet below ground at the western side (Earth Sciences Consultants, 1990). Seasonal variation is approximately 2 to 3 feet. The gradations of the tested soils fall partially outside (and partially inside) the "liquefiable soils" envelope. Based on tests on soil samples from three borings that penetrated more than 31 feet, and the types and distribution of soils encountered below the water table, the potential for liquefaction at the site was rated low (Buena Engineers, 1989).

Seismic Settlement

Post liquefaction settlement will occur when excess pore water pressures dissipate following an earthquake. Even if liquefaction does not occur in relatively loose granular deposits, seismic settlements detrimental to structural performance (National Research Council, 1985) may occur when seismic shaking dynamically compacts (densifies) the soils and settlement (including differential) follows. Dynamic compaction or minor liquefaction can cause settlements (uniform or differential) of a few to several inches, depending on the thickness and relative density of granular layers. No specific analysis has been performed to evaluate this possibility at the project site. Based on the distribution of surficial deposits, it would most likely occur in the younger alluvium areas.

Seismic Ground Failure

Ground failure is a broad term which can encompass liquefaction and seismic settlement. Here it is more narrowly defined to include the lesser manifestations of earthquake-induced ground shaking, namely lurching, ground cracking, and landslides.



LEGEND

- Area where shallow groundwater may exist within 30' of the existing ground surface and where there may be a "low" liquefaction potential.

N

0 800'

SOURCE: Buena Engineers, Inc. August 1990

LIQUEFACTION POTENTIAL AREAS

FIGURE 22

The site geology and topography are such that these occurrences are very likely. However, any slopes or open ground areas on the site or immediately adjacent are susceptible to ground failures (e.g., slope failure, cracking, lateral displacement) during seismic shaking. Evidence is presented (Buena Engineers, 1989) which indicates that past areas of lurching have been observed in exploratory trenches southeast of the site area. Such areas may coincide with the traces of "older" faults or geologic contacts at relatively shallow depths between materials of unlike physical characteristics. These zones may concentrate the seismic energy intensifying the response of shallow soil materials.

Seiche-, Earthquake-Induced Flooding

With the California Aqueduct passing through the site, the potential exists for seiche occurrence (water being thrown, or sloshed, out of the Aqueduct during strong shaking) and local flooding due to embankment failure. Seiche occurrence and embankment failure could occur where the Aqueduct crosses the San Andreas Rift Zone. Design of the Aqueduct by the State has apparently accounted for this type of an event (Buena Engineers, 1989). If a breach of the Aqueduct occurs, flood control gates which isolate that section of Aqueduct can be activated as soon as a breach is reported to the Department of Water Resources or when a significant drop in water level is detected (by personnel) at an Aqueduct control station. The water level in the Aqueduct is monitored 24 hours a day, 7 days a week. Alarms alert personnel at Aqueduct control stations to a water level change. At that time, the gates can be closed either remotely from the control station or manually at the site. Aqueduct flow would be cut off at the damaged section(s), thereby minimizing water loss (California Department of Water Resources, May, 1990). In addition to the shutoff system, the Department of Water Resources maintains an overflow channel along the length of the Aqueduct to accept any overflow spillover that could occur in the event of a breach of the Aqueduct (see Hydrology Section 5.6 for further discussion).

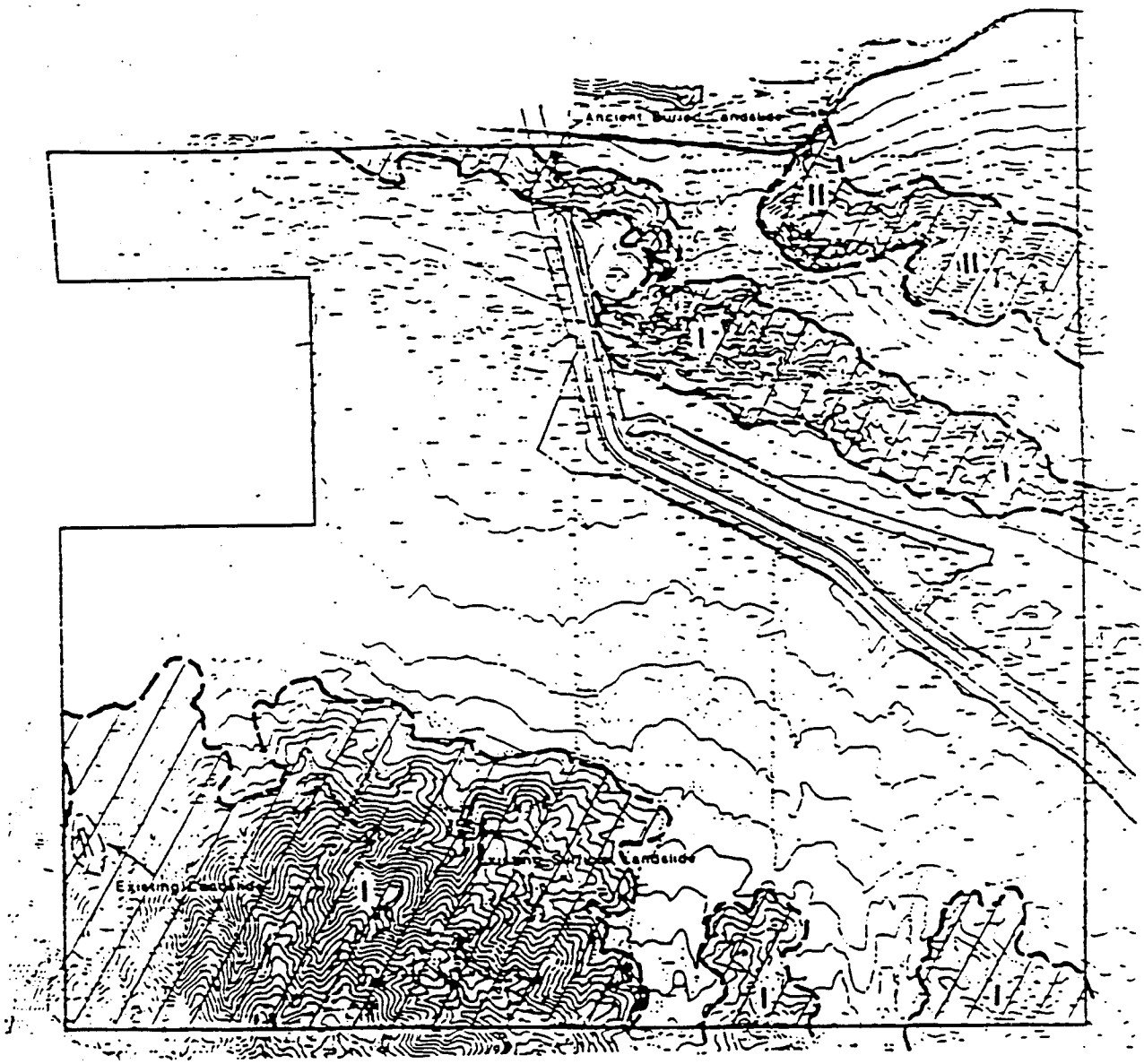
Landslides

Three landslides have been identified in natural exposures on the project site, two in the Sierra Pelona and one in the San Andreas Rift Zone near the Leona siphon (Figure 23). Landslide material has been mapped and observed in exploratory trenches at these sites (Buena Engineers, 1989). Landslide potential is increased during severe near-field seismic shaking in hillside terrains. The Anaverde Formation shales can be unstable if not properly engineered and designed. The Pelona schist due to its foliated nature, degree of weathering, presence of joints and faults and relatively steep slopes would be more susceptible to landslides in natural and cut slopes under seismic loading. Slope stability analyses performed by Buena Engineers (1989) assume static conditions and a 1.5 factor of safety; this means that the analyzed slopes were found to be stable without earthquake loads because resistive forces are 1.5 times driving forces. Figure 23 indicates areas that are subject to potential slope instability.

Soils

In the Sierra Pelona, the upper several feet of bedrock is generally weathered schist forming soft-to-moderately hard rock. Weathering generally extends from 3 to 15 feet deep. Seismic velocities of the schist at these depths range up to 5,500 feet/second (Buena Engineers, 1989). The schist is also present at relatively shallow depths (within 10-15 feet) in the upper pediment areas of Anaverde Valley. Where fault gouge zones are present, the expansion potential of the Sierra Pelona is considered high (Figure 24).

The Quaternary deposits in the Anaverde Valley (predominantly younger and older alluvium) are sands and clayey and silty sands with gravel. The sands range from loose to dense and are variably cemented. Based on seismic, drilling and trenching data, nearly all should be readily excavated. The upper 1 to 2 feet of older alluvium and 1 to 7 feet of younger alluvium show a strong tendency to hydroconsolidation (significant volume loss upon wetting) (Figure 25). Expansion potential is low to very low.

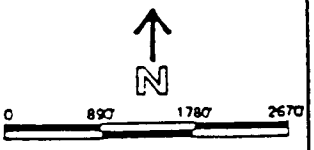


LEGEND

- Denotes bedrock or hillside areas where site specific geotechnical evaluations should be required relative to slope stability.

AREA I - Moderate to high potential for adverse geologic conditions relative to hillside or cut slope stability.

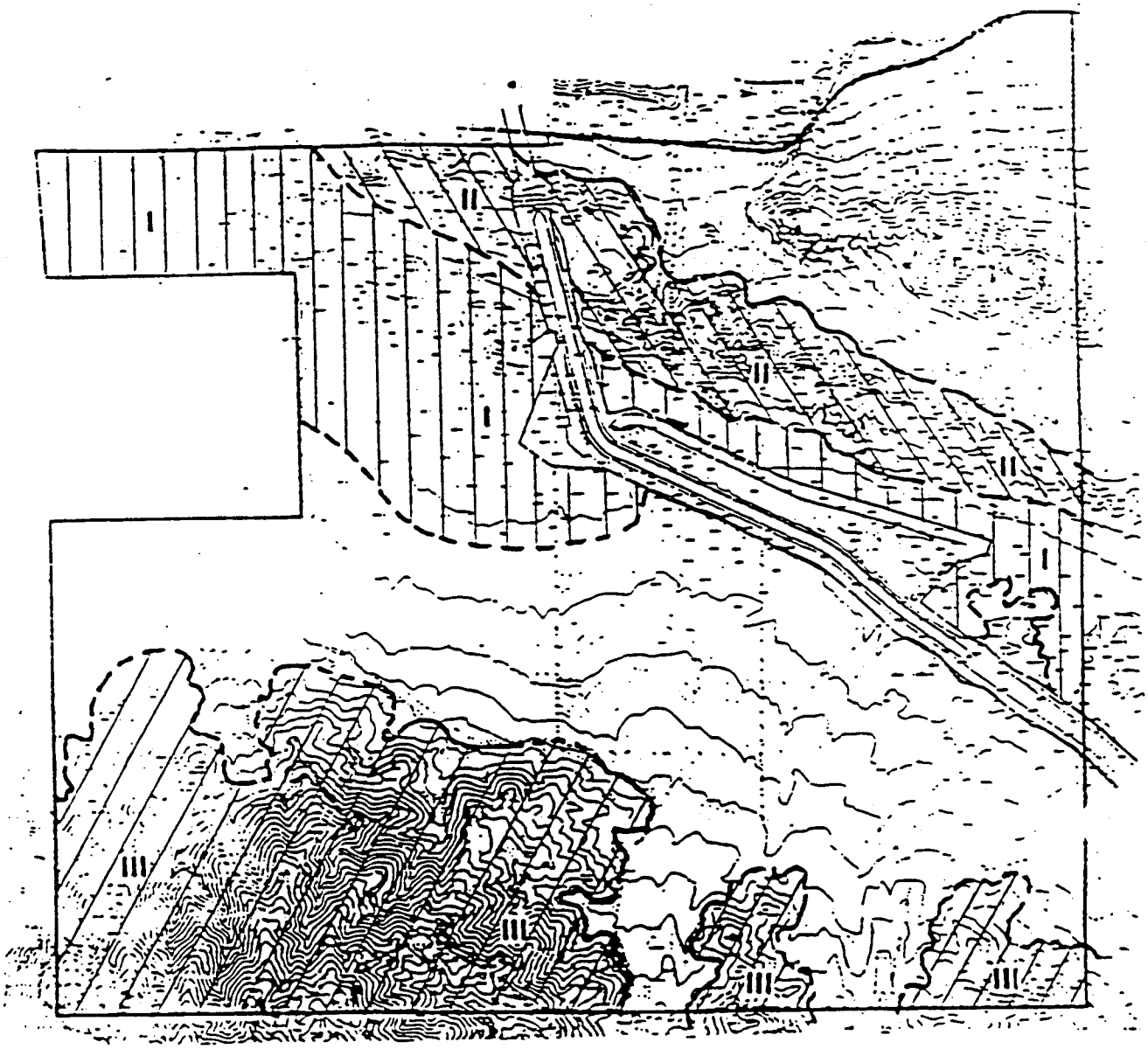
AREA II - Low potential for presence of adverse geologic conditions.



SOURCE: Buena Engineers, Inc. August 1990

POTENTIAL SLOPE INSTABILITY AREAS

FIGURE 23



LEGEND

- AREA I - Area where "low" to "medium" expansive soils may be encountered.

- AREA II - Area where "low" to "high" expansive soils may be encountered. (Anaverde clay shale exists in this area)

- AREA III - Schist bedrock where isolated lenses of expansive clay may be encountered.

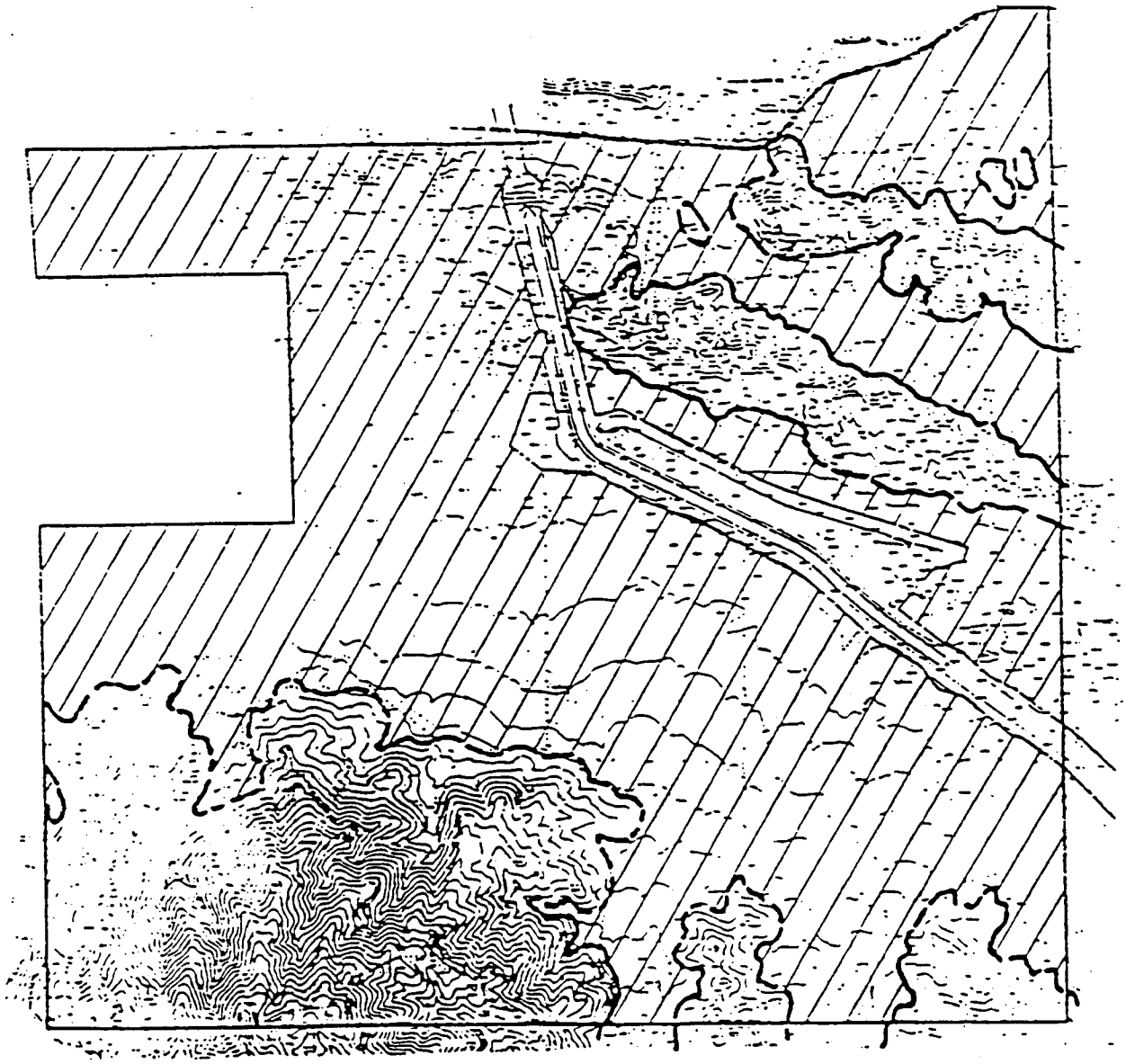
N

0 800'

Source: Buena Engineers, Inc. August 1990

POTENTIAL EXPANSIVE SOILS AREAS

FIGU 24



LEGEND

- Area of site where shallow younger and older soils subject to hydroconsolidation may exist.

N

0 890' 1780' 2670'

SOURCE: Buena Engineers, Inc. August 1990

POTENTIAL HYDROCONSOLIDATION AREAS

FIGURE 25

Nadeau gravels (Quaternary) form very coarse-grained, variably cemented (loose to very dense) soils consisting predominantly of gravels and cobbles in a sandy matri Interbeds of poorly consolidated materials are found throughout. Excavation should generally be achieved without difficulty.

The granitic rocks (Holcomb quartz monzonite on Verde Ridge) show significant weathering up to 10 feet deep, most often the monzonite could be excavated by a large backhoe. However, some areas will be very difficult to excavate with conventional equipment. Fractures and joints range from inches to a few feet apart. These granitic rocks form very solid foundation materials.

Anaverde Formation rocks vary in composition from clayey shales to coarse arkosic sandstones. They tend to weather fairly deeply and should be readily excavatable.

The Harold Formation comprises a wide variety of clast sizes from boulders to clay. The predominant lithology is silty sand with gravel and sandy gravels. Beds are often caliche (calcium carbonate precipitate) cemented and have an abundance of Pelona schist clasts. Excavation should be easy to moderately difficult.

Groundwater

Depth to groundwater varies across the site from approximately 10 feet to over 100 feet. As indicated on **Figure 22** areas with shallow groundwater (areas where groundwater occurs within 30 feet of the existing ground surface) occur roughly along the Anaverde Valley Floodplain which runs northwest/southeast across the site. Groundwater was encountered in borings and trenches in the Anaverde Valley flood plain (2 borings) and in the San Andreas Rift Zone (2 borings, 3 trenches) just north of the southeast extension of the California Aqueduct (Buena Engineers, 1989). Seasonal fluctuations may occur in these water levels. No groundwater depth or elevation contours exist for the site beyond these individual data points.

5.5.2 Project Impacts

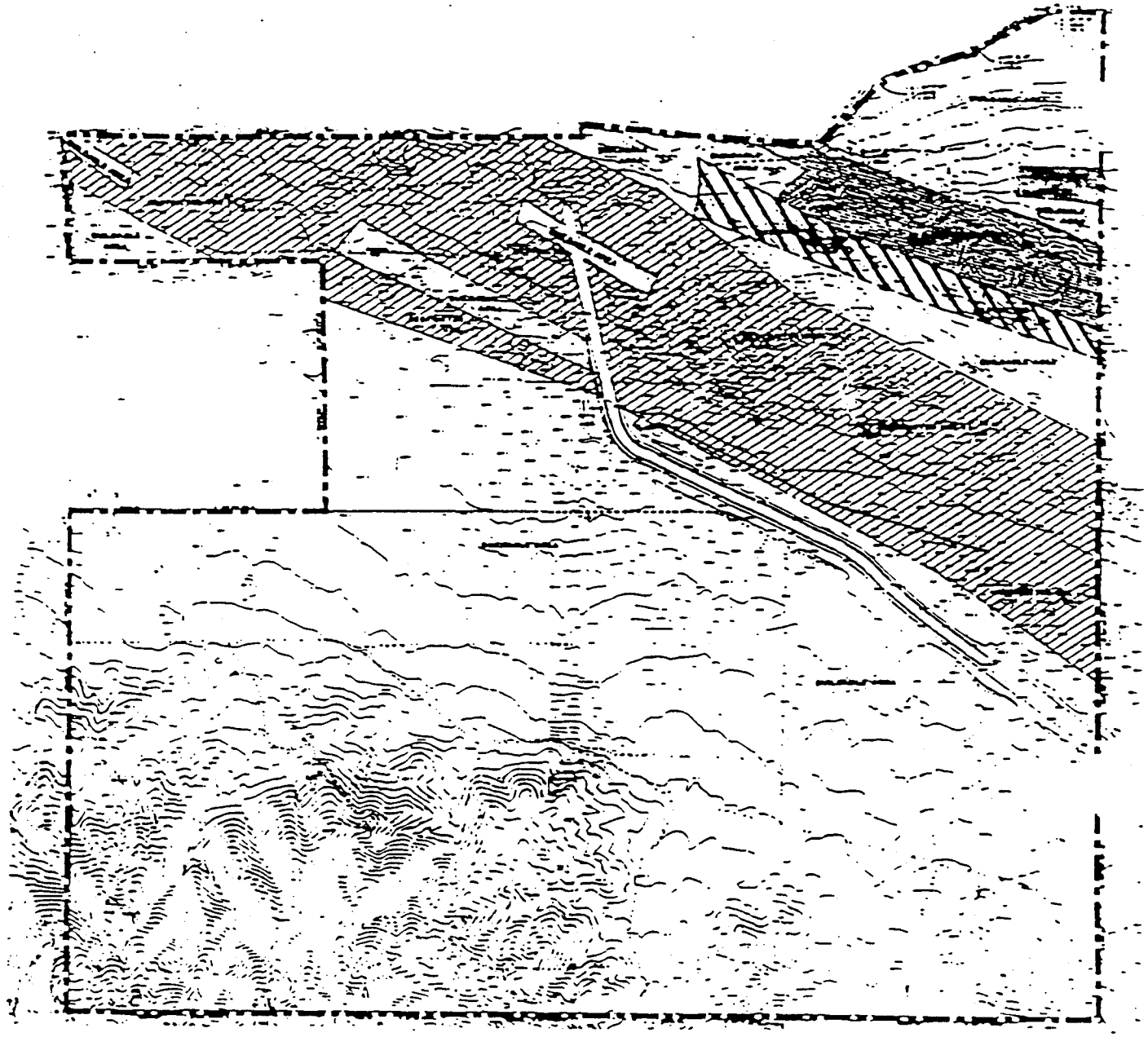
Development of the project site will introduce full-time residents to the geologically complex project site. Additional people (employees at the project schools and commercial and recreational facilities plus visitors and passing motorists) could be present on-site and exposed to site conditions at any given time.

The City Ranch Specific Plan divides the project site into 35 planning areas classified by primary land use (i.e, single-family residential, open space, etc.). As such, planning area requirement and constraints are addressed individually to provide for site drainage, infrastructure improvements, sensitive grading design and consideration of geologic hazards. Specific geologic hazards posed to future residents and site users are discussed below.

Faulting

Surface displacements along the San Andreas, or its related faults which were determined to have experienced relatively recent (Holocene) movement, could range from a few feet up to as much as 30 feet horizontally and a few inches to several feet vertically. Extensive geologic and geotechnical investigative work has been done to detect these faults in order to avoid them during project construction. As a result, the proposed Specific Plan identifies restricted use areas that preclude construction of habitable structures.

Studies to date by Buena Engineers (1989; 1990) have delineated faults, identified lineations, and have determined the age of last movement for each fault based on inspection and analysis of numerous trenches. Restricted use zones, which include 100-foot building setbacks from faults, have been delineated to indicate where habitable structures should not be located and where more study is needed before specific structures are planned and constructed (Figure 26). A habitable structure is defined as a structure for human occupancy which is used or intended for supporting or sheltering any use or



LEGEND

PROJECT SITE BOUNDARY

RESTRICTED USE ZONE I - INCLUDES 100' SETBACK OF UNKNOWN OR SUSPECTED POTENTIALLY ACTIVE FAULTS WHERE PROBABILITY OF FUTURE FAULT RUPTURE IS CONSIDERED MODERATE TO HIGH

RESTRICTED USE ZONE II - INCLUDES 100' SETBACK OF KNOWN OR SUSPECTED POTENTIALLY ACTIVE OR INACTIVE FAULTS WHERE PROBABILITY OF FUTURE FAULT RUPTURE IS CONSIDERED LOW TO MODERA

RESTRICTED USE ZONE III - INCLUDES 100' SETBACK WHERE ACTIVITY OF FAULTS IS QUESTIONABLE. ADDITIONAL EVALUATION PRIOR TO LOCATION OF HABITABLE STRUCTURES IN THIS AREA IS RECOMMENC

AREAS WHERE NO RESTRICTIONS RELATIVE TO FAULTS HAZARDS ARE RECOMMENDED. "SF" DENOTES BUILDABLE AREAS WHERE SPECIAL REINFORCED FOUNDATIONS ARE RECOMMENDED

N

0 850' 1700'

Envicom Corporatio

SOURCE: Preliminary Geotechnical Engineering Report, May 1989 Buena Engineers, Inc. Revised April 19 1990

RESTRICTED USE ZONES

FIGURE 26

occupancy expected to have a human occupancy rate of more than 2,000 person hours per year (Buena Engineers, 1990). According to the City Ranch Specific Plan, part or all of Planning Areas, 1, 2, 3, 4, 5, 7, 8, 9, 10, 12, 13, 15 and 35 are located in Restricted Use Zones.

Restricted Use Zone I encompasses the San Andreas Rift Zone and associated faults that show evidence of movement within the past 11,000 years. The Restricted Use Zone I (Buena Engineers, 1990) roughly corresponds to, but is wider than, the APSSZ through the site.

The following planning areas are encroached upon by the fault traces governing Restricted Use Zone I: Planning Areas 1 (open space/community park); 2 (natural open space); 4 (open space/golf course); 5 (single-family detached); 9 (community park); 10 (single-family detached); 12 (multi-family); 13 (open space/golf course); 15 (single-family attached) and 35 (open space/community park). Buena Engineers (1989) have delineated the "edges" of the San Andreas Rift Zone based on information gathered from exploration trenches dug on the project site (T-17, T-48, T-10, T-11, T-43, T-23, T-30, T-30b, T-42, T-51, T-24, T-27, T-13, T-61, and T-65 through T-71). Construction of habitable structures in this zone is not recommended. If fault rupture were to occur beneath a structure built in this area, very serious structural damage would result and serious injury would be likely. According to the City Ranch Specific Plan no structures will be built within Restricted Use Zone I. (See Project Description and **Figures 5 and 9**.) If the above planning areas are built as specified in the project description and depicted on **Figures 5 and 9**, no significant impacts are anticipated.

Activities supporting development such as recreation and infrastructure systems (such as water, power, gas and sewer lines and Avenue S, Bridge Road, City Ranch Road, collector streets and residential roadways along with the bridge across the Aqueduct) will be allowed within the main San Andreas Rift Zone (Restricted Use Zone I; Buena Engineers, 1990). The survival of these systems during large earthquakes and ground rupture will be highly dependent on their design. Their disruption during and follow-

ing a major earthquake on the San Andreas Rift Zone could substantially affect the ability of local residents to move into, out of or around the area. These types infrastructure systems have been designed and installed in other similar situations along the San Andreas and related faults.

Restricted Use Zone II encompasses the main trace of the Little Rock fault zone the probability of future fault rupture potential is considered to be low to moderate. Location of habitable structures within this zone is not recommended without further subsurface exploration and analysis and implementation of setbacks from the fault (Buena Engineers, 1989). The Restricted Use Zone II area coincides with parts of Planning Areas 3, 7 and 8. As discussed in the project description, the impacted portion of Planning Area 3 will be limited to landscaping, parking, loading, temporary storage areas and other non-habitable structural uses. As shown in **Figure 6**, all lots in Planning Area 8 will be setback 100 feet from the fault traces. Planning Area 7 will remain as natural open space. If Planning Areas 3, 7 and 8 are developed as described above, no significant impacts are anticipated.

Restricted Use Zone III which covers most of the Verde Ridge is described as an area where fault activity is questionable. This zone coincides with parts of Planning Areas 7 and 8. No habitable structures are proposed to be located within the restricted portions of these planning areas. Therefore, impacts with regard to Restricted Use Zone III are not anticipated to be significant.

Seismic Shaking

The overall risk from seismic shaking at the project site is higher than for other sites in the Antelope Valley. This represents a very significant adverse impact. The severity of ground shaking at the site depends on many factors, but since the site lies astride the San Andreas Rift Zone (source distance = zero miles), the earthquake magnitude and the nature of the earth materials beneath the site are most critical. Because a conservative magnitude must be assumed, the effect of this shaking depends upon the design

the various structures (including their foundations) and the specific soil conditions at each location within the site.

Design Level Acceleration in Percent Gravity (g)

Maximum Credible Peak Ground Acceleration	Estimated Repeatable Ground Acceleration
70-100%g (0.70-1.00g)	50%g (0.50g)

The most serious potential impact would develop if inadequate geotechnical and structural studies were performed as a basis for the specific seismic design of the single-family, multi-family, commercial and critical (school) structures. Buildings not constructed to the seismic building code requirements may be susceptible to damage and pose potential injury to occupants during the maximum credible shaking event.

Liquefaction Potential

Because of the presence of a relatively shallow groundwater table (less than 30 feet) and potentially loose-to-medium dense fine-grained sands in the alluvium, liquefaction potential is a concern to dwellings or structures proposed in portions of Planning Areas 1, 3, 5, 7, 10, 11, 12, 13, 14, 15, 20, 21, 22, 23, 24 and 25. While depth to water data alone are insufficient to make firm conclusions, it appears these planning areas are in areas of relatively high groundwater where liquefaction could occur if susceptible soil conditions exist. According to Buena Engineers, liquefaction potential, while it does exist, is considered to be low. Liquefaction could produce failure (including lateral spreading) of shallow building foundations leading to substantial structural damage and possible bodily injury. This is considered a significant impact. As with seismic shaking, liquefaction effects are well understood and many buildings have been designed to withstand these effects in similar geologic environments.

Seismic Settlement

While liquefaction is the potentially greater hazard in specific areas of the project site, other areas of the project site may contain granular materials of greatly different densities. This creates a potential for differential settlement across an overlying structure during and after a severe earthquake. Damage to structures from seismic settlement can range from minor to significant. Damage will be manifest as minor-to-severe cracking of foundations and the overlying structure; collapse is unlikely. These settlements have been predicted and accommodated for in the design and construction of other buildings in similar geologic environments. The potential for seismic settlement on this property is not significantly different than elsewhere in the greater Palmdale area.

Seismic Ground Failure

The most probable earthquake-induced ground failures at the site are fill slope failure shallow liquefaction with attendant lateral displacement and general ground lurching and cracking. Based on the project development plan, some areas with earthquake-induced ground failure potential will exist on site. A primary concern is the potential for failure of the cut and fill slopes adjacent to occupied dwellings. Should this occur, earth materials could move downslope and onto or into structures causing structural as well as cosmetic damage and possibly injury. Also other fill slopes created for roadways, berms, drainage control structures, etc. may be susceptible to failures which may affect supported structures (e.g., pavements, abutments, bridges, walkways). This would pose safety problems to drivers and inhibit post-earthquake relief efforts. These impacts are considered significant.

Seiche and Flooding Effects

Seiche effects could include some minor sloshing of water over the California Aqueduct embankment. In a more severe case, failure of the embankment could release lar

quantities of water. In a worst case scenario, portions of Planning Areas 2, 4, 9, 13 and 22 could be impacted by flooding. Though these areas are park, golf course and open space areas, some buildable areas exist within these locations. Aqueduct flooding of clubhouse or park facility structures would be considered significant. For further discussion, see Hydrology Section 5.6.

Landslides

The stability of natural slopes on the project site is of concern because evidence of previous slope failures has been observed. These concerns are greatest in Sierra Pelona hillside areas in the southern portion of the site and in the Anaverde shales in the San Andreas Rift Zone. Earthquake loading would exacerbate any existing problems related to adverse bedding plane and foliation orientations, and weak clayey layers or gouge zones. Failure of substantial areas of bedrock, alluvium or fill above or below structures could cause substantial structural damage or bodily injury. This would be considered a significant impact. There is no evidence to suggest that the project site is susceptible to major earthquake-induced rock avalanche such as the Blackhawk landslide which occurred near Lucerne, California (Wilson and Keefer, 1985).

It has been assumed that grading for areas of the development in younger and older Quaternary alluvium, Pelona schist and Holcomb quartz monzonite will result in cut slopes. Because of the soil and rock properties and depending on height of cuts and the severe seismic shaking, there may be a potential for slope instability. This is of particular concern in the Sierra Pelona in the area of Fault Zone G (Planning Areas 30A and 31) where intersecting faults, joints and foliation may occur in these high cut slopes. Proper design and support is commonly provided on construction projects in geotechnically similar materials and environments.

For proposed new cut and fill slopes, stability analyses have been performed per Chapter 70 of the Los Angeles County Building Code for several cases (Buen. Engineers, 1989). Stable results including a 1.5 Factor of Safety were obtained as follows:

Soil Type	Stable Slope Ratio
Younger alluvial soils	
30 feet high fill at	2:1
40 feet high cut	2.5:1
with recompacted face)	(2:1)
Older alluvial soils	
30 feet high fill at	2:1
40 feet high cut	2:1
Bedrock	
To be compatible with bedding and foliation/joint conditions	

Soils

Soil concerns relate to excavation characteristics, bearing capacity, hydroconsolidation, shrink/swell potential and erodability. The site soil materials are relatively easy to excavate and are suitable as fill materials (if properly prepared). As shown in **Figures 24** and **25**, several areas within the development are known to contain potentially expansive soils and hydro-compactable soils. Where these soils are found, special design and construction precautions should be taken to minimize damage to structures. Bearing capacities in all areas will be suitable for the presently contemplated spread footings if soils are properly prepared. Suitability for heavy loads must be determined by geotechnical borings, appropriate laboratory tests and engineering analysis specifically for the planned structure. Other similar single-, multi-family and commercial-type structures have been successfully constructed in similar soil materials.

Anaverde Formation soils should generally be acceptable for foundations or as fill. The clay shale members are expansive and where encountered will require special measure

in design and construction (e.g., removal, over-excavation, drainage measures). Such considerations are routinely made for similar projects.

Bedrock in the Sierra Pelona and Verde Ridge areas may be difficult to excavate using standard equipment; some local blasting may be required. Blasting imposes certain normal construction risks to worker safety; these are similar to those found on other similar projects. Resulting soils or residuum should be suitable as fill material if properly prepared.

Groundwater

Groundwater will not likely be found in excavations for the structures presently contemplated. However, should excavations be planned in areas where water is 10 feet deep or less (Planning Area 15), hazardous working conditions for both construction personnel and equipment can be created. This potential impact is routinely handled by pumping and drainage techniques to minimize the significance. The development of the proposed project could raise groundwater levels in Planning Area 15. This could create soggy ground, nuisance moisture relative to landscaping, and in the worst case, surface water ponding. This could be considered a significant impact.

5.5.3 Mitigation Measures

To fully mitigate impacts to geologic hazards, the project would have to be redesigned to eliminate the introduction of people into the areas susceptible to seismic impact. This mitigation measure has not been required by this EIR since it would make development of the project infeasible. However, implementation of the following measures would minimize adverse impact or reduce impacts related to geologic hazards to an acceptable level:

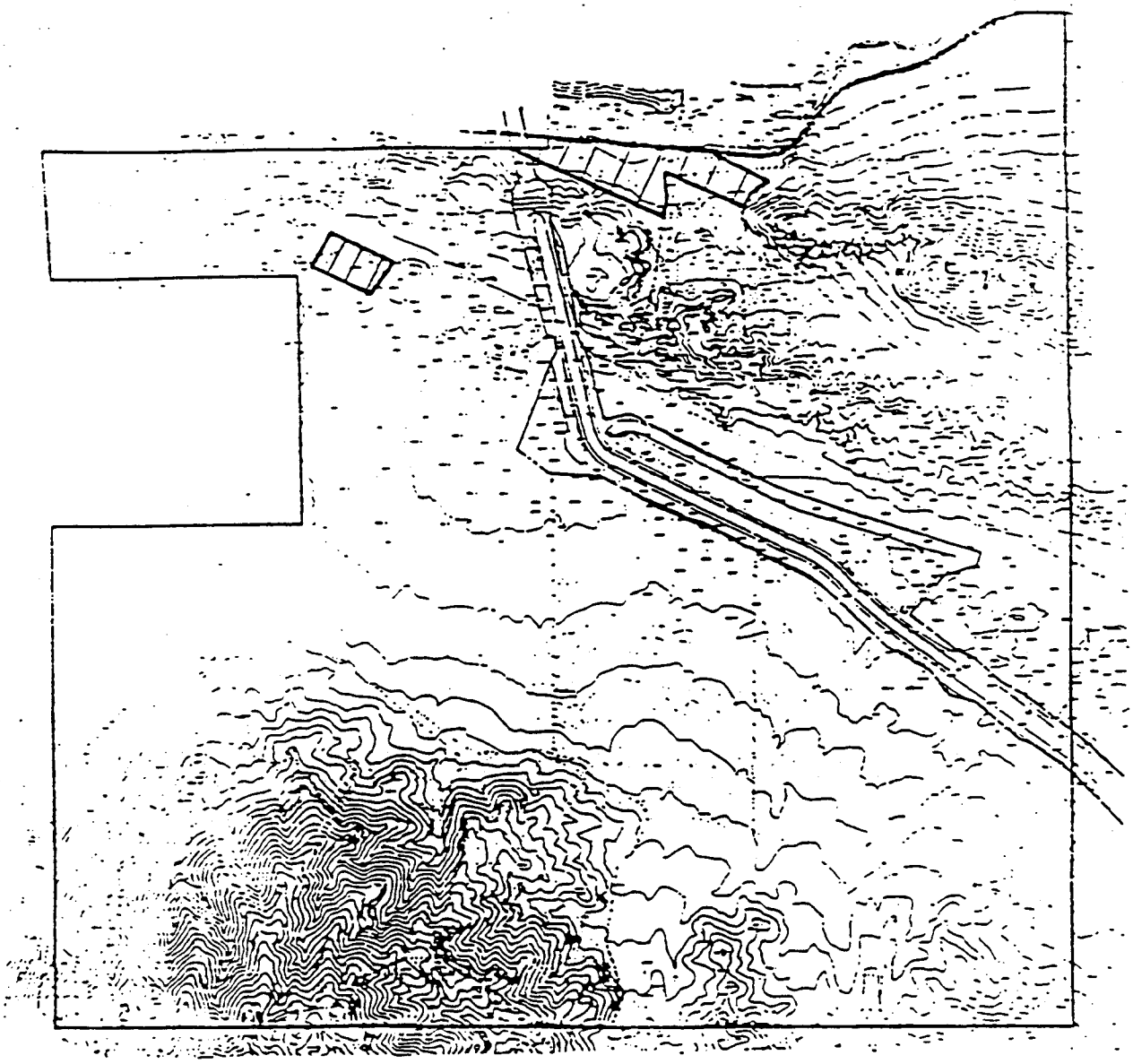
Surface Fault Rupture

- No structures intended for human habitation as previously defined shall be constructed in Restricted Use Zones I, II or III. Further specific fault hazard studies may reveal the existence of additional buildable areas within previously identified Restricted Use Zone areas.

- Special foundations have been recommended for select areas of the site adjacent to defined Restricted Use Zones (**Figure 27**). Special foundations should consist of more heavily reinforced foundations and concrete slabs. Actual design of the foundations should be determined by the project structural engineer as approved by the City Building and Safety Department.

- In accordance with California Department of Real Estate disclosure format and procedures, all potential buyers purchasing real property in City Ranch shall be advised of potential seismic hazards in accordance with the following disclosur language:

- Each deed or other conveyance of Real Property shall include the following statement: "Portions of the City Ranch Specific Plan area are traversed by major traces of the San Andreas Rift Zone, a geologic feature capable of producing a magnitude 8.3 earthquake. The active fault zone has been identified by extensive site specific testing and analysis. All buildings are prohibited by the Specific Plan from being constructed across the trace of an active fault throughout the Specific Plan area. Due to the proximity of portions of the property to the San Andreas Fault, there is a higher risk of experiencing surface fault rupture than other locations not adjacent to an active fault. An active fault is any fault that has been determined to have experienced movement within the last eleven thousand (11,000) years." Additionally, where applicable, each disclosure statement and deed record shall contain language which denotes the possibility of building restrictions on residential additions for human occupancy on those parcels whi



LEGEND

- Area where more heavily reinforced foundations are recommended relative to seismic hazards.

N

0 890' 1780' 2670'

SOURCE: Buena Engineers, Inc. August 1990

SPECIAL FOUNDATION AREAS

FIGURE 27

are located in either the Special Seismic Foundation or Seismic Setback Zones.

Seismic Shaking

- Develop site specific earthquake response spectra for critical facilities such as water tanks, schools and the fire station which consider effects of ground shaking associated with events in the San Andreas Rift Zone. These reports are intended to provide specific engineering design criteria related to structural design and selection of building materials.

- All structures on the project site shall be designed in accordance with at least the minimum code standards for Seismic Zone 4 as described in the Los Angeles County Building Code.

- Structural and foundation designs, detailed drawings and specifications shall be incorporated into architect designs and construction plans. Specifications for the construction plans may include soil improvements or other remedial measures.

- The project geotechnical consultant shall perform grading observation and testing to confirm adherence to specifications and recommendations and shall certify that all grading complies with the provisions of all approved plans and specifications, pursuant to Los Angeles County Uniform Building Code.

Liquefaction and Seismic Settlement

- A liquefaction study of the site shall include the following:

  - Subsurface exploration (by borings) to depths of thirty to forty feet below existing native soil grades in areas of known shallow groundwater. Relatively undisturbed soil samples should be obtained from the borings for determination of soil density and grain-size analysis. (A sufficient number c

borings should be drilled to obtain a reasonable amount of knowledge relative to the soil conditions and depths to groundwater.)

- Testing to determine engineering characteristics of the soil shall include the following:

  - Soil sampling blowcounts, soil density measurements, and grain-size analysis to determine the susceptibility of the soil in shallow groundwater areas to liquefaction. Recommendations for remedial grading or foundation design shall be made for areas in which it is determined that liquefaction is a significant hazard. Typical recommendations may include deeper foundations, densification of the susceptible soils, or construction of subdrains.

- Tests and observations shall be performed by the project geotechnical consultant during grading operations to assure adherence to recommendations in identified liquefaction hazard areas and shall certify that all grading complies with the provisions of all approved plans and specifications, pursuant to Los Angeles County Uniform Building Code.

Landslides

- Any hillside areas of the property where planned grading would result in artificial slopes greater than ten feet in height shall be evaluated specifically relative to slope stability by preparing the following geologic and geotechnical engineering studies:

  - Detailed geologic mapping of surface features in the areas of the proposed cut slopes.

- Subsurface exploration with backhoe test pits and trenches to expose the shallow geologic conditions in and around the proposed graded areas.

- Deep subsurface exploration with borings including small diameter auger borings or large diameter bucket borings at the specific cut slope locations. (It is suggested that the subsurface exploration be extended to depths at least equal to, and ideally greater than, the proposed depths of grading.)

- Laboratory tests on the soils and rocks collected from the exploration programs for determination of density, moisture content, shear strength, and compaction characteristics.

- Detailed engineering analyses utilizing the data obtained from the field exploration and laboratory testing programs relative to stability of the existing and planned graded slopes. Recommendations shall be provided for remedial grading to repair or replace any potential unstable slopes.

- The findings and recommendations of the Slope Stability Study shall be in-corporated into construction plans and site grading activities, and a slope maintenance plan. Grading, slope maintenance, and construction plans shall be reviewed and approved by the City Engineer.

- The project geotechnical consultant shall be responsible to perform confirmatory tests and observations during grading to assure that the geotechnical recommendations are being followed and shall certify that all grading complies with the provisions of all approved plans and specifications, pursuant to the Los Angeles County Uniform Building Code.

- Recommendations for slope planting and irrigation shall be prepared by a qualified landscape architect and reviewed by the City Planning Department and by the City Engineer. Approved plans by City Engineer will be required prior

approval of final map by Engineering.

- Temporary erosion control measures shall be employed as follows:

  - The surface of all slopes more than three (3) feet in vertical height shall be covered with North American Green S 150 or approved erosion control blankets or application of an approved latex soil binder included in a hydroseed mix designed for germinating with natural rainfall. This would consist of slope stabilizing, low water consuming grasses and ground covers. Installation shall conform to all manufacturer's specifications.

  - Erosion mitigation measures shall be performed to the satisfaction of the City of Palmdale Landscape Architect prior to the acceptance of rough grading.

- Permanent erosion control measures shall be employed as follows:

  - The surface of all slopes more than three (3) feet in vertical height shall be covered with North American Green S 150 approved equal erosion control blankets or be permanently landscaped and irrigated per approved landscape plans, and have obtained 80 percent coverage of groundwater. Installation shall conform to manufacturer's specifications. ?

  - The surface of all slopes more than three (3) feet in vertical height shall be protected against damage from erosion by planting with groundcover plants. Slopes exceeding fifteen (15) feet in vertical height shall also be planted with shrubs at not to exceed 10 feet on centers; or a combination of shrubs and trees at equivalent spacing, in addition to the groundcover plants.

- Planting need not be provided for cut slopes which are rocky in character and not subject to damage by erosion and any slopes protected against erosion damage by other methods when such methods have been specifically recommended by a soils engineer, engineering geologist or equivalent authority, and found to offer erosion protection equal to that provided by the planting specified in this section.

- All required landscaping and irrigation shall conform to the City of Palmdale's Slope Erosion Control Landscaping Standards.

- All planting and irrigation shall be installed to the satisfaction of the City of Palmdale Landscape Architect prior to the acceptance of final grading.

- All slope banks less than 30 feet in height within single-family residential lots shall be maintained by individual homeowners enforced through deed restrictions. Slopes in common open space areas of multi-family and attached single-family unit planning areas and slopes greater than 30 feet high in rear yards of private residential lots shall be maintained by homeowners associations. Slopes in landscape easements along public rights-of-way and roadway slopes within tracts shall be maintained by homeowners associations unless reviewed and approved by the Director of Engineering to be included in a maintenance district.. Slopes in park areas shall be maintained by the City of Palmdale. Where maintenance is to be provided by a maintenance district or homeowner's association, said area shall have an easement recorded over it for access and maintenance purposes.

- Slope plantings and irrigation systems shall be maintained.

- Berms, swales or devices shall be provided at the top of cut or fill slopes to prevent surface waters from overflowing onto and damaging the face of the slope. Gutters or other special drainage controls shall be provided where th

proximity of runoff from buildings or other structures is such as to pose a potential hazard to slope integrity.

- Manufactured down slopes to property lines shall be prohibited except for corner lot conditions. Where walls occur at the tops of slopes, access shall be provided to the homeowner or designated maintenance party to permit maintenance of slopes and landscaping.

- The drainage outlets shall be periodically inspected and cleaned of silt and debris.

- In accordance with California Department of Real Estate disclosure format and procedures, all potential buyers of residential lots containing slope banks greater than 30 feet in height shall be notified of the condition.

Soils

- Soils engineering recommendations listed on pages 40-63 of the May, 1989 Buena Engineering report entitled "Preliminary Engineering Geotechnical Report, City Ranch Property" (Appendix D) shall be strictly followed.

- Reshaping of the natural terrain to permit access and construction of facilities such as water tank sites, utility lines and easements, service roads, fire access, etc., shall be kept to a minimum in areas of greater than 25% slope.

- The geotechnical consultant shall control construction activities through confirmatory observations and testing and quality control procedures. Special attention must be given to the hydroconsolidation issue and specific plans for treating or removing the susceptible soils. Present recommendations appear adequate but may require reassessment depending on location specific conditions.

- For areas within "medium" or higher soil expansion potential (refer to Figure 24), post-tensioned foundations shall be required.

Seismic Ground Failure

- Prohibit construction of habitable structures in Restricted Use Zone I and in Restricted Use Zones II and III, conduct in-grading inspections and identify precautionary measures (e.g., enhance foundations, adjust building locations slightly) where trench exposures show evidence of soil filled cracks along lineaments or buried geologic contacts.

Flooding Potential

- Construct flood control channels along the main washes and maintain drainage diversion devices locally (e.g., under roads, engineered fills and along the Aqueduct).

- For the Aqueduct embankment failure event, construct protective berms to the elevation sufficient to control the design flooding event specified by the State for this area. In addition, the structures shall be elevated above the flooding levels by increasing the height of fills.

Groundwater

- Provisions shall be made for adequate drainage of the site both during construction and operational phases of the project. To avoid problems associated with rising groundwater levels in Planning Area 15, subsurface drainage (for example, gravel drains, herring bone drains or french drains) would be required.

- If required during construction, a dewatering or drainage diversion program shall be developed and implemented subject to review by the County of Los A

geles Department of Public Works and/or the City of Palmdale as required by the City Engineer.

5.5.4 Cumulative Impacts

As the project vicinity becomes built out through the development of this and the cumulative projects, increased numbers of persons would be exposed to the geologic hazards of seismically-induced effects in this high geologic hazards potential area. Increased numbers of persons could be injured by an earthquake event in this area.

5.5.5 Unavoidable Adverse Impacts

Implementation of the recommended mitigation measures would reduce many adverse geologic impacts; however, they would not eliminate all the significant impacts associated with geologic hazards. Geologic impacts are, therefore, considered unavoidable adverse impacts.

5.6 HYDROLOGY

5.6.1 Existing Conditions

The City Ranch site contains two drainage areas, the Anaverde Creek and Amargosa Creek drainages. The majority of the project site (73%) falls within the Anaverde Creek drainage which flows northeasterly from the south and southwest portions of the site to the center of the site. From there, runoff drains under the Aqueduct via culverts and then east along the north side of the Aqueduct through a wetland area. The source of moisture for the wetland is groundwater. At this time there is no surface water flow to the wetland in the dry season. The Amargosa Creek drainage area includes the northern portion of the project site. This area drains north off the project site then east, north of Elizabeth Lake Road. The Amargosa Creek is proposed to be channelized and improved per City of Palmdale proposed Assessment District 90-1. The Anaverde and Amargosa Creek drainages, which serve as accumulators for inflow from many local sources, have been designated "Flood Plain Management Areas" by the Los ngeles County General Plan (Los Angeles County, 1986, Map 5). The City is currently in the process of developing a regional drainage solution for the Anaverde basin along the lines of that developed for the Amargosa Creek basin. The flood control facilities proposed in the Specific Plan for this basin may be modified in the future if additional flood water detention or channelization is determined to be appropriate for the regional solution that may be proposed.

Flooding

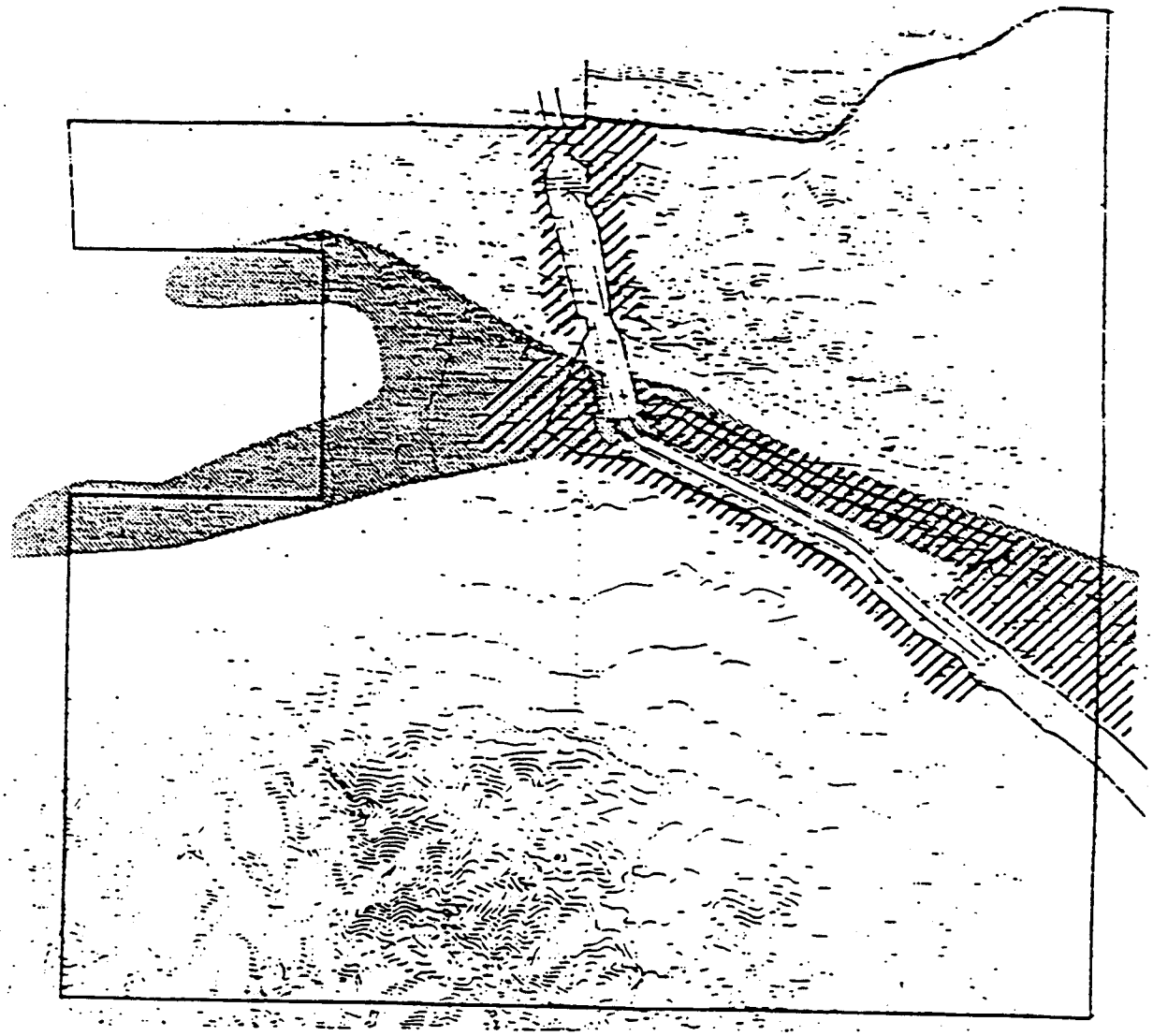
Water sources which may cause flooding on the project site are as follows: 1) the Anaverde Creek; 2) overland and channelized runoff from the Sierra Pelona Highland and Anaverde Plain; 3) overland and channelized runoff from the hills of the Verde Ridge and San Andreas Rift Zone; 4) abnormal precipitation events over the site and/or its upstream drainage basin; and 5) the California Aqueduct which trends roughly diagonally (northwest-southeast) through the site and could be a source of flooding in

the event of levee failure (Figure 28).

The project site contains 1,800 acres of the 7,400-acre area of the Anaverde Creek watershed. The 100-year Federal Emergency Management Agency (FEMA) flood area of the Anaverde Creek coincides with the central portion of the project site (Figure 28). This designation, which indicates areas subject to flooding during a 100-year FEMA flood under existing conditions, also mandates procedures to be followed in altering the flood plain for development. A 100-year storm is defined as the volume of precipitation expected to be equaled or exceeded once every 100 years. In any given year, there is a one percent chance of a 100-year storm occurring. The City of Palmdale and the Federal Emergency Management Agency regulate development within the 100-year FEMA flood plain to protect new development and existing adjacent property. There has been one recorded occurrence of flooding on the project site. This occurred in the vicinity of the existing ranch buildings adjacent to Anaverde Creek. The flood was due to blockage of a culvert under the Aqueduct by debris.

The nearby desert areas are generally susceptible to flash flooding and erosion, often with debris/mudflow occurrences, during seasonal peak periods of precipitation. Because the project vicinity contains many individual drainage areas, this susceptibility is variable depending on location.

The Sierra Pelona foothills and the adjacent Anaverde Plain alluvial fans/bajadas contain separate drainage channels and sloping plains. The majority of the Sierra Pelona area lies within the designated Hillside Management area (areas where slopes are greater than 25% and debris potential is high) (Los Angeles County, 1985, Map 5). The potential for debris flows across the project site is considered nil to high depending on slope gradient, soil type and drainage concentration (Buena Engineers, 1989) (Figure 29).



LEGEND

- PROJECT SITE BOUNDARY
- 100-YEAR FEMA PRECIPITATION EVENT FLOOD ZONE
- ESTIMATED AQUEDUCT FAILURE FLOOD AREA

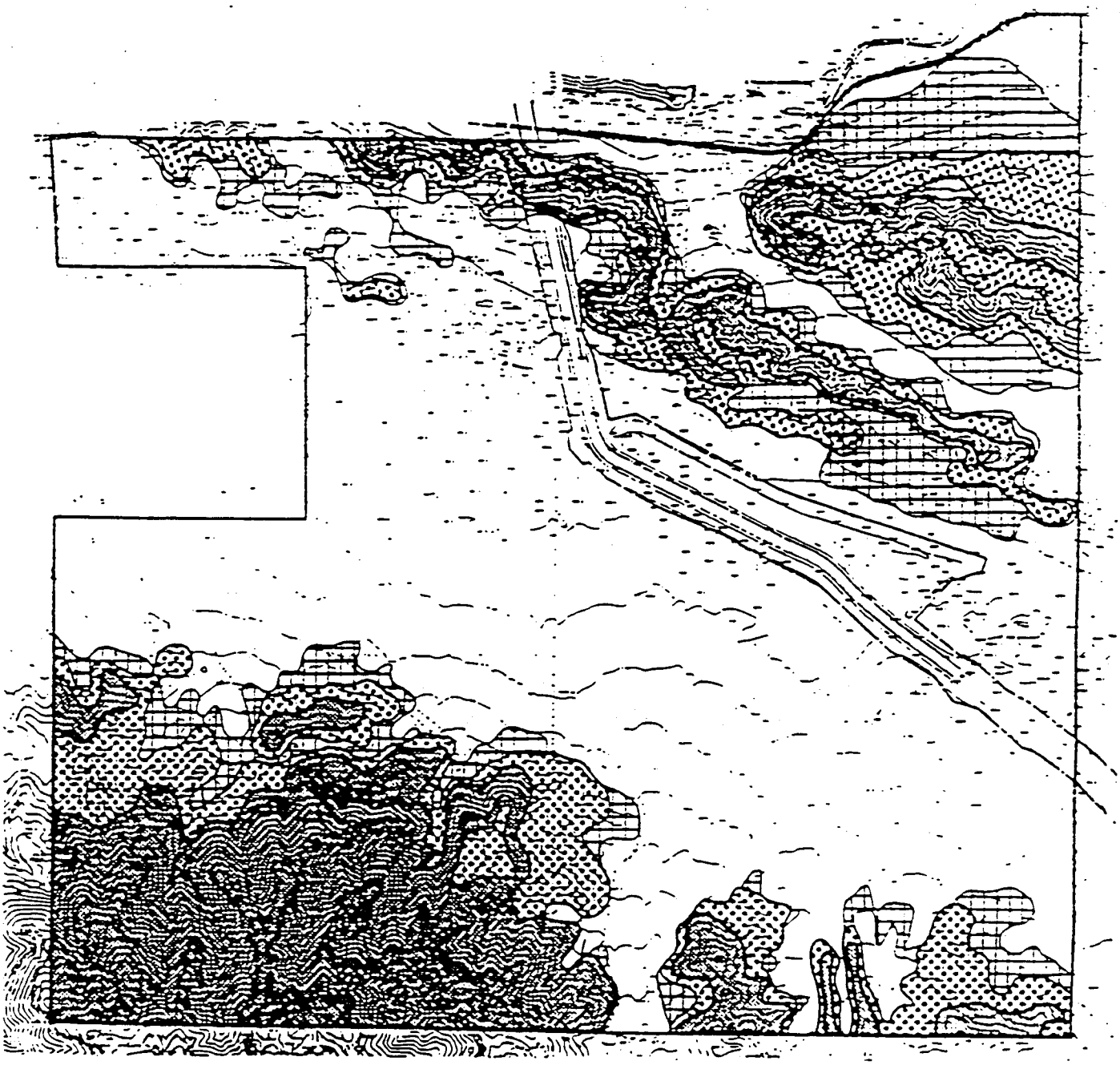
N

0 900' 1800'

SOURCE: PHB Engineering, May 1990

FLOOD HAZARD AREAS (EXISTING CONDITIONS)

FIGURE 28



LEGEND

- 0-10% LITTLE TO NO DEBRIS POTENTIAL
- 10-15% LOW DEBRIS POTENTIAL
- 15-25% MODERATE DEBRIS POTENTIAL
- 25% AND ABOVE (HILLSIDE MANAGEMENT AREAS)

N

0 770' 1540' 2310'

Envicom Macintosh Graphic

SOURCE: Modified from Preliminary Geotechnical Engineering Report May 1989, Buena Engineers, Inc.

DEBRIS POTENTIAL AREAS

FIGURE 29

Small portions of the Verde Ridge and San Andreas Rift Zone are also occupied by slopes designated as Hillside Management Areas (Buena Engineers, 1989; Los Angeles County, 1986, Map 5). Though these slopes are not as steep as those of the Sierra Pelona foothills, the possibility of debris flows during abnormally high precipitation events should not be discounted.

The California Aqueduct which traverses the project site, occupies the valley floor between the Verde Ridge and the Sierra Pelona foothills. Based on annual volumes delivered downstream from Palmdale (California Water Atlas, 1978), water flow in the California Aqueduct normally ranges between 500 to 1,450 cubic feet per second. No failures of the Aqueduct system have occurred within the project site or in immediately surrounding areas.

Figure 28 also identifies the probable maximum flood inundation areas that could occur as a result of an Aqueduct levee breach on either side of the Aqueduct under existing conditions. This area is based on Aqueduct flow volumes, topography and the existing drainage system.

Areas to the east of the Aqueduct could be subject to floodwater inundation if the east Aqueduct levees are breached. However, the areal extent of any flooding from this breach would primarily be confined to the Anaverde Creek area immediately to the east of the Aqueduct. The volume of waters that would be released in the event of a breach would be controlled by the shut-off system in place along the length of the entire Aqueduct system. There is one shut-off gate within the City Ranch site, approximately 1/4 mile west of the eastern project site boundary and another shut-off gate just 1/8 mile north of the northern project boundary. The two structures are approximately 1 and 1/2 miles apart. Additional control structures exist at the Ritter Siphon approximately 1/2 mile north of the site and approximately 7 miles east of the site. In addition to the shut-off system, the Department of Water Resources maintains a graded channel within its right-of-way capable of conveying flood waters from a 500-year storm to and away from the Aqueduct storm drain culverts. This channel also controls

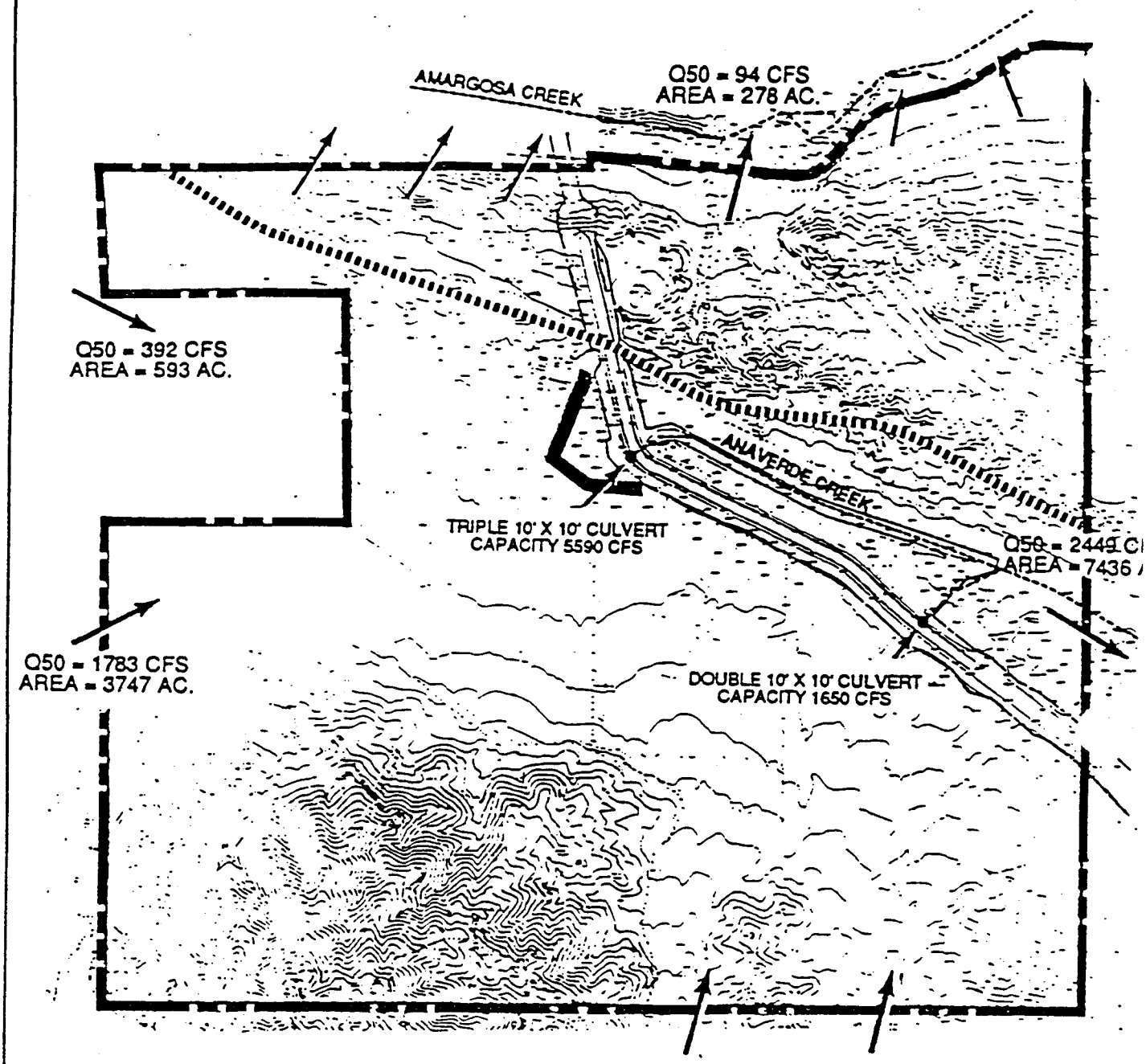
the spread of water from an Aqueduct failure and protects the central portion of the project site from high velocity flows and erosion.

Areas to the west of the Aqueduct and south of the Amargosa siphon could also be subjected to floodwater inundation if the west Aqueduct levees failed. However, the areal extent and duration of any flooding would be minimal. Any waters released from the western portion of the project site would intrude onto areas immediately adjacent to the Aqueduct. These waters would flow primarily southeastward following topography to either of two existing box culverts systems that extend under the Aqueduct on the project site The existing culverts have capacities of 5,590 and 1,650 cfs (PHB, 1990), respectively, while the peak flow in the Aqueduct is approximately 1,450 cfs (**Figure 30**). This provides adequate drainage relief to prevent extended flooding or standing water west of the Aqueduct.

Storm Drainage

A hydrology analysis was completed for the project site (PHB, 1990, Appendix D) using a 50-year capital storm frequency analysis per the Los Angeles County Flood Control District's criteria. Assuming a 50-year frequency rainfall, runoff within Anaverde Creek at the eastern boundary of the project site would be 2,449 cubic feet per second (cfs). Estimated northerly drainage flow into the Amargosa Creek watershed from the City Ranch site for the 50-year recurrence storm event would be 280 cubic feet per second (PHB,1990) (**Figure 30**).

Presently existing storm drain systems are limited to two box culvert systems which pass beneath the Aqueduct; one is near the old ranch buildings (triple-box with a total free capacity of 5,590 cfs), and one is to the southeast (double-box with a total free capacity of 1,650 cfs) (**Figure 30**). Localized grading has been done in selected areas to control surface flow away from roads and at canyon crossings. No other engineered storm drainage devices presently exist on the project site.



LEGEND

Q50	RUNOFF RATE 50-YEAR RAINFALL
CFS	CUBIC FEET PER SECOND
AC	TRIBUTARY AREA ACREAGE
	DRAINAGE AREA SEPARATION LINE
●	CULVERT
	RETENTION / RETARDING BASIN

N

0 800' 1

SOURCE: PHB Engineering, May 1990

HYDROLOGY - UNDEVELOPED SITE (50-YEAR RAINFALL)

FIGURE 30

5.6.2 Impacts

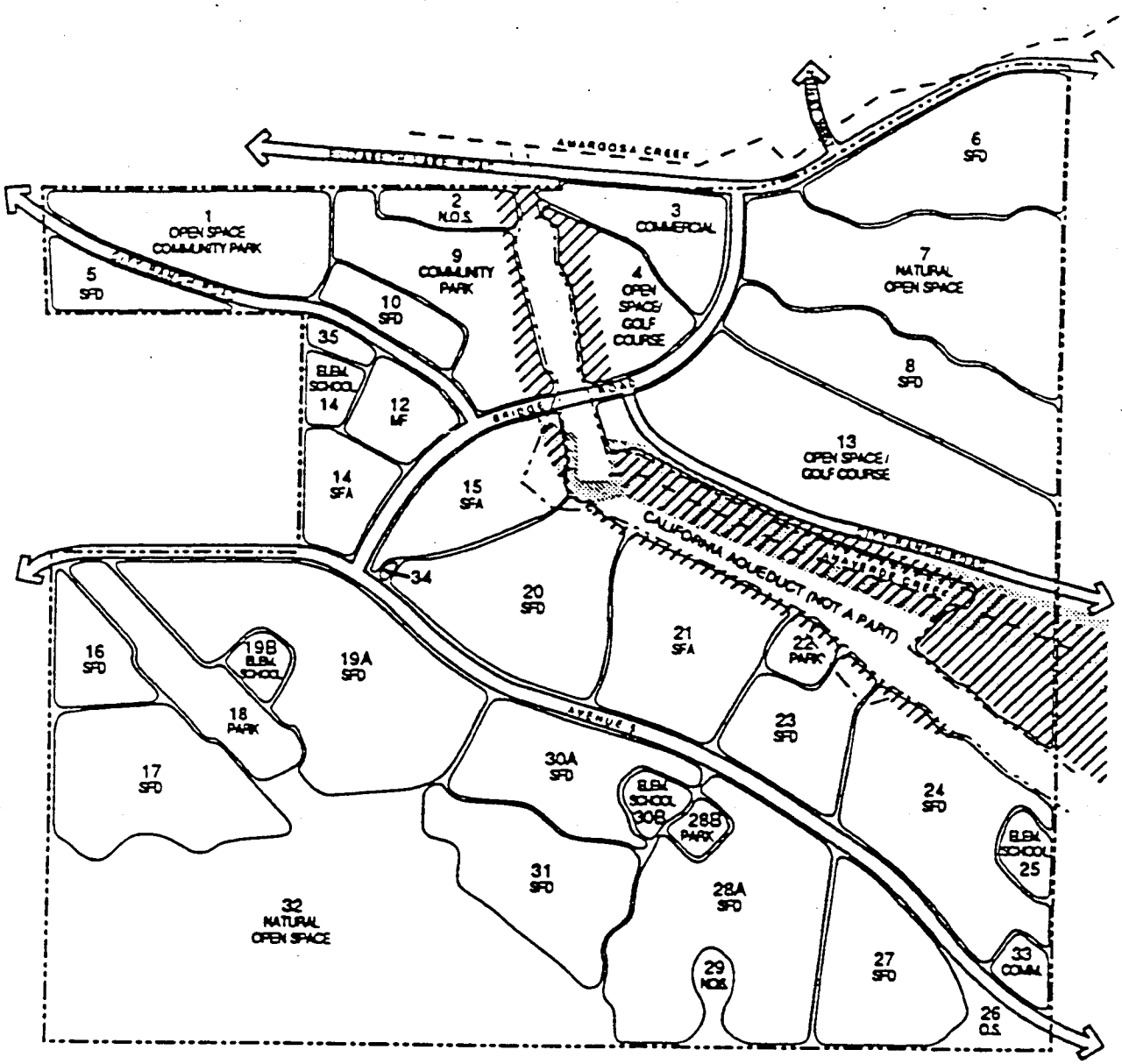
Flooding

As part of the grading plan for the proposed project, building pads and roadways in planning areas situated in the area flooded by the 50-year capital storm within the Anaverde Creek will be raised above the level of the 50-year capital flood zone as required by City Engineering Design Standards. Flood Control basins and storm drain channels will be created to handle storm runoff from these areas. According to the development plan for the proposed project, this grading would occur in portions of residential Planning Areas 10, 12, 14, 15, 16 and 19A, school site 11, open space areas 9, 13, 18 and 35, and portions of the City Ranch Road alignment, Bridge Road and Avenue S. Upon completion of the proposed project, hazards associated with the 50-year capital storm will be eliminated from the project site (Figure 31).

Failure of the California Aqueduct could cause flooding in parts of Planning Areas 2, 4, 9, 13, 15, 20, 21, 22, 23 and 24 (Figure 31). As part of the grading plan for the project site, building pads and roadways will also be elevated in low areas adjacent to the Aqueduct in Planning Areas 3, 15, 20, 21, 23 and 24 to raise these areas from possible Aqueduct failure flooding. Planning Areas 2, 4, 9, 13 and 22, however, would not be elevated above potential flood hazards. Any structures built in impacted portions of these park or golf course areas would be damaged by flooding in the case of an Aqueduct failure or breach of the Aqueduct. In particular, the golf course clubhouse site may be impacted. This is considered a significant impact.

Proposed Storm Drainage

According to the hydrology study (PHB, 1990), peak surface water flow discharge for a 50-year capital flood event for the developed site will be 2,671 cfs. This is 9% greater than runoff from the undeveloped site. Northerly flows into Amargosa Creek from the project-site after development are estimated to be 394 cubic feet per second for a 50-year



LEGEND

PROJECT SITE BOUNDARY

100-YEAR PRECIPITATION EVENT FLOOD ZONE

ESTIMATED AQUEDUCT FAILURE FLOOD AREA

N

0 900' 18

Envicom Macintosh

SOURCE: PHB Engineering, May 1990

FLOOD HAZARD AREAS (DEVELOPED CONDITIONS)

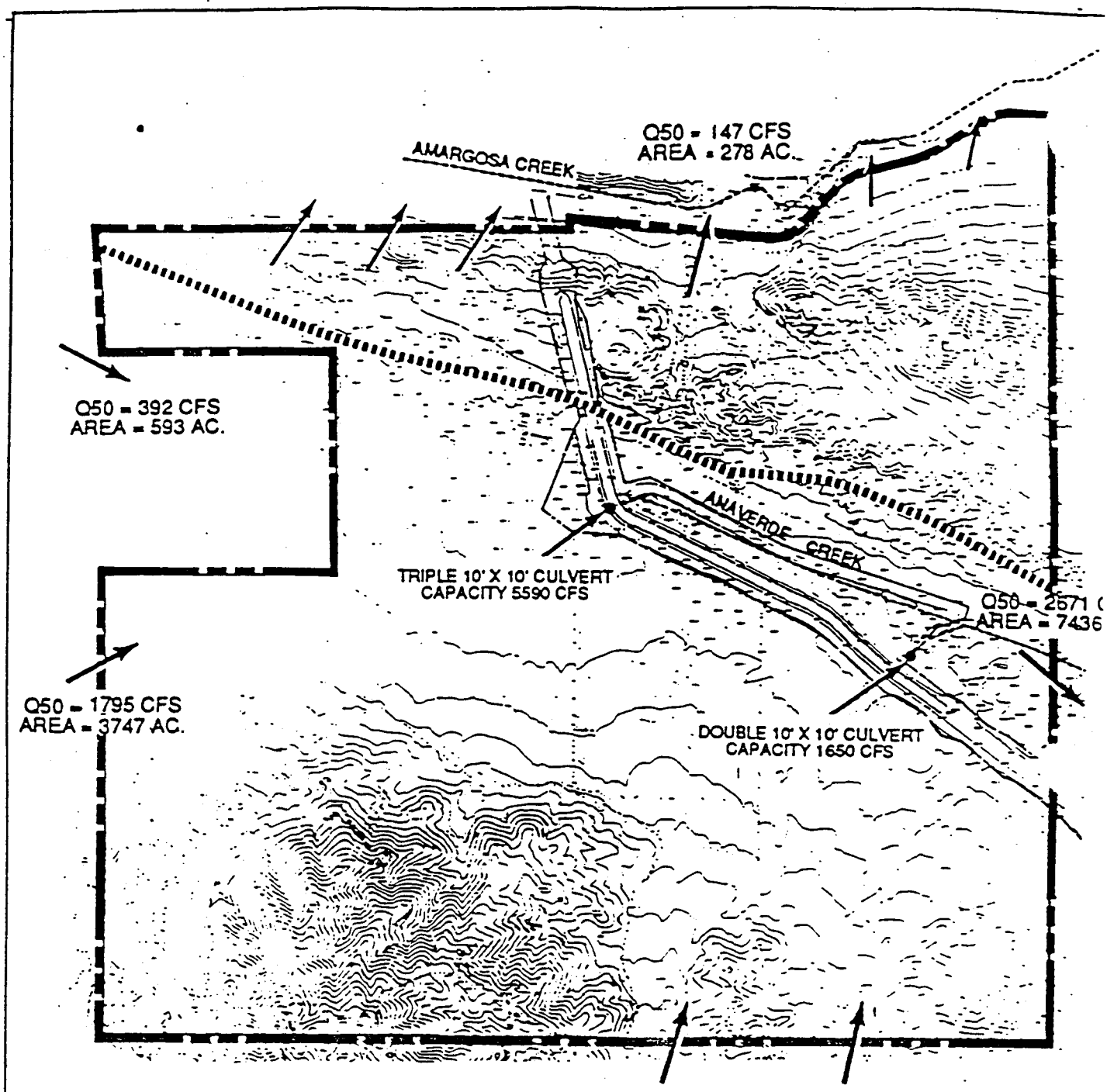
FIGURE 31

capital storm event (Figure 32).

Preliminary drainage studies (PHB, 1990) have determined the need for drainage improvements to channel storm runoff and separate debris flow. This could be accomplished by a system of closed conduits, open channels, earthen swales and flood control basins. Figure 33 depicts storm drainage facilities 24 inches in diameter or larger. These storm drains range in size from 24 to 96 inches depending upon accumulation of flows. These systems would need to be designed in conjunction with surface water collection features such as inlets from natural channels in the foothills and catch basins in streets. Pipes would need to carry flows up to approximately 700 cfs. Pipes would need to be sized to prevent runoff from backing up into inlet facilities. Open channels and culverts would need to run along Planning Area 19A across Avenue S then between Planning Areas 15 and 20. These would need to be approximately ten feet deep and twenty feet wide. The channel would need to carry flows of approximately 2,000 cfs. The construction would need to be of reinforced concrete.

Several flood control basins would also be needed. These basins would collect natural drainage runoff, screen debris and rocks and reduce peak surface water flows. The debris basins will need to be permanent facilities. In locations where natural channels are intercepted from adjacent property which may be developed in the future, flood control basins are shown as temporary in anticipation of relocation upstream onto adjacent developments. Temporary basins shall be constructed as though they will be permanently maintained and operated.

To control the increase in runoff due to proposed project development, approximately 150 acre feet of storage capacity in flood control basins would be needed. Figure 33 shows several potential flood control basin locations. Some of these basins may not be needed. Final configuration and location of these basins will be determined with State Department of Water Resources, the Los Angeles County Flood Control District, the



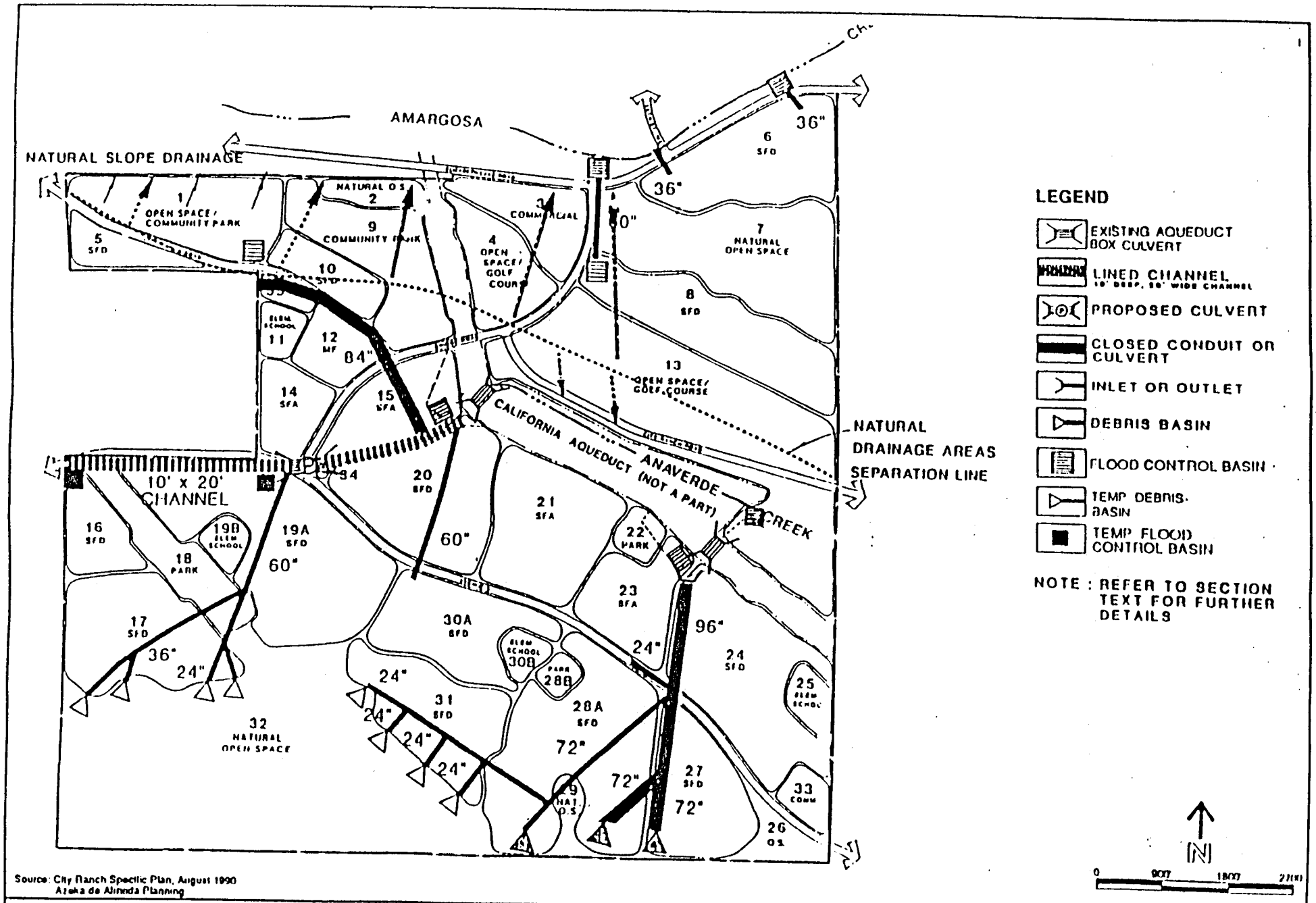
LEGEND

Q50	RUNOFF RATE 50-YEAR RAINFALL
CFS	CUBIC FEET PER SECOND
AC	TRIBUTARY AREA ACREAGE
▪▪▪▪▪▪▪▪▪	DRAINAGE AREA SEPARATION LINE
●	CULVERT

SOURCE: PHB Engineering, May 1990

HYDROLOGY - DEVELOPED SITE (50-YEAR RAINFALL)

FIGURE 32



Source: City Ranch Specific Plan, August 1990
Azeka de Almeida Planning

MASTER DRAINAGE PLAN

FIGURE 33

City of Palmdale Department of Public Works, the City Engineer, the Parks an Recreation Department, and the Planning Department. One of the potential flooa control basin locations is north of the Aqueduct in a wetland area. Development in this area would require a 404 Permit from the U.S. Army Corps of Engineers and a 1603 Agreement from the California Department of Fish and Game.

Proposed Assessment District 90-1 drainage improvements to the Amargosa Creek would adequately accommodate increased northerly flows from the project site into the Amargosa Creek. If the Assessment District does not get approved or the proposed improvement built, the applicant has property north of the project site in which sufficient flood control basin facilities could be built which will adequately handle increased northerly flows. Runoff impacts into Amargosa Creek are therefore not considered significant.

Water collected from the flood control basins and general tract areas would need to flow through pipes, closed conduits or open channels. Inlet/outlet drainage structures catch basins and culverts (e.g., along streets) would need to connect to these major conduits and channels. The improvements on the Master Drainage Plan show that Planning Areas 17, 27, 28A and 31 would accept hillside runoff, collect it in flood control basins and convey it northeasterly to flood control basins in Planning Areas 15 and 23. Surface flow from the west which enters City Ranch would be collected in a system of swales and channels and conveyed to the flood control basin in Planning Area 15 before crossing under the Aqueduct. On-site developed areas are anticipated to use a combination of street, curb and gutters, catch basins, underground conduits and open channels to convey storm runoff safely through the developed areas of City Ranch.

Post-development runoff has the ability to pick up and transport urban pollutants such as pesticides, fertilizers, and household and commercial chemical products into the storm drains. This is of particular concern with regard to the wetland area north of the Aqueduct as the storm drainage improvements necessary to handle on-site runot.

would direct flows to this area. Low flow non-storm runoff originating from excess irrigation or household flows such as from car washing, etc., could contain these contaminants and therefore pose as a harmful impact to the wetland habitat. Storm flows, on the other hand, would be able to dilute urban pollutants with large volumes of water thereby minimizing risk to plant and animal life. Low-flow urban runoff has been estimated at approximately 1,300 cubic feet of water daily (PHB, 1990). A low-flow containment system may be needed to contain these low-flow non-storm discharges upstream of the Aqueduct culverts and upstream of the wetland area to protect the area from urban pollutants.

All of the proposed storm drains for Anaverde Creek connect to the culverts which drain under the Aqueduct. The Department of Water Resources (DWR) has designed the channels downstream of the Aqueduct to be non-eroding as a protection for their facilities. DWR culverts and the topography downstream of those culverts are the controlling factors for storm drain discharges from City Ranch. The construction of storm drains west of the Aqueduct would not change flow velocities east of the Aqueduct. The wetlands area, east of the Aqueduct would, therefore, not be subject to more frequent or higher velocity flows as a result of development of the proposed project.

5.6.3 Mitigation Measures

The following mitigation measures would eliminate significant flooding/surface drainage impacts:

- Habitable structures and public facilities, including the golf course clubhouse, shall be constructed above the flood plain level determined by the 50-year Los Angeles County capital storm event. Water will be conveyed off-site via proposed storm drainage facilities.

- Building pads and roadways in areas which would be flooded in the event of failure of the California Aqueduct (Figure 31) shall be raised above the anticipated floodwater levels.

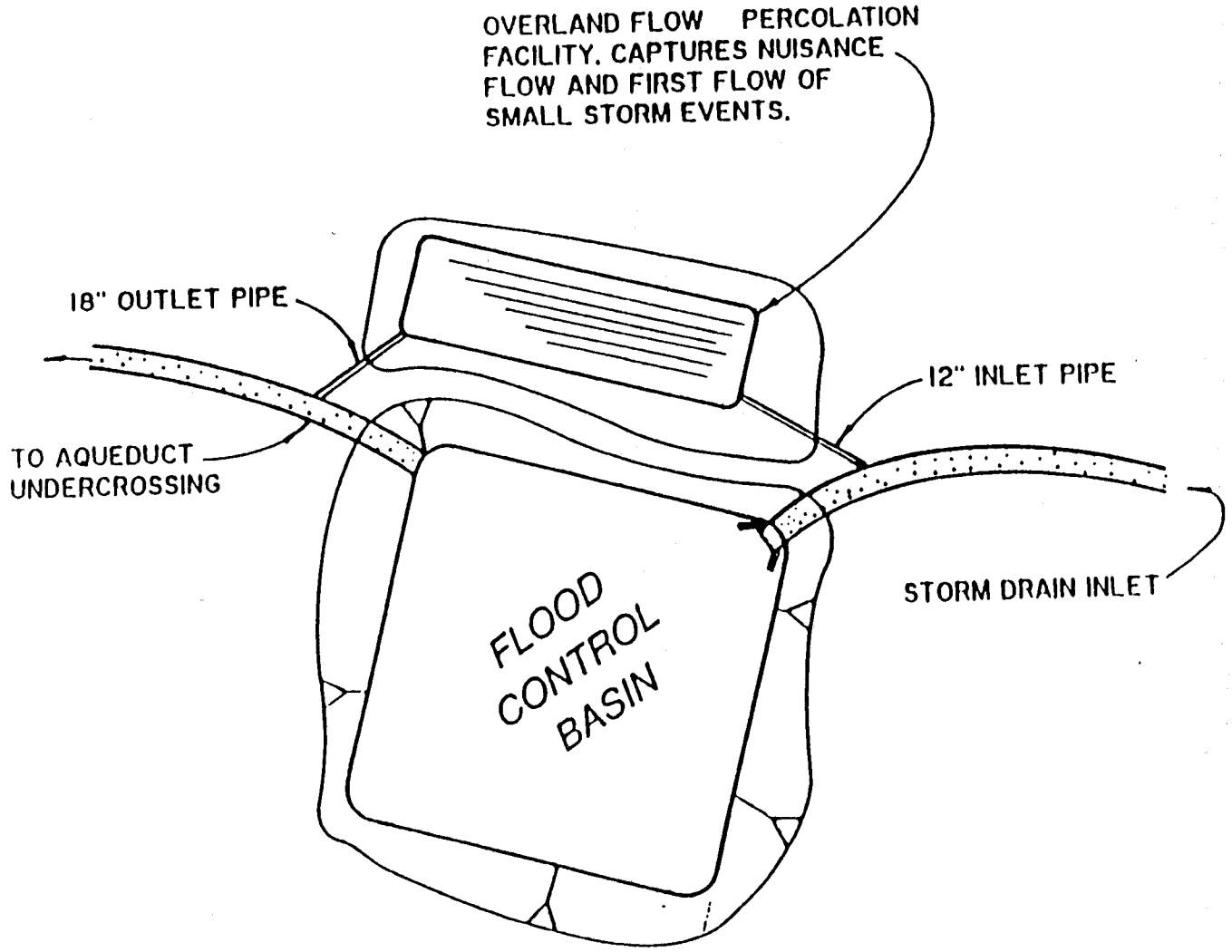
- All storm drainage improvements depicted on Figure 32 shall be implemented as part of the proposed project. This includes storm drains, channels, and detention and debris basins.

- Low flow containment system will need to be constructed to accommodate urban runoff flows during the dry seasons to prevent deterioration of water quality in wetland areas and streams as required by the City Engineer. (See Figure 34 for a conceptual design of the kind of low flow containment system.)

- The proposed golf course will need to have a separate runoff collection system along City Ranch Road to direct flows away from the wetland area. This collection system shall be subject to the applicable laws for point sourc discharge of the Regional Water Quality Control Board.

- The applicant shall submit an Erosion Control Plan for each development application for review and approval by the City Engineer prior to issuance of grading permits. In addition, the applicant will demonstrate each development application complies with the provisions of any National Pollution Discharge Elimination System permit requirements that may be required by other regulatory agencies. At the time of submittal of a development application for the golf course, the applicant shall provide for the controlled use of pesticides and fertilizers on the golf course by limiting the frequency and type of fertilizers/pesticides used and requiring application by qualified persons.

- Modifications to natural drainage courses shall conform to City, County, State, and Federal Law.



Source: PSOMAS 1990

CONCEPTUAL DESIGN FOR LOW FLOW RUNOFF MITIGATION

FIGURE 34

- Fencing shall be installed along constructed drainage channels, as appropria for safety purposes.

- Modification of drainage patterns will not be permitted across property lines without written consent of affected property owners.

- Final Subdivision Maps shall be accompanied by Drainage Improvement Plans prepared by a licensed Civil Engineer and approved by the City Engineer.

- In accordance with the California Department of Real Estate disclosure format and procedures, all potential purchasers of real property which is shown within the FEMA 100-year flood plain on the Flood Insurance Rate Maps most recently circulated by FEMA, shall be notified of the situation, regardless of whether the actual flood hazard has been abated by other methods Also, the applicant shall contact FEMA as soon as possible after eliminating areas from the 100-year flood hazard zone to request modifications of the Flood Insurance Rate Maps. The applicant shall then diligently pursue revisions of the maps until the year flood hazard zone as modified by the development is dep. on them.

5.6.4 Cumulative Impacts

As development of the project site and surrounding vicinity occurs, overland flow and runoff volumes are expected to increase as a result of increased impervious surfaces and compaction of natural ground area which impedes infiltration. However, the City of Palmdale Public Works Department requires that post-development peak runoff volumes from new developments be equal to or less than peak runoff volumes prior to development. Therefore, cumulative runoff impacts are not anticipated.

5.6.5 Unavoidable Adverse Impacts

With adoption of proposed storm drainage plans and mitigation measures indicated above, project impacts with regard to hydrology would not be significant.

5.7 BIOLOGY

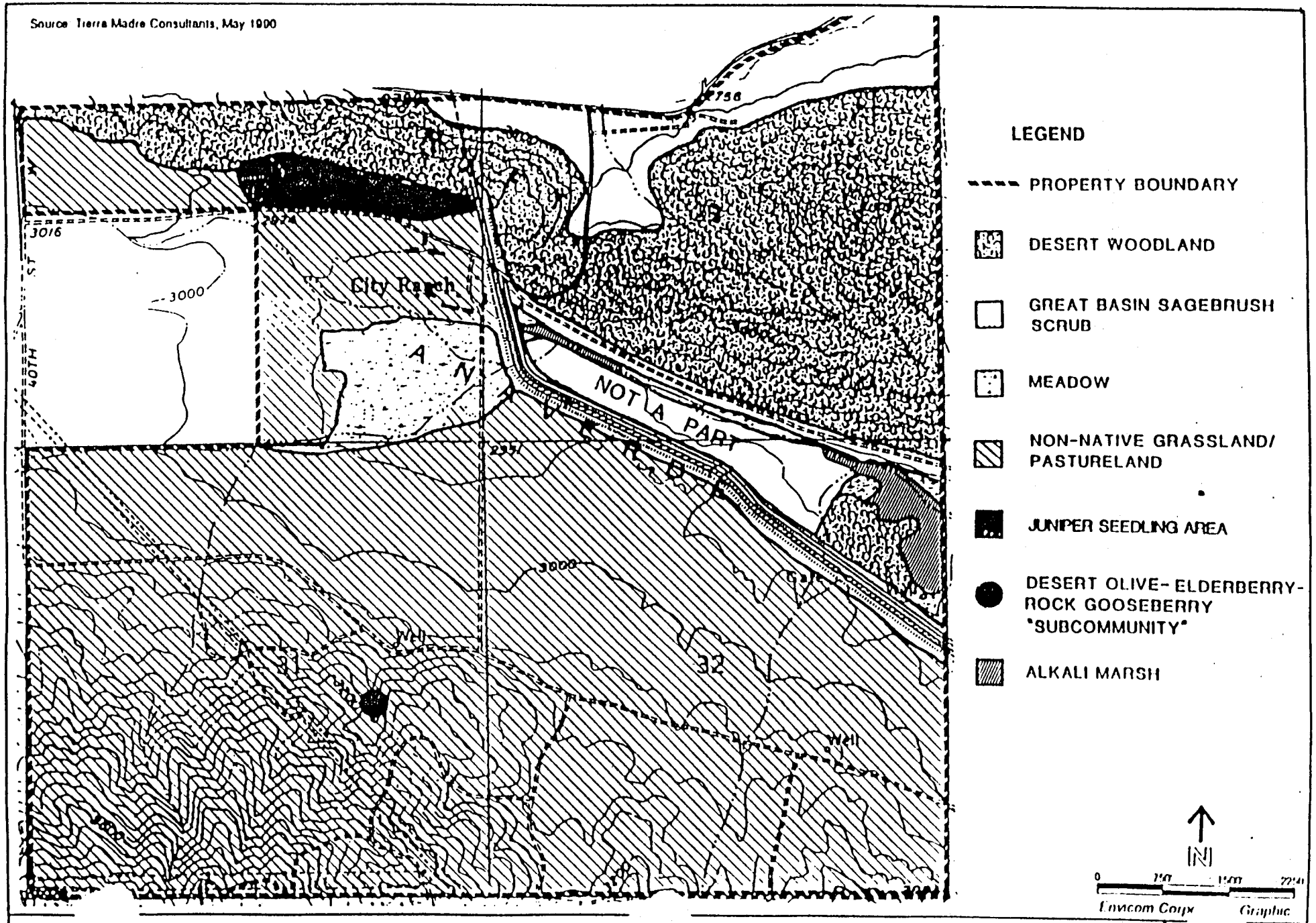
5.7.1 Existing Conditions

The biological resources of the project site are primarily influenced by arid climatic conditions, varied topography, site geology, and historic and present day land use patterns. Five distinct plant communities can be recognized on the project site: desert woodland (an intergrade between California juniper woodland and Joshua tree woodland), Great Basin sagebrush scrub, alkali meadow, transmontane alkali marsh and non-native grass-land/pastureland. The designations follow the terminology of Holland (1986). The plant communities present on the project site are delineated in **Figure 35**. The vegetation associated with the site are those able to adapt to extreme moisture stress levels ranging from drought to torrential rainstorms. Land use disturbances affecting vegetation distribution include extensive clearing of the natural areas for agricultural use and development of the California Aqueduct.

Wildlife associated with the plant communities of the project site comprise a diverse assemblage of species. Wildlife habitat on the site is generally of high quality, especially in those ares containing native plant communities. Several sensitive animal species utilize habitat within the project site.

Reports prepared by Tierra Madre Consultants entitled "City Ranch Biological Assessment", September 1989, revised, November 1989 and May 1990; by D.R. Sanders and Associates, Inc. entitled "Wetlands Investigation of a Portion City Ranch South Located West of the California Aqueduct", April 1990; and "Wetlands Investigation of a Portion of City Ranch South Located East of the California Aqueduct", April 1990, and by Lee Newman and Associates entitled "City Ranch Joshua Tree Survey", November 1989, used in the preparation of this report are provided in Appendix E.

Source: Tierra Madre Consultants, May 1990



Plant Communities

The **desert woodland** community occupies much of the portion of the project site between Elizabeth Lake Road and the San Andreas Rift Zone. This open woodland is characterized by a mixture of California junipers and Joshua trees, with various other shrubs interspersed. The understory is dominated by Cooper's and linear-leaf goldenbush, Great Basin sagebrush, rabbitbrush, fourwinged saltbush, California buckwheat, Nevada joint-fir, and paperbag bush, along with grasses such as cheat grass, red brome, and desert needlegrass. Approximately 4,000 Joshua trees have been identified within the desert woodland community on the project site (Lee Newman and Associates, 1989; **Figure 36**). Trees range in size from 6 inches to 15 feet in height. Diameters vary from (4) four to (11) eleven inches. The overall health of the trees is satisfactory and the project site contains some remarkable specimens. In the northeastern portion of the project site lies an east-west running ridge which contains components of mixed chaparral and junipers. Scrub oak, mountain mahogany, and holly-leaf redberry are present, but most notable in this area is an abundance of big-berry manzanita. A juniper seedling area occupies a portion of the northwest section of the project site south of the ridge.

Great Basin sagebrush scrub occupies a flat area bordering Elizabeth Lake Road in the northeast corner of the site. Great Basin sagebrush is the dominant perennial plant at this location, with small amounts of rabbitbrush and goldenbush interspersed. This dense scrub community has a poorly developed understory, mainly of introduced grasses.

Two meadows are located on the project site along the southern edge of the San Andreas Rift Zone. Utilizing the vegetation community classifications provided by Holland (1986), the vegetation found in these areas best fits the description of **alkali meadow**. As defined, alkali meadows consist of dense to fairly open growth of salt-tolerant plants, including perennial grasses and sedges that are usually low-growing.

For purposes of differentiation, the meadows on the project site are termed the west meadow and the east alkali meadow (Figure 35).

Soils in the two meadow areas are of the Hanford-Greenfield association described by the Soil Conservation Service (1969) as "slightly acid to mildly alkaline throughout...." A range of alkalinity is therefore normal for this association. Based on surface inspection, the west meadow does not appear to have alkali soils. The east alkali meadow, however, is very alkaline and obvious salt deposits are present on the soil surface.

Vegetation diversity in the **west meadow** is low as a result of years of grazing. The pastureland here is dominated by wire grass, but salt grass, alkali dropseed, sedge, yerba mansa and alkali mallow also occur. The site of this meadow area has apparently increased from its original condition as a result of irrigation to improve the pasture. Although irrigation ceased in 1986, this area still remains green and supports obligate wetland plants (species whose estimated probability of occurrence in wetlands is >99% under natural conditions; Reed 1988). However, it appears that drier vegetation is gradually encroaching along the margins.

The **east alkali meadow** community occurs along the north side of the California Aqueduct from the bend (in the Aqueduct) to the eastern property boundary. At its eastern end, the east alkali meadow intergrades with a marsh. The marsh vegetation community here best fits Holland's definition of **transmontane alkali marsh** (Figure 35). Transmontane alkali marshes are dominated by perennial, emergent, herbaceous monocots with short summer growing seasons. The transmontane alkali marsh on the project site contains a flora characteristic of alkaline soils, meadows and wetlands. Examples of alkali plants present are frankenia, salt grass, alkali dropseed, alkali goldenbush and two species of saltbush. Meadow plants include saltgrass, alkali dropseed, rushes and wiregrass. Wetland plants include cattails, alkali bulrush, pickleweed, yerba mansa, heliotrope and wiregrass. This marsh was dry in 1990 and has been somewhat degraded by grazing.

The two portions of the east alkali meadow qualify as wetlands under federal wetlands criteria (Sanders and Associates, 1990). One wetland area (2.9 acres) occurs in a depression of a former stream channel of the Anaverde Creek. It contains obligate wetland species and facultative wetland species (species whose estimated probability of occurrence in wetlands is 67% to 99% under natural conditions). In this area, wetland hydrology is suggested. The second wetland area (18.3 acres), consists of a former stream channel of Anaverde Creek and a broader depression on the east side of the bend in the Aqueduct (Figure 35). Vegetation in this area is dominated by salt-tolerant plants such as the facultative wetland species frankenia and saltgrass. Pickleweed, an obligate wetland species, also commonly occurs throughout this area, but is not usually a dominant species. Isolated pockets of cattails, also an obligate wetland plant, occur in areas where standing water is often present.

Non-native grassland or pastureland communities occupy the remainder of the project site. These areas have all been subject to past disturbances, mainly livestock grazing. Dominants of the non-native grasslands include red brome, cheat grass, red-stem filaree and various mustards. Some native annual wildflowers are present in these areas. Most of this area is currently used as pasture. Other portions appear to have been used for crops or grazing in the past, and are currently in early successional stages of what may be described as "rabbitbrush" scrub.

The north facing hillsides along the southern property boundary appear to have burned sometime in the past, and now contain mostly non-native grassland species, scattered junipers and other shrubs, and various annuals. It is likely that prior to burning, this area was a sparse California juniper woodland. Even though many of the annual grasses in this area are the same as those found in the pasturelands of the flatter portions of the project site, wildlife use is much higher on the slopes than in the pasture areas. This higher biological diversity can be attributed to the scattered shrub cover, rock outcrops, and a relative lack of disturbances from livestock and humans. A prominent drainage in the southwestern portion of the project site contains a note-worthy "subcommunity" comprised mainly of desert olive, elderberry, rock gooseberry

and sticky nama. These shrubs form an almost solid band of vegetation along this drainage.

Wildlife

Wildlife diversity is high within the desert woodland, around the agricultural fields and eastern alkali meadow. The presence of the California Aqueduct and a small ranch pond just south of the existing ranch structures increases the amount of invertebrates (mainly insects) in the area. Insectivorous birds are plentiful in the area. Cliff swallows, which nest in colonies, often around manmade structures near water, were observed nest building under the roadway bridge over the Aqueduct near the ranch house. These birds forage widely over the area, especially over open water and the agricultural fields. The agricultural fields also provide abundant seeds for granivorous birds and mammals.

A total of 70 bird species were observed on the site; others are expected within the area and on-site during other times of the year. Among the birds which are resident on the site are northern mockingbird, scrub jay, horned lark, cactus wren, Bewick's wren, rock wren, common raven, California thrasher, California quail, California (brown) towhee, rufous-sided towhee, and house finch. Species which are winter visitants to the project site include white-crowned sparrow, dark-eyed junco, savannah sparrow and yellow-rumped warbler. The field survey performed in late April 1989, revealed the presence of species which spend only spring and summer in the region, such as ash-throated flycatcher, northern oriole, and Scott's oriole. One pair each of barn and great horned owls occupy the site, with the barn owls nesting inside the ranch's barn. An unusually large number of ravens are present near the ranch with up to 46 birds observed at one time; seven active raven nests were located in 1990. Several birds which prefer meadows frequent the eastern alkali meadow and marsh, including western meadowlark, lark sparrow and three species of blackbirds. Western meadowlark was also observed at the western meadow. Northern harrier (marsh hawk), a bird characteristic of wetland areas, was observed hunting over the eastern meadow.

Reptiles observed during field investigations included side-blotched lizard, wester fence lizard, desert night lizard, western whiptail and coachwhip. Lizards we common to abundant in the desert woodland and Great Basin sagebrush scrub. Only two species of snakes were seen during the field surveys, (gopher snake and coachwhip) and their numbers appear to be locally depleted relative to the amount of habitat available.

Black-tailed hare and Audubon's cottontail appear to be common throughout the property. California ground squirrels were seen in several areas, and are very abundant in the agricultural fields. Indirect observations of mammals in the form of sign (tracks, scat, burrows) were noted throughout the property, and included species such as coyote, grey fox, Botta's pocket gopher, and woodrat. Many nocturnal rodents were captured in the spring 1990 live trapping effort.

Because the project site is within approximately 2-1/2 miles of a recorded occurrence of the Mohave ground squirrel, a State threatened species, diurnal trapping surveys we performed in 1989 and 1990 to ascertain its presence or absence on the site. No Mohave ground squirrels were captured or observed during the survey. The upland habitat on the City Ranch site is considered marginal for this species. The California ground squirrel is dominant over the site and the two species are rarely found together. Although the Mohave ground squirrel has been reported in Palmdale, the last record is of its occurrence is from 1920, at a location approximately 2.5 miles northeast of the project site.

Wildlife Movements

The movements of animals on the project site such as deer, coyote, fox and badger, are expected to take place largely east-to-west along the flanks of the Sierra Pelona and the San Andreas Rift Zone, where vegetation provides both food and cover. Dispersal across the Anaverde Valley between these mountainous areas is more tenuous because of the open, flat terrain, and is additionally blocked by the Aqueduct. Of course, t.

movements of flying species across the valley is relatively unrestricted.

Sensitive Species

A review of the lists of state and federally designated threatened and endangered species and the California Department of Fish and Game's Natural Diversity Data Base and the California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California revealed that two sensitive plants and nine sensitive animals have been previously recorded in the region of the project site. None of these occurrences were recorded on the project site itself. During the field survey, six additional sensitive species (one plant, five animals) were recorded. All sensitive species either occurring (observed) or potentially occurring (as reported by the literature) on the site are presented in **Table 7**. Sensitive species and communities are so called because of their limited distribution, restricted habitat requirements, particular susceptibility to human disturbance, or a combination of these factors.

Alkali mariposa lily occurs in alkaline meadows and springy places, often within creosote bush scrub, at elevations ranging from 2,500 to 4,000 feet. It occurs in the Mohave Desert at the north base of the San Bernardino Mountains, and in the San Gabriel Mountains and ranges east to Las Vegas. In the vicinity of the project site, alkali mariposa lily is known within the City of Lancaster, several miles to the northeast. This plant is a bulbous geophyte which flowers from April to June. During a site survey on April 28, 1990 a focused search was conducted within the eastern alkali meadow and marsh areas and the western meadow on the site, but alkali mariposa lily was not found. The marsh area was in a very dry condition during 1989 and 1990, and it is possible that alkali mariposa lily, if present, failed to come up this year. Despite the fact that habitat on the City Ranch site appears suitable, it is believed that this species does not occur on-site.

TABLE 7

Sensitive Species Considered for City Ranch Specific Plan

Species & (Habitat)	Status*	Occurence Probability**	Number of Sightings
Calochortus striatus Alkali mariposa lily (Alkali meadows and springs)	1) C2 2) ND 3) List 1 R-2 E-2 D-2	High (Not found in 1989 or 1990)	0
Calystegia peirsonii Peirson's morning-glory (Joshua tree woodland, pinyon-juniper woodland, chapparal)	1) C2 2) ND 3) List 4 R-1 E-1 D-3	Occurs	<100
Opuntia basilaris var. *brachyclada* Short-jointed beavertail (Dry desert slopes)	1) C2 2) ND 3) List 1 R-2 E-1 D-3	Occurs	330
Phrynosoma coronatum blainvillei San Diego horned lizard (Chapparal, coatal sage scrub, woodlands)	1) C2 2) CSC	Moderate	0
Accipiter cooperii Cooper's hawk (Woodlands; many habitats during migration)	1) ND 2) CSC	High	0
Accipiter striatus Sharp-shinned hawk (Woodlands; many habitats during migration)	1) ND 2) CSC	Occurs	1
Agelaius tricolor Tricolored blackbird (Marshes, agricultural areas)	1) C2 2) ND	Occurs	1
Asio otus Long-eared owl (Riparian woodlands, orchards)	1) ND 2) CSC	Occurs	1

TABLE 7 (Cont.)

Species & (Habitat)	Status*	Occurence Probability**	Number of Sightings
Aguila chrysaetos Golden eagle (Mountainous areas grasslands)	1) ND 2) CSC	Occurs	2
Circus cyaneus Northern harrier (Marshes; agricultural areas during winter)	1) ND 2) CSC	Occurs	1
Elanus caeruleus Black-shouldered kite (Oak and riparian woodlands; agricutural areas)	1) ND 2) CP	Moderate	0
Falco mexicanus Prairie falcon (Steep cliffs, open areas)	1) ND 2) CSC	Occurs	1
Toxostoma lecontei Le Conte's thrasher (Creosote bush scrub saltbush scrub)	1) ND 2) CSC	Occurs	1
Plecotus townsendii pallescens Pale big-eared bat (Desert areas)	1) ND 2) CSC	Low	0
Taxidea taxus American badger (Grasslands, other open areas)	1) ND 2) CSC	High	0
Vulpes macrotis arsipus Desert kit fox (Desert scrub)	1) ND 2) SA	Moderate	0
Spermophilus mohavensis Mohave ground squirrel (Creosote bush scrub, saltbush scrub)	1) C2 2) CT	Absent	0

* For Status Designations, see page 14.

** For definitions of Occurrence Probability, see page 15.

KEY TO TABLE 7

* For Status Designations, see below.

Status Designations

1) **Federal Designations:**

E = Federally listed, endangered.
T = Federally listed, threatened.
C1 = Category 1 candidate species. Enough data are on file to support the federal listing.
C2 = Category 2 candidate species. Threat and/or distribution data are insufficient to support federal listing.
C3a = Extinct.
C3b = Taxonomically invalid.
C3c = Too widespread and/or not threatened. No longer considered as a federal candidate for listing.
ND = Not designated.

2) **State Designations:**

CE = State listed, endangered.
CT = State listed, threatened (previously listed as rare).
CP = Fully protected under California Fish and Game Code, Sections 3511, 4700, 5050, 5515.
CSC = California Department of Fish and Game Species of Special Concern.
W = Watch list, the California Department of Fish and Game is currently collecting distribution information on these species.
SA = California Department of Fish and Game "Special Animals" list.
ND = Not designated.

3) **Califor. ia Native Plant Society (CNPS):**

List 1 - Plants rare and endangered in California and elsewhere.
List 2 - Plants rare or endangered in California, but more common elsewhere.
List 3 - Plants about which we need more information.
List 4 - Plants of limited distribution (a watch list).

R-E-D CODE:

R (Rarity)
1 - Rare, but found in sufficient numbers and distributed widely enough that the potential for extinction or extirpation is low at this time.
2 - Occurrence confined to several populations or one extended population.
3 - Occurrence limited to one or a few highly restricted populations, or present in such small numbers that it is seldom reported.

E (Endangerment)
1 - Not endangered.
2 - Endangered in a portion of its range.
3 - Endangered throughout its range.

D (Distribution)
1 - More or less widespread outside California.
2 - Rare outside California.
3 - Endemic to California (i.e., does not occur outside California).

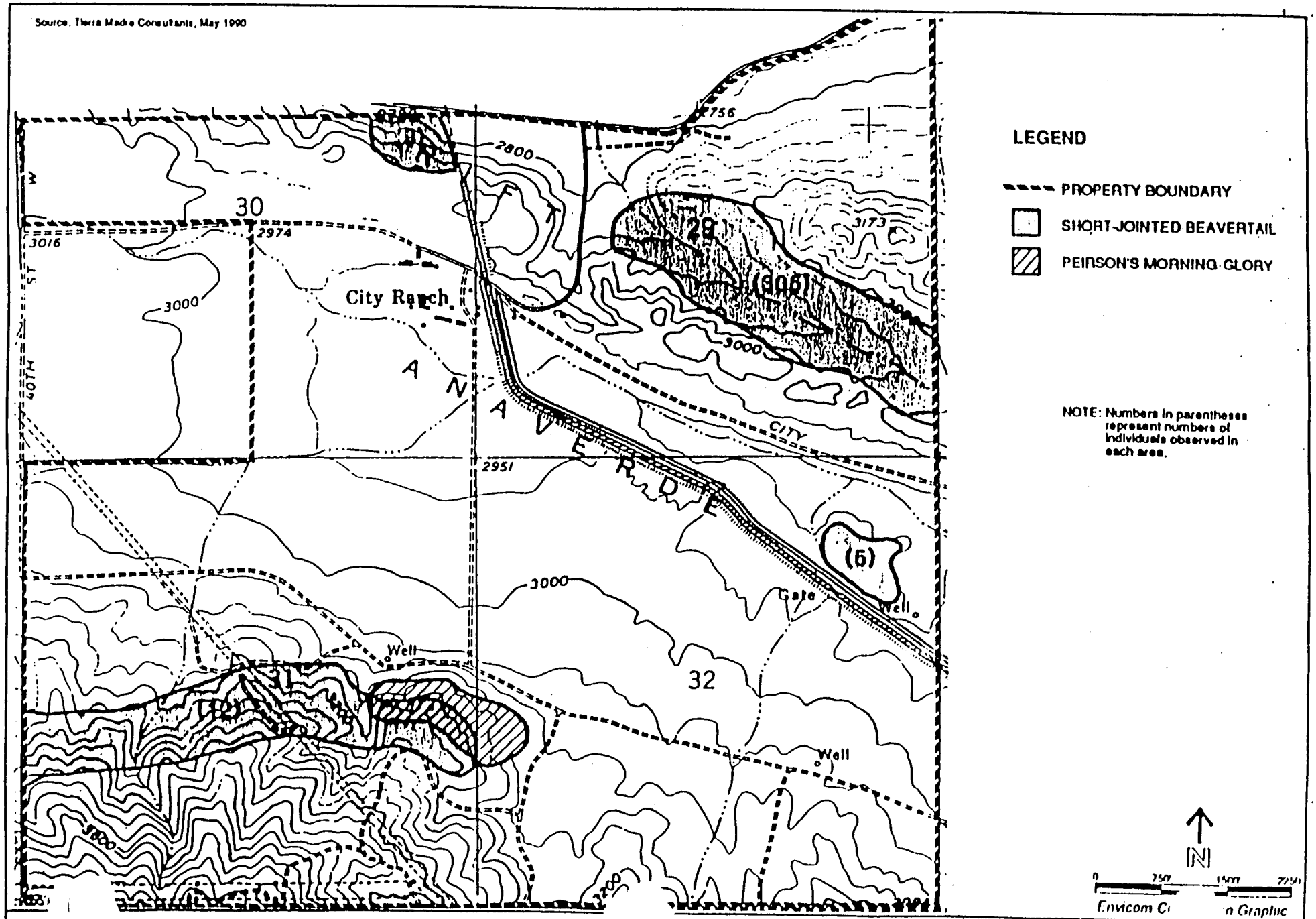
** **Definitions of occurrence probability:**
Occurs: Observed on the project site by TMC biologist.
High: Reported sightings in surrounding region, habitat on the site is a type often utilized by the species.
Moderate: Reported sightings in surrounding region, habitat on the site is a type occasionally utilized by the species; or site is within known range of the species and habitat on the site is a type occasionally utilized by the species.
Low: Site is within the known range of the species but habitat on the site is rarely used by the species.
Absent: A focused survey for this species failed to reveal its presence.
Information sources of status descriptions are derived from the California Natural Diversity Data Base and California Native Plant Society.

Peirson's morning-glory occurs only in Los Angeles County, in habitat ranging from creosote bush scrub and Joshua tree woodland on the desert slopes of the San Gabriel Mountains, to chaparral and coastal sage scrub in the more cismontane portion of its range. It is a perennial, trailing or twining herb which produces small white flowers in May or June. This plant was found on the project site during the field survey on steep north facing hillsides in the south central portion of the project site. At least 30 individuals were seen in this area, which appears to have been burned within recent years. The plants were just beginning to flower during the last field survey performed during early spring. During the Mohave ground squirrel trapping survey, this area was again visited, and the dried remnants of approximately 100 plants were found. Figure 37 indicates the area where this plant was located during site surveys, although, the entire mountainous upland southwest portion of the project site would appear to be suitable habitat for this species.

The current endangerment status of Peirson's morning-glory is that it has been placed on the California Native Plant Society's List 4, a "watch list" which includes "[species] of limited distribution in the state whose vulnerability or susceptibility to threat appears low at this time. While these plants cannot be considered rare from a statewide perspective, they are uncommon enough that their status should be monitored regularly. Many areas where the plants occur may be significant locally" (Smith and Berg, 1988). This species does, however, not meet the definition of Section 1901, Chapter 10 (Native Plant Protection) of the California Fish and Game Code, and is therefore not eligible for state listed status. There are no specific provisions in CEQA for the protection of this species.

Short-jointed beavertail cactus occurs in Joshua tree and California juniper woodland at elevations ranging from 4,000 to 7,500 feet on the desert slopes of the San Bernardino and San Gabriel Mountains and in the Providence Mountains. According to the California Natural Diversity Data Base, the western edge of this species' known range is in the vicinity of Pearblossom, approximately 20 miles east of the project site. However, at least 330 short-jointed beavertails were noted on the project site during the current

Source: Tierra Madre Consultants, May 1990



study. Tierra Madre Consultants biologists also located this species recently on a property near the intersection of Barrel Springs Road and the California Aqueduct, approximately 5 miles east of the City Ranch site. Much of the remaining undisturbed land on the project site contains short-jointed beavertails, as shown on Figure 37.

The short-jointed beavertail has been placed on the California Native Plant Society's List 1B; plants that are rare, threatened or endangered in California and elsewhere, and are "judged to be vulnerable under present circumstances, or to have a high potential for becoming so because of their limited vulnerable habitat, the low number of individuals per population, or the limited number of populations. These plants meet definitions of Section 1901 and are eligible for state listing. However, like the Peirson's morning-glory, there are no protections in CEQA for this species.

The **San Diego horned lizard** frequents a variety of habitat types including coastal sage scrub, broad-leaved woodlands, and chaparral. This species is common in areas where there is loose sandy soil with low-growing brush nearby. Ants are the primary food source of this species, although it also eats beetles and other insects. Distinctive fecal pellets containing mostly ant parts can often aid in the detection of this species. Populations of this lizard are declining due to extensive collecting on wildlands near urban development areas and as a result of its habitat being converted to agricultural and urban lands. Records of San Diego horned lizards occur throughout much of the north slope of the San Gabriel Mountains. There is a moderate probability that they are present on the project site; this species was not observed on site during the site survey.

Cooper's hawk is an uncommon permanent resident of southern California which prefers lowland riparian woodland or less frequently, mountain canyons for nesting and foraging activities. It is considered a declining species due to habitat loss and the effects of the presence of pesticides in the food chain resulting in egg shell thinning. No suitable nesting habitat exists on the property, but migrant or wintering birds could occur occasionally on-site to forage.

A **sharp-shinned hawk** was observed foraging over the desert woodland during the March 21 site survey. This individual was most likely a migrant, although wintering sharp-shinned hawks may also utilize the site. This raptor feeds on small birds, such as white-crowned sparrows and juncos, which it captures during swift flights through woodlands or scrub. The sharp-shinned hawk is a fairly common migrant and winter visitor in southern California.

Tricolored Blackbirds are very gregarious marsh birds which occur only in California, Oregon, and Baja California. This species nests in colonies within cattail marshes, with colonies sometimes numbering thousands of birds. Tricolored blackbirds have suffered population declines in recent times due mainly to the destruction of freshwater marshes. Site surveys determined that nesting of tricolors did not occur on the project site in 1989. A single individual seen during June was foraging, not nesting, in an agricultural field on-site.

The **long-eared owl** is an uncommon resident of riparian woodlands and orchards, occurring most commonly in southern California in the desert regions. This species is known to nest in colonies of three or four family groups. A single individual of this species was observed on-site and was probably a migrant.

Golden eagles nest in rugged mountainous areas which have adjacent open grassland or scrubland where prey occurs. This species feeds mainly on ground squirrels, rabbits, and other small to medium sized mammals. Its home range averages approximately 35 square miles. There are numerous sites in this region of southern California where suitable nesting habitat may be found. No suitable nesting sites exist on the project site, however, the more open areas of the property, such as the agricultural fields, may be utilized for foraging.

Northern harriers (formerly called marsh hawks) are migratory throughout much of North America and are permanent residents in many parts of their range including portions of California. Harriers inhabit coastal and river marshes, wet meadows, and

open lands. They usually nest on the ground in areas with tall brush, rushes, or reeds. This species feeds on ground-dwelling mammals, reptiles, crustaceans, small birds, and carrion. Although nesting on the City Ranch property is very unlikely, one individual, a female, was observed on the site in April, 1990. It is believed that this harrier was migrating north because it was not seen again in May despite several searches of the east and west meadows.

Black-shouldered kites inhabit oak and riparian woodlands and utilize adjacent open areas for foraging. The City Ranch site is outside of the breeding range of this species. There is a moderate probability that kites may occasionally utilize the site for foraging.

A **prairie falcon** was observed foraging over pastureland near the central portion of the project site. The range of this species extends over much of the western United States. It inhabits arid, open lands and occasionally woodlands. Its nests are usually on high cliff faces in crevices or caves. The prairie falcon is a year-round resident in much of its range, descending to open agricultural lands and coastal plains during fall and winter months. This species feeds primarily on small birds but also on small mammals and reptiles. Threats to this species include pesticide contamination, robbing of aeries by falconers, hunting, human activities near nest sites, and habitat conversion by development activities. Suitable nesting sites may be located nearby in the San Gabriel Mountains, but not on the project site.

Le Conte's thrashers inhabit areas with sparse desert scrub, especially those which contain small washes. This bird can be found throughout much of the Mojave and Colorado Deserts, and an isolated population exists in southwestern San Joaquin Valley, near Taft and Maricopa. Its population densities in the Mojave Desert are among the lowest of passerine (perching) birds, with estimated densities in optimum habitat of less than five birds per square mile. This low population density together with their secretive habits decreases the probability of their detection by observers. Only during breeding activities, when males sing from exposed perches (often the tops of shrubs), are they relatively easy to detect. Silver cholla and saltbush are the plants

most preferred by this species for nesting sites. The 1989 field surveys were conducte during the breeding season of this species, but it was not detected. However, a singl bird was seen in late April 1990, during the ground squirrel trapping studies. The location was searched again several times in May 1990, but the LeConte's thrasher was not seen again. Therefore, it may have been passing through rather than nesting in the marginal habitat on the City Ranch site. Perhaps it was displaced from more suitable habitat on the desert floor nearby, where a great deal of construction is underway.

The **pale big-eared bat** is a sub species of the Townsend's big-eared bat and is generally known to occur in the Central Valley and southeast desert area. The probability of occurrence on the project site is low. These bats need roost sites away from human disturbance. The only potential roost sites would be ranch buildings of the former City Ranch, but agricultural activities over the years have probably been too disruptive for this species to utilize the site. It is possible that these bats forage on the site.

The **American badger** is a seldom-seen animal which, in California, occupies a wid variety of habitats. Open areas are preferred, but almost anywhere prey can be found seems to suit this species. Nearly all of its food sources, mainly gophers, ground squirrels, or kangaroo rats, are obtained by digging out the victim's burrow. Although direct observations of badgers are infrequent, scats or fresh diggings around rodent burrows can indicate their presence. Although no badgers, or definitive sign of their presence were detected on the City Ranch site, all of the habitat requirements seem to be present. In addition, the species is known to occur within Joshua tree and juniper habitats on the north slopes of the San Gabriel Mountains. There is a high probability that it occurs on the City Ranch property.

The **desert kit fox** is a small, primarily nocturnal fox which occurs throughout the deserts of North America. It is found in a wide variety of habitats including creosote bush scrub, shadscale scrub, alkali sink and Joshua tree woodland. The desert woodland or Great Basin sagebrush habitats found on the project site may be suitable for the kit fox, but none were found during the on-site survey.

The Mohave ground squirrel occurs in a restricted portion of the Mojave Desert, and in a wide variety of habitat types, including saltbush scrub, creosote bush scrub, shadscale scrub and Joshua tree woodland. It is absent from rocky, steep slopes and dry lake playas. It is diurnal and active from March through July; during the remainder of the year it becomes torpid within underground burrows. The most important threat to this species is habitat loss. This species was captured within 2.5 miles northeast of the site in 1920. The trapping survey performed for the current study indicated that the Mohave ground squirrel is not present on the project site.

5.7.2 Project Impacts

Construction of the proposed project would result in direct elimination of plant and wildlife habitat and consequently loss of biological resources within areas of the project site where residential lots, streets, the golf course, commercial development, school, and community parks are intended. According to the development plan for the proposed project, Planning Areas 2, 7, 29 and 32 with a combined total of approximately 404 acres would remain as natural open space. Although no rare, threatened, or endangered species of plant or animal as designated by the California Fish and Game Commission or the U.S. Fish & Wildlife Service will be affected by approval of the City Ranch Specific Plan, two sensitive plants known to occur on the site, Peirson's morning-glory and the short-joint beavertail cactus, would be greatly disturbed as a result of project development.

Although approximately 404 acres of the project site are designated as natural open spaces, these areas do not, for the most part, coincide with the location of the short-jointed beavertails and Peirson's morning-glories occurring on the site. Thus most individuals of each species would be destroyed as a result of construction activities. Planning Area 32, which is designated as natural open space, contains habitat for Peirson's morning-glories but no known occupied habitat areas. All known-occupied locations of Peirson's morning-glory would be lost to single-family residential development in Planning Areas 30A and 31. Short-jointed beavertails are present in

Planning Areas 2, 32 and a small portion of Planning Area 7. Therefore, individu within these areas would be preserved on-site. Planning Areas 8, 17 and 31 proposec for single-family detached residential use, and Planning Area 13 proposed as a golf course also contain numbers of the short-jointed beavertail. Individuals in these areas would be eliminated by proposed project development.

According to the City Ranch Specific Plan, development standards (p. V-60) "disturbance or grading which causes the removal or elimination of short-jointed beavertail shall be avoided. When these [sic] species will be disturbed, transplantation to Planning Areas 7 or 32 shall be performed". Furthermore, the plan states (p. V-60) that "prior to development of Planning Area 31, a program of mitigation by seed or other method shall be implemented which results in the establishment of these [sic] plant in suitable locations on or off the property as identified in the City Ranch EIR". While the cacti can be readily propagated vegetatively from the cactus stems or "pads" and therefore transplanted to an *ex situ* location with a reasonable chance for success, there is no precedent for restoration of the morning glory using seed, or any othe. method, and any such attempt to do so must be considered "experimental" with no guarantee for success. Moreover, officials of the Department of Fish and Game's Endangered Plant Program do not generally consider relocation of rare plants to be a viable mitigation alternative.

Under the proposed development plan, the east alkali meadow/transmontane alkali marsh habitat area coincides with a portion of Planning Area 13, south of the City Ranch Road alignment, designated as golf course/open space. This habitat continues just north of the California Aqueduct in the area owned by the State Department of Water Resources, not considered part of the project site. Grading to construct City Ranch Road, which would occur along the northern boundary of the east alkali meadow/transmontaine alkali marsh habitat may encroach upon the alkali meadow wetland habitat. In addition, runoff volumes from the developed project site which would drain through the wetland area, may contain urban pollutants including fertilizers, pesticides, herbicides, salts, and detergents. Entrance of these pollutants int

the area and/or increased volumes of runoff and velocity could degrade the quality of the east alkali meadow/transmontane alkali marsh habitat.

As a result of project development, a large portion of the area containing the Joshua tree/juniper woodland would be developed as a golf course (Planning areas 4 and 13). The densest and best developed stands of these trees are located in the proposed golf course area. Another portion of the Joshua tree/juniper woodland would be developed as a single-family residential area (Planning Area 8). The rest would be converted to community park space (Planning Areas 1 and 9) or would remain as natural open space (Planning Areas 2 and 7). Though the opportunity exists to incorporate some of the trees into residential and golf course designs, up to 3,044 (or 75%) of the Joshua trees would be eliminated from the project site as a result of project development. (This assumes 50% of golf course area would be graded, avoiding the ridge area of Planning Area 13, and that all trees would be lost in Planning Areas 1, 4, 8 and 9.) The California juniper seedling area which coincides with portions of Planning Areas 1, 4, 10 and a portion of the City Ranch Road alignment would be eliminated.

Development of the proposed project would result in the potential for impaired wildlife movements in an east-west direction along the foothills of the Sierra Pelona and the San Andreas Rift Zone. Some especially shy species would likely avoid the developed project site environment entirely. Other species such as deer and coyote may continue to use the proposed open spaces but in fewer numbers than without project implementation.

At least five sensitive animal species utilize the site at least on an intermittent basis: golden eagle, prairie falcon, tricolored blackbird, sharp-shinned hawk and long-eared owl. Other species with a high or moderate chance of occurring on-site include: San Diego horned lizard, northern harrier, black-shouldered kite, American badger and desert kit fox. Construction of the proposed project would result in a reduction of habitat for these species.

Because the site has habitat for these sensitive species, it can be considered a valuabl open space resource. Loss of this resource would contribute to the cumulative reduction of contiguous open space in the region. This reduction of contiguous open space adversely impacts territorial species which rely upon large expanses of land for their home ranges. Project development would result in the loss of part of the raptor foraging habitat in the region which would directly affect the raptor species known to be on-site: sharp-shinned hawk, golden eagle and prairie falcon.

Overall, implementation of the proposed project would result in fragmentation of the existing habitat of plants and animals into smaller discontinuous parcels. After a few years, the species diversity on the remaining fragments would be expected to decline. Preservation of 404 acres of natural open space on the project site would allow maintenance of a portion of the existing biological habitat and area for the transplantation of plants displaced elsewhere on the project site by project development.

5.7.3 Mitigation Measures

Implementation of the following measures would reduce project-related impacts on biological resources to an acceptable level:

Disturbance to or Loss of Sensitive Flora and Fauna

- Individuals of short-jointed beavertail in the impacted areas of Planning Areas 17 and 31 shall be transplanted into Planning Area 32. Similarly, those individuals impacted in Planning Areas 8 and 13 shall be transplanted into Planning Area 7. A written plan for such relocation shall be prepared and shall be subject to approval by the City Planning Department (which may require independent review) prior to site grading. The plan shall be prepared and implemented by a qualified horticulturist/botanist/restoration biologist, with thorough familiarity of the Antelope Valley region and demonstrated experience in transplantation of

cacti.

- A portion of Planning Area 31 shall be transferred to Planning Area 32 in order to preserve approximately 40 percent of the known occupied extent of Peirson's morning-glory located therein. The boundaries of Planning Areas 31 and 32 may be modified as shown on **Figure 38**, or as approved by the Director of Planning at the time of approval of tentative maps for Planning Area 31.

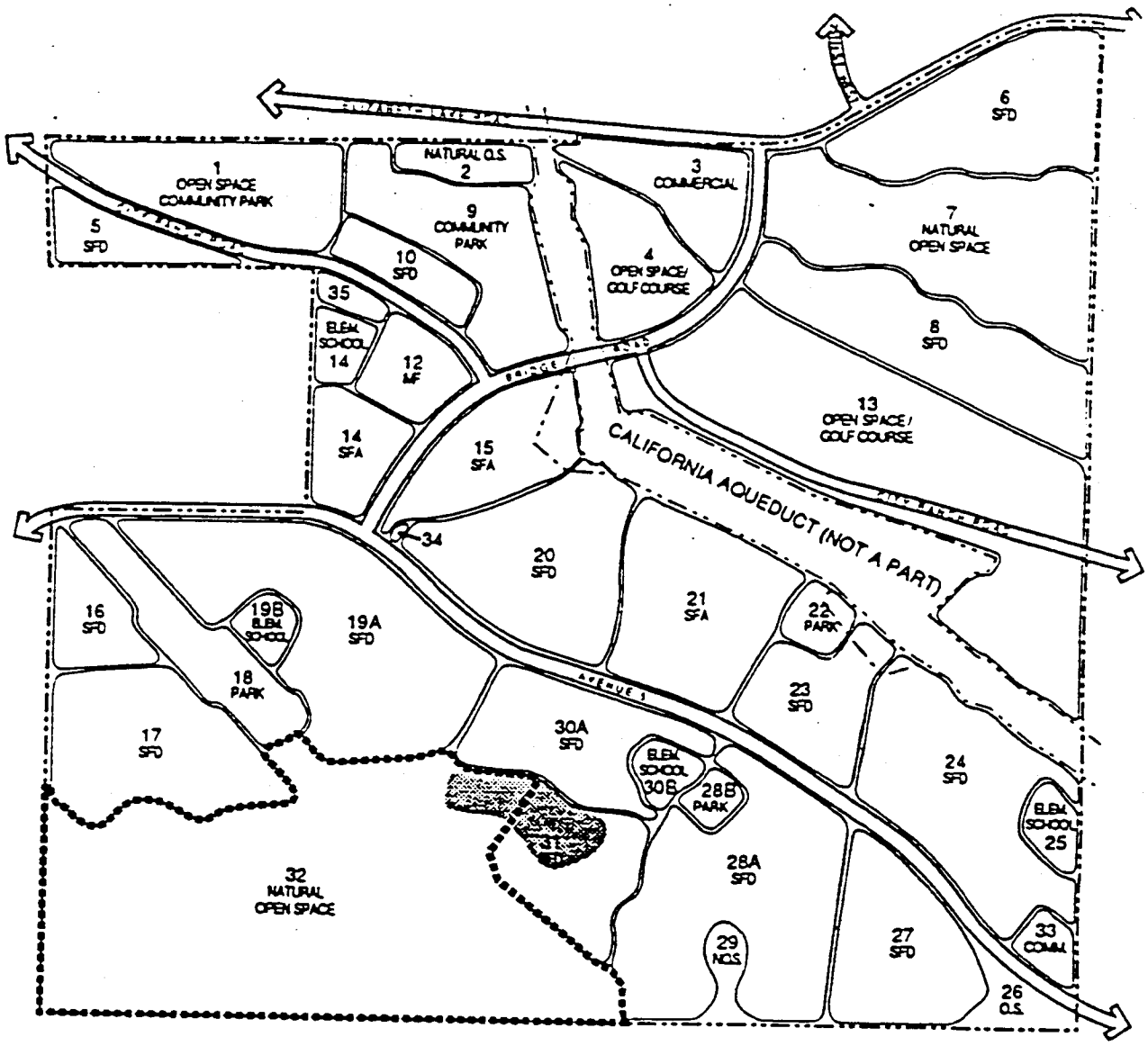
- A written plan for seed collection from impacted individuals of Peirson's morning-glory located in the portion of Planning Area 31 which shall be disturbed, for subsequent redistribution into Planning Area 32 shall be subject to approval by the City Planning Department (may require independent review) prior to site grading. The plan shall be prepared and implemented by a qualified botanist/horticulturist/restoration biologist, with thorough familiarity with the Antelope Valley region.

- The applicant shall consult with the Department of Fish and Game in order that potential impacts to Mohave ground squirrel may be addressed. If an endangered species permit is warranted, the permit must be completed and mitigation measures fully dedicated before issuance of a grading permit. Therefore, the consultation with CDFG will occur prior to issuance of any grading permit for the proposed project.

Alkali Meadows/Transmontane Alkali Marsh

- The land in Planning Area 13 south of the City Ranch Road alignment and north of the California Aqueduct property shall be set aside and designated as natural open space to preserve the east alkali meadow and transmontane alkali marsh habitat.

- The City Ranch Road alignment shall avoid the wetland areas. Landscaping, grading, and irrigation along the south side of the segment of City Ranch Road adjacent to the wetlands shall be kept to a minimum.



LEGEND

- PROJECT SITE BOUNDARY
- POSSIBLE PLANNING AREA 32 BOUNDARY
- KNOWN EXTENT OF PIERSON'S MORNING GLORY DISTRIBUTION

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PIERSON'S MORNING GLORY MITIGATION

FIGURE 38

- If avoidance of the alkali meadow/transmontane alkali marsh is impossible, permits and agreements under Section 404 of the Clean Water Act and under 1603 of the State Fish and Game Code will be required from the U.S. Army Corps of Engineers and the California Department of Fish and Game, respectively. At a minimum, lost wetland acreage will be replaced in kind on a one-to-one acre basis. Also, a mitigation and monitoring plan, subject to CDFG approval, will be required in the event of any loss of alkali meadow/transmontane marsh habitat.

- Provisions will be made to divert low-flow surface runoff from entering the east alkali meadow/transmontane alkali marsh habitat. (See Hydrology Section Mitigation Measures.)

Native Plant Landscaping

- Native species such as California juniper, Great Basin sagebrush, four-winged saltbush, holly-leaf cherry (*Prunus ilicifolia*), and big-berry manzanita, and trees such as Joshua tree, Fremont cottonwood (*Populus fremontii*) and California sycamore (*Platanus racemosa*) shall be used for landscaping purposes to the maximum extent feasible. Use of these species may encourage some local wildlife species to continue to utilize the area. The construction of a golf course on the site provides an opportunity for a great number of native plants, particularly trees, to be incorporated into the project site. In addition to the encouragement of continued wildlife use of the area, all of these plants are drought tolerant.

Joshua Trees and California Junipers

- The applicant shall comply with all City of Palmdale policies regarding the preservation or transplantation of Joshua trees and California junipers on the project site.

- Development of Planning Areas 4, 8 and 13 shall include the preservation or relocation of Joshua trees such that approximately two trees per acre graded sl be preserved or transplanted into suitable natural open space areas or undisturbed areas of the golf course. As a result of this measure, approximately 398 trees shall be preserved in Planning Areas 4, 8 and 13.

- California juniper seedlings located in Planning Areas 1, 9 and 10 shall be relocated to natural open space areas of the project site under the guidance of a certified botanist.

Natural Open Space Maintenance

- To preserve the biological integrity of the natural open space areas, measures shall be implemented assuring that off-road vehicles, ornamental or non-indigenous landscaping, domestic animals (especially dogs), hunting or other discharge of firearms, livestock grazing, plant, animal or rock collectir pedestrian, equestrian or bicycle use off marked trails or at night are exclude from natural open space areas. This shall be accomplished by signing and the construction of exclusionary walls or fences. Provisions shall be made to maintain open space areas.

5.7.4 Cumulative Impacts

Development of the proposed project would contribute to the cumulative reduction of contiguous open space in the region. This reduction of contiguous open space would adversely impact territorial species which rely upon large expanses of land for their home ranges, such as large birds of prey, upland game birds and carnivores, would result in loss of regional biological habitat, and would result in an overall decrease in regional biological diversity.

In addition, cumulative impacts would result from increased off-road vehicle use, collection of wildlife species as pets (lizards, snakes, etc.), harassment and predation of native wildlife species by dogs and cats, and degradation of natural vegetation due to increased foot traffic or bicycle use in undisturbed areas. Cumulative impacts to biological resources would be significant.

5.7.5 Unavoidable Adverse Effects

Implementation of the recommended mitigation measures would reduce project impacts to biological resources on the project site to an acceptable level.

5.8 TRANSPORTATION

A report prepared by Endo Engineering entitled "City Ranch Specific Plan Technical Studies," May 1990, updated August 5, 1991 was used in the preparation of this section. The full text is provided in Appendix G. Since the preparation of the May 1990 report, the Specific Plan was revised. The prior version of the Specific Plan, which had a slightly different mix of housing unit types, more park acreage, and a sheriff's station located on-site, generated approximately 3% more traffic trips than the currently proposed project. Therefore, the calculations in this report reflect a slightly worse case situation than would result from development of the currently proposed project.

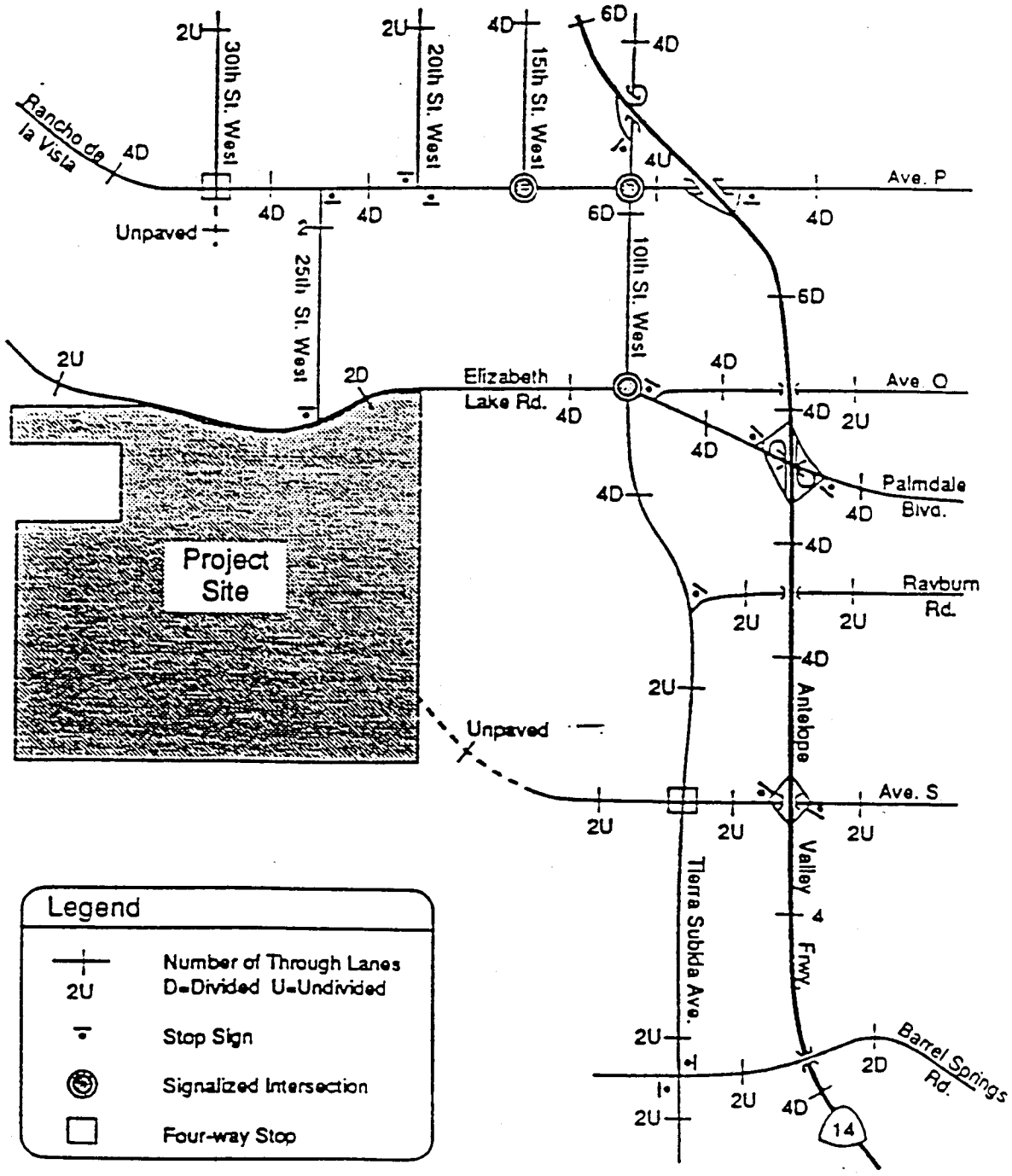
5.8.1 Existing Conditions

Regional access to the project site is currently available from the Antelope Valley Freeway located approximately two miles east of the project site. Local access is available from Avenue P, Avenue S, Palmdale Boulevard and Elizabeth Lake Road. **Figure 39** depicts the existing circulation system in the project vicinity. The number of through lanes and existing traffic control devices shown are based upon field reconnaissance in the project vicinity.

Surrounding Street System

The Antelope Valley Freeway (State Route 14) is a north/south freeway located two miles east of the project site. It provides primary access for the entire Antelope Valley. To the south, the Antelope Valley Freeway becomes an east/west route providing access to the San Fernando Valley and the Los Angeles basin. The Antelope Valley Freeway has four travel lanes south of Avenue P-8, and six travel lanes north of Avenue P-8.

Palmdale Boulevard is a 84-foot-wide east/west roadway that provides an interchange at the Antelope Valley Freeway. Palmdale Boulevard is a four-lane divided highway east of 10th Street West and is a designated truck route. The posted speed limit we



SOURCE: City Ranch South Specific Plan Technical Studies
July 1991, Endo Engineering

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Envicom Corporation Graphic

EXISTING CIRCULATION SYSTEM

FIGURE 39

of the Antelope Valley Freeway is 50 mph. East of the Antelope Valley Freeway, the posted speed limit is 40 mph. East of 5th Street West, current improvements inclu curbs, gutters, sidewalks and streetlights. The intersections of Division Street, 5th Street West and 10th Street West are signalized.

Elizabeth Lake Road is an east/west roadway that forms the northern project boundary. It is currently a two-lane undivided roadway west of Foxholm Drive. East of Foxholm Drive to 10th Street West, Elizabeth Lake Road is a four lane roadway. East of 10th Street West, Elizabeth Lake Road continues as Palmdale Boulevard. Current improvements do not include curbs, gutters, sidewalks, or streetlights west of Foxholm Drive. The posted speed limit in the project vicinity is generally 45.

Avenue P is a four-lane east/west undivided roadway both east and west of the Antelope Valley Freeway except for a six-lane divided portion west of the freeway to 15th Street West. West of 15th Street West, Avenue P is a four-lane roadway. The posted speed limit is 50 mph. Avenue P is a designated truck route east of 10th Street We Avenue P is fully improved with several signalized intersections.

Avenue Q is an east/west roadway that extends east from Palmdale Boulevard, and passes under the Antelope Valley Freeway. It does not provide direct freeway access. Avenue Q is a two-lane undivided roadway east of Palmdale Boulevard. Avenue Q has a posted speed limit of 35 mph. Avenue Q is currently being widened and improved west of the freeway. The intersection at 5th Street West is signalized.

30th Street West is a north/south two-laned undivided roadway with graded shoulders. This roadway terminates immediately south of Avenue P and is currently controlled by a four-way stop at Avenue P. Improvements south of Avenue P are currently

being made in conjunction with adjacent residential construction. Current improvements north of Avenue P do not include curbs, gutters, sidewalks, or streetlights. The posted speed limit along 30th Street West north of Avenue P is 55 mph.

25th Street West is a north/south two-lane undivided roadway between Avenue P and Elizabeth Lake Road which provides access to the project site. Immediately north of Elizabeth Lake Road there is a bridge crossing at Amargosa Creek. The bridge is 28 feet wide and provides two travel lanes. In areas adjacent to development along 25th Street West, curbs, gutters, sidewalks and streetlights currently exist. The posted speed limit is 55 mph. At the Elizabeth Lake Road intersection, the sight distance to the west for southbound motorists stopped on 25th Street West is limited to approximately 275 feet by the curvilinear alignment of Elizabeth Lake Road.

20th Street West is a north/south two-lane undivided roadway extending north and south of Avenue P. Access to Avenue P is controlled by stop signs on 20th Street West. Access to Avenue P is controlled by stop signs on 20th Street West. Improvements such as curbs, sidewalks or street lights currently exist along 20th Street West north of Avenue P adjacent to development. The posted speed limit is 55 mph.

10th Street West is a north/south access route located west of the Antelope Valley Freeway. North of Avenue 0-8, 10th Street West is a four-lane undivided roadway providing access to the northbound Antelope Valley Freeway. From Avenue 0-8 to Palmdale Boulevard, 10th Street West is a six-lane divided highway. The 10th Street West interchange allows southbound vehicles on the freeway to exit.

Tierra Subida is a north/south two-lane undivided roadway, 26 feet in width extending southerly from 10th Street West. Tierra Subida has a posted speed limit of 55 mph. Improvements along Tierra Subida include curbs, gutters and streetlights.

Barrel Springs Road is a two-lane undivided roadway that passes over the Antelope Valley Freeway without providing direct access to the freeway. Barrel Springs Road has a posted speed limit of 55 mph.

Rayburn Road is an east/west two-lane undivided roadway that extends east from Tierra Subida, and passes under the Antelope Valley Freeway. Rayburn Road does not provide direct freeway access. A stop-sign control at the Tierra Subida intersection, where the sight distance to the south for westbound motorists stopped on Rayburn Road, is limited to approximately 350 feet by the grade and curvature of the roadway. Rayburn Road is a designated truck route and has a posted speed limit of 55 mph.

Avenue S is a two-lane east/west undivided roadway. It provides an interchange at the Antelope Valley Freeway which will serve project-related traffic. Avenue S generally provides 24± feet of pavement and 14-foot graded shoulders and is currently controlled by a four-way stop at Tierra Subida. The southern side of Avenue S on either side of the Antelope Valley Freeway overpass is used for ride-sharing participants. Avenue S is a designated truck route in this area.

Public Transportation

The study area is not served by public transportation at present. As more development occurs and connects the site to other developed areas, the demand for transit services will increase and public transportation may be justified. It is important, therefore, that planning for new developments incorporate the means to accommodate future public transportation services.

Current Traffic Volumes

Typical weekday evening peak hour turning movement counts were made on September 29 and November 16, 1988 at 16 intersections in the project vicinity. The count data were collected to establish: (1) the extent to which the current peak hour in-

tersection capacities are being utilized by existing traffic volumes, (2) average daily two-way traffic volume (ADT) estimates for the vicinity, and (3) the directional orientation of traffic in the area. The count data are included in the Appendix of the Traffic Report with a map depicting the manual traffic count locations.

Current average daily traffic volumes for the project vicinity are shown in Figure 40. These volumes were taken from published 1990 Caltrans count data and a map depicting 1990 average daily traffic volumes provided by the City of Palmdale Public Works Department.[1]

Seasonal fluctuations in traffic demands are quantified by Caltrans along the Antelope Valley Freeway in terms of the peak month average daily traffic volumes (54,000 ADT), which are seven percent higher than the annual average daily traffic (52,000 AADT) north of Palmdale Boulevard. Peak hour volumes (4,700 vehicles per hour or VPH) currently comprise nine percent of the AADT on the Antelope Valley Freeway north of Palmdale Boulevard.[2]

Roadway Capacity Considerations

Roadway capacity has been defined as the maximum number of vehicles that can pass over a given roadway during a given time period under prevailing roadway and traffic conditions. By comparison, Levels of Service are a relative measure of driver satisfaction, with values ranging from A (free flow) to F (forced flow) as described in **Table 8**. Levels of Service (LOS) reflect a number of factors such as speed and travel time, traffic interruptions, vehicle delay, freedom to maneuver, driver comfort and convenience, safety and vehicle operating costs.

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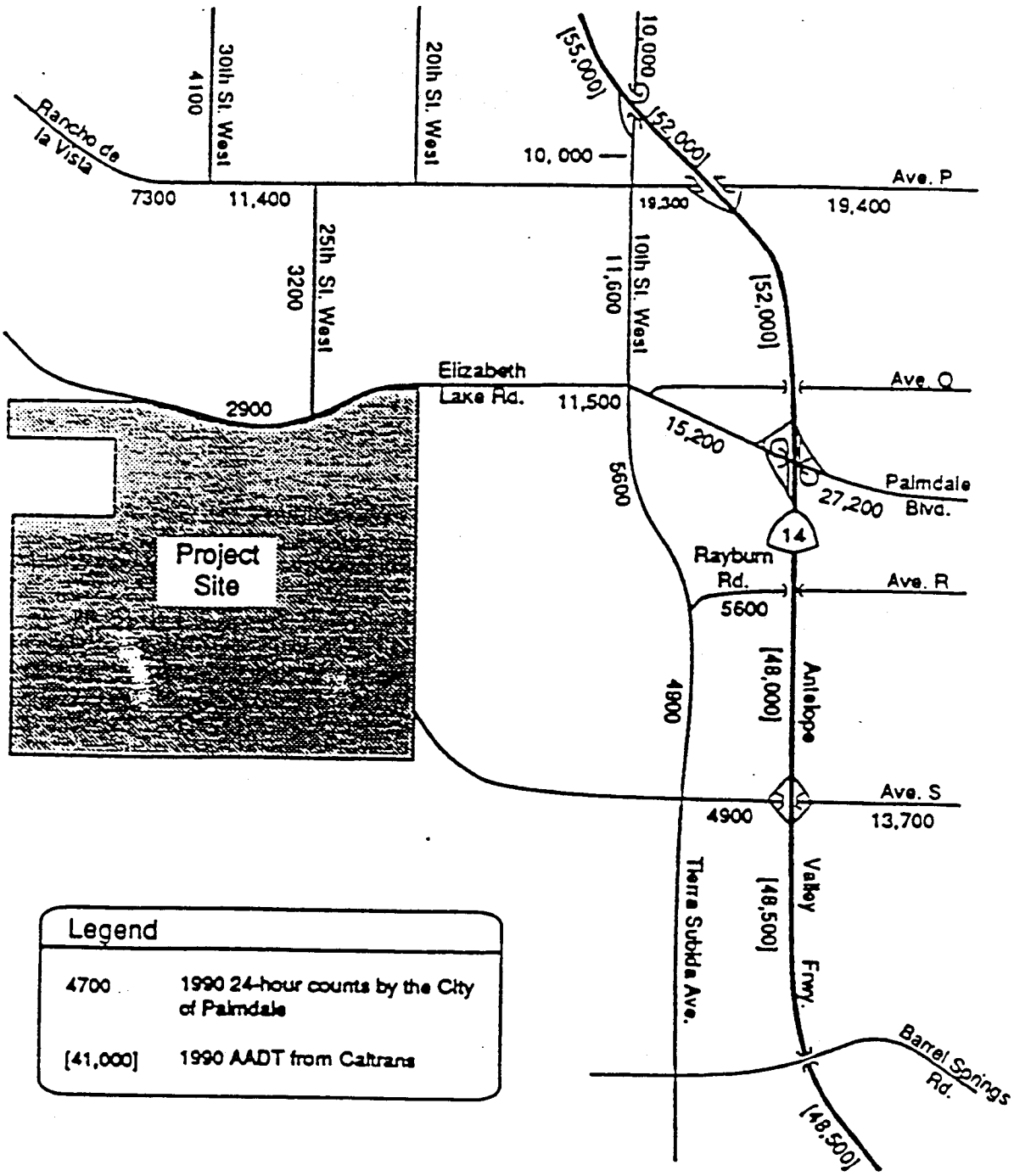
1. Source: Caltrans, "1990 Traffic Volumes on California State Highways".

2. Source: Caltrans, "1990 Traffic Volumes on California State Highways".



Source: City Ranch South Specific Plan Technical Studies, August 5, 1991, Endo Engineering.

CURRENT TRAFFIC VOLUMES

FIGURE 40

TABLE 8

Level of Service Criteria[1]

Level of Service	Traffic Flow Characteristics	Stopped Delay Per Vehicle (sec)	V/C Ratio[2] Range	ICU[3] Range
A	Extremely favorable progression with very low delay. Most vehicles do not stop at all.	≤ 5.0	.00-.75	.00-.60
B	Good progression and stable flow with an occasional approach phase fully utilized.	5.1-15.0	.76-.87	.61-.70
C	Satisfactory operation with fair progression and longer cycle lengths. Individual cycle failures may begin to appear.	15.1-25.0	.88-1.00	.71-.80
D	Tolerable delay where congestion becomes noticeable and many vehicles stop.	25.1-40.0	1.01-1.12	.81-.90
E	Unstable flow with poor progression and frequent cycle failures. This is considered the limit of acceptable delay.	40.1-60.0	1.13-1.25	.91-1.00
F	Oversaturation with arrival flow rates exceeding the capacity of the intersection. Considered unacceptable to most drivers.	> 60.0	1.26+	1.01+

1. Source: "Highway Capacity Manual", Special Report 209, Transportation Research Board,1985; pp. 9-4 and 9-5.
2. Determined by Endo Engineering for roadway link (mid-block) applications, based upon a daily design capacity at the upper limit of LOS C.
3. Determined by Endo Engineering for signalized intersection applications, based upon the peak hour maximum capacity of intersection approach lanes at the upper limit of LOS E.

Source: Endo Engineering, May 1990.

An important distinction exists between the concepts of capacity and Levels of Service A given lane or roadway may provide a wide range of service levels depending upon traffic volumes and speeds, but it has only one maximum capacity. The maximum capacity is determined from roadway factors such as lane widths, lateral clearance, shoulders, surface conditions, alignment and grades as well as traffic factors (such as vehicle composition, truck and bus mix, distribution by lane, peaking characteristics, traffic control devices, intersections, etc.). It is usually given as the hourly service volume at the upper limit of LOS E.

The Palmdale Draft General Plan suggests the use of LOS C for design applications and evaluation purposes. LOS C represents a condition where traffic volume and vehicle density begin to restrict motorist's freedom to select speed, change lanes, or pass.

Table 9 presents daily vehicle volumes at the upper limit of LOS C on typical master planned roadways throughout the City of Palmdale. These capacity values can be applied at the General Plan level as guidelines relating the daily traffic volume to the number of lanes needed mid-block to serve that volume. The City also uses LOS D for peak hour design purposes at intersections.

It should be kept in mind that the roadway capacity estimates in **Table 9** are "rule-of-thumb" estimates. They are affected by site specific factors such as the number and configuration of intersections, the degree of access control, roadway grades, substandard design geometrics (horizontal and vertical alignment), sight distance, the level of truck and bus traffic, the percentage of turning movements, and the level of pedestrian and bicycle traffic.

The daily service volume at the upper limit of LOS E is the absolute maximum volume that can be accommodated under ideal conditions (assuming improvement to full City standards under optimum operating conditions). This Level of Service is characterized by unstable flows, extremely high volumes, limited operating speeds, and intermittent

TABLE 9

Daily Roadway Capacity Estimates[1]

Facility Type	Number of Lanes	Lane Configuration (Mid-Block)	R/W (Feet)	Daily Design Capacity (Vehicles/Day)
Freeway	6	Divided	Varies	115,000
Freeway	4	Divided	Varies	65,000
Major Highway	6	Divided	100	45,000
Major Highway	4	Divided	100	30,000
Secondary Highway	4	Undivided	80	20,000
Collector Street	2	Undivided	64	10,000
Local Street	2	Undivided	60	2,500

1. These daily capacity estimates represent the upper limit of LOS C for surface streets and the upper limit of LOS D for freeways.

vehicle queuing. Peak hour capacities for LOS E are assumed to be 8% of the avera daily traffic volumes (based on high volumes spread over a longer period of time).

Volume-To-Capacity Analysis

A comparison of daily traffic volumes to the daily design capacity gives the proportion of the roadway capacity being utilized by the traffic volumes present. Therefore, a volume-to-capacity (V/C) ratio of 1.0 indicates that the facility is handling the maximum traffic volume that it can accommodate while maintaining the Level of Service deemed appropriate for design purposes (LOS C). Smaller volume-to-capacity ratios imply better operational characteristics and Levels of Service. Ratios which exceed 1.0 imply less favorable operating conditions and lower Levels of Service.

Table 10 shows the current daily volume-to-capacity ratios and corresponding Levels of Service on area roadways. Current daily volume-to-capacity (V/C) ratios in the project vicinity range from 0.19 (LOS A) to 1.37 (LOS F) on the roadway links analyzed. A links are operating at acceptable Levels of Service (LOS C or better) except one. Avenue S, east of SR 14 is operating at LOS F on a daily basis at present, with a V/C ratio of 1.37. Thus, current daily volumes on Avenue S (east of SR 14) exceed the daily design capacity of the roadway by 37 percent.

Route 14 is currently operating at 48 percent of the daily design capacity where it is a six-lane freeway and is operating at 74 to 80 percent of the design capacity where it is a four-lane freeway. It provides LOS B or better on a daily basis in the project vicinity. It is generally acknowledged that LOS D is the maximum acceptable service level for freeways in urban areas in view of the additional expense involved in providing LOS C.

It should be noted that daily V/C ratios usually reflect mid-block operations based upon daily traffic volumes and capacities derived from the number of through lanes on each roadway. More detailed analyses typically include an analysis of peak hou capacity at key intersections. Since peak hour traffic creates the heaviest demand on tl.

TABLE 10

Current Daily Volume-to-Capacity Ratio
and Level of Service Summary

Roadway Link	A.D.T. (Veh/Day)	Daily Capacity[1] (Veh/Day)	V/C[2] Ratio	Level of Service
Antelope Valley Freeway				
- West of 10th St. West	55,000	115,000	0.48	A
- East of 10th St. West	52,000	115,000	0.45	A
- North of Palmdale Blvd.	52,000	65,000	0.80	B
- North of Avenue S	48,000	65,000	0.74	A
- South of Avenue S	48,500	65,000	0.75	A
30th Street West				
- North of Avenue P	4,100	10,000	0.41	A
25th Street West				
- North of Elizabeth Lake Rd.	3,200	10,000	0.32	A
10th Street West				
- North of Route 14	10,000	30,000	0.33	A
- North of Avenue P	10,000	45,000	0.22	A
- North of Elizabeth Lake Rd.	11,600	45,000	0.26	A
Tierra Subida Avenue				
- North of Rayburn Rd.	5,600	30,000	0.19	A
- North of Avenue S	4,900	10,000	0.49	A
Rancho de la Vista				
- West of 30th St. West	7,300	30,000	0.24	A
Avenue P				
- West of 25th St. West	11,400	30,000	0.38	A
- West of Route 14	19,300	30,000	0.64	A
- East of Route 14	19,400	30,000	0.65	A
Elizabeth Lake Road				
- West of 25th St. West	2,900	10,000	0.29	A
- West of 10th St. West	11,500	20,000	0.58	A
Palmdale Boulevard				
- West of Route 14	15,200	30,000	0.51	A
- East of Route 14	27,200	30,000	0.91	C
Rayburn Road				
- East of Tierra Subida Ave.	5,600	10,000	0.56	A
Avenue S				
- West of Route 14	4,900	10,000	0.49	A
- East of Route 14	13,700	10,000	1.37	F

1. These values represent the current daily design capacity (upper limit of LOS C) in Table 2.
2. These values were calculated using the daily capacity at the upper limit of LOS C.

circulation system and the lane configuration at intersections is the limiting factor i- roadway capacity, peak hour intersection capacity analyses are useful indicators o. "worst-case" conditions.

Intersection Capacity Utilization

The current Intersection Capacity Utilization (ICU) values at the key intersections in the project vicinity have been determined based upon the current peak hour traffic volume and the existing intersection geometrics which are shown in **Table 11**. ICU values represent the sum of the V/C ratios of conflicting movements at intersections (as shown in the ICU worksheets in the Appendix) and are indicative of the portion of the intersection capacity which is being utilized by peak hour traffic volumes. The City of Palmdale utilizes an ICU level of 0.90 (indicating the upper limit of LOS D) as the maximum desirable criteria for design purposes.

Table 12 provides the Intersection Capacity Utilization and corresponding Level c Service findings at the key intersections for evening peak hour conditions. ICU values have been correlated with Level of Service designations as shown in **Table 8**. Within the project vicinity, evening peak hour volumes typically exceed morning peak hour volumes and therefore represent a "worst case" peak hour scenario.

As shown in **Table 12**, the key intersections are currently operating with ICU values ranging from 0.21 to 0.56 during evening peak hours. This represents Level of Service A operation (extremely favorable progression with very low delay).

Relevant Circulation Plans

The Circulation element of the City of Palmdale General Plan details the general location and extent of the circulation system required to serve future traffic demands associated with development per the Land Use Element of the General Plan. Currently the Circulation Element of the City of Palmdale General Plan is undergoing revision t

TABLE 11

Existing Intersection Lane Geometrics[1]

Intersection	Northbound			Southbound			Eastbound			Westbound		
	T	R	L	T	R	L	T	R	L	T	R	L
Avenue P @												
- 30th Street West	1	1	0	1	0	0	2	0	0	2	0	0
- 25th Street West	0	0	0	1	0	0	2	0	0	2	0	0
Elizabeth Lake Road @												
- 25th Street West	0	0	0	1	0	0	1	0	0	1	0	0
- 10th Street West	2	0	1	2	0	1	2	0	1	2	1	1
Palmdale Boulevard @												
- Route 14 SB Ramps	0	0	0	0	1	1	2	1	0	2	1	0
- Route 14 NB Ramps	0	1	1	0	0	0	2	1	0	2	1	0
Avenue S @												
- Tierra Subida Ave.	1	0	0	1	0	0	1	0	0	1	0	0
- Route 14 SB Ramps	0	0	0	0	1	1	2	1	0	2	0	1
- Route 14 NB Ramps	0	1	1	0	0	0	2	0	1	2	1	0

1. T = Through Lane; R = Exclusive Right Turn Lane; L = Exclusive Left Turn Lane.

TABLE 12

Current Peak Hour
ICU and LOS Summary

Intersection	Evening Peak Hour Operation Intersection Capacity Utilization	Level of Service
Avenue P @		
- 30th Street West	0.56	A
- 25th Street West	0.25	A
Elizabeth Lake Road @		
- 25th Street West	0.22	A
- 10th Street West	0.51	A
Palmdale Boulevard @		
- Route 14 SB Ramps	0.41	A
- Route 14 NB Ramps	0.42	A
Avenue S @		
- Tierra Subida Ave.	0.35	A
- Route 14 SB Ramps	0.32	A
- Route 14 NB Ramps	0.21	A

update each roadway alignment and designation in conjunction with changes to the Land Use Element.

Figure 41 illustrates the most likely alignments and roadway designations for master planned roadways in the project vicinity. It does not reflect the currently adopted Circulation element, but rather the City's current position on the updated Circulation Element, which is being developed at present. Figure 42 illustrates the typical cross-sections for the various roadway designations applied throughout the City of Palmdale.

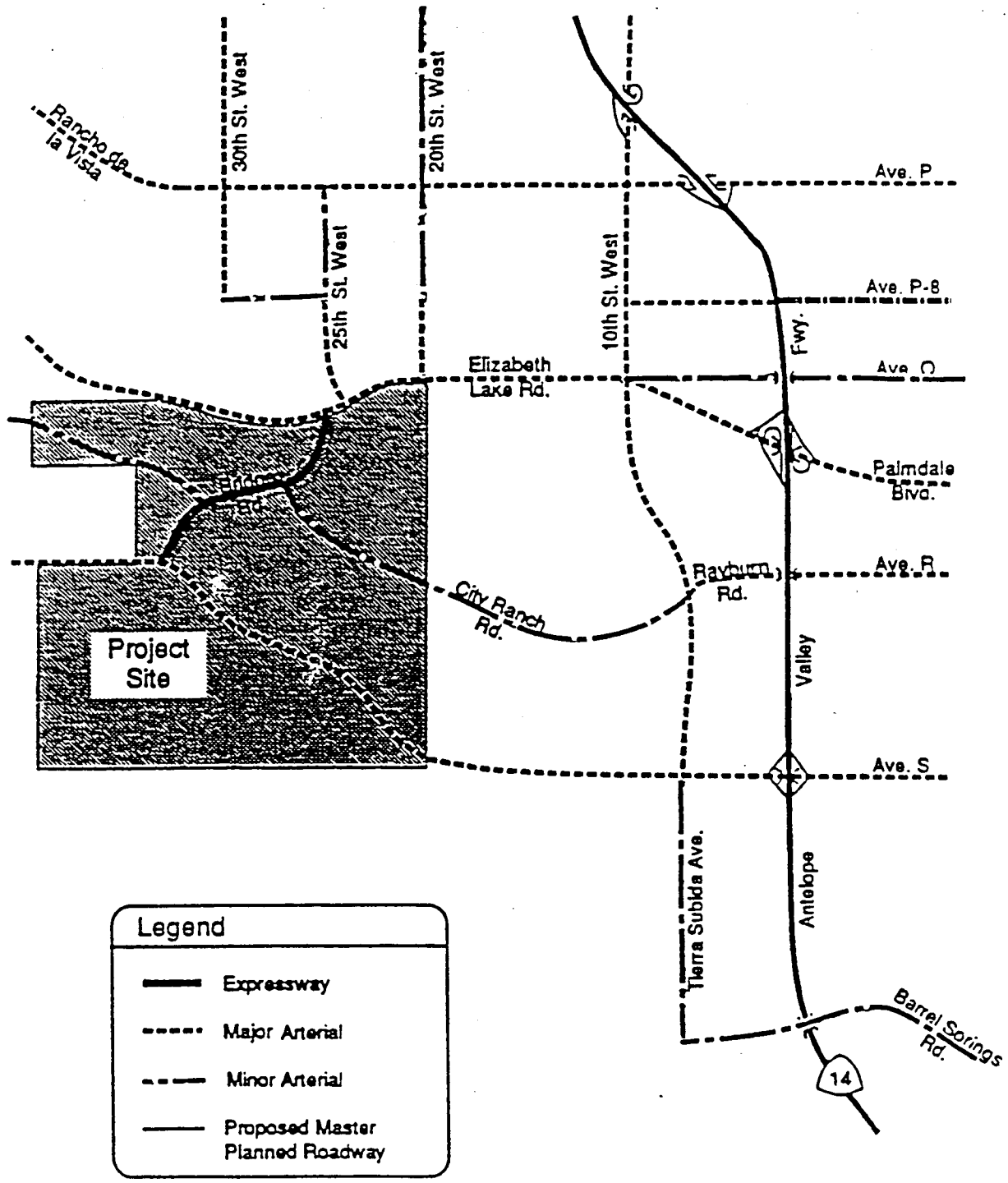
Avenue P-8 is master planned as a major highway from 10th Street West to the Freeway. Palmdale Boulevard, 30th Street West, 25th Street West, 10th Street West, Tierra Subida (north of Avenue S), Elizabeth Lake Road, Avenue S and Avenue P are also master planned as major highways. The design standards for major highways include four or six lanes with a 100-foot right-of-way and an 84-foot curb-to-curb width.

Avenue Q and 20th Street West are master planned as secondary highways. Barrel Springs Road, east of Tierra Subida, is classified as a four-lane undivided secondary highway on the Los Angeles County Highway Plan. South of Avenue S, Tierra Subida is designated as a secondary highway. Secondary highways have four lanes with 64 feet curb-to-curb within an 80-foot right-of-way.

The Los Angeles County Highway Plan preserves rights-of-way in all future areas where growth might occur to insure that areas develop with adequate access by requiring private developers to dedicate sections of the master planned system adjacent to their developments.

Planned Roadway and Intersection Improvements

Roadway improvements are currently being planned in conjunction with the construction of Amargosa Creek drainage improvements which would realign 25th



SOURCE: City Ranch South Specific Plan Technical Studies
July 1991, Enco Engineering

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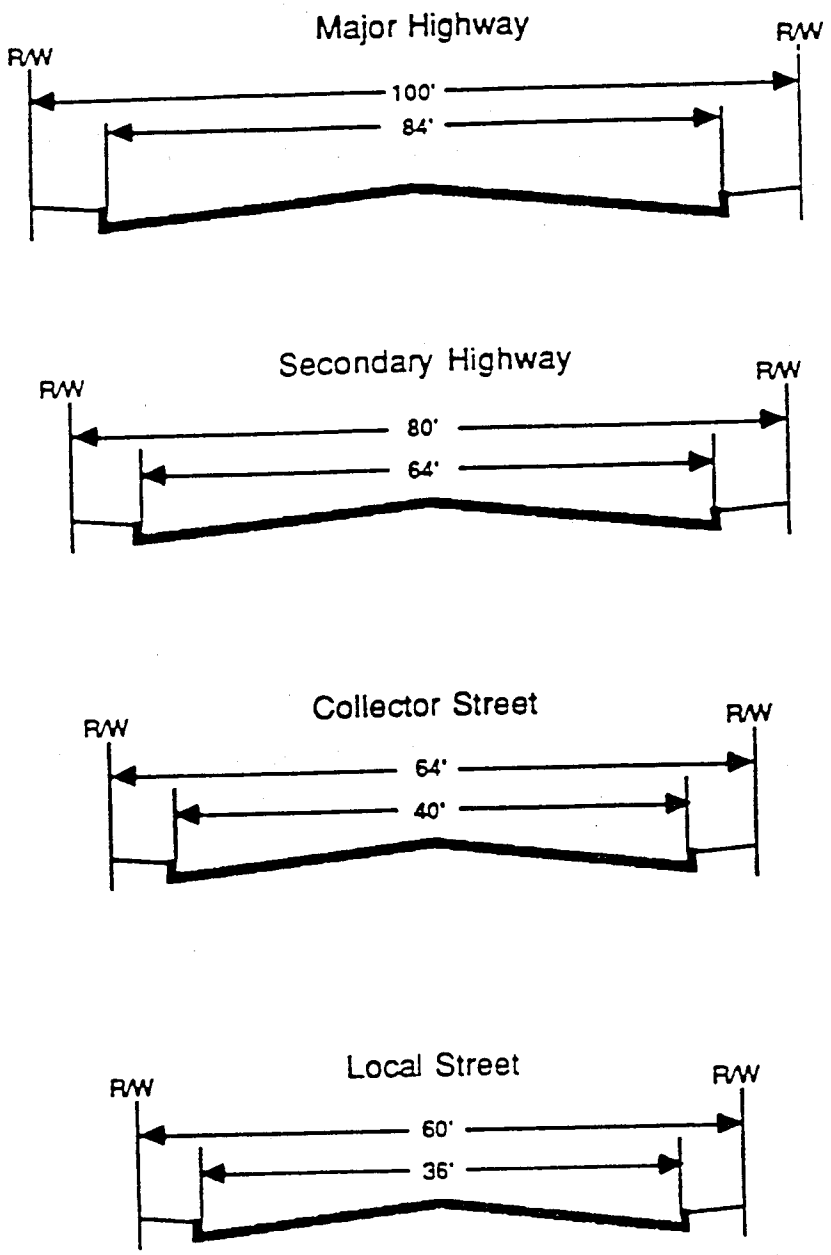
Envicom Corporation

MASTER PLANNED CIRCULATION SYSTEM

FIGURE 41



SOURCE: City Ranch South Specific Plan Technical Studies May 1990, Enco Engineering

TYPICAL STREET CROSS-SECTIONS (PALMDALE)

FIGURE 42

Street West to intersect Elizabeth Lake Road east of the existing intersection. Thes improvements are anticipated to be implemented by late 1992.

To adequately serve future cumulative demand, Elizabeth Lake Road/Palmdale Boulevard will need to be widened. Initially, the roadway would be widened to six lanes from the project site to the Antelope Valley freeway. As demand increases, the segment between 10th Street West and the freeway will require further widening to eight lanes. Future refined traffic studies will help to identify the timing of these improvements.

5.8.2 Project Impacts

Traffic Generation Forecast

The potential trip generation from the proposed development was estimated by multiplying appropriate trip generation rates by the land use quantities proposed. Tri generation rates were determined from the regression equations included in the Institute of Transportation Engineers publication entitled "Trip Generation - An Informational Report" (1987).

The trip generation regression equations developed by the Institute of Transportation Engineers for single-family residential dwellings (based on 320 traffic studies) demonstrate that as the number of dwellings within a development increases, the trip generation rate per dwelling decreases. This occurs because a portion of the home-based trips have destinations to other residences within the development. However, only eight of the studies were on developments with more than 1,000 units. In view of the relatively small number of substantiating studies for large developments, a "worst case" value of 9 trips per single-family dwelling was assumed to determine the unadjusted trip generation forecast shown in Table 13. Similarly, a weekday trip generation rate of 4.68 per multi-family attached dwelling was assumed.

The trip generation potential of the proposed 1-acre fire station facilities was estimated from field observations at existing similar fire stations in southern California. The trip generation for the proposed fire station was estimated from the El Toro, California fire station which serves the neighboring commercial, industrial and Leisure World Retirement Community. This station responding to an average of 30 calls daily is the busiest of 42 stations in Orange County.

Table 13 shows the unadjusted daily and peak hour trip generation forecast by land use type for the proposed project. It should be noted, however, that the forecast provided in **Table 13** does not account for trip overlap on-site (i.e., trip interactions on-site between the residential, commercial, recreational and educational land uses proposed), and therefore is a conservative estimate.

The development of mixed-use projects reduces the trip generation below that which is forecast directly from ITE trip generation rates for the individual land uses. The ITE rates were developed from isolated single-use developments and therefore ignore trip overlap. When different land uses are combined on one site, the actual trip generation decreases. For example, fewer residents will drive off-site if commercial uses, recreational opportunities and elementary schools are provided on-site.

Trips by motorists who drive between uses on-site are overstated by a direct application of the ITE rates because they are counted twice (once as exiting the residential use and then again as entering the school) even though only one trip was made between the two land uses on-site. When a trip generation forecast does not explicitly handle trip overlap, it can overstate traffic demands on the circulation system upon project build-out. To determine as accurately as possible the traffic impact of the proposed project, trip interactions on-site have been estimated and taken into account.

TABLE 13

Project-Related Unadjusted Trip Generation[1]

Land Use	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily 2-Way
Residential Trips							
- 3,372 detached units	610	1,640	2,250	2,040	1,190	3,230	30,350
- 1,828 attached units	110	590	700	590	290	880	9,100
Residential Subtotal	720	2,230	2,950	2,630	1,480	4,110	39,450
Commercial Trips							
- 151,000 sq.ft.	160	70	230	380	390	770	9,710
- 109,000 sq.ft.	130	60	190	320	330	650	7,860
Commercial Subtotal	290	130	420	700	720	1,420	17,570
Recreation Trips							
- Golf Course (216.1 acres)	50	10	60	10	80	90	970
- Park (171 acres)	20	20	40	30	30	60	860
Recreational Subtotal	70	30	90	40	110	150	1,830
Fire Station							
- 1 station	10	10	20	10	10	20	200
School Trips							
- 4 Elementary schools	400	240	640	0	40	40	2,200
Total	1,490	2,640	4,120	3,380	2,360	5,740	61,250

1. Trip Generation rates were derived from the regression equations provided in "Trip Generation", ITE, 4th Edition, Dec. 1987 for land use codes 210, 230, 430, 491, 492, and 820.

The unadjusted trip generation forecast shown in **Table 13** was adjusted to eliminate the double counting of those trips which are generated on-site and remain on-site. The adjusted daily trip generation forecast for buildout on-site by land use type is shown in **Table 14**. The unadjusted trip generation, the number of internal trips (including double counted trips), the number of external trips, and the adjusted total trip generation are also provided therein.

As shown in **Table 14**, the project as proposed is expected to generate 49,970 daily trip-ends, of which 38,050 will have either an origin or a destination off-site (external trips). There are 11,920 which will have both an origin and a destination on-site (internal trips). An estimated 33,590 trips will be generated by the residential development and 16,380 trips will be generated by the other land uses proposed on-site on an average weekday.

Trip Distribution and Assignment

Traffic distribution is the determination of the directional orientation of traffic. It is based upon the geographical location of the site and land uses which will serve as trip origins and destinations. Traffic assignment is the determination of which specific routes project-related traffic will use, once the generalized traffic distribution is determined. The basic factors affecting route selection are minimizing time and distance. Other considerations might be the aesthetic quality of alternate routes, street grades, number of turning maneuvers and avoidance of congestion. Site access locations directly affect the project traffic assignment.

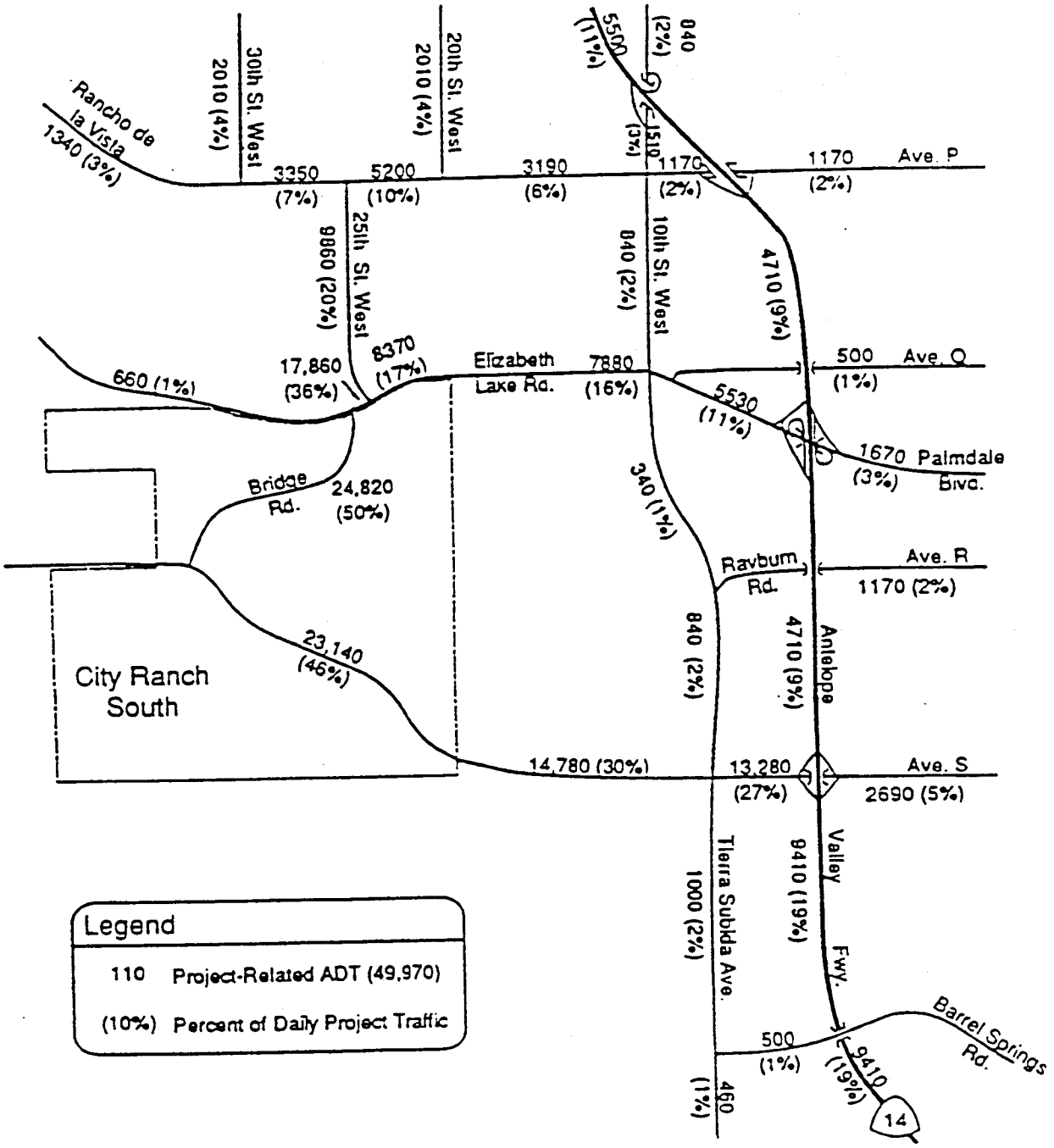
Figure 43 illustrates the traffic assignment associated with the proposed project, including two-way weekday traffic volume projections associated with buildout on-site. **Figure 43** also provides the percentage of the project-related traffic expected to utilize each roadway link.

TABLE 14

Adjusted Trip Generation Forecast

Trip Type	Unadjusted Trips[1]	Internal Trips[2]	External Trips	Adjusted Trips
Residential Trips				
- Daily Two-Way	39,450	11,720	27,730	33,590
- AM Inbound	720	200	520	620
- AM Outbound	2,230	540	1,690	1,960
- AM Total	2,950	740	2,210	2,580
- PM Inbound	2,630	530	2,100	2,370
- PM Outbound	1,480	390	1,090	1,290
- PM Total	4,110	920	3,190	3,660
Commercial/Recreation/Fire/Educational Trips				
- Daily Two-Way	22,440	12,120	10,320	16,380
- AM Inbound	810	540	270	540
- AM Outbound	430	200	230	330
- AM Total	1,240	740	500	870
- PM Inbound	770	390	380	580
- PM Outbound	930	530	400	670
- PM Total	1,700	920	780	1,250
All Trips Combined				
- Daily Two-Way	61,890	23,840	38,050	49,970
- AM Inbound	1,530	740	790	1,160
- AM Outbound	2,660	740	1,920	2,290
- AM Total	4,170	1,440	2,710	3,450
- PM Inbound	3,400	920	2,480	2,940
- PM Outbound	2,410	920	1,490	1,950
- PM Total	5,810	1,840	3,970	4,890

1. Taken from Table 13 without accounting for trip overlap.
2. Each value is double counted and must be halved to eliminate the double counting.



SOURCE: City Ranch South Specific Plan Technical Studies
July 1991, Endo Engineering

PROJECT TRAFFIC ASSIGNMENT

FIGURE 43

Future Daily Traffic Conditions

As an extension of the General Plan modeling effort, DKS Associates completed a year 2010 assessment of the Palmdale Southwest Planning Area to determine the roadway cross-sections necessary to provide an adequate level of service (DKS Associates, July 1990). DKS assessed potential development in the southwest portion of Palmdale by the year 2010, determined traffic generated by this development, and then, using a computer model, assigned that traffic to the proposed road network in the vicinity of the project. The study details DKS' findings, including the impact that the City Ranch Specific Plan will have on nearby roadways. In the course of their study, DKS prepared model runs with and without the City Ranch Specific Plan. These model runs demonstrate the difference in traffic volumes on the circulation system caused by the City Ranch project. The model assumed that roadway segments would be widened as shown on Table 15.

Year 2010 Ambient Conditions

The year 2010 ambient daily traffic volumes, V/C ratios, and LOS designations without development of the City Ranch project are shown in **Figure 44**. As shown in **Figure 44**, not all of the links analyzed will operate at acceptable levels in the year 2010 without the addition of project-related traffic. Even with expanded roadways, one link would exceed acceptable levels of service. This link is 10th Street West north of Elizabeth Lake Road. With the exception of this link, the remaining surface streets analyzed would provide acceptable levels of service.

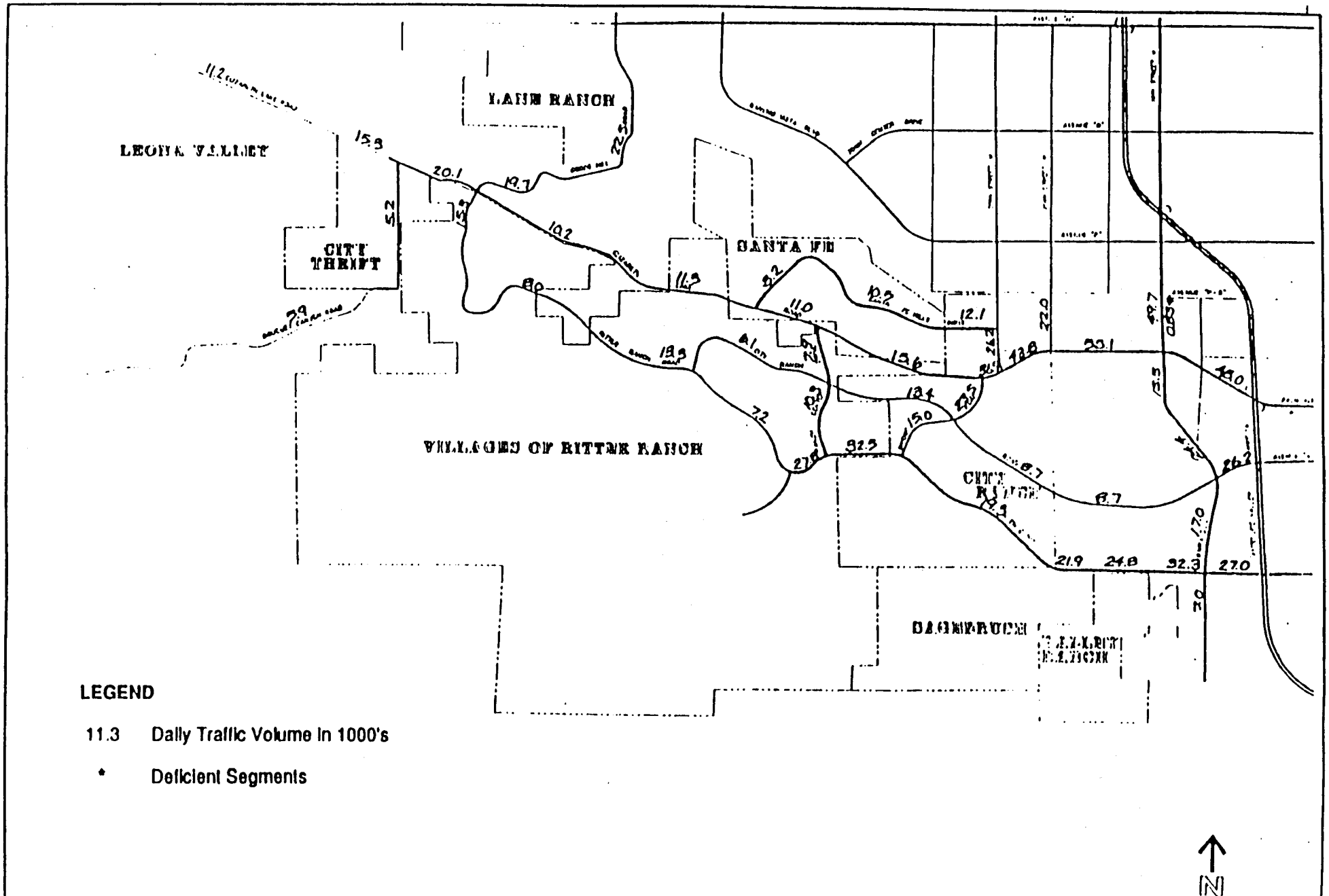
Year 2010 Plus Project Conditions

The V/C ratio analysis is intended to demonstrate: (1) what roadway link improvements would be needed to accommodate project-related traffic at acceptable Levels of Service, and (2) whether or not the master planned circulation system would

TABLE 15

Forecast Year 2010 Daily Traffic
Volumes and Levels of Service

Roadway	Location (From/To)	Striping/ Geometrics	Facility Type	Capacity	Volume	V/C	LOS
Santa Fe Hills Dr	Elizabeth Lake Rd/25th St W	4 LANES	DIV. MINOR	28,000	12,300	0.44	A
Elizabeth Lake Rd	West of Leona Valley	2 LANES	MAJOR	15,000	11,200	0.74	C
	Leona Valley/Bouquet Canyon Rd	2 LANES	MAJOR	15,000	15,100	1.01	F *
	Bouquet Canyon Rd/Godde Hill Rd	4 LANES	DIV. MAJOR	36,000	19,900	0.55	A
	Godde Hill Rd/Santa Fe Hills Dr	2 LANES	DIV. MAJOR	18,000	11,200	0.62	B
	Santa Fe Hills Dr/Ranch Center Dr	4 LANES	DIV. MAJOR	36,000	10,600	0.29	A
	Ranch Center Dr/Bridge Rd	4 LANES	DIV. MAJOR	36,000	16,600	0.46	A
	Bridge Rd/25th St W	6 LANES	DIV. U. MAJOR	60,000	49,000	0.82	D *
	25th St W/20th St W	6 LANES	DIV. U. MAJOR	60,000	47,200	0.79	C
	20th St W/10th St W	6 LANES	DIV. U. MAJOR	60,000	55,200	0.92	E *
Palmdale Blvd	10th St W/Antelope Valley Fwy	8 LANES	DIV. MAJOR	72,000	48,000	0.67	B
City Ranch Rd	Ritter Ranch Rd/Ranch Center Dr	2 LANES	DIV. MINOR	14,000	5,700	0.41	A
	Ranch Center Dr/Bridge Rd	4 LANES	DIV. MINOR	28,000	15,900	0.57	A
	Bridge Rd/20th St W alignment	4 LANES	MINOR	24,000	13,300	0.55	A
	20th St W alignment/Tierra Subida Ave	4 LANES	MINOR	24,000	16,400	0.68	B
Avenue R	Tierra Subida Ave/Division St	6 LANES	DIV. MAJOR	54,000	31,500	0.58	A
Ritter Ranch Rd	Godde Hill Rd/City Ranch Rd	2 LANES	DIV. MAJOR	18,000	13,300	0.74	C
	South of Elizabeth Lake Rd	2 LANES	DIV. MAJOR	18,000	14,800	0.82	D *
	40th St W alignment/Ranch Center Dr	4 LANES	DIV. MAJOR	36,000	26,500	0.74	C
	Ranch Center Dr/Bridge Rd	4 LANES	DIV. U. MAJOR	40,000	31,800	0.80	C
	Bridge Rd/20th St W alignment	6 LANES	DIV. MAJOR	54,000	36,700	0.68	B
	20th St W alignment/Tierra Subida Ave	6 LANES	DIV. MAJOR	54,000	45,300	0.84	D *
Avenue S	Tierra Subida Ave/Antelope Valley Fwy	6 LANES	DIV. U. MAJOR	60,000	34,800	0.58	A
Bouquet Canyon Rd	South of Elizabeth Lake Rd	4 LANES	DIV. MINOR	28,000	5,200	0.19	A
	W of City Thrift	2 LANES	MINOR	12,000	5,800	0.48	A
Godde Hill Rd	60th St West/Elizabeth Lake Rd	4 LANES	MAJOR	30,000	22,300	0.74	C
Ranch Center Dr	Elizabeth Lake Rd/City Ranch Rd	2 LANES	DIV. MINOR	14,000	9,600	0.69	B
	City Ranch Rd/Ritter Ranch Rd	2 LANES	DIV. MINOR	14,000	10,100	0.72	C
Bridge Rd	Elizabeth Lake Rd/City Ranch Rd	4 LANES	DIV. MAJOR	36,000	28,900	0.80	C
	City Ranch Rd/Ritter Ranch Rd	4 LANES	DIV. MAJOR	36,000	20,300	0.56	A
25 St West	Ave P-8/Elizabeth Lake Rd	6 LANES	MAJOR	45,000	27,500	0.61	B
20 St West	Ave P-8/Elizabeth Lake Rd	4 LANES	MAJOR	30,000	23,900	0.80	C
10 St West	Ave P-8/Palmdale Blvd	6 LANES	DIV. U. MAJOR	60,000	51,800	0.86	D *
Tierra Subida Ave	Palmdale Blvd/S. of Palmdale Blvd	6 LANES	DIV. MAJOR	54,000	16,200	0.30	A
	S. of Palmdale Blvd/Ave R	6 LANES	DIV. MAJOR	54,000	24,800	0.46	A
	Ave R/Ave S	4 LANES	DIV. MAJOR	36,000	21,500	0.60	B
	Ave S/Barrel Springs Rd	2 LANES	MINOR	12,000	9,300	0.78	C



LEGEND

11.3 Daily Traffic Volume in 1000's

* Deficient Segments

SOURCE ...ociates, 1990

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...2010 DAILY TRAFFIC VOLUMES W... ...UT CITY RANCH ...RE

be adequate to meet the travel demands generated by the proposed project. Tenth (10th) Street West, discussed above shown to exceed acceptable levels of service, would carry a relatively small portion of the project-related traffic (four percent (4%) of the project related traffic).

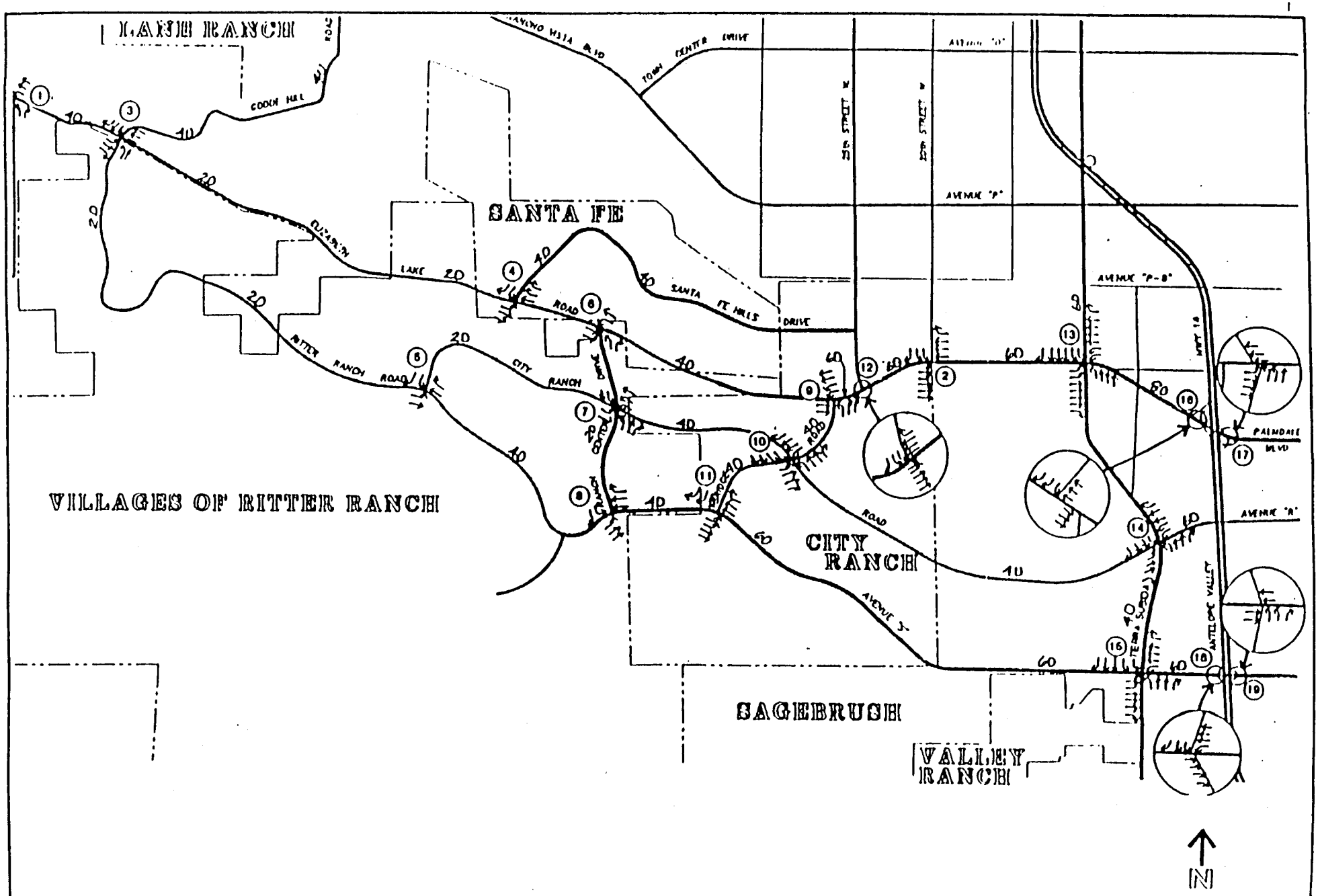
Table 15 provides the year 2010 plus project daily V/C ratios and corresponding Levels of Service. The values in **Table 15** assume master planned improvements on roadway links in the project vicinity. The assumed roadway striping and geometrics are shown on **Figure 45**.

Figure 46 indicates forecast year 2010 daily volumes and levels of service with City Ranch. The majority of the area arterials are projected to operate at an acceptable daily level of service by the year 2010. Facilities which are projected to operate at an unacceptable level of service are mostly limited to roadways near the Antelope Valley Freeway. These potentially deficient arterial segments are indicated with an asterisk in **Table 15**.

For the purposes of the Southwest Planning area Traffic Study (July, 1999) the unsignalized existing intersections and all planned intersections were assumed to warrant a signal by the year 2010. The 19 study intersections under consideration for the year 2010 were shown in **Figure 45**.

The Planning Application of the Critical Movement Analysis procedures, which are outlined in Transportation Research Board Circular 212, was the methodology used to determine the intersection utilization. The results of the intersection capacity analysis for the 2010 AM and PM peak hour volumes are shown in Table 16.

The following paragraphs compare the forecast year 2010 total traffic volumes on the arterial network to the "no project" scenario (Figures 44 with 46). **Table 17** also presents a comparison of traffic volumes on selected key arterial segments.



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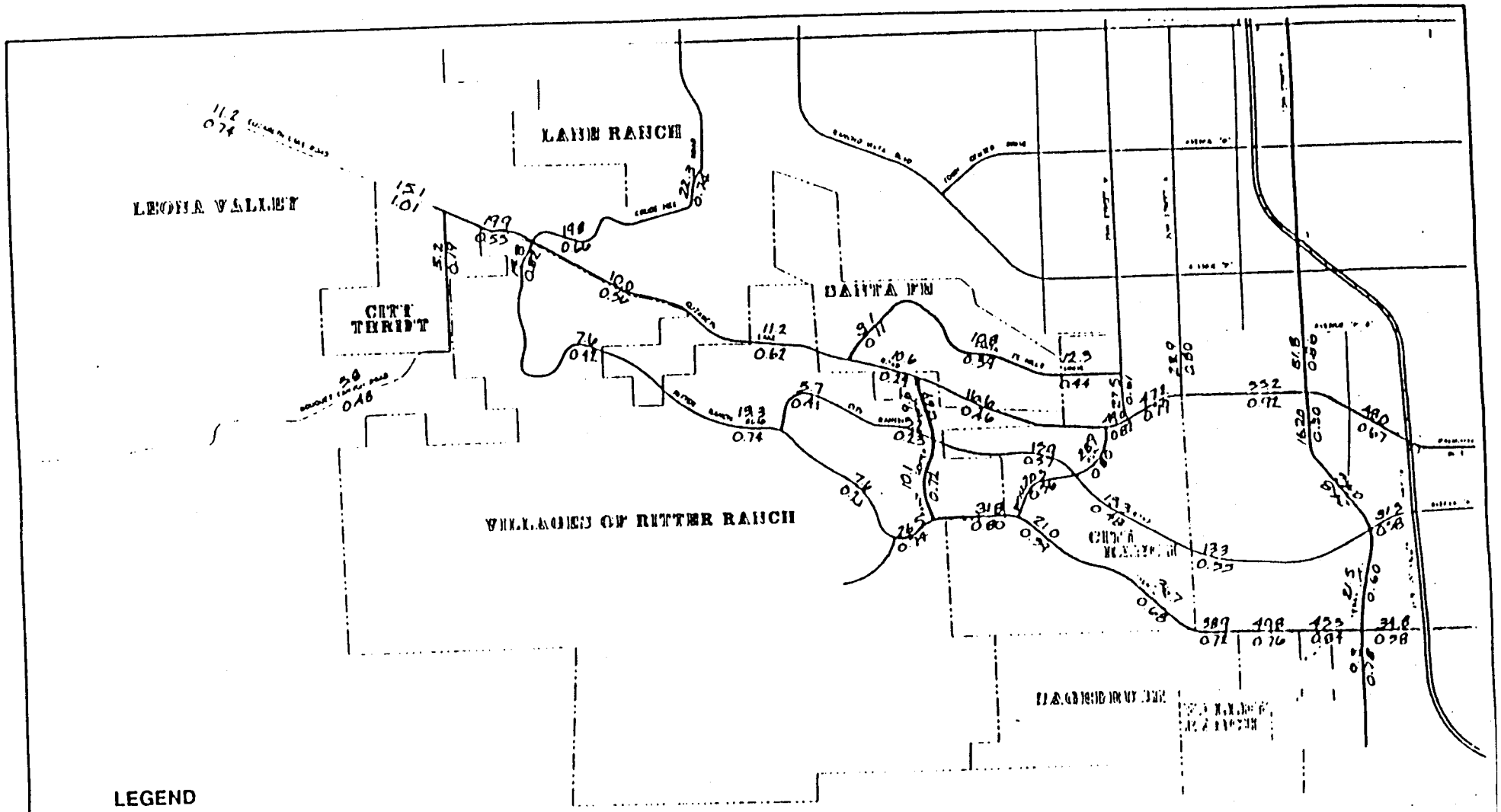

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7.6 = Daily Traffic Volume In 1000's
0.21 = Volume to Capacity (V/C) Ratio

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SOURCE: DKS Associates, 1990

PROJECTED YEAR 2010 DAILY TRAFFIC VOLUMES AND LEVELS OF SERVICE

FIGURE 46

TABLE 16

Year 2010 ICU and LOS Summary

Intersection	AM Peak ICU-LOS	PM Peak ICU-LOS
Palmdale Boulevard @		
- SR 14 SB Ramp	0.82-D	0.89-D
- SR 14 NB Ramp	0.43-A	0.82-D
- 10th Street West	0.85-D	0.89-D
Elizabeth Lake Road @		
- 20th Street West	0.83-D	0.79-C
- 25th Street West	0.66-B	0.75-C
- Bridge Road	0.88-D	0.81-D
City Ranch Road @		
- Tierra Subida	0.77-C	0.89-D
- Bridge Road	0.64-B	0.79-C
Avenue S @		
- SR 14 SB Ramp	0.24-A	0.81-D
- SR 15 NB Ramp	0.33-A	0.87-D
- Tierra Subida	0.89-D	0.89-D
- Bridge Road	0.43-A	0.85-D

Source: Circulation and Transportation Needs Study for Palmdale Southwest Planning Area, DKS Associates; Revised July, 1990; Table 3-4.

TABLE 17

Year 2010 Traffic Volume Projections

Roadway Link	Year 2010 Without Project	Year 2010 With Project	Percent Reduction Without Project
Elizabeth Lake Road			
- 10th to 20th St. W.	57,300	55,200	1%
- 20th to 25th St. W.	43,600	47,200	13%
- 25th to Bridge Road	37,600	44,000	33%
- W. of Bouquet Cyn.	15,300	15,100	0%
10th Street West			
- N. of Palmdale Blvd.	46,400	51,900	11%
Avenue S			
- W. of Tierra Subida	35,000	46,200	24%
City Ranch Road			
- E. of Project Site	8,700	13,300	41%

Source: Circulation and Transportation Needs Study for Palmdale Southwest Planning Area, DKS Associates; Revised July, 1990; Table 3-5.

- Elizabeth Lake Road between 20th Street West and 25th Street West. Traffic volumes without City Ranch would be reduced by 3,400 daily trips. Without the City Ranch project, daily volumes on this segment of Elizabeth Lake Road would be within LOS C and clearly would not require additional lanes beyond the six lanes proposed.

- Elizabeth Lake Road between 25th Street West and Bridge Road. This segment would be the most heavily impacted segment. Traffic volumes without City Ranch would be 12,100 daily trips lower than with the project. Daily volumes on this segment of Elizabeth Lake Road would be 36,900 trips without the proposed project, which would be at or below LOS C and would not require more than six lanes.

- Avenue S/Ritter Ranch Road. Year 2010 forecasts had indicated that additional lanes may be needed on this segment. Without City Ranch, volumes would be lower by 13,000 daily trips; operating level would be LOS B and additional lanes would not be required. This would suggest a direct adverse impact due to the project. However, examination of the traffic patterns on this link indicates that heavy volumes are mainly due to the traffic loading from the Valley Ranch development located southeast of the project site. Approximately 12,000 daily trips would be loaded on this link from the Valley Ranch development. In addition, capacity deficiencies appear only on a short segment east of the Valley Ranch property and are not present for a significant length of the proposed roadway. Therefore, the impacts at this location would be mainly a result of traffic from the Valley Ranch development.

- Elizabeth Lake Road west of Bouquet Canyon Road. This segment would require additional lanes regardless of the trips from the proposed project. Traffic volumes on this link without the projects would be only 300 lower than the base case. The primary reason for capacity deficiencies on this segment is its assumed

two-lane cross section. In addition, investigation of traffic patterns shows that most of the traffic volumes causing the deficiency would be traffic between points north on Godde Hill Road and developments in Leona Valley. Capacity deficiencies only exist on the short segment west of Bouquet Canyon Road and to the east of Leona Valley.

- 10th Street West north of Elizabeth Lake Road. Traffic volumes without City Ranch are 2,100 trips lower than the base case. However, V/C ratios are within the LOS D range and the need for additional lanes on this segment would exist regardless of the proposed project.

- 25th Street West north of Elizabeth Lake Road. Traffic volumes without City Ranch would be 3,700 daily trips lower and the impacts would be relatively insignificant. There would be no capacity problems on this segment with or without the proposed project.

- City Ranch Road west of Tierra Subida. Volumes without City Ranch would be 4,600 lower. However, there would not be any capacity problems on this arterial and all segments would operate at or better than LOS C.

In summary, one segment of Elizabeth Lake Road between Bridge Road and 25th Street West would require additional improvements because of the City Ranch and adjacent Ritter Ranch project. The segment of 10th Street West just north of Palmdale Boulevard would also be adversely impacted when the City Ranch project is developed, and would require improvement.

All other deficient arterial segments would either have capacity problems regardless of the proposed project or the capacity deficiency would be mostly due to traffic impacts of developments other than City Ranch.

Project Traffic Contribution On Regional Network

For comparison purposes, probable traffic contributions of the City Ranch project was calculated based on a series of forecasting computer outputs under various alternatives. The percent contribution of the project on the regional circulation system was calculated by comparing total year 2010 volumes to traffic volumes under the scenarios without the project. Probable percent contribution of the project was assumed to be the percent reduction of traffic volume on a particular link as a result of taking the project out of the forecast model. **Figure 47** shows the projected probable percentage contribution of the City Ranch project to the total traffic. Contribution values less than 0.5 percent are shown as insignificant in this analysis.

Site Access and Internal Circulation

The placement of the access points meets the City's minimum intersection spacing criteria and is satisfactory in terms of the distance from existing intersections. With regard to internal circulation, two lane collector streets will occur at all points where two-lane access to arterial roads occur. This is expected to result in a satisfactory flow of traffic.

Other Considerations

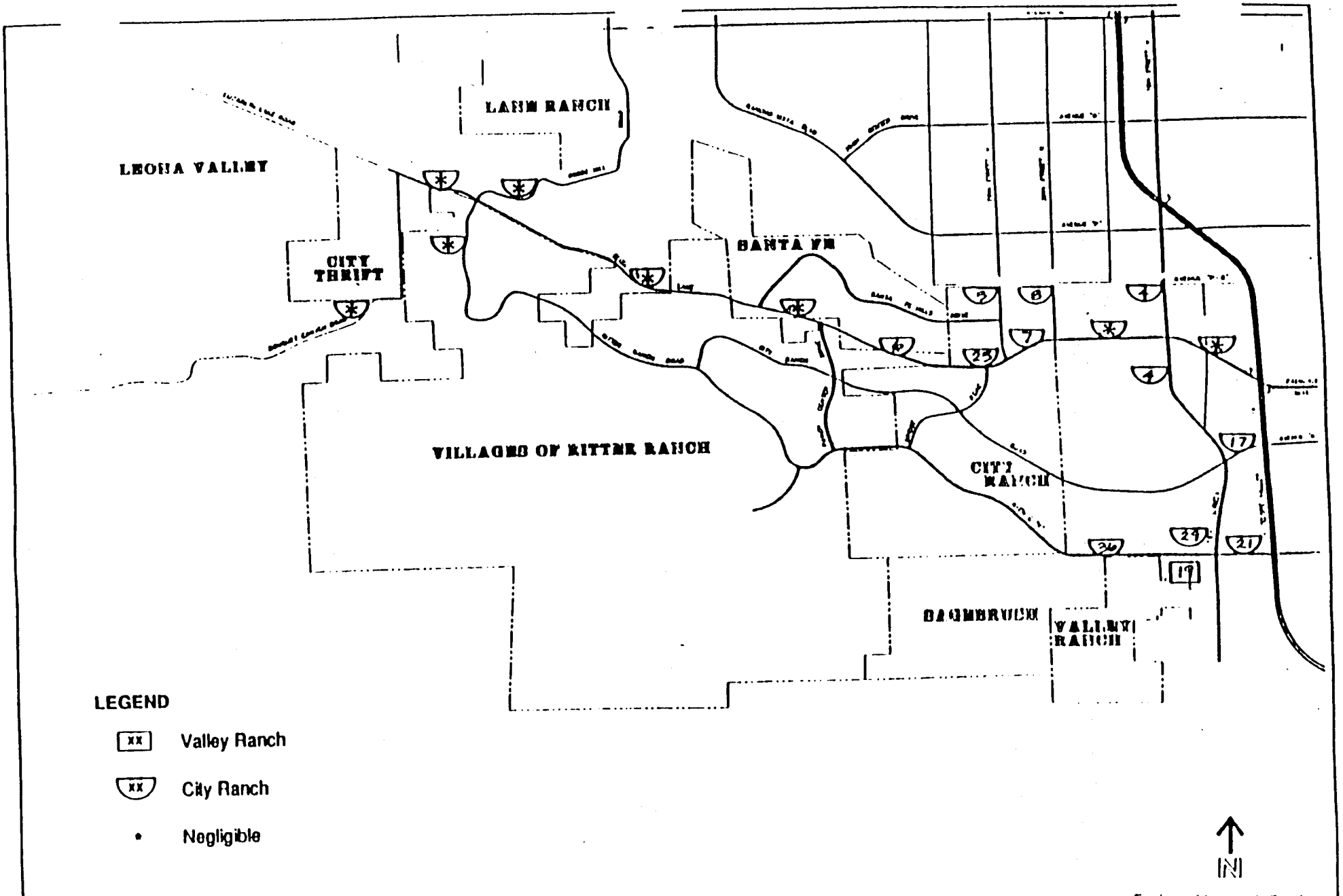
The proposed project would create a mixed-use development which would benefit from bikeway and pedestrian linkages that encourage local trips by modes other than the private automobile. The growing use of bicycles makes the integration of bikeways on-site particularly beneficial. The location of bicycle lanes within roadway rights-of-way allows the maintenance of the bicycle lanes to occur in conjunction with the maintenance of the road.

TABLE 17

Year 2010 Traffic Volume Projections

Roadway Link	Year 2010 Without Project	Year 2010 With Project	Percent Reduction Without Project
Elizabeth Lake Road			
- 10th to 20th St. W.	57,300	55,200	1%
- 20th to 25th St. W.	43,600	47,200	13%
- 25th to Bridge Road	37,600	44,000	33%
- W. of Bouquet Cyn.	15,300	15,100	0%
10th Street West			
- N. of Palmdale Blvd.	46,400	51,900	11%
Avenue S			
- W. of Tierra Subida	35,000	46,200	24%
City Ranch Road			
- E. of Project Site	8,700	13,300	41%

Source: Circulation and Transportation Needs Study for Palmdale Southwest Planning Area, DKS Associates; Revised July, 1990; Table 3-5.



SOURCE DKS Associates, 1990

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PERCENT TRAFFIC CONTRIBUTION ON REGIONAL NETWORK

FIGURE 47

Proposed Phasing

To maximize effectiveness and efficiency of the street network, circulation improvements have been proposed in the Specific Plan and will be implemented in phases corresponding to the eight development phases of the project itself. Circulation improvements will proceed as follows:

- During Phase I, Elizabeth Lake Road will be improved from Bridge Road to 20th Street West.

- During Phase 2, construction of Bridge Road between Elizabeth Lake Road and the southern boundary of Planning Area 12. The eastern half of Bridge Road from the southern boundary of Planning Area 12, to Avenue S will be constructed. Construction of City Ranch Road from Bridge Road to the western perimeter of Planning Area 10. In addition, Avenue S (east of Bridge Road) will be improved to its half-width on the eastbound side as far as the eastern perimeter of Planning Area 20.

- During Phase 3, the remainder of Bridge Road will be improved from the southern boundary of Planning Area 12 to Avenue S. The southern half of Avenue S between Bridge Road and the eastern perimeter of Planning Area 19A will be improved in Phase 3. Construction of Avenue S from Bridge Road to the western project boundary will also be improved during Phase 3.

- During Phase 4, a second portion of Avenue S east of Bridge Road to the eastern boundary of Planning Area 19A will be completed. Construction on the southern half of Avenue S will begin from the eastern perimeter of Planning Area 21 to the eastern boundary of the project site. Connection from the eastern boundary of the project site to the 14 Freeway as determined by the Mitigation Monitoring Plan will be initiated.

- During Phase 5, Avenue S will be fully improved from the western perimeter to the eastern perimeter of Planning Area 23.

- Begin construction of required improvements to Avenue S from the western boundary of Planning Area 24 to the eastern boundary of the project site. During Phase 6, Avenue S will be improved from the eastern project boundary to the 14 Freeway. All improvements to Avenue S will be completed during Phase 6.

- (Phase 7 will not have any additional roadway improvements to the primary circulation system on-site.)

- During Phase 8, the last portion of City Ranch Road West (located on-site) will be completed.

5.8.3 Mitigation Measures

Implementation of the following mitigation measures would reduce significant circulation impacts associated with the proposed project to a level of "not significant":

- All roadways shall be built out by the applicant to City approved roadway cross-sections per **Figure 42** of the EIR.

- The proposed internal cross-sections and circulation layout shall be subject to review and approval of the City Traffic Engineer during the development review process to insure compliance with City access and design standards.

- Collector roadways which cross Avenue S shall be signalized. The applicant shall be required to contribute funds on a pro rata basis toward the purchase and installation of the aforementioned traffic signals as determined by the City Traffic Engineer.

- Landscaping and signage on-site shall be low and shall not interfere with sight distances at the site access points or at internal intersections. Street lights and sidewalks shall be provided in accordance with City standards.

- Prior to future development application approvals, the Applicant will be required to submit a Transportation Demand Management Plan and a Focused Traffic Study for review and approval by the Director of Planning and the Traffic Engineer, as appropriate, to determine the necessary improvements for impacts generated by that project. These plans shall be prepared in accordance with the Los Angeles County Transportation Commission's Congestion Management Plan and the City's transportation analysis guidelines, the City's transportation plan, and the Engineering Design Standards. Necessary improvements shall be determined by the City Traffic Engineer, and shall include, but not be limited to, all on-site and off-site road improvements to achieve a Level of Service D (peak period) or better with ultimate traffic projections. On the basis of this and other studies, the developer will improve or fund a pro rata share of improvements. The developer shall pay appropriate traffic impact fees in accordance with City Ordinance 825, and all other fees for facilities and services that may be in place at the time of issuance of certificates of occupancy.

- The applicant shall participate in the construction of a park-and-ride facility to be located on- or off-site at a location within Palmdale Southwest Planning Area designated by the City of Palmda as determined by the City Traffic Engineer.

- The project applicant shall pay applicable traffic impact fees or provide improvements pursuant to future agreements with the City of Palmdale in lieu of fees as required by City Ordinance or Resolution.

- If, as a result of project impacts, the level of service falls below either the standards set by the Los Angeles County Transportation Commission's Congestion Management Plan, or the policies set by the City's General Plan, the applicant

shall implement improvements or services necessary to bring the roadway segment into compliance. The Final Draft CMP, dated August 14, 1991 includes SR-14 and Route 138, and identifies Sierra Highway as a roadway requiring additional study.

- The applicant shall be required to contribute a pro-rata share of the cost of extension of Avenue S to Tierra Subida as determined by the City of Palmdale Traffic Engineer.

- Improvements to the portion of City Ranch Road east of Bridge Road shall be financed by the applicant and/or surrounding property developers as determined by the City of Palmdale Traffic Engineer.

5.8.4 Cumulative Impacts

Cumulative Projects Scenario

Palmdale Southwest Planning Area Circulation and Transportation Needs Study

As an extension of the General Plan modeling effort, DKS Associates completed a year 2010 cumulative assessment of the Palmdale Southwest Planning Area to determine the roadway cross-sections necessary to provide an adequate level of service (DKS Associates, July 1990). This analysis provides a longer range projection (i.e., year 2010) of future traffic conditions than does the cumulative projects scenario described above.

The list of cumulative projects utilized by DKS Associates in their analysis is provided on **Table 18**. **Figure 48** illustrates the boundaries of the traffic analysis zones (TAZs) in which these projects are located. Based on this list of projects, traffic volumes were modeled for the year 2010 (see **Table 17**). Because of the interactive nature of the computer model, a detailed City Ranch South traffic assignment was not provided by DKS. The "without project" numbers shown in **Table 17** represent the traffic model run without volumes in the City Ranch traffic analysis zones.

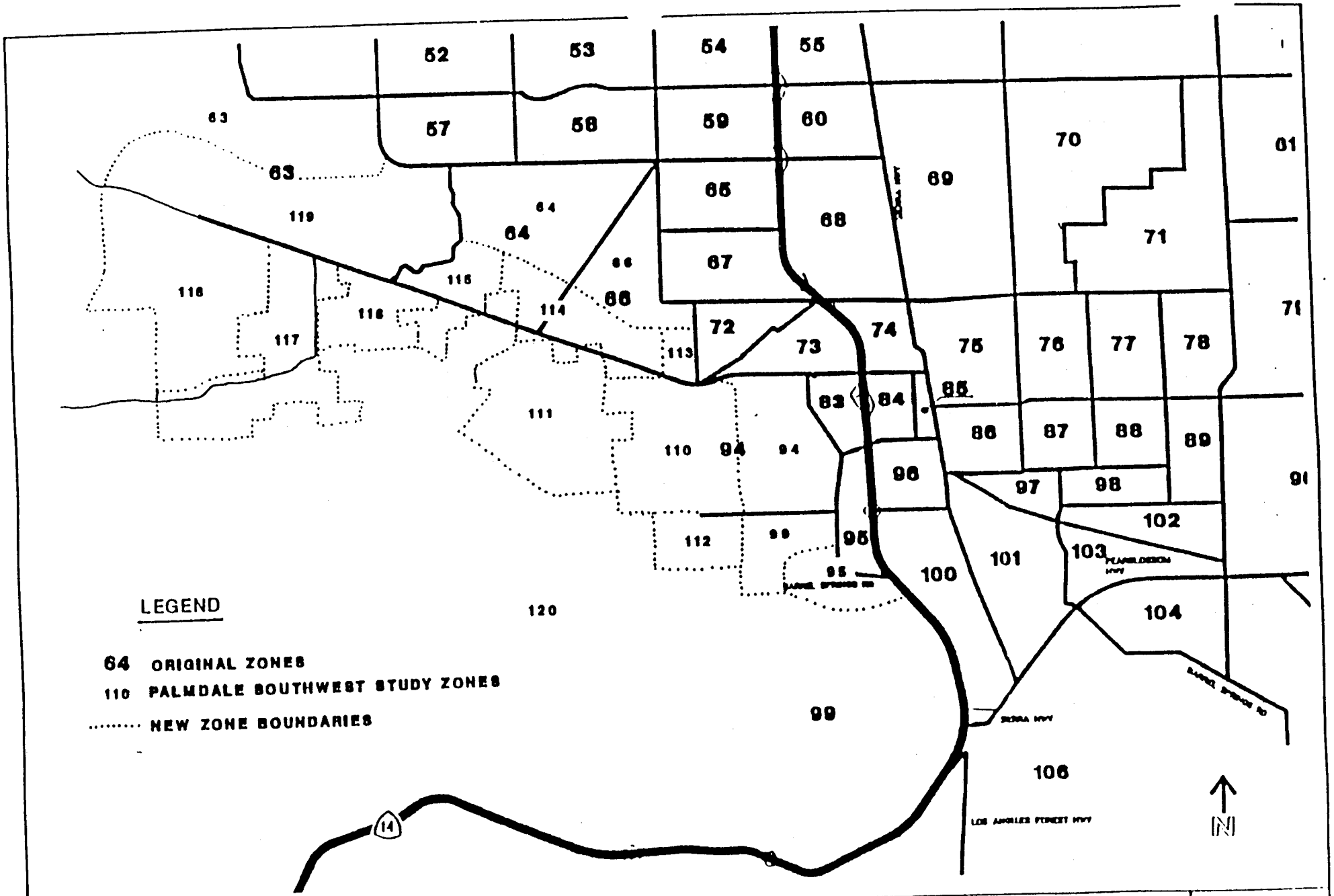
TABLE 18

Forecast Year 2010 Land Use

Project Area	Analysis Zone (TAZ)	Single-family (Units)	Multi-family (Units)	Retail (Acres)	School (Students)	Park (Acres)
Villages of Ritter Ranch	111,116	6,305	895	63.0	1,800	198.0
City Ranch North	113	400			600	
City Ranch South	110	3,558	1,642	17.9	2,400	98.4
Valley Ranch	99	1,137		3.8	600	37.4
S. Elizabeth Lake Rd.	94	1,120				
Santa Fe Hills	114	684	1,466		1,200	17.2
Ana Verde	95	425				
Leona Valley	118	420			600	
Kinoshita	94	412				
Lane Ranch	119	400				
Sagebrush	112	350			600	
Messer Ranch	115	160				
City Thrift	117	135				
Godde Hill	115	125				
San Andreas	119	100				
Bouquet Canyon	117	45				
North Elizabeth	115	40				50.0
N. Santa Fe	114	25				
Northridge West	115	20				
Portal Ridge South	119	20				
Stable Area	117	17				
Peterson	114	5				
Lazy T	114	5				
TOTAL		15,908	4,003	84.7	7,800	401.0

Source: Circulation and Transportation Needs Study for Palmdale Southwest Planning Area, DKS Associates, July, 1990.

N[illegible]e: Forecast land uses are based on a project list prepared in July, 1990. Minor subsequent changes in dwelling unit numbers have occurred. [illegible]r these changes do not significantly modify the above estim[illegible]nd results of the cumulative analysis.



Source: DKS Associates, 1990

TRAFFIC ANALYSIS ZONES FOR 2010 AREAWIDE TRAFFIC STUDY

FIGURE 48

The majority of the traffic volumes projected for 10th Street West and Elizabeth Lake Road will be generated from the heavy commercial development proposed north o Elizabeth Lake Road. **Table 18** shows that the contribution to the congestion along Elizabeth Lake Road. Figure 47 shows that the contribution to the congestion along Elizabeth Lake Road from project-related traffic is .5% (from 20th to 10th Streets West) and 0% (east of 10th Street West). Generally, project-related traffic will divert around this congested area unless it is destined for land uses within this zone.

Table 16 provides a summary of the intersection capacity utilization values and corresponding levels of service for intersections in the project vicinity for the year 2010. All of the intersections analyzed were mitigable to LOS D or better within the cross-sections recommended in the General Plan. Therefore, assuming that master-planned roadway improvements are implemented, cumulative traffic impacts are not expected to be significant.

5.5.5 Unavoidable Adverse Impacts

None.

5.9 AIR QUALITY

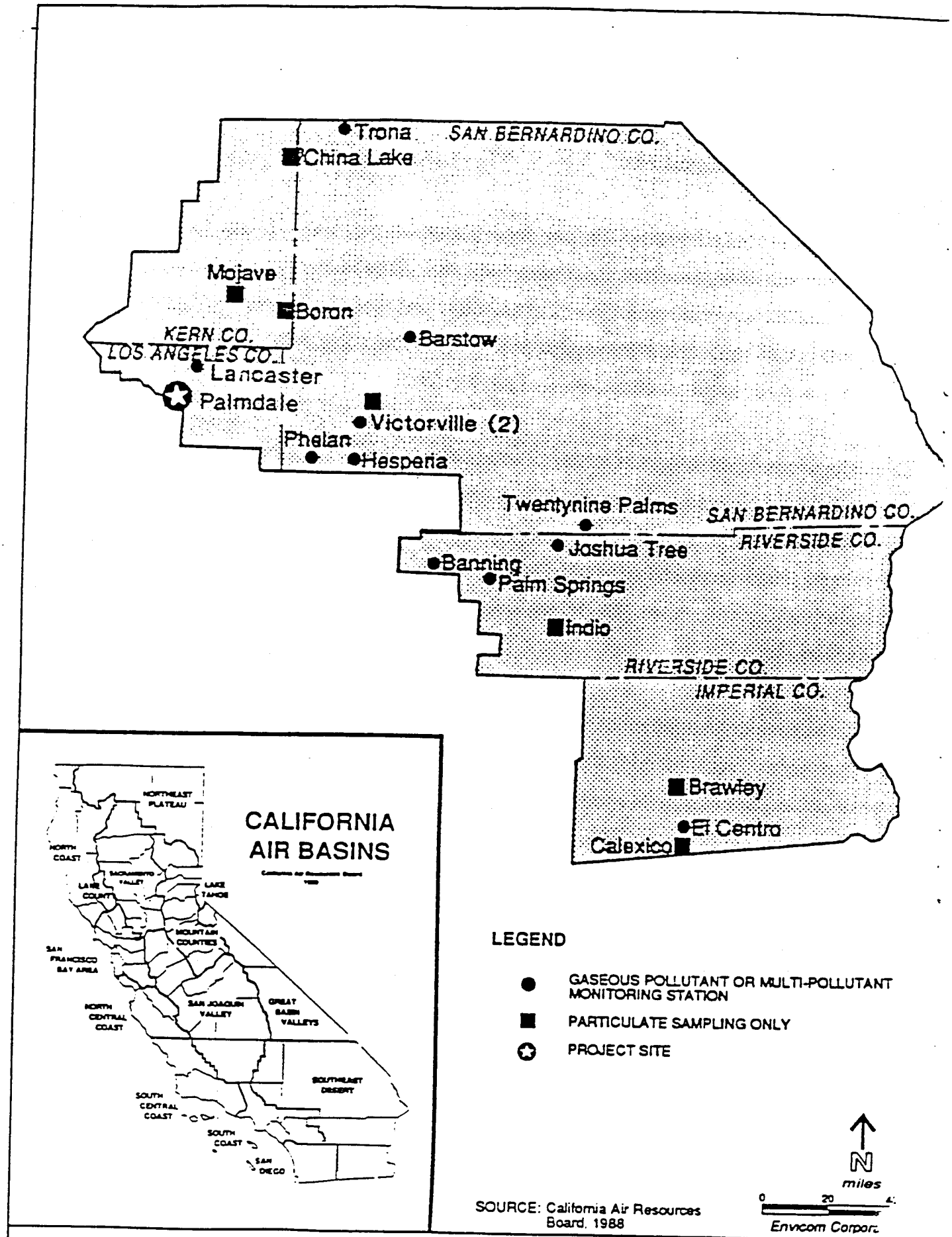
5.9.1 Existing Conditions

Air quality is affected by the rate and location of pollutant emissions and by climatic conditions that influence the movement and dispersion of pollutants. Atmospheric conditions such as wind speed, wind direction, and air temperature gradients, along with local and regional topography, and surrounding land uses provide the links between air pollutant emissions and air quality.

The project site is located within the Southeast Desert Air Basin. The Southeast Desert Air Basin encompasses portions of Kern, Los Angeles, San Diego, Riverside and San Bernardino counties, and all of Imperial County (Figure 49). The Southeast Desert Air Basin contains the Mojave and Colorado Deserts where climate is largely determined by latitude, position on the North American continent, distance from oceans, and topography.

The project site is located in the Anaverde Valley portion of the Antelope Valley at the southern edge of the Mojave Desert. Antelope Valley encompasses approximately 1,200 square miles bounded on the south by the San Gabriel Mountains and on the west by the Tehachapi Mountains. Antelope Valley is an area of relatively slight relief with elevations ranging from 2000 to 2700 feet (Rowlands, et al., 1982).

Presently, the project site is mostly undeveloped. The adjacent Antelope Valley Public Landfill to the east is a source of dust and methane emissions which may create objectionable odors on the project site when winds blow from the east. This condition occurs less than 5% of the time (18 days) annually and because no sensitive receptors are currently on-site, odors are not a significant problem.



SOURCE: California Air Resources Board, 1988

SOUTHEAST DESERT AIR BASIN

FIGURE 49

Climate and Meteorology

The Southeast Desert Air Basin is generally dominated by the Hawaiian subtropical high pressure zone of the Eastern Pacific Ocean during the summer and the Great Basin high pressure zone during the winter. Antelope Valley is dominated by warm and dry continental air during much of the year. Based upon climatic records for the period 1951-80, Anaverde and Antelope Valleys have an arid climatic classification with a large annual deficit of moisture (Mather, 1985).

The coolest months are December through February with a mean monthly minimum temperature of 46.7°F. The warmest months are June through September with a mean monthly maximum temperature of 93.9°F. Compared with a daily mean temperature base of 65°F, Palmdale has an annual mean of 2,908 heating-degree days and 1,760 cooling-degree days. There is often a large daily temperature range, with variations of up to 77°F, between maximum and minimum temperatures in a twenty-four hour period. The daily range is greater in summer than in winter (NOAA, 1982).

Mean annual precipitation, for the 30-year period 1951-80, measured at the National Weather Service climatic station in Palmdale, is 7.38 inches. Anaverde- Antelope Valley is characterized by three kinds of precipitation sources: winter cyclonic storms, monsoon summer storms, and intense tropical storms. Precipitation is extremely variable but generally distributed throughout the year. Based on a 30-year precipitation distribution, 2.9% percent occurs June-August, 18.9% September-November, 54.6% December-February, and 23.4% March-May (Rowlands, et al., 1982; USDC, 1982). Mean annual potential evapotranspiration is estimated to be a minimum of 50 inches annually. Forty-five percent of annual potential evapotranspiration occurs during the summer months of June through August. Anaverde Valley has an estimated mean annual moisture deficit of 45 inches. The large mean negative Index of Moisture (-90) value for Anaverde Valley indicates that even in years of high precipitation and low evapotranspiration, there is a large annual moisture deficit (NOAA, 1982).

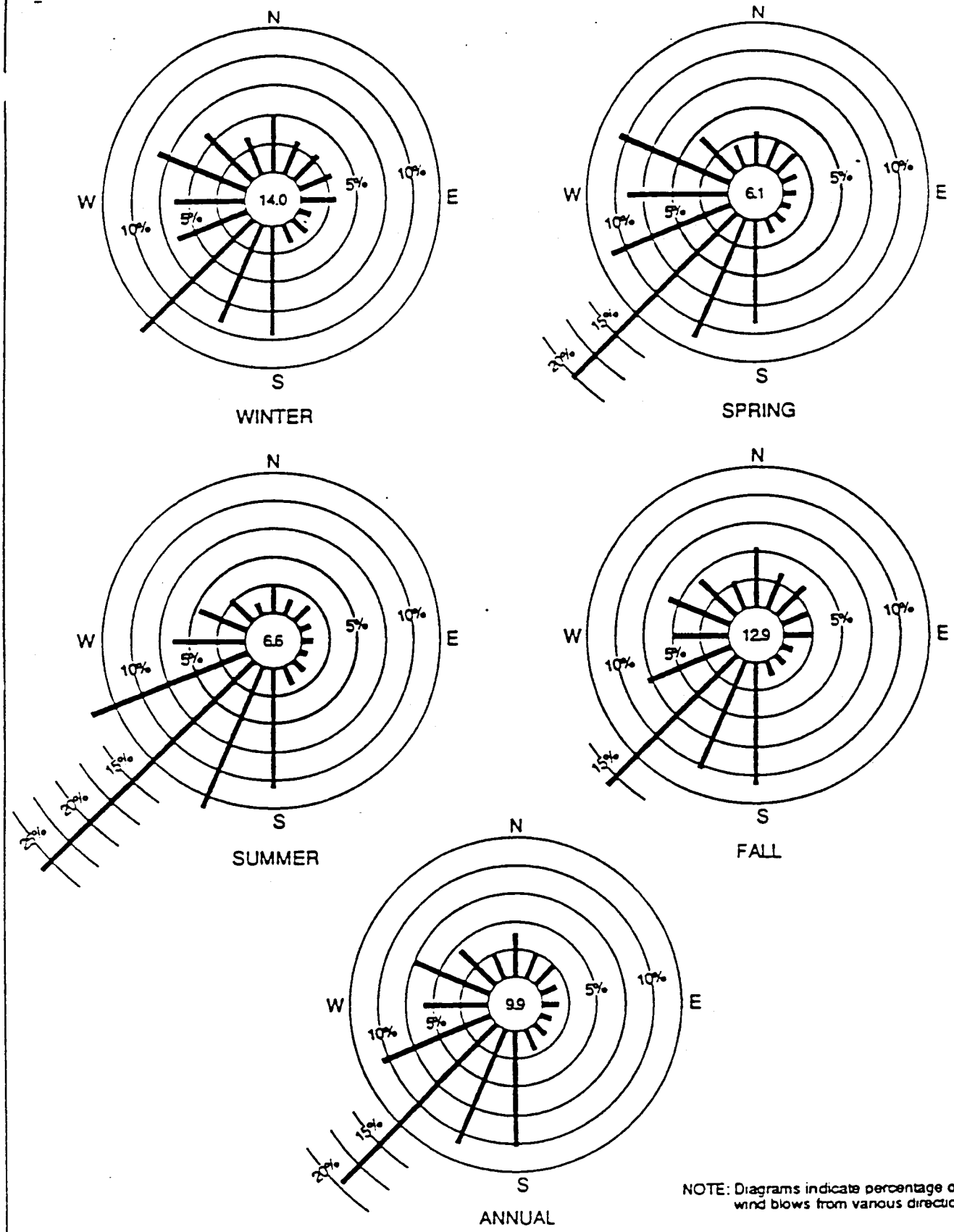
A temperature inversion, with a base between 6,000 to 8,000 feet above the Anaverde-Antelope Valley floor, is present at night throughout the year. The inversion tends to dissolve early in the day during summer. The inversion may persist throughout most of the day during winter when mixing in the lower atmosphere is limited to a height of 200 to 2,000 feet above the surface (Bennett, 1975; Rowlands, et al., 1982). Such inversions restrict the vertical dispersion of air pollutants, and together with strong sunlight, can produce worst case conditions for the formation of photochemical smog. The combination of low wind speeds and low inversions produces the greatest concentration of air pollutants. On days without inversions or days when wind speed is greater than 15 miles per hour, smog potential is greatly reduced.

On a annual basis the predominant wind directions in Palmdale are from the south, and southwest 51.7 percent of the time. Average wind speeds from these directions are 11.5 mph. Winds from the east and northeast occur only five percent of the time on an annual basis. Average wind speeds from these directions are 8.9 mph (**Figure 50**).

The Southeast Desert Air Basin is sheltered from maritime influences and gross interbasin transport of air pollution by mountain barriers to the west and south. Entry points into the Southeast Desert Air Basin where some limited interbasin transport of air pollutants may take place include Tehachapi Pass, Tejon Pass (4,183 ft.), Soledad Canyon, Cajon Pass (4,260 ft.), Morongo Valley, Yucca Valley, and San Gorgonio Pass (2,559 ft.) (Bennett, 1975).

Air Quality Regulations and Plans

The Anaverde Valley has been classified by the U.S. Environmental Protection Agency as a "non-attainment area" under the Federal Clean Air Act. This means that the area exceeds federally established ambient air quality standards for specific criteria air pollutants. National Ambient Air Quality Standards (NAAQS) have been established for carbon monoxide (CO), ozone (O_3), sulfur oxides (SO_x), nitrogen oxides (NO_x), fine



NOTE: Diagrams indicate percentage of time wind blows from various directions

Source: California Air Resources Board

Envicom Macintosh Graphic

SURFACE WIND SUMMARY WIND ROSES - PALMDALE STATION

FIGURE 50

particulate matter (PM_{10}) and lead (Pb) (**Table 19**). California has established ambient air quality standards for additional pollutants. California standards are generally more stringent than corresponding Federal standards (**Table 20**). The Southeast Desert Air Basin exceeds state and national ambient air quality standards on as many as 166 days per year. Potentially unhealthful air conditions are described by the SCAQMD as Stage 1 through 3 conditions. Episodic criteria for these stages and the actions to be taken are provided in **Table 21**.

The South Coast Air Quality Management District is empowered to regulate stationary sources in Palmdale and within the Southeast Desert Air Basin. The SCAQMD develops and enforces air quality rules and regulations in air quality planning, and operates the regional air quality monitoring network. In 1989, SCAQMD adopted the *Regional Air Quality Management Plan (AQMP)*. The *AQMP* establishes air pollution control strategies in an effort to set forth a comprehensive program to lead Los Angeles County into compliance with all Federal and California air quality standards. As of 1991, all of Los Angeles County including outlying areas of Palmdale and the project site will be covered under this *AQMP*.

Local jurisdictions are expected to come into conformity with this *Plan*, essentially by adopting an Air Quality Element as part of their General Plans. The Air Quality Element must contain transportation, land use and energy conservation control measures recommended in the *AQMP*. The City of Palmdale General Plan does not have an Air Quality Element. Until a local government adopts an Air Quality Element, all regionally significant general development projects as defined by SCAG's Guidance for Implementation of Conformity Procedures are subject to review by SCAG as to conformity with the *AQMP*. The three conformity criteria by which a project is judged are:

TABLE 19

Description of Selected Air Contaminants and Emission Comparisons

PHOTOCHEMICAL OXIDANT (0_x)

Characteristics - Photochemical oxidants include several different pollutants, but consist primarily of ozone (more than 90 percent) and a group of chemicals called organic peroxynitrates. Photochemical oxidants are created in the atmosphere rather than emitted directly into the air. Reactive organic gases, including hydrocarbons, and oxides of nitrogen are the emitted contaminants that participate in the reaction. Ozone is a pungent, colorless toxic gas that is produced by the photochemical process. Photochemical oxidant is a characteristic of Southern California smog and reaches highest concentrations during the summer and early fall.

Sources - Photochemical smog is caused by complex atmospheric reactions involving oxides of nitrogen and reactive organic gases with ultraviolet energy from sunlight. Motor vehicles are the major source of oxides of nitrogen and reactive organic gases in the basin.

Effects - The common manifestations of oxidants are damage to vegetation and cracking of untreated rubber. Photochemical oxidants in high concentrations can also directly affect the lungs, causing respiratory irritation and possible changes in lung functions.

CARBON MONOXIDE (CO)

Characteristics - CO is a colorless, odorless, toxic gas produced through the incomplete combustion of fossil fuels. Concentrations are higher in winter when more fuel is burned and weather conditions favor the buildup of directly emitted contaminants.

Sources - The use of gasoline powered engines is the major source of this contaminant, with automobiles being the primary contributor. However, various industrial processes also produce CO emissions through incomplete combustion of fossil fuels.

Effects - CO does not irritate the respiratory tract, but it passes through the lungs directly into the blood stream and, by interfering with the transfer of oxygen, deprives sensitive tissues of oxygen.

NITROGEN OXIDES (NO_x)

Characteristics - Nitrogen oxides consist primarily of nitric oxide (NO) (a colorless, odorless gas formed from atmospheric nitrogen and oxygen when petroleum combustion takes place under high temperatures and/or pressure) and nitrogen dioxide (NO_2) (a reddish-brown irritating gas formed by the combination of nitric oxide with oxygen).

Sources - High combustion temperatures cause nitrogen and oxygen to combine and form nitric oxide. Further reaction produces additional oxides of nitrogen. Combustion in motor vehicle engines, power plants, refineries, and other industrial operations are the primary sources in the region. Ships, railroads, and aircraft are other significant sources.

Effects - Oxides of nitrogen contribute directly to photochemical smog reactions. The emitted compound, nitric oxide, combines with oxygen in the atmosphere in the presence of hydrocarbons and sunlight to form nitrogen dioxide and ozone. Nitrogen dioxide, the most significant of these pollutants, can color the atmosphere at concentrations as low as 0.5 ppm on days of 210-mile visibility. NO_x is an important air pollutant in the region because it is a primary receptor of ultraviolet light, which initiates the reactions producing photochemical smog. It will also react in the air to form nitrate particulates.

TABLE 19 (Cont.)

SULFUR DIOXIDE (SO_2)

Characteristics - SO_2 is a colorless, pungent, irritating gas formed primarily by the combustion of sulfur-containing fossil fuels. In humid atmospheres, some SO_2 may be changed to sulfur trioxide and sulfuric acid mist, some of the latter of which can eventually react with other materials to produce sulfate particulates.

Sources - This contaminant is the natural combustion product of sulfur or sulfur-containing fuels. Fuel combustion is the major source and chemical plants, sulfur recovery plants, and metal processing are minor contributors. SO_2 can harm lung tissues. Sulfur oxides, in combination with moisture and oxygen, can yellow plant leaves, dissolve marble, and eat away iron and steel. Sulfur oxides can also react to form sulfates that reduce visibility and diminish light from the sun.

PARTICULATES (TSP and PM_{10})

Characteristics - Atmospheric particulates are made up of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. By weight, about 90% of the emitted particles are larger than 10 microns in diameter, but about 90% of the total number of particulates are less than 5 microns in diameter. The aerosols formed in the atmosphere, primarily sulfate and nitrate, are usually smaller than 1 micron. In areas close to major sources, particulate concentrations are generally higher in the winter, when more fuel is burned and meteorological conditions favor the buildup of directly emitted contaminants. However, in areas remote from major sources and subject to photochemical smog, particulate concentrations are higher during summer months.

Sources - Particulate matter consists of particles in the atmosphere resulting from many kinds of dust- and fume-producing industrial and agricultural operations, from combustion, and from atmospheric photochemical reactions. Natural activities also release particulates to the atmosphere; wind-raised dust and ocean spray are two such sources.

Effects - In the respiratory tract, very small particles of certain substances may produce injury by themselves or may contain absorbed gases that are injurious. Suspended in the air, particulates of aerosol size can both scatter and absorb sunlight, producing haze and reducing visibility. They can also cause a wide range of damage to materials.

HYDROCARBONS AND OTHER ORGANIC GASES (THC, CH_4, NMHC, AHC, NHC)

Characteristics - Hydrocarbons include any of the vast family of compounds consisting of hydrogen and carbon in various combinations. Fossil fuels are included in this group. Many hydrocarbon compounds are major air pollutants, and those classified as olefins or aromatics are highly photochemically reactive. Atmospheric hydrocarbon concentrations are generally higher in winter when the reactive hydrocarbons react more slowly and meteorological conditions are more favorable to their accumulating in the atmosphere to higher concentrations before producing photochemical oxidants.

Sources - Motor vehicles are a major source of anthropogenic hydrocarbons (AHC) in the basin. Other sources include evaporation of organic solvents and petroleum refining and marketing operations. Trees are the principal emitters of biogenic or natural hydrocarbons (NHC) (Chameides, 1988).

Effects - Certain hydrocarbons can damage plants by inhibiting growth and causing flowers and leaves to fall. Levels of hydrocarbons currently measured in urban areas are not known to cause adverse effects in humans. However, certain members of this contaminant group are important components in the reactions that produce photochemical oxidants.

TABLE 20

Ambient Air Quality Standards

Air Pollutant	Avg. Time	CALIFORNIA Concentration	CALIFORNIA Method	FEDERAL Primary	FEDERAL Secondary	FEDERAL Method
Oxidant	1 hour	0.10 ppm (200 μgm^{-3})	Ultraviolet Photometry	-	-	-
Ozone	1 hour	0.10 ppm (200 μgm^{-3})	Ultraviolet Photometry	0.12 ppm (235 μgm^{-3})	0.12 ppm (235 μgm^{-3})	Ethylene Chemiluminescence
Carbon Monoxide	8 hour	9 ppm (10 μgm^{-3})	Non-dispersive Infrared Spectroscopy (NDIR)	9 ppm (10 μgm^{-3})	9 ppm (10 μgm^{-3})	Non-dispersive Infrared Spectroscopy (NDIR)
	1 hour	20 ppm (23 μgm^{-3})		35 ppm (40 μgm^{-3})	35 ppm (40 μgm^{-3})	
Nitrogen Dioxide	1 hour	0.25 ppm (470 μgm^{-3})	Gas Phase Chemiluminescence	0.053 ppm (100 μgm^{-3})	0.053 ppm (100 μgm^{-3})	Gas Phase Chemiluminescence
Sulfur Dioxide	24 hour	0.053 ppm (131 μgm^{-3})	Ultraviolet Fluorescence	0.03 ppm (80 μgm^{-3})		Pararosaniline
				0.14 ppm (365 μgm^{-3})		
	3 hour	-			0.53 ppm (1300 μgm^{-3})	
	1 hour	0.25 ppm (655 μgm^{-3})				
Total Suspended Particulate (TSP)	Annual Geometric Mean	-	-	75 μgm^{-3}	60 μgm^{-3}	High Volume Sampling
	24 hour			260 μgm^{-3}	150 μgm^{-3}	
Suspended Particulate Matter (PM_{10})	Annual Geometric Mean	30 μgm^{-3}	Size segregated inlet high volume sampling	50 μgm^{-3}	150 μgm^{-3}	-
	24 hour	50 μgm^{-3}				

TABLE 20 (Cont).

Air Pollutant	Avg. Time	CALIFORNIA Concentration	CALIFORNIA Method	FEDERAL Primary	FEDERAL Secondary	FEDERAL Method
Sulfates	24 hour	25 μgm^{-3}	Turbid imetric Barium sulfate	-	-	-
Lead	30-day Average Calendar Quarter	1.5 μgm^{-3}	High Volume Sampling X-ray Fluorescence	1.5 μgm^{-3}	1.5 μgm^{-3}	High Volume Sampling Atomic absorption Spectrophotometry
Hydrogen Sulfide	1 hour	0.03 ppm (42 μgm^{-3})	Cadmium Hydroxide Stractan	-	-	-
Vinyl Chloride (chloroethene)	24 hour	0.010 ppm (26 μgm^{-3})	Tedlar Bag Collection Gas Chromatography	-	-	-
Ethylene	8 hour 1 hour	0.10 ppm 0.50 ppm	-	-	-	-
Visibility Reducing Particles	1 observation	In sufficient amount to reduce prevailing visibility to less than 16 kilometers at relative humidity <70%				

Source: SCAQMD, 1987, Title 40 CFR Parts 50-87.

TABLE 21

Episodic Criteria

Air Pollutant	Avg. Time	SCAQMD AND CALIFORNIA Stage 1	Stage 2	Stage 3	FEDERAL Stage 1	Stage 2	Stage 3
Ozone	1 hour	0.20 ppm	0.35 ppm	0.50 ppm	-	-	0.50 ppm
Carbon Monoxide	12 hour	20 ppm	35 ppm	50 ppm	-	-	-
	8 hour	-	-	-	15 ppm	30 ppm	40 ppm
	1 hour	40 ppm	75 ppm	100 ppm	-	-	-
Nitrogen Dioxide	24 hour	-	-	-	0.15 ppm	0.30 ppm	0.40 ppm
	1 hour	-	-	-	0.60 ppm	1.20 ppm	1.60 ppm
Sulfur Dioxide	24 hour	0.20 ppm	0.70 ppm	0.90 ppm	-	-	-
	1 hour	0.50 ppm	1.00 ppm	2.00 ppm	-	-	-
Sulfur Dioxide and Particulate Matter Combined	24 hour	-	-	-	65,000*	261,000*	393,000*
Particulate	24 hour	-	-	-	375 μgm^{-3}	625 μgm^{-3}	875 μgm^{-3}
Sulfates**	24 hour	25 μgm^{-3} combined with ozone >0.20 ppm 1 hour average			-	-	-
Actions to be Taken		Health advisory to a) persons with respiratory and coronary disease; b) school officials in order to curtail students' participation in strenuous activities. First steps in abatement plans.	Intermediate stage. Abatement actions taken to reduce concentration of pollutant at issue.	Mandatory abatement measures. Extensive actions taken to prevent exposure at indicated levels. State can take action if local efforts failed.	Open burning prohibited. Reduction in vehicle operation requested. Industrial curtailment.	Incinerator use prohibited. Reduction in vehicle operation required. Further industrial curtailment.	Vehicle use prohibited. Industry shutdown or curtailment. Public activities ceased.

*Product of Sulfur dioxide (ppm), particulate matter (μgm^{-3}) and a factor (2620).
**Not classified according to stages.

Source: SCAQMD, 1987.

1) whether or not the project has a positive or neutral effect on the subregion's jobs/housing performance ratio;

2) whether or not the project reduces vehicle miles traveled to the greatest extent feasible through transportation demand management strategies; and

3) whether or not the project employs transportation, land use and energy control measures such that the project will not have a significant negative impact on air quality in the long term.

Existing Air Quality

The Lancaster air quality monitoring station, approximately 10 miles northeast of City Ranch, is the nearest air quality monitoring station to the project site (California Air Resources Board, 1988). The Lancaster air quality monitoring station monitors ozone (O_3), carbon monoxide (CO), nitrogen oxides (NO_x), and particulates, and noncriteria pollutants of toxic gases, toxic metals, and sulfates.

The California Air Resources Board which regulates mobile emissions oversees the activities of regional air quality management districts in California, has identified Lancaster as an area that frequently exceeds California and Federal standards for 8-hour and 1-hour peak concentrations of ozone (O_3) (California Air Resources Board, 1985, 1986, 1987, 1988, 1989). NAAQS for ozone (O_3) were exceeded during 1985 through 1989. While information on ten micron particulates is not available from the Lancaster station, the California PM_{10} standard was exceeded in the Southeast Desert Air Basin as a whole during 1985 through 1988. Soil dust and motor vehicles are believed to contribute the largest proportion of particulates in Anaverde Valley. Other pollutant concentrations are presently being recorded below California and Federal standards at the Lancaster air quality monitoring site (Table 22).

TABLE 22

Measured Ambient Air Quality
Lancaster Monitoring Site - 1986-1989

	1986	1987	1988	1989
CARBON MONOXIDE				
Maximum Concentration ppm 1hr	9.0	12.0	11.0	13.0
Maximum Concentration ppm 8hr	4.60	3.90	2.47	2.45
No. Days Exceeded				
Federal ≥9.5 ppm 8hr	-	-	-	-
Federal >35 ppm 1hr	-	-	-	-
California ≥9.1 ppm 8hr	0	0	0	0
California > 20 ppm 1hr	0	0	0	0
OZONE				
Maximum Concentration ppm 1hr	0.20	0.17	0.18	0.21
No. Days Exceeded				
Federal > .12 ppm 1hr	47	32	44	27
California ≥ .10 ppm 1hr	108	105	105	95
NITROGEN DIOXIDE (NO_2)				
Maximum Concentration ppm 1hr	0.9	0.9	0.9	0.8
Standard Criterion[1] Federal				
Annual Mean ppm	0.014	0.016	0.016	0.19
No. Days Exceeded				
California > .25 ppm 1hr	0	0	0	0
SUSPENDED PARTICULATES (TSP)				
Number of Samples	59	60	58	60
Maximum 24-Hr. Concentration $\mu g\ m^{-3}$	137	187	257	154
No. Samples Exceeding Standard				
>150 $\mu g\ m^{-3}$	0	1	2	1
>100 $\mu g\ m^{-3}$	4	11	12	12
Geometric Mean Concentration $\mu g\ m^{-3}$	61.5	64.2	69.9	72.6
SULFATE (SO_4)				
Maximum 24-Hr. Concentration $\mu g\ m^{-3}$	8.9	7.3	5.7	6.7
Number of Sample Exceeding Std.				
California ≥25 $\mu g\ m^{-3}$ 24-Hour	0	0	0	0
NITRATE (NO_3)				
Annual Maximum 24 hour Mean	10.9	-	-	15.3
Annual Mean $\mu g\ m^{-3}$	4.65	-	-	2.12

Notes:
PPM - Parts by volume per million parts of air; NM - Pollutant not monitored; * - Data received from FAA.; $\mu g\ m^{-3}$ - micrograms per cubic meter.
Source: California Air Resources Board, 1985, 1986, 1987, 1987, 1988.

1. The federal standard is annual arithmetic mean NO_2 greater than 0.0534 ppm.

Sensitive Receptors

Land uses such as schools, playgrounds, day care centers, convalescent homes, retirement homes, hospitals, and clinics are considered sensitive to air pollutant emissions due to the population groups typically occupying such areas. (Air Quality Handbook for Preparing Environmental Impact Reports, SCAQMD, 1987). The young, the old and the infirm are generally more susceptible to respiratory infections and other air quality-related health problems than are other members of the general population. Residential uses are also considered sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time resulting in sustained exposure to any pollutants present.

While the area immediately surrounding the project site is undeveloped, sensitive receptors are located within one mile of the project site. Octotillo Elementary School is located approximately 1/2 mile to the east, Juniper Intermediate School is located approximately one mile to the east. Highland High School is located 1/2 mile north of the project. Residential and school projects are approved for sites within one mile of the project site to the north. There are no agricultural crop areas in the vicinity of the project site.

5.9.2 Project Impacts

The following air quality analysis is based upon vehicle trips estimated for the May, 1990 version of the City Ranch Specific Plan. This previous plan generated 3% more vehicle trips than the currently proposed project. Therefore, this air quality analysis represents a slightly worse case condition.

The proposed project would contribute to the air emissions inventory in the Anaverde Valley/Palmdale area on a short- and long-term basis, and would incrementally affect Antelope Valley and the Southeast Desert Air Basin air quality.

Short-term Impacts

Significant short-term air quality impacts would primarily occur as a result of fugitive dust emissions generated during grading and construction activities and diesel emissions generated by heavy-duty construction vehicles.

The proposed project is expected to be constructed over a 10-year period. Grading and the generation of fugitive dust will occur on approximately 1,500 acres of the site. Assuming an average emission factor for grading activities of 1.2 tons of dust per month of activity per acre disturbed and a three month grading period per construction phase, grading would generate approximately 5,400 tons of dust over the life of the project. This factor can be reduced by half through dust suppression techniques such as regular watering during the grading phase (particularly on unpaved roads used by construction vehicles).

Fugitive dust is typically chemically inert. Large diameter particles are readily filtered by human breathing passages and therefore do not represent a significant health concern. Fine-grained particle emissions may be dispersed over greater distances, especially during Santa Ana wind conditions. It has been estimated the 30 to 40 percent of the suspended particulate matter generated during grading is comprised of these fine-grained particles called PM_{10} particulates whose diameters are less than ten microns, small enough to be of concern from a public health perspective.

Existing nearby sensitive receptors may be affected by project grading dust emissions (Octotillo Elementary School and Juniper Intermediate School). Also, because proposed project construction is phased over a 10-year period, the approved school and residential projects approximately one mile to the north of the site may be operating during City Ranch grading operation periods. These sensitive receptors may suffer adverse health impacts as a result of project-related grading.

Short-term emissions would also be generated by the operation of construction vehicles. As shown on **Table 23**, daily construction-related vehicle emissions would exceed the SCAQMD threshold for NO_x emissions.

Long-term Impacts

Project Emissions

Upon completion of the project, emissions would be generated by mobile and stationary sources generated by the proposed project. Stationary emissions include those from the use of natural gas and electricity. Mobile emissions are those from motor vehicle combustion. Estimated long-term stationary and mobile emissions were projected using SCAQMD's Air Quality Handbook for Preparing Environmental Impact Reports (April, 1987) generation factors. Emissions calculations are shown in **Table 24**. Development of the proposed project would result in the daily generation of approximately 2,943 pounds of carbon monoxide (CO), 955 pounds of nitrogen oxides (NOx), 198 pounds of particulates and 244 pounds of reactive organic gases (ROG). These long-term project-related mobile and stationary emissions would exceed South Coast Air Quality Management District daily emissions threshold criteria for all of these contaminants. Project stationary emissions alone exceed SCAQMDs suggested threshold for NOx only, while project mobile emissions exceed guidelines established for criteria air pollutants.

Air quality impacts associated with development of the proposed project would cause further degradation of the air quality in the Antelope Valley and Southeast Desert Air Basin. Substances emitted into the air from the project site would predominantly affect the Anaverde Valley, Palmdale, adjacent downwind areas, and Antelope Valley in the northern portion of the Southeast Desert Air Basin. Project-related air emissions are not expected to be reduced to non-significant levels in the long term.

TABLE 23

Estimated Grading and Site Preparation Vehicle Emissions

Equipment	CO Emissions		NO_x Emissions		Particulates		ROG Emissions	
	Factor[1]	lbs day	Factor[1]	lbs day	Factor[1]	lbs day	Factor[1]	lbs day
Diesel								
Watering Trucks (2)	816.81	33.06	1,889.16	76.48	116.0	4.69	86.84	3.51
Scrapers (5)	568.29	57.52	1,740.74	176.18	184.0	18.62	128.15	12.97
Bulldozer (1)	91.25	1.84	375.22	7.59	26.6	0.54	44.55	0.90
Compactors (1)	137.97	2.79	392.90	7.95	22.7	0.46	30.58	0.62
Daily		95.21		268.20		24.31		18.0
SCAQMD Criteria		550		100		150		75
Exceed Criteria		No		Yes		No		No

Emissions factors are listed in grams $hour^{-1}$.
Emissions assume 10-hour work day.
Source of Emissions Factors: SCAQMD (1987). Appendix K-1.
Assumes 700 work days for watering trucks, scrapers and compactors and 350 work days for the bulldozer.

TABLE 24
PROJECT-GENERATED
ESTIMATED BUILDOUT EMISSIONS
(pounds per day)

SOURCE	Emissions CO	NOx	Particulates	ROC
Project Kilowatt hours per day	98,975	98,975	98,975	98,975
Electricity Emission Factor (pounds per 1000 KWH)(1)	0.20	1.15	0.04	0.0
Total Electrical Emissions	19.80	113.82	3.96	0.99
Project cubic ft. per day - commercial	38,702	38,702	38,702	38,702
Project cubic ft. per day - domestic	883,598	883,598	883,598	883,598
Emission Factor - commercial(1)	20	120	0.15	5.[illegible]
Emission Factor - domestic(1) (pounds per million ft3)	20	80	0.15	5.[illegible]
Total Natural Gas Emissions	18.45	75.33	0.14	4.89
•TOTAL STATIONARY EMISSIONS	38	189	4	
Project Distance per day (miles)(2)	327,700	327,700	327,700	32[illegible]
Vehicular Emission Factor(1)(3) (grams per mile)	4.02	1.06	0.269	0.3[illegible]
Total Vehicular Emissions	2,905	766	194	238
•TOTAL PROJECT EMISSIONS	2,943	955	198	244
South Coast Air Quality Management District Threshold Criteria for Requiring an Air Quality Analysis (1)	550	100	150	75
•EXCEEDENCE OVER THRESHOLD	2,393	855	48	169

1. Source: South Coast Air Quality Management District (1987: Appendices D,F,G,H&I)
2. Source: Endo Engineers, 1990.
3. Assumes year 2000 buildout and average speed of 30 mph.

Odors

Perception of the objectionable odors on the project site from the Antelope Valley Public Landfill by future site residents and users will primarily be dependent on landfill operations and predominant wind direction and speed.

Winds from the east, northeast and south in the Palmdale area occur less than 5% of the time. Assuming site conditions are similar to those of the Palmdale vicinity, winds blowing over the project site from the landfill would occur less than 18 days per year. On those days, odors and dust impacts at the project site could be moderate to severe.

Conformance With the Air Quality Management Plan (AQMP)

Because the City of Palmdale has not yet adopted an Air Quality Element, the proposed project, which is considered regionally significant by SCAG's Guidance for Implementation of Conformity Procedures because the Specific Plan proposes over 500 dwelling units, is subject to SCAG review for conformity with the *AQMP*.

As discussed in the Housing section of this EIR, Section 5.4, the Regional Growth Management Plan (February, 1989) recommends that the North Los Angeles subregion return to a JHR of 0.72 in order to reach SCAG's regional jobs/housing balance goals. The proposed project would continue the area trend of developing housing with few jobs opportunities. The project JHR is 0.17. The JHR of the cumulative projects also remains housing rich at 0.65. The proposed project does not, therefore, conform to Criteria 1 of conformance with the *AQMP* (see page 5-176).

The proposed project provides for pedestrian as well as bicycle trails throughout the project site. These trails which would connect residential areas with the commercial centers could result in a reduction in overall vehicle miles traveled. In addition, the Specific Plan proposes to participate in the development of a park-and-ride facility off-site at Avenue S and the 14 Freeway, or on-site, in order to further reduce vehicle miles traveled.

For these reasons, the project is considered to be in conformity with Criteria 2 of the *AQMP*.

The City Ranch Specific Plan includes 260,000 square feet of retail uses and on-site school and recreational facility locations. Together with the proposed park-and-ride and pedestrian and bicycle trails, the proposed project would minimize vehicle miles traveled and would promote alternate forms of transportation. Overall, air pollutant emissions would be reduced. However, even with these features, the proposed project would further degrade air quality in the Antelope Valley and the Southeast Desert Air Basin on a long-term basis. Therefore, the proposed project does not conform with Criteria 3 of the *AQMP*. In conclusion, the proposed project would not be in conformance with two of the three *AQMP* conformity criteria and thus would have a significant negative impact on air quality.

5.9.3 Mitigation Measures

In addition to the implementation of all mitigation measures listed under Sections 5.8, Traffic, 5.13 Energy, and 5.29 Antelope Valley Public Landfill, the following mitigation measures would reduce short-term construction-related impacts to a level of "not significant":

- South Coast Air Quality Management District Rule 403 (on Fugitive Dust) shall be adhered to, to ensure the clean up of construction-related dirt on approach routes to sites within the project site. Rule 403 covers measures such as the removal of particulate matter from equipment prior to movement on paved streets and the prompt removal of any material from paved streets onto which such material has been deposited.

- Building construction shall comply with energy use guidelines in Title 24 of the California Code of Regulations.

Minimize Construction Activity Emissions:

- Schedule construct activity during off-peak hours and require a phased-schedule of construction to even out emissions peaks.
- Remove silt by paving construction roads, sweeping streets, and washing trucks leaving construction site.
- Suspend grading operations during first and second stage smog alerts.
- Maintain construction equipment engines by keeping them tuned.
- Use low-sulfur fuel for equipment.
- Use existing power sources; avoid using temporary power generation.

Reduce Construction-Related Traffic Congestion:

- Provide rideshare and transit incentives for construction personnel.
- Configure construction parking to minimize traffic interferences.
- Minimize obstruction of through traffic lanes.
- Provide a flagperson to guide traffic properly.
- Schedule operations affecting traffic for off-peak hours.

Limit Emissions from Vehicle Trips:

- Establish telecommuting programs, alternative work schedules, and satellite work centers.
- Schedule goods movements for off-peak traffic hours.
- Provide local shuttle and regional transit systems, transit shelter, bicycle lanes, storage areas and amenities, and ensure efficient parking management.
- Provide dedicated turn lanes as appropriate.
- Work with cities/developers/citizens in the region to implement TDM goals.
- Ensure streamlined traffic synchronization.
- Provide park-and-ride facilities.
- Implement parking management at commercial facilities and other places attracting traffic.
- Provide preferential parking to high occupancy vehicles and shuttle services; and charge parking lot fees on low occupancy vehicles.
- Provide temporary roadway controls at peak-hours, such as one-way streets; and install directional traffic signs; and synchronize traffic signals to relieve congestion on surrounding streets; and manage street intersections to improve level of service.

Maximize Energy Conservation:

- Implement energy conservation measures beyond stat- and local requirements.
- Include energy costs in capital expenditure analysis.
- Landscape with native drought-resistant species to reduce water consumption and to provide passive solar benefits.
- Improve thermal integrity of buildings, and reduce thermal load with automated time clocks or occupant sensors.
- Introduce glazed windows, wall insulation, and efficient ventilation methods; install window-systems to reduce thermal gain and loss.
- Introduce energy efficient heating and other appliances.
- Incorporate appropriate passive solar design.
- Ensure sealing of all buildings.
- Control mechanical systems, or equipment with time clocks or computer systems.
- Implement waste separation and recycling programs."

Limit Emissions from Architectural Coatings and Asphalt Usage:

- Nonsolvent-based coatings should be used on buildings. Solvent-based coatings, if used, should minimize solvent emissions.
- Use of high-solid or water-based coatings should be encouraged.

5.9.4 Cumulative Impacts

Development of the proposed project and cumulative projects would result in the generation of an estimated 27,025 pounds of carbon monoxide (CO), 7,040 pounds of nitrogen oxides (NOx), 1,492 pounds of particulates and 2,158 pounds of reactive organic gases (ROG) emissions daily (Table 25). The South Coast Air Quality Management District does not specifically address control requirements for cumulative and adjacent areas, but recognizes that control measures at a project site assist downwind areas to comply with California and Federal air quality standards (SCAQMD, 1988).

5.9.5 Unavoidable Adverse Impacts

Development of the proposed project would add emissions to the already poor regional air quality. Implementation of the recommended mitigation measures would reduce

Palmdale, City of, Planning Department, Jim Paget, Planner, telephone conversation, May 29, 1989.

Palmdale, City of, Planning Department, Sonja Wilson, Planner, telephone conversation, June 12, 1989.

Palmdale Disposal Company, Freddy Valentino, General Manager, telephone conversation, August 24, 1989.

Palmdale Disposal Company, Freddy Valentino, General Manager, telephone conversation, September 5, 1990.

Palmdale School District, Pam Johnson, Facilities Coordinator, correspondence, August 21, 1989.

Palmdale School District, Pam Johnson, Facilities Coordinator, telephone conversation, August 22, 1989.

Palmdale School District, Pam Johnson, Facilities Coordinator, telephone conversation, August 24, 1989.

Palmdale Water Reclamation Plant, Tim Linn, Supervisor, telephone conversation, June 11, 1990.

Sage Associates, Cindy Sage, Owner, correspondence, July 15, 1989.

Sage Associates, Orrin Sage, Geologist, correspondence, August 21, 1989.

Scientific Resource Surveys, Inc., Steve Desautels, Administrator, correspondence, October 5, 1989.

Scientific Resource Surveys, Inc., Robert Beer, Vice President, correspondence, November 21, 1989.

Southern California Association of Governments, Michael Schwarzmann, Marketing Aide, telephone conversation, May 10, 1990.

Southern California Edison Company, David M. Rupp, Customer Service Planner, correspondence, August 11, 1989.

Southern California Gas Co., Ray D. Rawls, Distribution Planning Supervisor, correspondence, July 14, 1989.

U.C. Riverside, Mike Woodburne, Vertebrate Paleontologist, telephone conversation, August 11, 1989.

Westside Union School District, George "Bud" Reams, District Superintendent correspondence, July 17, 1989.

Westside Union School District, George "Bud" Reams, District Superintendent, telephone conversation, August 24, 1989.

Westside Union School District, Cathy Stokes, Accountant Clerk, telephone conversation, September 26, 1990.

TABLE 25

CUMULATIVE PLUS PROPOSED PROJECT
ESTIMATED EMISSIONS
(pounds per day)

SOURCE	Emissions			
	CO	NOx	Particulates	ROG
Cumulative Kilowatt hours per day	579,238	579,238	579,238	579,238
Electricity Emission Factor (pounds per 1000 KWH)(1)	0.20	1.15	0.04	0.01
Total Daily Electrical Emissions	115.85	666.12	16.22	5.79
Cumulative cubic ft. per day - commercial	898,157	898,157	898,157	898,157
Cumulative cubic ft. per day - domestic	3,199,396	3,199,396	3,199,396	3,199,396
Emissions Factor - commercial (1)	20	120	0.15	5.3
Emissions Factor - domestic(1) (pounds per one million ft3)	20	80	0.15	5.3
Total Daily Natural Gas Emissions	81.95	363.73	0.61	21.72
•TOTAL STATIONARY EMISSIONS	198	1030	17	28
Vehicle Miles Travelled per day (2)	2,477,903	2,477,903	2,477,903	2,477,903
Vehicular Emission Factor (grams per mile)(1)(3)	4.91	1.1	0.27	0.39
•TOTAL VEHICULAR EMISSIONS	26,827	6,010	1,475	2,131
•TOTAL CUMULATIVE EMISSIONS	27,025	7,040	1,492	2,158
South Coast Air Quality Management District Threshold Criteria for Requiring Air Quality Analysis(1)	550	100	150	75
•EXCEEDANCE OVER THRESHOLD	26,475	6,940	1,342	2,083

1. Source: South Coast Air Quality Management District (1987:Appendices D,F,G,H &I)
2. Estimated using average ADT rates for the projects listed on Table 1 added to the proposed project's ADT.
Assumes trip length of 7.5 miles.
3. Assumes year 2000 buildout and average speed of 30mph.

emissions. However, because the Antelope Valley has been classified by the EPA as a non-attainment area under the Federal Clean Air Act, operational emissions will add to an already polluted air basin. Therefore, the proposed project is anticipated to create unavoidable adverse impacts with regard to air quality.

5.10 NOISE

A report prepared by Endo Engineering entitled "City Ranch South Specific Plan Technical Studies," May 1990, was used in the preparation of this section. The full text is provided in Appendix G. The May 1990 report reflects noise levels from the May 1990 version of the City Ranch Specific Plan. The prior plan generated 3% more traffic trips than the currently proposed project. The noise calculations in this report therefore reflect a slightly worse case situation than would result from the proposed project.

5.10.1 Existing Conditions

The proposed project site is located within an unincorporated portion of the Antelope Valley and partially within the sphere of influence of the City of Palmdale. The major source of noise in the project vicinity is motor vehicle noise from area surface streets. The project site is removed from freeways, railroads, public and private airports or other significant noise generators.

Noise from motor vehicles is generated by the engine vibrations, the interaction between the tires and the road and the exhaust system. Reducing the speed of motor vehicles reduces the noise exposure of listeners inside the vehicle and those located adjacent to the roadway.

The Highway Traffic Noise Prediction Model developed by the Federal Highway Administration was used to evaluate current noise conditions near the project site. This model accepts various parameters including: the traffic volume; vehicle mix and speed; and roadway geometry, in computing equivalent noise levels during typical daytime, evening, and nighttime hours. The resultant noise levels are then weighted, summed over 24 hours, and output as the CNEL value at the observer*. Various CNEL contours

* CNEL: Community Noise Equivalent Level. The average equivalent A-weighted sound level during a 24-hour day, obtained after addition of five decibels to sound levels in the evening from 7 p.m. to 10 p.m and after addition of ten decibels to sound levels in the night before 7 a.m. and after 10 p.m.

are subsequently located through a series of computerized iterations designed to isolate the 60, 65 and 70 CNEL contour locations for planning purposes.

The City of Palmdale recommends various noise policies in the General Plan Noise Element (adopted 1975). The City has adopted development guidelines which specify maximum allowable noise levels for various land use categories. A land use compatibility chart for community noise was taken from the Palmdale Community General Plan Noise Element and is shown in **Figure 51**. "Clearly acceptable", "normally acceptable", "normally unacceptable" and "clearly unacceptable" noise levels for various land use types are identified.

A "normally unacceptable" designation implies that new construction or developments must include noise insulation features incorporated in the project design. By comparison, a "normally acceptable" designation indicates that standard construction can occur with no special noise reduction requirements. An external "normally acceptable" maximum noise level of 60 dB(A) CNEL is specified in the City of Palmdale Noise Element for outdoor areas in residential developments. Residential uses are "normally unacceptable" in exterior environments between 60 and 75 dB(A) CNEL. Other sensitive land uses such as school classrooms, playgrounds, libraries, churches and neighborhood parks are "normally acceptable" up to 65 dB(A) CNEL, and "normally unacceptable" between 65 and 75 dB(A) CNEL. Recreational uses including golf courses, riding stables and water areas are "normally acceptable" up to 70 dB(A) CNEL.

Existing noise levels adjacent to roadways in the vicinity of the proposed project site are provided in **Table 26**. The noise levels at 100 feet from the centerline of those roadways within the project vicinity currently range from a low of 51.9 dB(A) CNEL at 100 feet from 25th Street West and Elizabeth Lake Road to a high of 65.6 dB(A) CNEL at 100 feet from Avenue P. The 70 dB(A) noise contours presently fall within the right-of-way along all roadways analyzed except: Palmdale Boulevard and Avenue P. The 65 dB(A)

LAND USE COMPATIBILITY GUIDELINES

LAND USE CATEGORY	Maximum Interior Exposure, dB(A) CNEL*
Residential - Single Family, Duplex, Mobile Homes	45
Residential - Multiple Family, Dormitories, etc.	45
Transient Lodging	45
School Classrooms, Libraries, Churches	45
Hospitals, Nursing Homes	45
Auditoriums, Concert Halls, Music Shells	35
Sports Arenas, Outdoor Spectator Sports	
Playgrounds, Neighborhood Parks	
Golf Courses, Riding Stables, Water Rec., Cemeteries	
Office Buildings, Personal, Business and Professional	50
Commercial - Retail, Movie Theaters, Restaurants	50
Commercial - Wholesale, Some Retail, Ind., Mfg., Util.	
Manufacturing, Communications (Noise Sensitive)	
Livestock Farming, Animal Breeding	
Agriculture (except Livestock), Mining, Fishing	
Public Right-of-Way	
Extensive Natural Recreation Areas	

LAND USE INTERPRETATION FOR CNEL VALUE

55 65 75 85

*Due to exterior sources

LAND USE ACCEPTABILITY CLASSIFICATIONS

CLEARLY ACCEPTABLE | NORMALLY ACCEPTABLE | NORMALLY UNACCEPTABLE | CLEARLY UNACCEPTABLE

CLEARLY ACCEPTABLE:

The noise exposure is such that the activities associated with the land use may be carried out with essentially no interference.
(Residential areas: both indoor and outdoor noise environments are pleasant.)

NORMALLY ACCEPTABLE:

The noise exposure is great enough to be of some concern, but common building constructions will make the indoor environment acceptable, even for sleeping quarters.
(Residential areas: the outdoor environment will be reasonably pleasant for recreation and play at the quiet end and will be tolerable at the noisy end.)

NORMALLY UNACCEPTABLE:

The noise exposure is significantly more severe so that unusual and costly building constructions are necessary to ensure adequate performance of activities.
(Residential areas: barriers must be erected between the site and prominent noise sources to make the outdoor environment tolerable.)

CLEARLY UNACCEPTABLE:

The noise exposure at the site is so severe that construction costs to make the indoor environment acceptable for performance of activities would be prohibitive.
(Residential areas: the outdoor environment would be intolerable for normal residential use.)

Source: North Los Angeles County Palmdale Community General Plan; November 1975

LAND USE COMPATABILITY FOR NOISE EXPOSURE

FIGURE 51

TABLE 26

Existing Exterior Noise Exposure Levels
Adjacent to Nearby Roadways

Roadway	A.D.T.[1] (vehicles per day)	CNEL @ 100 Feet	Distance to Contours[2] (ft.) 70 dBA	65 dBA	60 dBA
30th Street West					
- North of Avenue P	3,900	60.0	R/W	47	100
25th Street West					
- North of Elizabeth Lake Rd.	600	51.9	R/W	R/W	R/W
20th Street West					
- North of Avenue P	1,100	54.5	R/W	R/W	43
Tierra Subida					
- North of Rayburn Rd.	2,900	58.8	R/W	38	82
- North of Avenue S	1,800	56.7	R/W	R/W	60
- North of Barrel Springs Rd.	800	53.2	R/W	R/W	35
Palmdale Boulevard					
- West of Route 14	10,600	64.6	49	94	197
Avenue Q					
- East of Palmdale Blvd.	1,500	53.8	R/W	R/W	42
Elizabeth Lake Road					
- West of 25th St. West	2,400	57.9	R/W	R/W	73
- East of 25th St. West	2,700	56.3	R/W	R/W	58
- West of 10th St.West	6,500	60.2	R/W	50	102
Rancho Vista					
- West of 30th St. West	4,600	60.9	R/W	57	114
Avenue P					
- West of 25th St. West	5,000	62.3	38	68	140
- West of 20th St.West	4,700	61.9	R/W	61	132
- West of 10th St.West	8,200	63.3	36	76	165
- West of Route 14	13,600	65.6	53	109	232
Rayburn Road					
- East of Tierra Subida	1,700	54.2	R/W	R/W	41
Avenue S					
- West of Tierra Subida	1,200	53.9	R/W	R/W	40
- West of Route 14	2,200	56.5	R/W	R/W	58
Barrel Springs Road					
- East of Tierra Subida	600	51.9	R/W	R/W	R/W

1. A.D.T. means average daily two-way traffic volume.
2. All distances are measured from the centerline. R/W means the contour falls within the right-of-way.

Source: City Ranch South Specific Plan Technical Studies, Endo Engineering, May 1990.

contour presently falls within the right-of-way along eleven of the twenty links analyzed.

5.10.2 Project Impacts

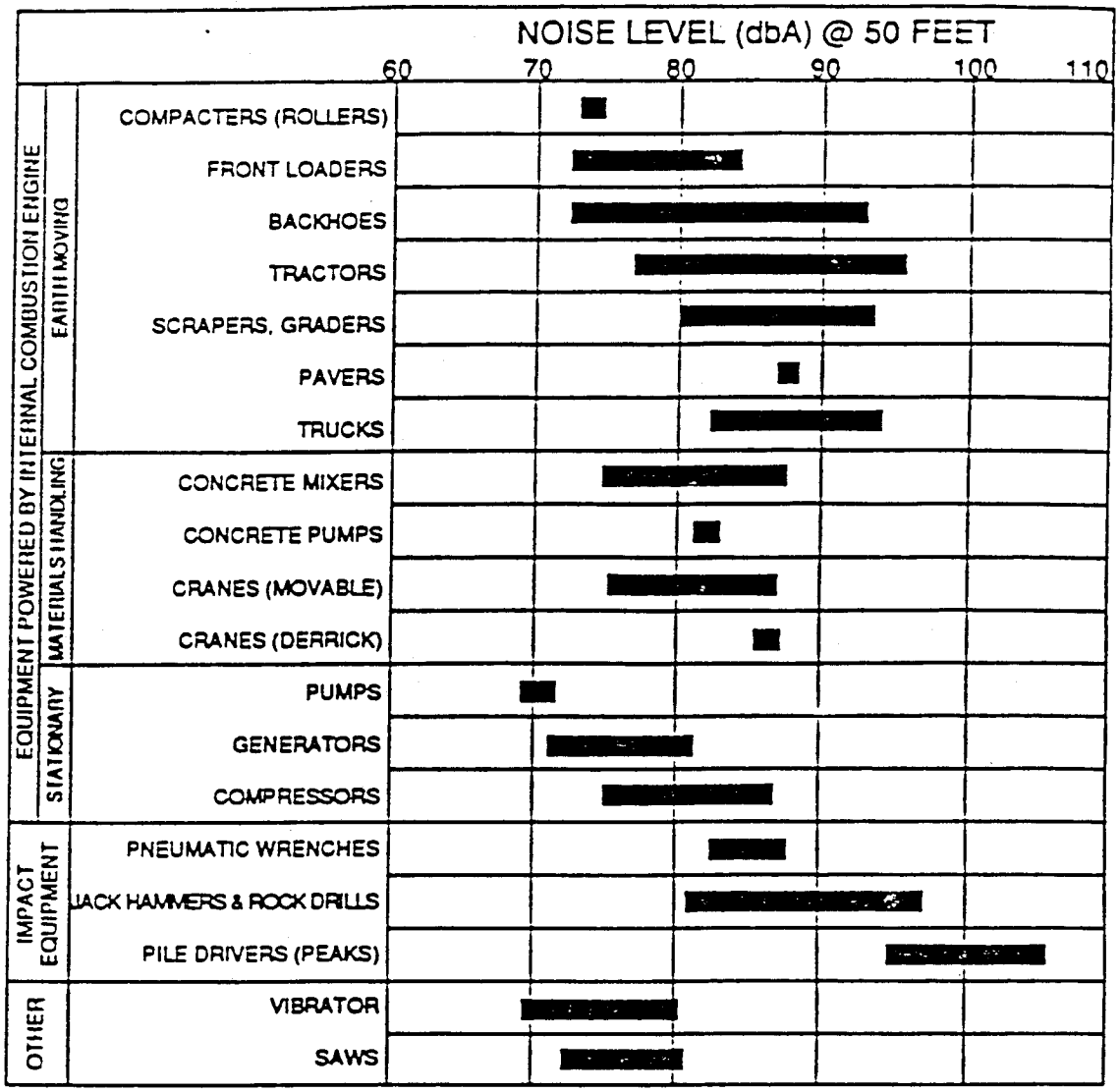
Short-term Impacts

Project-related grading and construction activities would result in increased noise levels adjacent to site access routes and on the project site during construction. The proposed project will be completed in eight phases and is expected to be completed by the year 2000. Grading processes, which create the highest noise levels, will take place in all four development phases. Heavy equipment such as bulldozers, loaders, and dump trucks will produce the highest noise levels. Typical noise levels generated by one piece of earth moving machinery may range from 70 dB(A) to 95 dB(A) at a distance of 50 feet (**Figure 52**). During later phases of development, grading and construction processes may present a short-term nuisance to residents occupying dwelling units completed in earlier phases and residents of residential projects to the north. Construction and grading noise impacts are considered significant short-term impacts.

Long-term Impacts

Operation of the proposed project would result in increased noise levels on-site and in the surrounding area. This increase would primarily result from increased vehicular traffic and human-related activities on the site. Development of the proposed project would generate an estimated 49,970 adjusted average daily vehicle trips (ADT). Future noise levels in the area were quantified based upon proposed project plus year 2000 generated traffic volumes*.

* The ambient or background traffic volumes in 2000 were determined by assuming a 5% annual traffic growth rate on all surface streets and a growth rate of 2% on State Highway 14.



Note: Based on limited available data samples.

Source: EPA, 1971 "Noise from Construction Equipment and Operations, Building Equipment and Home Appliances," NTID 300-1

NOISE LEVELS FOR TYPICAL CONSTRUCTION EQUIPMENT REFERENCED TO 50 FEET

FIGURE 52

As shown in Table 27, future noise levels at 100 feet from the centerline of surface streets in the project area range from a low of 54.3 dB(A) CNEL along Avenue Q to a high of 67.6 dB(A) CNEL along Avenue P. The proposed project would generate an audible noise increase (greater than 3.0 decibels) along 25th Street West, 20th Street West, Elizabeth Lake Road (east and west of 25th Street West) and Avenue S. A potentially audible noise increase (greater than 1.0 dB(A)) could occur along Tierra Subida Avenue (north of Barrel Springs Road), Elizabeth Lake Road (west of 10th Street West), Rayburn Road and Barrel Springs Road. However, as these roadways are master planned as either secondary or major highways, future off-site uses adjacent to these roadways must anticipate increased noise levels and are required, through the planning and design process, to mitigate current and future noise to acceptable levels.

Significant noise level increases will result on Elizabeth Lake Road, Bridge Road and Avenue S (south of Elizabeth Lake Road). Vehicular traffic on Avenue S would be expected to generate noise levels of up to 65.8 dB(A) CNEL at 100 feet from the centerline. Motor vehicle noise generated on Elizabeth Lake Road would be expected to be as high as 65.6 dB(A) CNEL at 100 feet from the centerline. The year 2000 noise level on Bridge Road is estimated to be 66.1 dB(A) CNEL. These noise levels are considered "normally acceptable" for commercial and open space land uses but "normally unacceptable" for sensitive land uses.

Residential land uses proposed on-site within 230 feet of the Avenue S, Bridge Road and the Elizabeth Lake Road right-of-way will be required to attenuate noise levels to comply with City noise standards (60 dB(A) CNEL). City Ranch Road is expected to be planned as a secondary roadway through the project site. Assuming a 4-lane undivided cross-section, the residential land uses proposed within 142 feet of the roadway centerline for City of Palmdale noise standards (68 feet for County standards) will be required to attenuate noise to acceptable levels below 60 dB(A) CNEL. Unless site design measures are incorporated as part of the proposed project or attached as conditions of approval, significant on-site noise impacts could occur as a result of

TABLE 27

Year 2000+Project Exterior Noise Exposure Levels
Adjacent to Area Roadways

Roadway	A.D.T.[1] (vehicles per day)	CNEL @ 100 Feet	Distance to Contours[2] (ft.) 70 dBA	65 dBA	60 dBA
30th Street West					
- North of Avenue P	9,010	62.6	R/W	70	150
25th Street West					
- North of Elizabeth Lake Rd.	10,940	65.3	R/W	105	221
20th Street West					
- North of Avenue P	3,990	60.1	R/W	48	102
Tierra Subida Avenue					
- North of Rayburn Rd.	5,550	61.6	R/W	59	127
- North of Avenue S	4,070	60.2	R/W	R/W	104
- North of Barrel Springs Rd.	2,440	58.0	R/W	R/W	74
Rancho de la Vista					
- West of 30th St. West	9,600	64.0	R/W	85	183
Avenue P					
- West of 25th St. West	12,330	64.2	R/W	89	185
- West of 20th St.West	13,640	64.6	R/W	94	198
- West of 10th St.West	17,920	66.0	62	115	238
- West of Route 14	25,590	67.6	74	143	301
Elizabeth Lake Road					
- West of Bridge Rd.	4,970	61.1	R/W	R/W	118
- West of 25th St. West	22,170	65.6	R/W	109	230
- East of 25th St. West	13,220	63.3	R/W	79	164
- West of 10th St.West	19,550	65.0	R/W	100	211
Palmdale Boulevard					
- West of Route 14	24,570	67.2	67	137	292
Avenue Q					
- East of Palmdale Blvd.	3,190	54.3	R/W	R/W	R/W
Rayburn Road					
- East of Tierra Subida Ave.	4,220	58.2	R/W	R/W	76
Bridge Road					
- North of Avenue S	24,820	66.1	58	117	247
Avenue S					
- East of Bridge Road	23,140	65.8	R/W	112	236
- West of Tierra Subida Ave.	16,940	64.4	R/W	92	192
- West of Route 14	17,230	64.5	R/W	93	195
Barrel Springs Road					
- East of Tierra Subida Ave.	1,580	56.1	R/W	R/W	55

1. A.D.T. means average daily two-way traffic volume for 2000+Project conditions.
2. All distances are measured from the centerline. R/W means the contour falls within the right-of-way.

Source: City Ranch South Specific Plan Technical Studies, Endo Engineering, May 1990.

ultimate motor vehicle volumes on Avenue S and Elizabeth Lake Road and City Ranch Road.

City noise standards consider noise levels below 65 CNEL to be acceptable for school uses. According to Los Angeles County standards, noise levels around schools in excess of 70 CNEL require noise attenuation to bring noise levels inside classrooms to acceptable levels. Currently no school sites are proposed adjacent to major roadways.

Location of a fire station on-site has the potential to create noise impacts due to use of sirens by fire engines exiting the fire station during emergency situations. Because the project site is proposed to be a residential community, it is expected that siren use will be kept to a minimum and only used when necessary. Therefore, noise generation during the sensitive evening and nighttime hours will be minimized. However, sensitive receptors in proximity to the fire station will find this noise a nuisance.

5.10.3 Mitigation Measures

The following measures are proposed to reduce noise impacts during grading and construction to a level of "not significant":

- Construction activities adjacent to residential areas shall take place only between the hours of 6:30 a.m. and 8:00 p.m., Monday through Saturday, as specified by the City of Palmdale Noise Ordinance.

- Grading and construction equipment shall be stored at the project site.

- Repair of construction vehicles on-site shall be restricted to the same working hours stated above, 6:30 a.m. to 8:00 p.m., Monday through Saturday.

- All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers.

- Stationary equipment shall be placed such that emitted noise is directed away from sensitive noise receivers.

- Temporary noise attenuation barriers, such as walls and/or berms, shall be placed between construction areas and sensitive noise receivers.

The following site design measures are recommended to ensure that the ultimate noise exposure does not exceed 60 dB(A) CNEL in residential areas and 65 dB(A) CNEL at school sites to meet City of Palmdale normally acceptable noise standards. These measures would reduce operational noise impacts to a level of not significant:

- Reduction of intrusive noise levels in residential and school areas shall be accomplished through the incorporation of design measures structural measures which will reduce noise levels to acceptable levels within the living or recreational portions (as defined by tl City) of any lot. The measures that may be utilized to reduce n-'s impacts include, but are not limited to, placement of parking s in such a manner as to act as a buffer, increasing the setbacks the roadway, creation of landscaped berms, or construction of o r barriers such as walls. The acceptable noise level CNEL which wil: be applied to future projects will be that level which is in place either by ordinance, resolution or General Plan policy, at the time that future development applications are deemed complete.

- Carports and parking areas in multi-family residential areas shall be located adjacent to the heavily traveled roadways to create building setbacks and shield more sensitive uses.

- Multi-family structures shall be oriented away from adjacent roadways to insure that room arrangements, window size and placement, and balcony, roof and courtyard design minimize intrusive noise levels.

- Truck access, parking area design and air conditioning refrigeration units within commercial land uses shall be carefully designed and evaluated at more detailed levels of planning to minimize the potential for acoustic impacts to adjacent noise sensitive development.

- The design of the elementary schools shall locate administration buildings, noise-insulated structures (such as gymnasiums and auditoriums), locker facilities, parking areas and bus loading zones adjacent to roadways to buffer more sensitive uses such as classrooms and playgrounds.

5.10.4 Cumulative Impacts

Noise levels on surface streets in the project vicinity will increase as a result of development of the proposed project and the cumulative projects in the area. The most significant increases will occur on Elizabeth Lake Road and Avenue S. As stated above, both of these roads are master planned as major highways and future off-site and adjacent land uses must anticipate high noise levels along these roadways.

5.10.5 Unavoidable Adverse Impacts

Provided the recommended mitigation measures are properly applied, construction and operation of the proposed project are not expected to create significant noise impacts on-site. However, some areas along Elizabeth Lake Road containing sensitive receptors such as residences and schools may be significantly impacted.

5.11 AESTHETICS

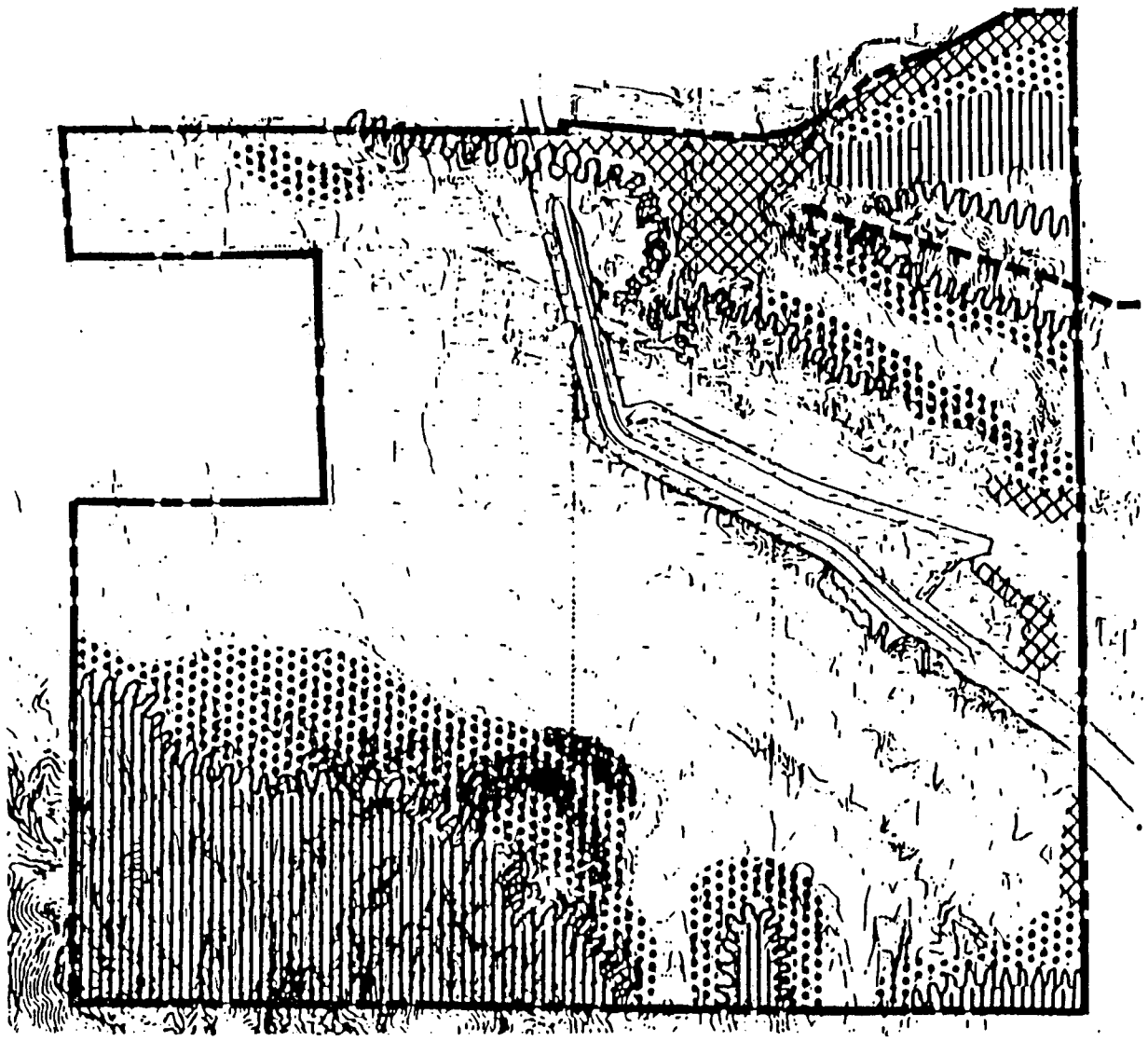
5.11.1 Existing Conditions

The project site, located in the foothill portion of the Sierra Pelona Mountain Range, offers a variety of natural visual features characteristic of the western Antelope Valley as well as several man-made features. Major scenic features on the project site include the San Andreas Rift Zone, the California Aqueduct, the Sierra Pelona Mountain Range along the southern project site boundary, the Verde Ridge in the northeast portion, a wetland and Joshua tree woodland north of the California Aqueduct, a Joshua tree woodland in the San Andreas Rift Zone, and the Anaverde Valley floor across the central portion of the project site (**Figure 53**).

The Anaverde Valley floor area of the project site, which presently contains an abandoned ranch compound with silos and water tanks and cattle grazing activities, provides a rural aesthetic setting as viewed from undeveloped areas to the northwest and southeast and from several higher elevation locations on the project site (**Figure 54**).

The San Andreas Rift Zone and the Sierra Pelona Range with slopes over 25% provide important regional visual topographic relief (**Figure 55**). The Joshua tree woodland area located in the Rift Zone is an important scenic stand. The wetland and woodland areas north of the Aqueduct serve important biological and visual features.

Five sets of high power transmission lines cross the southwest corner of the project site (**Figure 56**). Three sets of lines traverse diagonally from the adjacent site to the west across the Anaverde Valley floor and up through the Sierra Pelona foothills. The other two lines pass along the southern property line at the highest site elevation line, one from the southwest corner to the center of the southern property line, the other crossing the extreme southwest corner only.



LEGEND

- PROMINENT FOREGROUND RIDGE - VISIBLE FROM SURROUNDING ON-SITE & OFF-SITE OUTSIDE AREAS
- BLUFF / STEEP SLOPE EDGE - VISIBLE FROM ADJACENT AREAS
- GENTLE TERRAIN - VISIBLE FROM MAJOR ROADS AND OFF-SITE AREAS
- GENTLY TO MODERATELY SLOPING TERRAIN
- MAJOR FOOTHILLS - PROMINENTLY VISIBLE FROM ON-SITE & OFF-SITE
- FLAT OPEN TERRAIN - GENERALLY NOT PROMINENTLY VISIBLE FROM OFF-SITE DEVELOPED AREAS
- ON-SITE DEVELOPMENT WHICH CAN READILY SEE THE PALMDALE DISPOSAL LANDFILL

N

0 900' 1800' 2700'

SOURCE: City Ranch Specific Plan, 1991
Azeka de Almieda Planning

VISUAL FEATURES OF THE PROJECT SITE

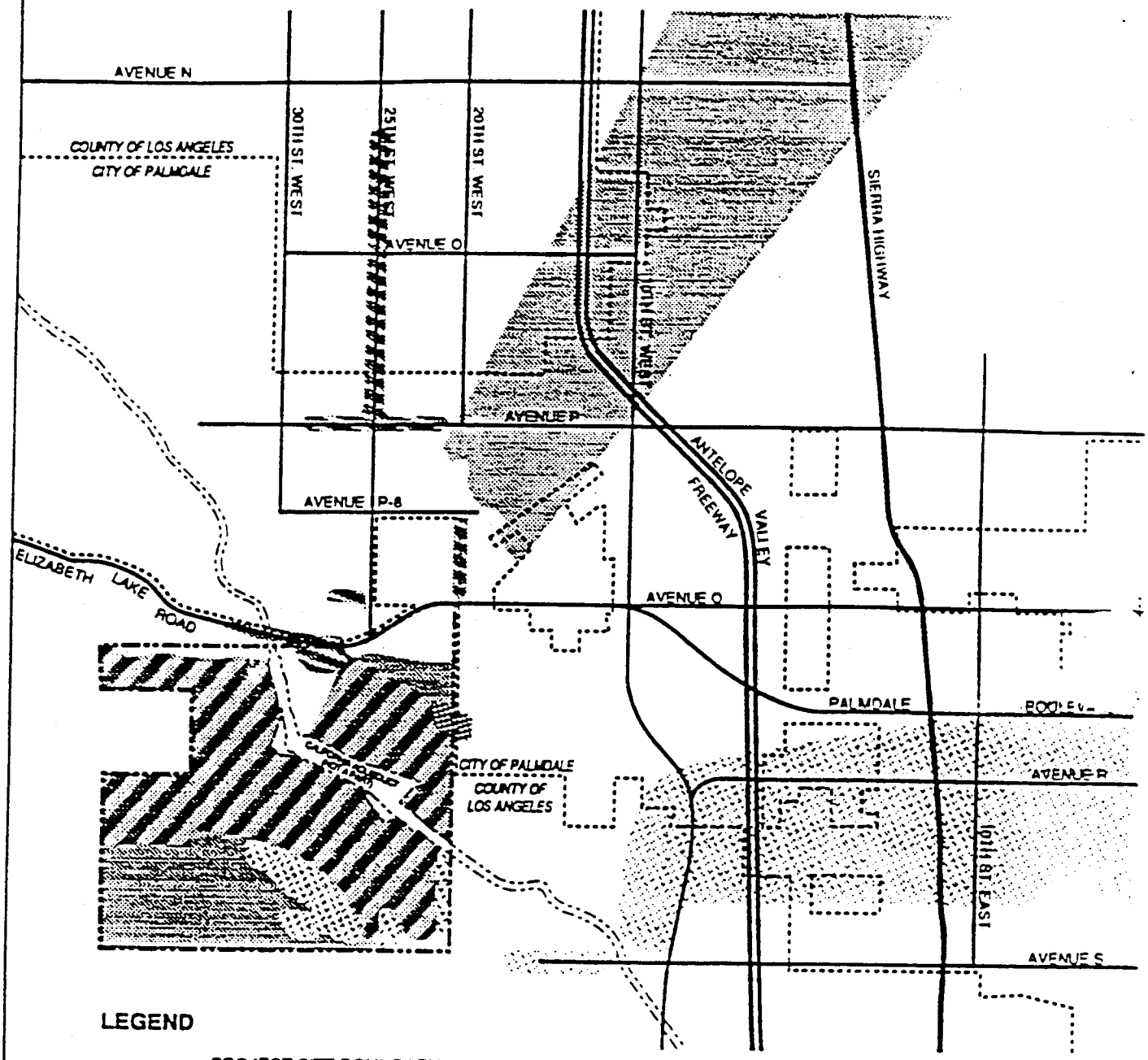
FIGURE 53

The California Aqueduct (not a part of the project site) bends through the Anaverde Valley portion of the site, providing an almost river-like appearance. The Northside Riding and Hiking Trail traverses the project site along the Anaverde Creek (see Figure 72 in Section 5.23, Parks and Recreation). This trail traverses the whole of Los Angeles County. Scenic views of the Ritter Ridge Mountain Range to the northwest and of the Sierra Pelona and the San Gabriel Mountain Ranges to the south are provided along the Northside Riding and Hiking Trail.

Because of the topography of the project site and surrounding areas, a number of vistas of the City Ranch property are available from off-site locations (Figure 57). These include both near and far field vistas.

Near field views presently occur from Elizabeth Lake Road, 25th Street West, areas of the Anaverde Valley (including the Antelope Valley Landfill), Ritter Ranch and portions of Avenue S, west of the Antelope Valley Freeway. Elizabeth Lake Road, which forms a portion of the project site's northern boundary, is a County-designated scenic corridor. Views of the project site from Elizabeth Lake Road and 25th Street West are limited to the Verde Ridge hills on the northern portion of the project site and to the existing City Ranch project site entrance located just west of 25th Street West. The eastern portion of the Anaverde Valley area of the project site is visible from the Antelope Valley Public Landfill and from portions of Avenue S to the southeast. From Ritter Ranch to the west, almost the entire central portion of the City Ranch project is visible. The project site is not visible from the south as it is shielded by the ridgeline of the Sierra Pelona range.

Far field vistas of the project site exist along three primary view corridors: along 25th Street West to the north, from portions of northwest Palmdale northeast of City Ranch, from portions of central Palmdale and along the Antelope Valley Freeway (Highway 14). The eastern far field vistas may extend along Highway 138 as far as the community



LEGEND

- PROJECT SITE BOUNDARY
- AREAS VISIBLE FROM A DISTANCE TO THE NORTHEAST
- AREAS WHERE COMMERCIAL SITE WOULD BE VISIBLE
- AREAS WHERE SINGLE FAMILY HOMES WOULD BE VISIBLE
- AREAS VISIBLE FROM A DISTANCE TO THE EAST
- AREAS VISIBLE FROM ANTELOPE VALLEY PUBLIC LANDFILL SITE
- DEVELOPMENT AREAS NOT VISIBLE FROM OFF-SITE DEVELOPED AREAS

SOURCE: City Ranch Specific Plan, October 1990
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OFF-SITE VISUAL ANALYSIS

FIGURE 57

of Littlerock. The far field views from 25th Street West and from northwest Palmdale are limited to the extreme northern portions of the site. The remainder of the site is shielded from these viewing areas by the ridgeline of the Verde Hills and slopes of the San Andreas Rift Zone which cross the northern portions of the project site.

South-central portions of the City Ranch project site, consisting of the northern slopes of the Sierra Pelona, and small areas of the central project site south of the California Aqueduct are visible from the far field view corridors to the east. Other portions of the project site are not visible from the far field as they are shielded either by the Antelope Valley Landfill, the ridge line of the Verde Hills, or the slopes of the Rift Zone.

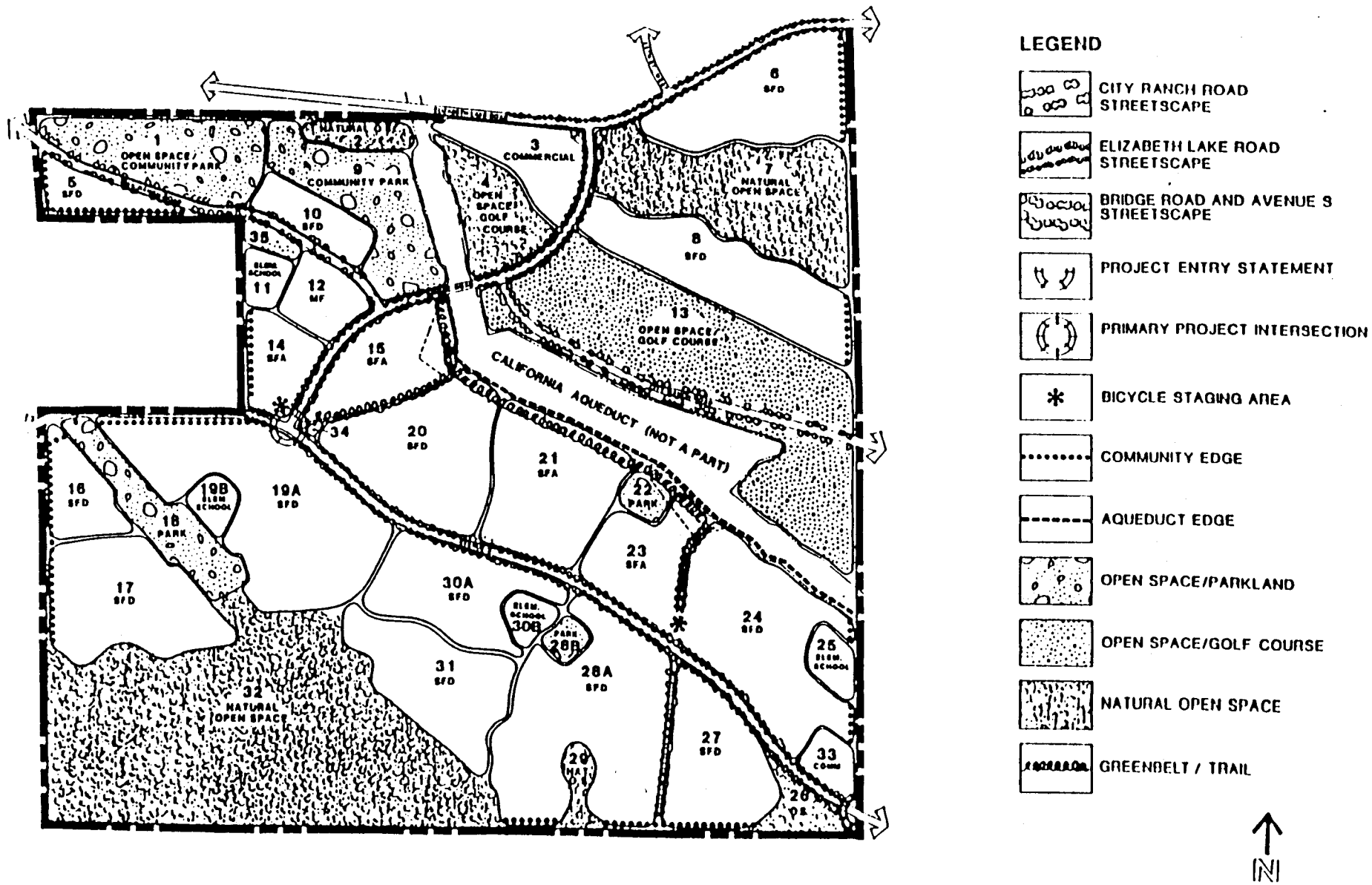
5.11.2 Project Impacts

Development of the proposed project would transform the project site from an essentially undeveloped area to a largely suburban setting. The majority of the residential development would primarily occur on the flatter portions of the project site along the Anaverde Valley floor. These areas would not be visible off-site.

Following project development, approximately 793 acres of the project site or more than 40% would supply visual open space opportunities by being developed as either parks, golf course, open space or natural open space. In addition, the school sites would also provide visual open space opportunities (Figure 58).

The majority of the San Andreas Rift Zone would be transformed into public recreation areas comprised of public parkland and golf course areas (Planning Areas 1, 4, 9 and 13). Sierra Pelona hillsides and a large portion of the Verde Ridge would remain as undeveloped natural open space (Planning Areas 2, 7, 29 and 32).

The majority of the Joshua tree woodland would be converted into a golf course (Planning Areas 4 and 13). Part of the Joshua tree woodland would be converted into a



SOURCE: [illegible] Ranch Specific Plan, 1991
Almeda Planning

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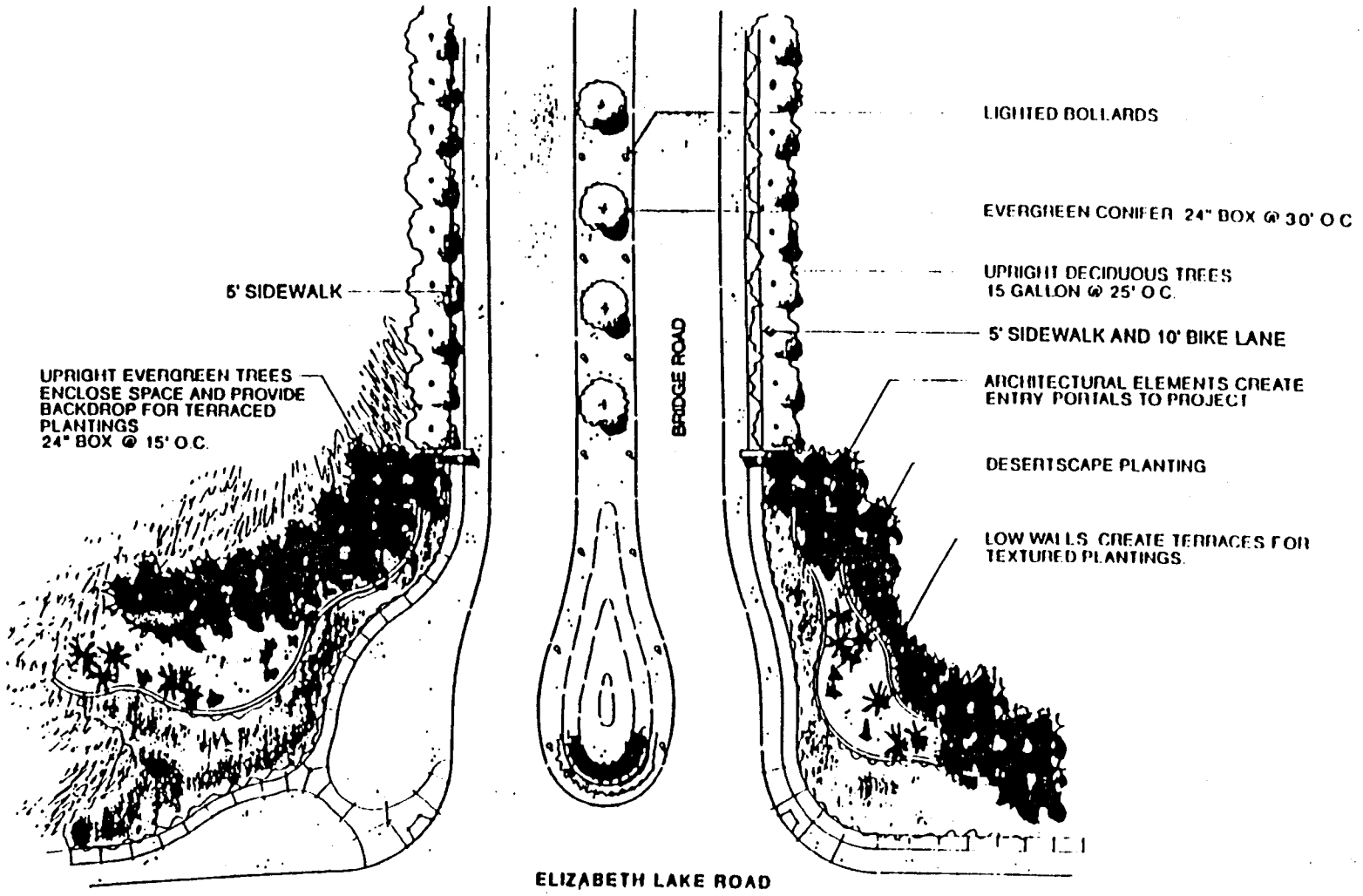
[illegible] PTUAL LANDSCAPE PLAN

single-family residential area (Planning Area 8). The rest would be converted into public park space (Planning Area 9) or would remain as natural open space (Planning Areas 2 and 7).

The only developed areas of the project site that would be visible from off-site locations will be higher elevation residential areas (Planning Areas 6, 31 and a portion of 28A) and both commercial areas (Planning Areas 3 and 33) from locations to the north, northeast and east. In addition, the easternmost portions of school Planning Area 25 and residential Planning Areas 8 and 24 would be visible from developed areas directly to the east (**Figure 57**). From the west, the entire residentially developed Anaverde Valley floor would be visible.

Southward views from the scenic Elizabeth Lake Road corridor into the project site would be largely blocked by a landscaped parkway strip of varying width along the south side of the road (**Figure 58**) and by the Verde Ridge. Only higher elevation portions of Planning Area 6 and portions of commercial area Planning Area 3 near Bridge Road would be visible. A major landscaped community entry statement is proposed to be established along Elizabeth Lake Road at the Bridge Road entry point into the project site (**Figure 59**). A second landscaped community entry statement is planned to be established in the southeast corner of the project site along Avenue S (**Figure 60**). Avenue S and Bridge Road which would pass through the project site, would be major landscaped roadways.

The Northside Riding and Hiking Trail currently passes through proposed golf course Planning Areas 4 and 13. According to the Specific Plan, this trail would be realigned along the northern perimeter of Planning Area 4, then along the northern perimeter of Bridge Road and along the northern perimeter of the City Ranch Road alignment through Planning Area 13 or alternately through the enter of Planning 1, and along the northern and western perimeters of Planning Area 9, then across the bridge across the Aqueduct then along the northern perimeter of the City Ranch Road alignment through



Source: Florian Martinez Associates

Bi E ROAD ENTRY STATEMENT

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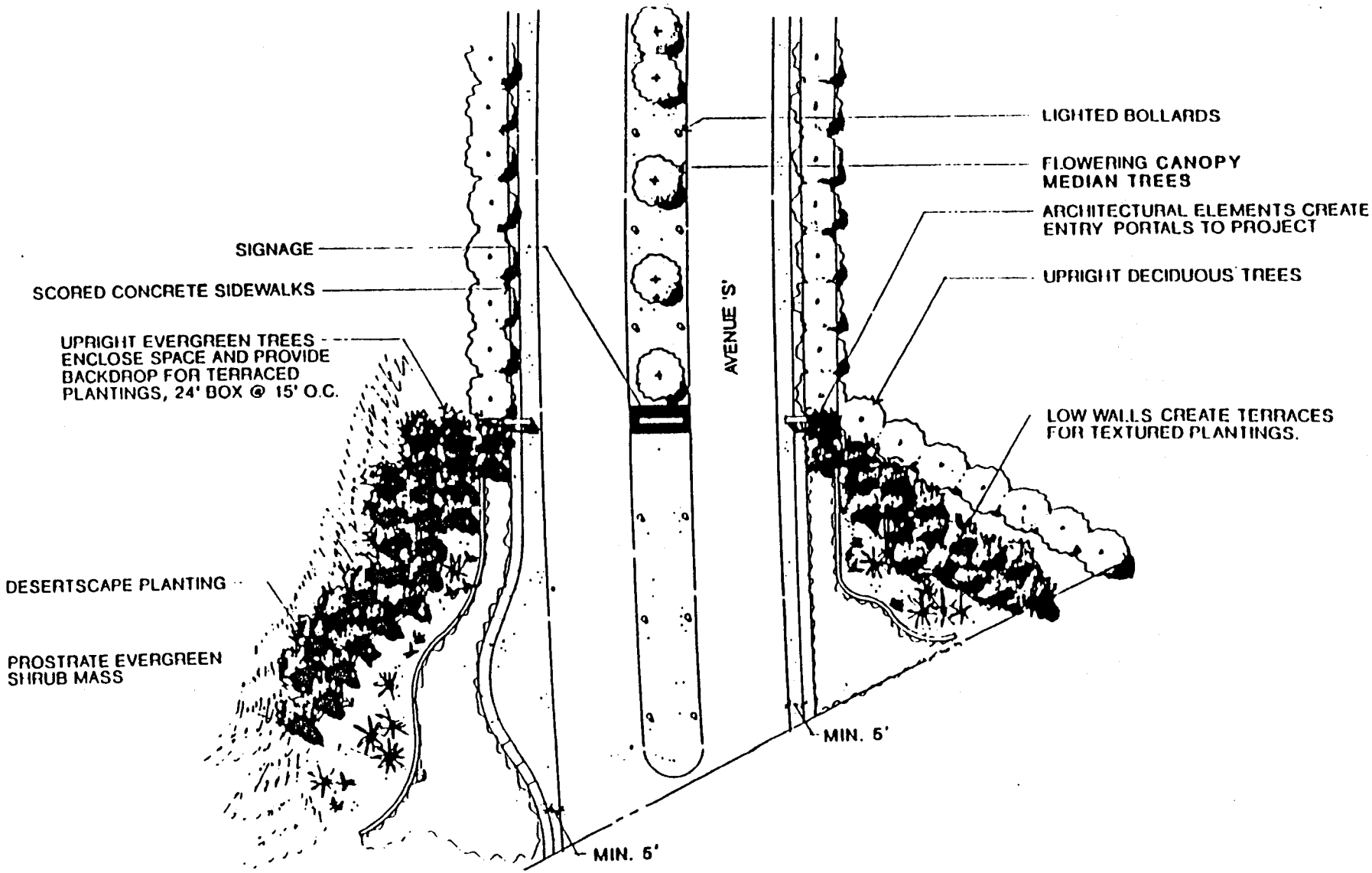


Source: Florian Martinez Associates

AVENUE S ENTRY STATEMENT

FIGURE 60

Planning Area 13. The trail will be constructed as determined by the City Department of Parks and Recreation (see **Figure 72**, Section 5.23, Parks and Recreation).

Following development of the proposed project, views of the project site from the realigned Northside Riding and Hiking Trail would be substantially altered. Views along the north side of the trail would consist of the proposed golf course or alternately of the northern portion of the Aqueduct and community park and open space areas.. Views on the south side of the trail would consist of City Ranch Road, wetland areas along the Aqueduct, the Aqueduct itself, and single-family residential areas, and a park site beyond or alternately, in addition, portions of the community park and residential areas beyond. Views of the San Gabriel, Sierra Pelona Range and Ritter Ridge would not be significantly altered.

The five high-tension electric transmission lines would remain as currently situated. A neighborhood park would be developed along the path of the three diagonally trending lines (Planning Area 18). The other two high-tension transmission line rights-of-way would be contained within Planning Area 32 designated as natural open space.

To accommodate water supply requirements, the Specific Plan identifies three reservoirs to be constructed on the southern portion of the site; two of these would be located in Planning Area 32 and one would be located in Planning Area 29. The water reservoir located in Planning Area 32 would be located at elevations of 3,240 feet (3.0 million gallons) and 3,430 feet (1.0 million gallons); the water reservoir located in Planning Area 29 would be at an elevation of 3,240 feet (3.0 million gallons). The facilities located in Planning Area 32 would be visible in the near field by Ritter Ranch to the west and in the far field by portions of northwest Palmdale. The facilities to be located in Planning Area 29 may be visible to the north and east far fields.

Infrastructure improvements would also include the installation of flood control basins. Grading for several debris basins will occur along the northern boundary of Planning Area 32 and along the southern boundary of the project site in Planning Areas 27 and

28A. This grading would be visible on-site and may be visible from portions of Ritter Ranch to the west and the Antelope Valley Public Landfill to the east.

As mentioned in the Light and Glare section (Section 5.12) of this report, the nighttime setting would be converted from a dark sky to an illuminated suburban setting. Although the site would be substantially altered visually as a result of project development, areas of the project site that would be developed are not visually prominent. The ridgelines, the most prominent visual resources on the project site would remain intact subsequent to project development. In addition, as a result of project development, many areas of the project site would have views of the Antelope Valley Public Landfill located to the east (**Figure 53**). These views, if not properly shielded, can be considered offensive and, therefore, potentially significant.

5.11.3 Mitigation Measures

Implementation of the following mitigation measures would reduce the project's aesthetic impacts:

- All roadways within the project site shall be tree lined and landscaped in accordance with City of Palmdale street design requirements and the streetscape guidelines provided in the Specific Plan.

- All new and relocated utility distribution lines shall be placed underground within developed areas.

- All storage, including cartons, containers or trash, shall be shielded from view within a building or area enclosed by a masonry wall not less than six (6) feet in height. No such area shall be located within fifty (50) feet of any residential area.

- Screening shall be required when the following abut residential uses:
  a) Loading areas;

  b) Visually obtrusive above-ground utility equipment and appurtenances;

  c) Antelope Valley Public Landfill

- A screen, as referred to above, may consist of two (2) of the following types:

  a) Walls: A wall shall consist of concrete, stone, brick, tile or similar type of solid masonry material a minimum of four (4) inches thick.

  b) Berms: A berm shall be constructed of earthen materials and it shall be landscaped.

  c) Fences, solid: A solid fence shall be constructed of masonry, wood or other materials a minimum thickness of two (2) inches and it shall form an opaque screen.

  d) Landscaping: Plant materials, when used as a screen, shall consist of densely planted evergreen or deciduous plants.

- Screening established near intersections shall consider safe sight distances so that adequate visual conditions are maintained for pedestrians and drivers of motor vehicles.

- Rooftop mechanical equipment shall be fully screened from view.

- Landscaping, consisting of trees, shrubs, and/or ground cover, shall be installed and maintained subject to the following standards:

  a) Landscaping shall be required along all property lines abutting streets except where provided in landscape easements adjacent to rights-of-way. Minimum tree and shrub size shall be fifteen (15) gallon and spaced a minimum of 30 feet average.

  b) Landscaping shall be required along all property lines abutting residential uses.

  c) Planting shall be designed so as not to hinder sight distance at intersections.

  d) Permanent irrigation facilities shall be provided for landscaped areas.

  e) Landscaping shall be maintained by property owners in a neat, clean and healthy condition.

  f) Areas of native vegetation within all open space and natural open space areas are exempted from the landscape standards identified above except that they shall be maintained free of trash and debris. Fuel modification zones will be required where fire hazards warrant them.

- Residential structures shall be limited to 35 feet in height.

- The colors and textures of building materials shall blend with the landscape as set forth in Section VI, Design Guidelines of the City Ranch Specific Plan.

- All downdrains shall utilize colored concrete chosen to blend with the adjacent terrain. Downdrains shall be located in less visually prominent locations where practical. When this is not feasible, downdrains shall be aesthetically mitigated

by the use of a combination of landscaping, rock, and screening, or may be dia onally angled down the slope when practical and when it will reduce the visu. impact. These measures shall be designed to the satisfaction of the Director of Planning and City Engineer, and shall be reviewed for conformance at the Tentative Tract Map stage. Details of these conditions shall be indicated on the Tentative Tract Map.

- On-site water tanks shall be painted in earth tone colors.

- City Ranch Specific Plan grading standards shall be strictly adhered to, to avoid negative impacts with regard to hillside grading. The Specific Plan policies which govern grading design and may affect aesthetics of the site are as follows:

  a) Major ridgelines shall be preserved. Specifically, the Sierra Pelona and Verde Ridge ridgelines shall be preserved in their existing states with ridgetop elevations retained at natural elevations.

  b) Large contiguous open spaces shall be preserved. Specifically, areas of natural slope above 45 percent which total over one-half acre in size and which are visible from off-site areas shall be preserved in their existing state. This condition occurs in Planning Areas 2, 7, 29, and 32.

  c) No construction shall be permitted in areas above 40 percent slope except for isolated pockets of steep slope which are not visually prominent, and only if required for reasons of health, safety, welfare, protection of property and for necessary public facilities. Isolated pockets of steep slope shall be defined as sloping areas up to 50 feet in height and up to 200 feet in horizontal length.

  d) Grading design and site planning design shall consider the aesthetic impacts of proposed slopes and structures as seen from off-site developed areas of the City of Palmdale, and shall employ measures to lessen the visual impacts t

off-site areas if required. Criteria for mitigation required shall include visual prominence, height of slope banks, "visual length" of slope banks, landscaping and erosion control.

e) Mass graded "mega pads" shall be prohibited. Design of residential subdivisions shall utilize grade breaks, curvilinear streets and smaller steps of grade change rather than single large slopes. The grading of the commercial site at Planning Area 3 may utilize a large graded pad design provided slope height does not exceed thirty (30) feet in height and provided the buildings are placed to provide nearly complete visual screening of slopes above twenty (20) feet in height.

f) Large manufactured slopes greater than three hundred feet in "visual length" shall be designed so as to simulate the curvature of a naturally shaped slope, or shall be blended into natural slopes by gradually adjusting the contours and slope orientation.

5.11.4 Cumulative Impacts

Development of the proposed project and cumulative projects will permanently convert the project vicinity from a rural open space area to a developed residential suburban setting. This development, which is in accord with the City of Palmdale General Plan land use policies, will extend the physical and visual boundary of the Palmdale City limits. As a result of both development and cumulative projects in the area, irreversible losses to open space vistas in the Leona and Anaverde Valleys will result. Because these losses are irreversible and because developed areas replacing open space would be visible from substantial distances off-site, these impacts are considered significant.

5.11.5 Unavoidable Adverse Impacts

As a result of implementation of the recommended mitigation measures, project impacts with regard to aesthetics will remain because implementation of the City Ranch Specific Plan will permanently transform the project site from its current undevelopment condition into a semi-urban environment. However, the ridgelines which are the most visually prominent features on the project site will be left intact.

5.12 LIGHT AND GLARE

5.12.1 Existing Conditions

The project site is presently largely undeveloped and is unlighted at night. The adjacent sites are presently also undeveloped. The site receives no spillover night lighting or glare from adjacent properties.

5.12.2 Project Impacts

Development of the proposed project would result in the conversion of the project site from an undeveloped to a primarily residential setting. The night environment would change from that of a dark remote area to a lighted, suburbanized condition. The major sources of lighting would be from the residences, commercial and recreational buildings, yard lighting, street lighting, and from vehicles along the project site streets. As the surrounding properties are currently undeveloped, this increase in night lighting may affect existing nighttime darkness amenities. Motorists along 25th Street West and Elizabeth Lake Road may also be affected by this change in night lighting.

The majority of the surrounding properties are anticipated to be developed residentially within the next 10-15 years. Most likely, they would have night lighting similar to that of the proposed project. Because development of the adjacent properties is anticipated to be concurrent with proposed project construction, project lighting impacts are not expected to be significant. However, if development of adjacent properties never occurs, development of the proposed project would cause significant impacts with regard to loss of existing nighttime darkness amenities. If surrounding property development occurs but only after proposed project development, temporary significant impacts would occur.

South-facing windows of project site structures may create a source of glare. South-facing windows would potentially affect motorists along Avenue S and Bridge Road.

The Sierra Pelona range blocks views from properties to the south and therefore obstruct glare impacts that would occur on parcels to the south. According to the streetscape plans for Avenue S and Bridge Road, a row of trees and dense landscaping would be planted in the parkway strip along the sides of the streets (Figures 61 and 62). This would reduce on-site glare impacts for motorists. Because glare impacts would not create hazardous conditions on surrounding roads and would not intrude on existing developments, glare impacts are not considered significant.

5.12.3 Mitigation Measures

While impacts are not considered significant with regard to light and glare, implementation of the following measures can reduce project-related light and glare impacts:

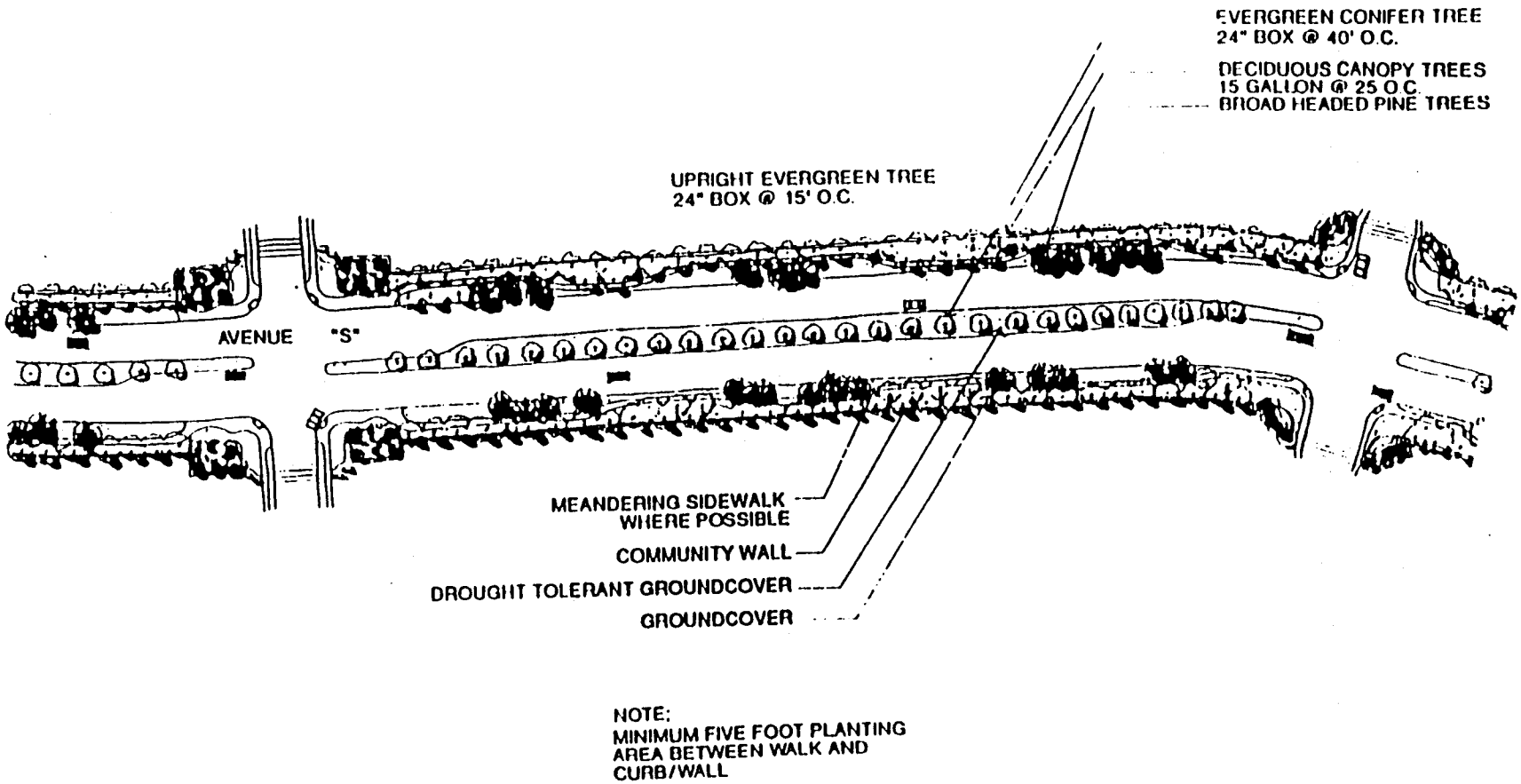
- All exterior lighting in commercial and multi-family planning areas shall be designed and located to confine direct rays to the premises. A photometric lighting plan is required pursuant to Section 86.05 (9)(A)-(H) of the Palmdale Municipal Code.

- Maximum overall height of fixtures shall be not more than fourteen feet in, or adjacent to residential areas; and not more than twenty feet in non-residential areas.

- Fixtures shall possess sharp cut-off qualities at property lines.

- Low intensity downward focused street lamps shall be used in the southern portion of Planning Area 19A, the southern half of Planning Area 17, portions of Planning Area 28A above 15% grade and in all of Planning Area 31.

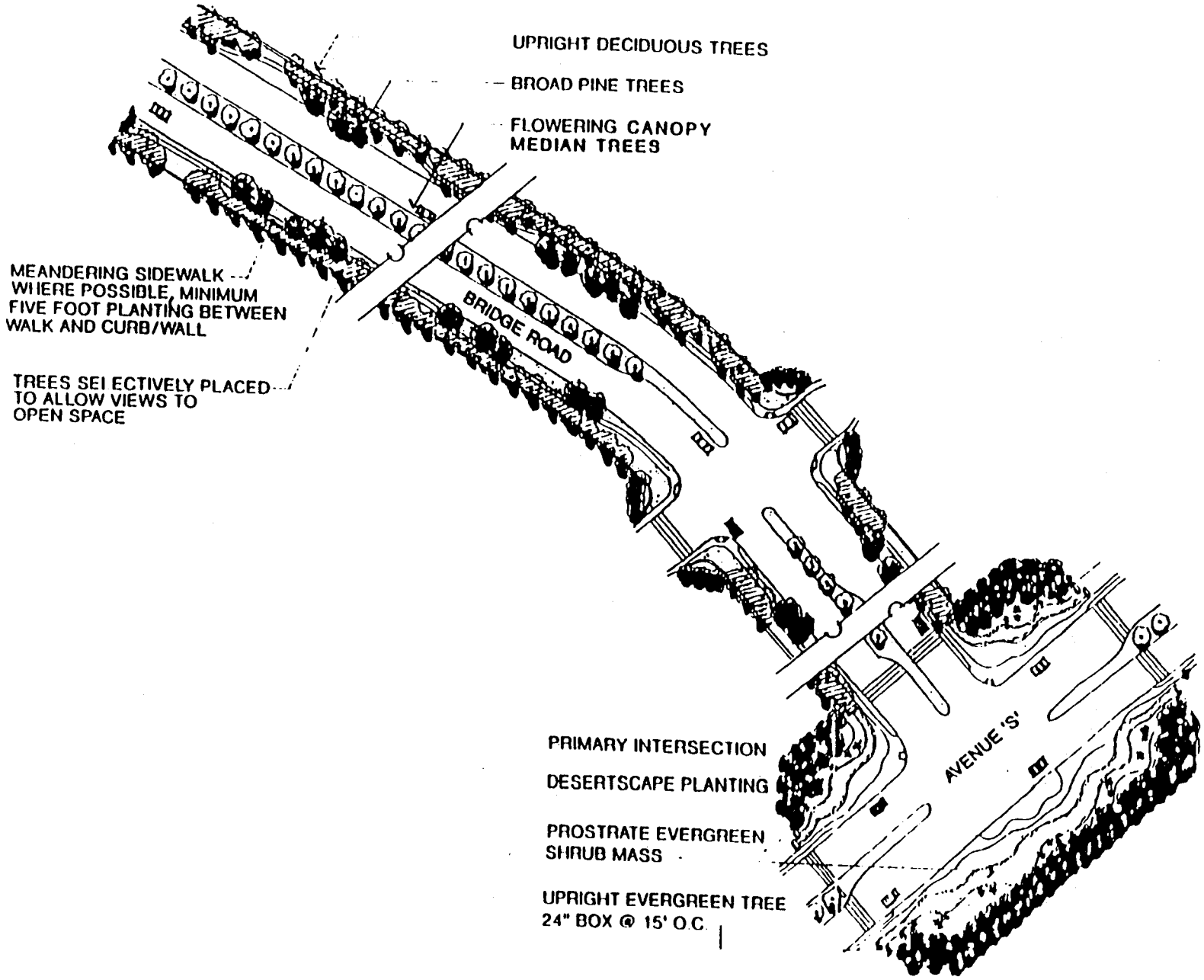
- No low pressure sodium lighting fixtures are allowed.



Source: Florian Martinez Associates

AVENUE "S" STREETSCAPE

FIGURE
61



Source: F' ...nez Associates

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- Lights shall be shielded with internal silvering or external opaque reflectors or other comparable techniques.

- Flashing lights shall be prohibited.

- Lighting plans for athletic courts and fields shall be reviewed by the City of Palmdale Planning Department.

- Lighting intensity within commercial or multi-family planning areas shall be a minimum of one foot-candle, maintained.

- Where appropriate, landscaping shall be used to screen night lighting.

5.12.4 Cumulative Impacts

Development of the proposed project along with the cumulative projects will increase night lighting in the presently rural, unlighted areas of the project vicinity as the area is transformed from an undeveloped rural environment to a suburban setting resulting in the loss of a dark nighttime sky. This is considered a significant cumulative impact.

5.12.5 Unavoidable Adverse Impacts

The project will contribute to the cumulative loss of a dark nighttime sky which is considered an unavoidable adverse impact.

5.13 ENERGY

5.13.1 Existing Conditions

The project site, in its present undeveloped state, uses only negligible amounts of energy in the form of electricity and natural gas. Southern California Edison and Southern California Gas Company supply the unincorporated area of Los Angeles County with electricity and natural gas. Sections 5.14 and 5.15 of this report discuss electricity and natural gas supplies and infrastructure in the vicinity of the project site. Incoming solar radiation, also available on the project site, is presently not utilized.

At 34°35' north latitude, the project site receives 40 percent of solar radiation June through August and 60 percent September through May of each year. Solar energy has not been extensively utilized in the City Ranch area but is expected to increase in importance as passive and active solar technology becomes more efficient and affordable (Buffo, 1972). Passive and active solar energy for thermal mass, space, and water heating is readily available and highly suitable to the project site. The relative low number of cooling-degree days (1,760) and higher number of heating-degree days (2,908) is an indicator that solar energy is important during winter months for thermal mass and space heating.

Energy requirements for cooling and heating building interiors in the project area are relatively high because of the distance from oceans. Additionally, cold air inversions are frequent in the Anaverde Valley (Rowlands, et al., 1982). Buildings in the Anaverde Valley can easily be kept warm or cool through detailed attention to climatic constraints and the best available current technological conservation measures.

5.13.2 Project Impacts

Upon project completion, electrical energy use from proposed on-site uses is estimated to be approximately 98,975 kilowatt-hours daily. Natural gas use is estimated to be

approximately 924,300 cubic feet daily. These long-term imported energy use requirements are computed in Section 5.14, Electricity and 5.15 Natural Gas, Tables 29 and 30, respectively. Distant water, insolation or fissionable materials would be used to generate electricity for the proposed project. Fossil fuels in the form of petrochemicals and natural gas would be used for transportation within, to and from the project site, to provide interior space heating, space cooling, and to operate commercial and residential machinery. Incoming solar radiation and waste heat from streets, sidewalks, roofs and walls of buildings, and appliances within the Anaverde Valley would warm lower level ambient air and help to maintain a new urban *heat island* that would encompass the project site (Brazel, 1987).

The proposed project would generate an estimated 49,970 average daily trips (11,600-site trips and 38,310 off-site trips); resulting in an estimated total daily vehicle miles traveled of 327,680. Assuming an average fuel economy of 15 miles per gallon, travel generated directly by the proposed project would use approximately 21,845 gallons of gasoline daily (**Table 28**).

Total energy demand for the proposed project would be approximately 972,940 million British Thermal Units (BTUs) daily. Overall, energy impacts are not considered significant because the existing deliverable capacity for natural gas and electricity are adequate to supply the proposed project. In addition, almost unlimited solar energy is available at the project site for future use.

5.13.3 Mitigation Measures

While energy impacts are not considered significant, implementation of all energy conservation measures listed as mitigation measures in Sections 5.8 (Traffic), 5.9 (Air Quality), 5.14 (Electricity) and 5.15 (Natural Gas) of this report and the following measures would reduce energy use at the project site:

TABLE 28

Proposed Project and Cumulative Estimated Daily Energy Use

Energy Type	Volume	Energy Use (million BTUs)*
Proposed Project		
Electricity	98,975 kilowatt-hours	337.8
Natural Gas	922,300 cubic feet	968,415.0
Gasoline	21,845 gallons	2,084.4
Subtotal Proposed Project		**970,837.2**
Cumulative Projects		
Electricity	482,245 kilowatt hours	1646.5
Natural Gas	3,148,358 cubic feet	3,305,776.0
Gasoline	75,275 gallons	7,182.6
Subtotal Cumulative Projects		**3,314,605.1**
Total Cumulative Energy Use		**4,285,442.3**

* 1 cubic foot of natural gas = 1,050,000 BTUs.
1 kilowatt hour = 3,414.4 BTUs
1 gallon of gasoline = 95,418 BTUs.

- Energy efficient water heaters and space heating units, insulation, dual glazed windows and thermally efficient building materials shall be installed in all structures constructed on the project site.

- Structures and landscaping shall be situated to maximize solar access.

- Ventable windows shall be installed to maximize use of passive heating, cooling and air exchange.

- Restrictive water fixtures shall be installed as identified by the California Department of Water Resources.

- Encourage the placement of dwelling units to take full advantage of solar energy for natural heating and cooling in order to reduce the use of electricity and natural gas within the project area.

5.13.4 Cumulative Impacts

There would be an increase in energy use as a result of proposed project and cumulative projects development (**Table 28**). Cumulative energy consumption including the proposed project, would be approximately 581,220 kilowatts of electricity, 4,070,658 cubic feet of natural gas and 97,120 gallons of gasoline daily. A total of 4,285,442.3 million BTUs of energy would be consumed daily as a result of proposed and cumulative projects development.

5.13.5 Unavoidable Adverse Impacts

None.

5.14 ELECTRICITY

5.14.1 Existing Conditions

The project vicinity receives electrical service from the Southern California Edison Company (SCE). Five sets of high-tension electric transmission lines and one 12 kV distribution line cross the project site (**Figure 63**). According to Southern California Edison, service within its service areas is currently adequate.

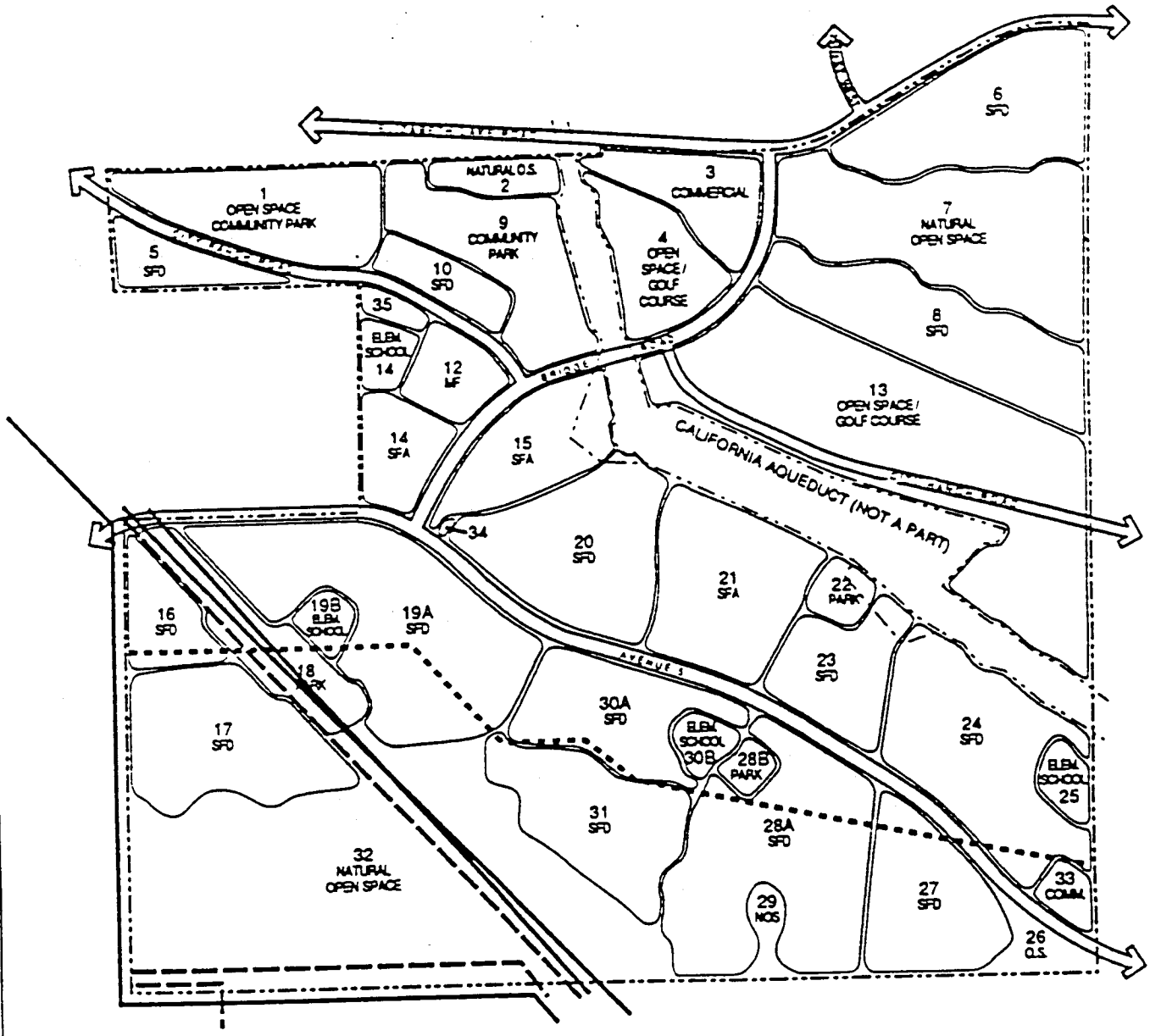
5.14.2 Project Impacts

Development of the proposed City Ranch project would create an increased demand for approximately 99,975 kilowatt-hours of electricity daily (**Table 29**). The proposed location of service lines capable of serving the project site have yet to be determined and would be contingent upon the developer's proposed phasing of the project. SCE, (August, 1989) has determined that they have sufficient capacity to serve the proposed project. Therefore, proposed project impacts are not considered significant with regard to electricity use.

The five sets of existing above-ground high-tension SCE transmission lines would not be disturbed by development of the proposed project. These lines would pass through Planning Area 18 which is designated as a park, and Planning Area 32 designated as natural open space. The 12 kV distribution line crossing the southern portion of the project site may need to be realigned along Avenue S as a result of project development.

5.14.3 Mitigation Measures

Although impacts related to electricity use are not considered significant, implementation of the following measures would reduce electricity use:



LEGEND

- PROJECT SITE BOUNDARY
- 500 kv TRANSMISSION LINE
- 220 kv TRANSMISSION LINE
- 12 kv DISTRIBUTION LINE

N

0 900' 1800' 2700'

Envicom Macintosh Graphic

Source: Analysis of Potential Adverse Health Risk Impacts Resulting from Proximity of Future Residents to Electrical Power Lines, June 1989, Ultrasystems Environmental Services

EXISTING ELECTRIC LINES

FIGURE 63

TABLE 29

Proposed Project and Cumulative Daily Electrical Usage

Land Use	Usage Factor[1] (kilowatt-hours/sq.ft./year)	Electricity Usage (kilowatt-hours/day)
Proposed Project		
Residential		
5,200 dwelling units	6,081/unit	86,633
Commercial		
260,000 sq.ft.	11.8	8,405
Schools		
170,000 sq.ft.	6.3	2,934
Golf Course Clubhouse		
15,000 sq.ft.[2]	8.8	362
Community Recreation Building		
20,000 sq.ft.[2]	8.8	482
Fire Station		
6,600 sq.ft.	8.8	159
Subtotal Proposed Project		**98,975**
Cumulative Projects		
Residential		
13,145 dwelling units	6,081/unit	219,000
Commercial		
5,143,496 sq.ft.	11.8	166,169
Public Library		
16,000 sq.ft.	8.8	385
Schools		
5,605,760 sq.ft.	6.3	96,691
Subtotal Cumulative Projects		**482,245**
Total Cumulative Electrical Usage		**581,220**

1. Source of usage factors: SCAQMD, Air Quality Handbook, 1987.
2. For estimating purposes only.

- Installation of thermal insulation must meet or exceed the requirements of California Code of Regulations Title 24.

- Natural gas shall be used for space heating and cooking.

- Attic ventilation devices shall be installed.

- Windows and vents shall be used to provide room ventilation where possible.

With regard to the 12 kV line:

- Depending on project design, the 12 kV line crossing the southern portion of the project site may need to be removed or realigned. It shall be done so in accordance with SCE regulations.

5.14.4 Cumulative Impacts

Development of the cumulative projects in the vicinity of the proposed project would increase electrical demand by approximately 482,245 kilowatt-hours per day (Table 29). Together with the proposed project, the cumulative demand for electricity would be approximately 581,220 kilowatt-hours per day. The proposed project demand represents approximately 17 percent of the total cumulative electric demand. According to Southern California Edison, they would be able to meet this demand.

5.14.5 Unavoidable Adverse Impacts

None.

5.15 NATURAL GAS

5.15.1 Existing Conditions

The proposed City Ranch development is located within the Southern California Gas Company Foothill Division service area; the Foothill Division currently serves the majority of the population in the Antelope Valley area. The project site is currently not served by Southern California Gas Company. The nearest service line is a 4-inch main located one-quarter of a mile east of the site at the intersection of Elizabeth Lake Road and Foxholm Drive. Those not using Southern California Gas Company services use private propane services. Two propane tanks are located on the project site.

5.15.2 Project Impacts

Development of the proposed City Ranch project would require approximately 922,300 cubic feet of natural gas daily (Table 30). The Southern California Gas Company (July 1989) has indicated that the proposed project can be served from the existing 4-inch main located one-quarter mile east of the project site along Elizabeth Lake Road at Foxholm Drive without a significant impact on overall system quality, service to existing customers, or the environment. Extension of the main to the project site and provision of a number of 2-inch mains within the project site will, however, be necessary. This would be done and paid for by the Southern California Gas Company. A gas main is proposed to be constructed in the Elizabeth Lake Road right-of-way as part of assessment district 90-1 improvements.

5.15.3 Mitigation Measures

Although the Southern California Gas Company has indicated that it would be able to supply the project's anticipated demand, the following mitigation measures are required to reduce natural gas consumption:

TABLE 30

Proposed Project and Cumulative Daily Gas Consumption

Land Use	Consumption Factor (cubic feet/month)	Natural Gas Consumption (cubic feet/day)
Proposed Project		
Residential		
3,253 single-family detached	5,300/unit	566,824
1,634 townhomes (single-family attached)	5,300/unit	284,719
313 condominiums (multiple-family)	3,115/unit	32,055
Commercial		
260,000 sq.ft.	2.9/sq.ft.	24,789
Schools		
170,000 sq.ft	2.0/sq.ft.	11,178
Golf Course Clubhouse		
15,000 sq.ft.[1]	2.0/sq.ft.	986
Community Recreational Buildings		
20,000 sq.ft.[1]	2.0/sq.ft.	1,315
Fire Station		
6,600 sq.ft.	2.0/sq.ft.	434
Subtotal Proposed Project		922,300
Cumulative Projects		
Residential		
13,035 single-family units	5,300/unit	2,296,749
110 multi-family units	5,300/unit	19,154
Commercial		
5,143,496 sq.ft.	2.9/sq.ft.	490,058
Schools		
5,605,760 sq.ft.	2.0/sq.ft.	368,346
Library		
16,000 sq.ft.	2.0/sq.ft.	1,051
Subtotal Cumulative Projects		3,148,358
Total Cumulative Natural Gas Consumption		4,070,658

Source: California Gas Company and SCAQMD, Air Quality Handbook, 1987.

1. For estimating purposes only.

- Install thermal wall and ceiling insulations and double glazed windows tha meet or exceed California Code of Regulations Title 24 insulation standards.

- Use pilotless ignition stoves, water heaters, dryers and heating/cooling units.

- Insulate gas water heaters with gas company approved insulated blankets.

5.15.4 Cumulative Impacts

Development of the cumulative projects in the Antelope Valley area is expected to require approximately 3,148,358 cubic feet of natural gas per day (**Table 30**). When combined, development of the proposed project, cumulative demand for natural gas is expected to require approximately 4,070,658 cubic feet per day. The proposed project demand represents approximately 23 percent of cumulative demand. The Southern California Gas Company is obligated under contract to the County of Los Angeles to supply all of the proposed projects with natural gas.

5.15.5 Unavoidable Adverse Impacts

None.

5.16 WATER

5.16.1 Existing Conditions

The project site is located within the Antelope Valley East Kern Water Agency (AVEK) boundary and is adjacent to the Los Angeles County Water Works District 34, Desert View Highlands (District 34) boundary at 20th Street West and Elizabeth Lake Road. District 34 is interconnected with Los Angeles County Waterworks District 4 (District 4) in 10th Street West at Avenue N and in Avenue P at 28th Street West. District 34 receives its water supply from AVEK and groundwater wells located in District 4.

AVEK obtains its water supply from the California Aqueduct at the Quartz Hill Water Treatment Plant near Avenue N and 65th Street West. This facility presently treats 54 million gallons per day (mgd) and is expected to be expanded to an ultimate capacity of 65 mgd in a few years. At this location, water is treated and pumped to local water purveyors through the South Feeder, the 60th Street West Lateral, and the Leona Valley Feeder. District 34 receives water from AVEK through three metered turnouts on the South Feeder.

If the AVEK water supply is interrupted, continuity of supply is maintained by pumping water from wells located in the Lancaster Groundwater Subunit. These wells are part of District 4 and have a combined capacity of approximately 43 mgd. Some of this capacity is available to District 34 through the connection with District 4 on 10th Street West. During 1990, the total groundwater production within the Lancaster Groundwater Subunit was 40,000 acre-feet. Approximately 18,500 acre-feet of this total was pumped by District 4.

The total consumption for both districts in 1990 was approximately 32,000 acre-feet. This is equivalent to an average daily consumption of 28.6 mgd. AVEK supplied approximately 42 percent of this water. There were a total of 32,620 connections in the two districts as of December, 1990.

Twelve and three tenths (12.3) to nine and seven tenths (9.7) million gallons of untreated water per day are currently available on-site from an AVEK turnout located at the California Aqueduct. The capacity of this turnout depends on the water level in the Aqueduct. This untreated water is suitable for construction and irrigation purposes. Additional water may be available from three existing on-site groundwater wells.

The project site is located southwest of District 34's 2,911-foot Service Zone and west of its 3,240-foot Service Zone. Existing mains in the 2,911-foot Service Zone include a 36-inch main in 25th Street West 5,300 feet south of Avenue P and a 24-inch main in Elizabeth Lake Road at 20th Street West. The closest existing point of connection to the 3,240-foot Service Zone is a 12-inch main in Elizabeth Lake Road at 20th Street West.

5.16.2 Project Impacts

Water supply for the proposed project would be provided by Los Angeles County Water Works District 34, Desert View Highlands. The estimated water requirement for the entire project is 5.22 mgd as shown on Table 31. Approximately 1.25 mgd of this amount would be required for irrigation. Irrigation water can be taken from the existing supply of non-potable water available on-site.

In the future, gray water may be available from the Sanitation District to supplement the use of raw water for irrigation purposes. The water mains that provide this water are separate from the potable water supply lines. The project developer has indicated that AVEK or another entity will be responsible for the long-term maintenance of the nonpotable water mains. However, confirmation of this has not yet been received from AVEK. In the event that AVEK declines the maintenance responsibility, the project developer will have to identify another maintenance entity or abandon these nonpotable water mains. The city will not maintain the raw water line.

The remaining 3.97 mgd of water demand would require a potable source, i.e., District 34. This amount represents a 16% increase in District 34's current water consumption

TABLE 31

Proposed Project and Cumulative Daily Water Usage

Land Use	Consumption Factor (gallons/day)	Average Daily Water Usage (million gallons/day)
Proposed Project		
Residential		
3,253 units single-family detached	752/unit	2.44
1,634 units single-family attached	668/unit	1.09
313 multi-family	585/unit	0.18
Commercial		
42.1 acres	3,340/acre	0.14
Schools		
36 acres	3,340/acre	0.12
Golf Course		
215.6 acres	3,340/acre	0.72
Public Parks		
159.3 acres	3,340/acre	0.53
Fire Station		
1 acre	3,340/acre	Negligible
Subtotal Proposed Project		**5.22**
Cumulative Projects		
Residential		
13,035 single-family detached	752/unit	9.80
110 multi-family	585/unit	0.06
Commercial	3,340/acre	0.57
170 acres*		
Schools*	3,340/acre	0.42
125 acres		
Public Library	3,340/acre	0.01
3 acres		
Subtotal Cumulative Projects		**10.86**
Total Cumulative Water Usage		**16.08**

Source of consumption factors: Los Angeles County Water Works.

* Represents estimated acreages.

demand of 25 mgd. In order to receive water from District 34, it would be necessary for the project to annex into its service area. Once annexed, the existing 2,911-foot and 3,240-foot Service Zones would have to be extended to the project site. Pumping capacities at existing stations are not sufficient to meet the additional needs of the proposed project, therefore, additional capacity would be required. Likewise, additional water storage would be required to serve the domestic, emergency, and fire flow requirements for the project. In addition to improvements to the 2,911-foot and 3,240-foot Service Zones, a third 3,430-foot Service Zone would be required to service the higher elevations on the project site.

The principal water supply from AVEK will be delivered to District 34 via the line along 10th Street West. It would be conveyed to the City Ranch property through proposed and existing water system facilities in the 2,696-foot and 2,911-foot Service Zones (**Figure 64**). When the AVEK supply is not available, groundwater from the Lancaster Subunit will be delivered to District 34 from a pumping station proposed to be located on an existing utility site at Avenue M and 5th Street East (M5E). This water would be conveyed through a proposed 30-inch main from the M5E utility site to Avenue O-4 and 10th Street West and then conveyed through District 34 facilities to the project site. Water infrastructure is also required through the site to serve proposed facilities (**Figure 65**).

District 34 has indicated that they would be capable of delivering water necessary to serve the proposed project through existing and proposed supply facilities. However, without annexation into District 34 and without implementation of water infrastructure extensions shown on **Figures 64** and **65**, the proposed project would have a significant impact with regard to water supply.

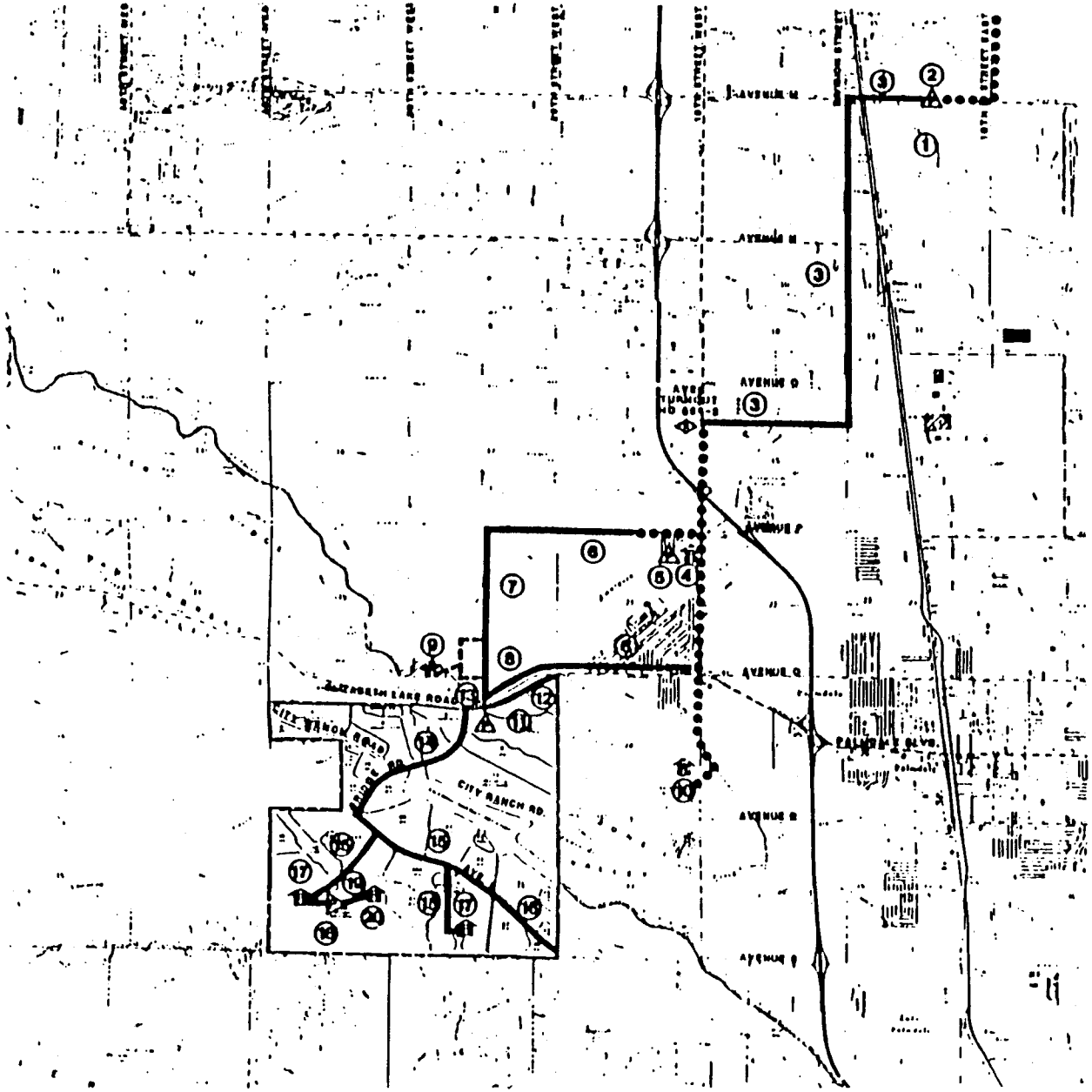
With regards to groundwater supply, several different studies were reviewed that appear to have conflicting opinions concerning the ability of the aquifer to accommodate additional growth in the Antelope Valley. The following studies were reviewed with respect to groundwater supply: Proposal for Antelope Valley Subsidence and Groundwater Resources Evaluation, prepared by U.S.G.S., May

30, 1991; Water Resources Study of the Antelope Valley, prepared by the Antelope Valley United Water Purveyors, April 1991; Report on Existing and Projected Water Demands and Source of Supply For the Antelope Valley, prepared by Los Angeles County Waterworks Districts, March 1991; Ground Water Supply Study for the Ritter Ranch, Antelope Valley Los Angeles County, California, prepared by C.B. Loundagin, February 1990; Hydrogeologic Assessment for Construction of New Emergency Supply Water Well, Antelope Valley, Los Angeles County, prepared by Richard Slade, August 1989; Geohydrology of the Antelope Valley Area California and Design for a Ground-water-quality Monitoring Network, prepared by U.S.G.S, 1987; and Planned Utilization of the Water Resources in the Antelope Valley, prepared by State of California Department of Water Resources, October, 1980.

The conclusions expressed in the various groundwater studies demonstrate that a disagreement exists between experts on groundwater supply, groundwater recharge and, safe yield from the aquifer. For example, the report prepared by Los Angeles County Waterworks District, March 1991, concludes that the Valley's existing water resources (groundwater and state-imported water) were sufficient to support SCAG's 2010 population projection for the Antelope Valley. However, the water resources study prepared by the Antelope Valley United Water Purveyors concluded that the overdraft in the aquifer in 1990 was at least 60,500 acre-feet, and implied that additional growth would jeopardize the availability of water in the future. Two of the studies reviewed discussed water levels in various locations of the aquifer; in one study location, well levels were rising, in the other, water levels were falling (Loundagin, Slade). Also, estimates of the annual recharge to the aquifer, and therefore, the safe yield, was reported to be 76,000 acre-feet, 58,000 acre-feet and 40,700 acre-feet in the various studies.

However, Los Angeles County Waterworks District No. 34 has repeatedly indicated that there is sufficient water supply using a conjunctive use policy to accommodate this project, as well as other planned development. The Waterworks District has described their conjunctive use policy in the following manner: state water project water will be used in times when water is plentiful to recharge the groundwater basin; in times when state water project water is scarce, the groundwater stored in the aquifer will be withdrawn and used as the primary source of supply. Application of this policy is anticipated to keep the groundwater levels above the 1980 historic low so as to preserve the capability to replenish the aquifer while at the same time providing sufficient water to serve the growing needs of the Antelope Valley.

Therefore, based upon the evidence presented, development of the project will not result in significant cumulative effects on the groundwater supply. However, if, in the future imported water is not available to support project development, a supplemental EIR would be required to address project impacts to regional groundwater resources.



LEGEND

2696-FOOT SERVICE ZONE:

- ① 12-3.0 MG RESERVOIRS BY OTHERS: AVE. M AND 5TH ST. EAST
- ② 7,000 GPM PUMPING STATION BY K&S: AVE. M AND 5TH ST. EAST
- ③ 30 INCH WATER MAIN BY K&S: IN AVE. M, DIVISION ST. AND AVE. O-4
- ④ 2-1.0 MG RESERVOIRS: AVE. P AND 10TH ST. WEST

2911-FOOT SERVICE ZONE:

- ⑤ 7,000 GPM PUMPING STATION EXPANSION BY K&S: AVE. P AND 10TH ST. WEST
- ⑥ 20 INCH WATER MAIN BY K&S IN AVE. P
- ⑦ 30 INCH WATER MAIN BY K&S AND OTHERS IN 25TH ST. WEST
- ⑧ 24 INCH WATER MAIN BY K&S IN ELIZABETH LAKE RD.
- ⑨ FUTURE 1.5 MG AND 2.5 MG RESERVOIRS: CITY RANCH NORTH
- ⑩ 2.0 MG AND 2.0 MG RESERVOIRS: TIERRA SUBIDA AVE. AND AVE. Q-10

3240-FOOT SERVICE ZONE:

- ⑪ 7,000 GPM PUMPING STATION BY K&S: ELIZABETH LAKE RD. AND 25TH ST. WEST
- ⑫ 16 INCH WATER MAIN BY K&S IN ELIZABETH LAKE RD.
- ⑬ 30 INCH WATER MAIN BY K&S AND OTHERS IN ELIZABETH LAKE RD.
- ⑭ 24 INCH WATER MAIN BY K&S
- ⑮ 20 INCH WATER MAIN BY K&S
- ⑯ 16 INCH WATER MAIN BY K&S
- ⑰ 3.0 MG (NET) RESERVOIRS BY K&S

3430-FOOT SERVICE ZONE:

- ⑱ 600 GPM PUMPING STATION BY K&S
- ⑲ 12 INCH WATER MAIN BY K&S BETWEEN ⑱ AND ⑳
- ⑳ 1.0 MG (NET) RESERVOIR BY K&S

SYMBOLS:

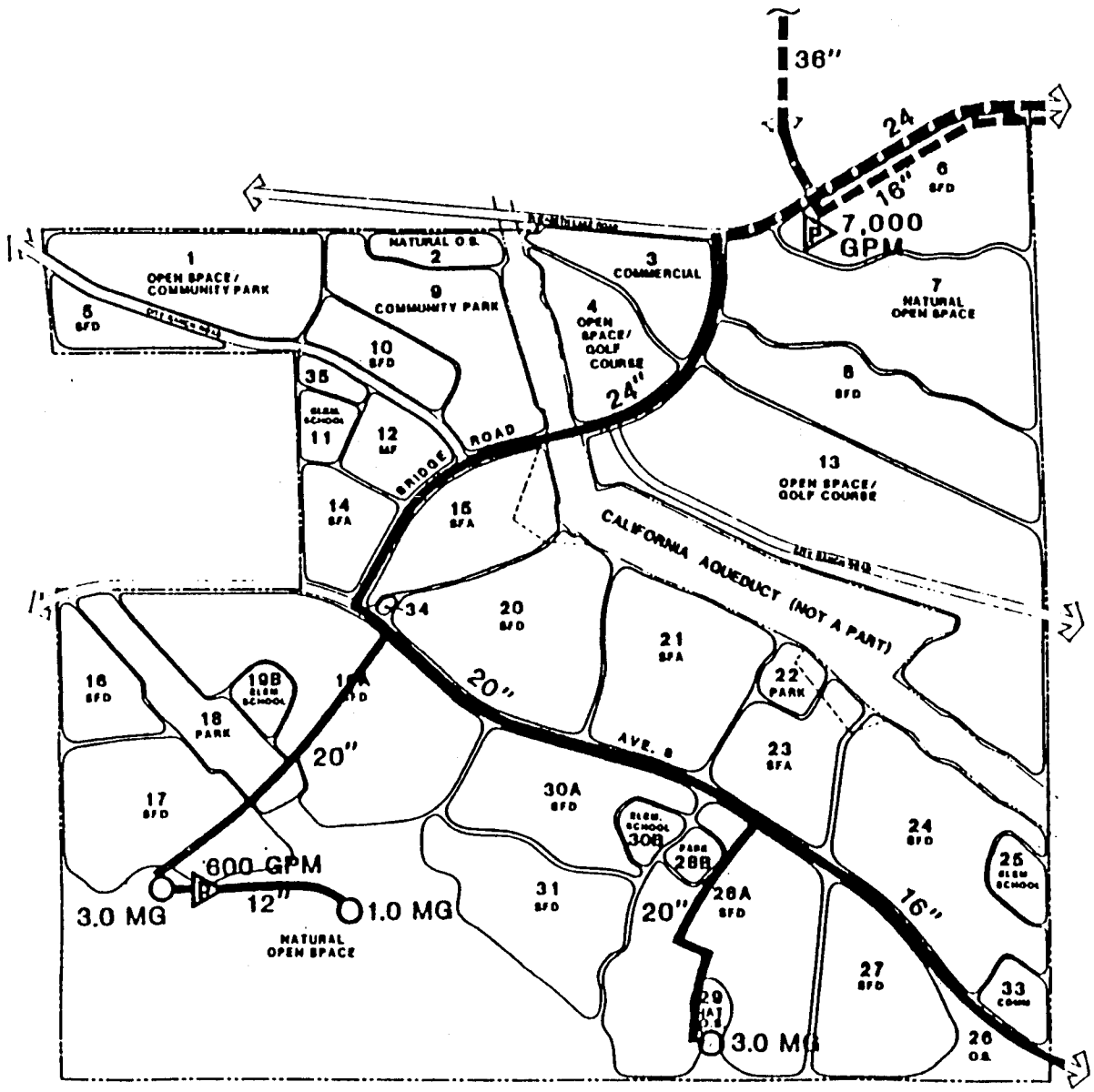
- PROPOSED WATER MAIN BY K&S
- PROPOSED MAIN BY OTHERS
- EXISTING MAIN
- PROPOSED PUMPING STATION BY K&S
- EXISTING PUMPING STATION
- PROPOSED RESERVOIR
- EXISTING RESERVOIR

N

0 Miles 6 12 18

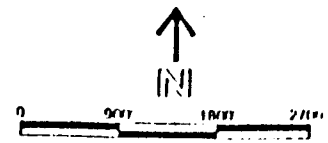
SOURCE: City Ranch Specific Plan, 1991
K&S de Almeida Planning

FIGURE



LEGEND

- PROPOSED ONSITE SUPPLY MAIN
- PROPOSED ONSITE PUMPING STATION
- PROPOSED ONSITE WATER STORAGE RESERVOIR
- PROPOSED OFFSITE SUPPLY MAIN



SOURCE: City Ranch Specific Plan, 1991
Azeka de Almeda Planning

ON-SITE WATER PLAN

FIGURE 65

5.16.3 Mitigation Measures

Implementation of the following mitigation measures would reduce project impacts with regard to water to a level of "non significant."

- The City Ranch property shall be annexed into District 34.

- Following annexation into District 34, the applicant shall negotiate the provision of and financing for major infrastructure facilities (reservoir sites, transmission lines, pumping equipment, etc.) as part of a water system agreement with District 34.

- All water infrastructure extensions and improvements shall be constructed by the applicant as depicted on **Figures 64** and **65** and described in the Project Impacts subsection of this section of the EIR, and as required by Waterworks District #34.

Interior Water Consumption Reduction Measures:

- Install a pressure regulator on all water services and maintain a building water pressure of 40 pounds per square inch or less;

- Use ultra-low flush toilets (1.5 to 1.6 gallons per flush) in all residential buildings.

- Use water-saver type shower heads.

- Use low-flow faucet fixtures.

Exterior Water Consumption Reduction Measures:

All mitigation measures listed below shall be in accordance with City standards as approved by the City Engineer and the Planning Director.

- Non-potable water shall be used for all golf course, park and community landscaping irrigation needs where available and determined feasible by the City Engineer.

- Landscape street rights-of-way, easements, medians, project entry statements, and all manufactured slopes with drought tolerant species where feasible.

- Lawn turf shall consist of drought tolerant species, warm season grasses, hybrid fescues, or lawn substitutes (i.e., *Achillea* species etc.).

- Landscape easements, right-of-way medians, entry statements, and all manufactured slopes shall be landscaped with drought-tolerant species.

- Improve the soil to increase water retention. Use mulch and other inorganic and organic groundcover extensively in appropriate landscaped areas. Ground covering applied on top of soil will improve the water-holding capacity of the soil by reducing evaporation and soil compaction.

- Group plants of similar water demand to reduce over-irrigation of low-water-using plants.

- Install efficient irrigation systems that minimize runoff and evaporation and maximize the water applied to reach plant root zones.

5.16.4 Cumulative Impacts

The cumulative projects, if developed as planned, would have a water demand of approximately 10.86 mgd (**Table 31**). When combined with the proposed project's estimated 5.22 mgd water demand, cumulative water demand would be expected to be 16.08 mgd. This would represent 25 percent of the current 65 mgd AVEK supply capability.

5.16.5 Unavoidable Adverse Impacts

Development of the project may contribute to potentially significant impacts to groundwater, if in the future, it is determined that the Lancaster subunit can not support the levels of development in the Antelope Valley.

5.17 SEWAGE DISPOSAL

5.17.1 Existing Conditions

The project site is located outside of the area served by the Los Angeles County Sanitation Districts (LACSD). Annexation of the project site into the City of Palmdale and into the LACSD will locate the project site within LACSD No.20. The District presently serves a population of approximately 72,800 in the Antelope Valley area. Sewage generated within District No. 20 is conveyed through trunk sewers to the Palmdale Water Reclamation Plant (Palmdale WRP) located approximately 5.7 miles east of the project site at 39300 30th Street East in Palmdale. The Palmdale WRP currently has an average daily flow capacity of 8.0 million gallons per day (mgd). At this time, the Palmdale WRP is operating at capacity, with daily flows often ranging from 7.3 to 8.2 mgd. Expansion of the Palmdale WRP, scheduled for completion in March 1992, will increase the plant capacity to an influent capacity of 12.0 mgd and an effluent discharge limitation of 10.0 mgd. There will be additional capacity added to the Palmdale WRP in the future to a maximum capacity of 15.0 mgd, however, there is no definite work schedule extablished for this expansion (Sakai, 1992).

The nearest District trunk sewer to the project site is the recently constructed LACSD No. 20 Trunk "C" Relief Sewer. The point of connection to Trunk "C" is located approximately 3 miles away at the intersection of Division Street and Avenue P-8. The Trunk "C" Relief Sewer operates by gravity flow and is a21 to 39-inch diameter vitrified clay pipe sewer which varies in capacity from 18.3 to 36.7 mgd.

Trunk Sewer "A," also made of vitrified clay pipe, connects to Trunk Sewer "C" at the intersection of Division Street and Avenue P-8. It varies in diameter from 18 to 30 inches increasing in capacity as it increases in diameter. At Avenue P-8 near Sierra Highway, Trunk Sewer "A" has a capacity of 3.6 mgd; flow however is only at 28% of capacity. At Avenue P-8 near 15th Street East, capacity is 4.8 mgd with flow at 50% of capacity. At 15th Street East and Avenue P the sewer increases from 18 to 24 inches in diameter with a capacity of 5.6 mgd and a 60% flow; and at 30th Street East near the

Palmdale WRP, it is a 30-inch sewer with 9.2 mgd capacity and a 37% flow. All flow measurements were made in January of 1990.

The abandoned structures located on the project site utilized septic tanks for sewage disposal.

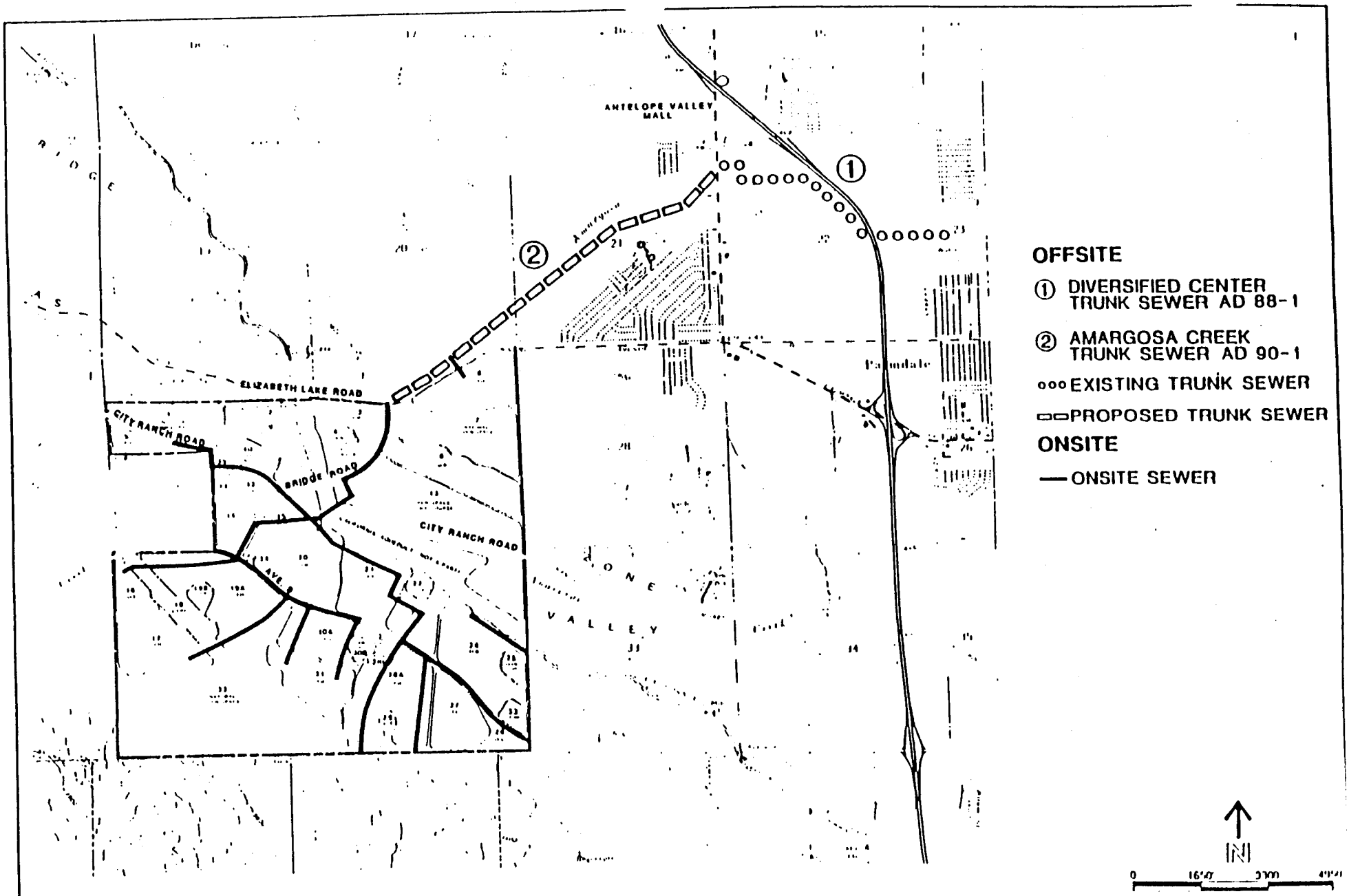
5.17.2 Project Impacts

In order to provide sewage service to the project site, a trunk sewer would need to be extended to the project site (**Figure 66**) from District 20 Trunk "C" Relief Sewer. Without implementation of infrastructure extensions shown on **Figure 66**, and described below, the proposed project would create significant impacts with regard to sewerage infrastructure.

From the point of connection of the Trunk"C" Relief Sewer at 10th Street West and Amargosa Creek, the Amargosa Creek Trunk Sewer (shown on **Figure 66**) would need to be extended to the project site. The Amargosa Creek Trunk Sewer would need to be extended along the Amargosa Creek drainage channel, then along Elizabeth Lake Road to Bridge Road. From the extension of Bridge Road at Elizabeth Lake Road to 25th Street West, a 27-inch trunk sewer would be required to connect on-site sewer mains to the Amargosa Creek Trunk Sewer.

From Elizabeth Lake Road, a 27-inch subtrunk sewer would be needed extending southwesterly along the alignment off Bridge Road to the California Aqueduct, then south 800 feet to a triple box stormdrain culvert where the trunk sewer would need to cross under the Aqueduct. After crossing under the Aqueduct, the trunk sewer would need to split into three other sewer mains at Planning Area 15.

The first sewer main off the three-way split (18 inches in diameter) would need to continue easterly and parallel to the California Aqueduct, through Planning Areas 20 and 21. In the eastern corner of Planning Area 21, the sewer main would need to route



SOURCE: City Ranch Specific Plan, 1991
Azeka de Almeda Planning

SEWER PLAN

FIGURE 66

around Planning Area 22 and continue in a southerly direction through Planning Area 23 to Avenue S, then southeasterly along Avenue S as a 15-inch diameter sewer main to the southeastern boundary of the property.

The second sewer main would serve Planning Areas 14, 15, 16, 17, 18, 19, 30 and 31, and a portion of the adjacent development to the west and would be tributary to a sewer main in Avenue S. This sewer main would be 15 to 18 inches in diameter. The third sewer main would be 12 inches in diameter and would need to extend to Planning Area 5 between Planning Areas 10 and 12, then along Bridge Road to the trunk sewer crossing under the California Aqueduct. The areas northeast of the Aqueduct need to be sewered either directly to the Amargosa Creek Trunk Sewer or to the trunk sewer along Bridge Road.

Development of the proposed project would generate an estimated 1,272,832 gallons of wastewater per day (**Table 32**). This would exceed Palmdale WRP's current capacity by approximately 1.27 mgd. However, as mentioned above, the Los Angeles County Sanitation Districts are planning for the expansion of the Palmdale WRP which would provide for the treatment of wastwater flows up to 15.0 mgd, an increase of 7.7 mgd.

If the proposed project is approved, the Palmdale WRP would be expanded to provide the necessary additional capacity, provided that the connection fees to the Sanitation District's sewer system have been paid by the applicant. Expansion would occur during the time between payment of connection fees and final buildout of the proposed project. Therefore, impacts with regard to sewage disposal are considered to be "not significant."

5.17.3 Mitigation Measures

Implementation of the following mitigation measures would reduce impacts with regard to sewage infrastructure to a level of "not significant":

TABLE 32

Cumulative Project and Cumulative Sewage Generation

Land Use	Generation Factor (gpd)	Daily Sewage Generation (gpd)
Proposed Project		
Residential		
3,253 single-family units	260/unit	845,780
1,634 townhomes	156/unit	254,904
313 condominiums	156/unit	48,828
Commercial		
260,000 sq.ft.	325/1,000 sq.ft.	84,500
School		
170,000 sq.ft.	200/1,000 sq.ft.	34,000
Golf Course Clubhouse		
15,000 sq.ft.	100/1,000 sq.ft.	1,500
Community Facility		
20,000 sq.ft.	100/1,000 sq.ft.	2,000
Fire Station		
6,600 sq.ft.	200/1,000 sq.ft.	1,320
Subtotal Proposed Project		**1,279,832**
Cumulative Projects		
Residential		
13,035 single-family	260/unit	3,389,100
110 multi-family	156/unit	17,160
Commercial		
5,143,496 sq.ft.	325/1,000 sq.ft.	1,671,636
Public Library		
16,000 sq.ft.	200/1,000 sq.ft.	3,200
Schools		
5,605,760 sq.ft.	200/1,000 sq.ft.	1,121,000
Subtotal Cumulative Projects		**6,202,096**
Total Cumulative Sewage Generation		**7,481,928**

Source of generation factors: Los Angeles County Sanitation Districts.

- All sewer infrastructure extensions and improvements depicted on Figure 66 and described in the project impacts subsection of this section of the EIR shall be constructed by the applicant. In the event that Assessment District 90-1 is not formed, and Developer constructs off-site trunk sewer lines within the San Andreas fault zone, the Developer shall use state-of-the-art designs for the trunk sewer line to minimize the risk of rupture, and subsequent contamination, caused by a seismic event. Also, the Developer shall cause the preparation of an emergency spill response plan. The plan shall include provisions for spilled sewage retention, spill response measures, cleanup and disinfection measures, and training and funding for implementation of the spill plan. The plan shall be reviewed by the Lahontan Regional Water Quality Control Board and Sanitation District No. 20, and reviewed and approved by the Director of Public Works and the Director of Planning.

- Sizing of these lines shall be dependent upon County of Los Angeles Sanitation Districts' specifications. The Districts may require over-sizing of sewer lines to accommodate future growth in the area. (The responsibility of installing relief sewers and expanding District No. 20's wastewater treatment plant (WTP) to accommodate flows generated by the proposed project and other developments belongs to County Sanitation District No. 20.)

- The Los Angeles County Sanitation Districts are empowered by the California Health and Safety Code to charge a fee (presently $1,350.00 per dwelling unit) for the privilege of connecting to the Sanitation Districts' sewer system. The applicant will pay the connection fee.

In addition to the conservation measures listed in Section 5.16 (Water), the following mitigation measure would reduce the amount of wastewater flow generated by development of the proposed project:

- The applicant shall consider the installation of an on-site water reclamation plant to provide a source of nonpotable water suitable for landscape irrigation. Consideration shall be based on final siting of project components and economic environmental, and regulatory agency requirements.

5.17.4 Cumulative Impacts

Fifty other development projects have been identified in the vicinity of the project site which will also contribute sewage to the sewerage system. Development of these projects is expected to generate approximately 6.20 mgd of sewage (Table 32). Together with the proposed project sewage, cumulative sewage generation is expected to reach 7.48 mgd. Expansion of the Palmdale WRP treatment facility to a capacity of 15.0 mgd would provide sufficient capacity to serve identified and cumulative projects. Proposed project and cumulative projects' discharge would represent approximately 49% of the Palmdale WRP's future capacity. Expansion of the treatment facility and improvements to the sewerage system to meet increased capacity demand will be mitigated through the implementation of the Sanitation Districts sewage connection fees paid by each project developer. The Sanitation Districts' schedules expansion of its facilities upon payment of connection fees and following project approval so that their facilities are on-line prior to project buildout and occupancy.

5.17.5 Unavoidable Adverse Impacts

None.

5.18 SOLID WASTE

5.18.1 Existing Conditions

Solid waste generated in the City of Palmdale and the surrounding unincorporated areas of Los Angeles County is collected by the Palmdale Disposal Company. Each home and business is billed directly by the disposal company for this service. The waste is transported to the Antelope Valley Public Landfill Class III Landfill which is also owned and operated by the Palmdale Disposal Company; the private disposal companies serving cities and communities in the Antelope Valley also utilize this landfill. The landfill receives 127,400 tons of waste per year and as of November, 1990, had a remaining permitted capacity of 1,750,000 tons (Palmdale Disposal Company, 1990). Present capacity may be exhausted as soon as July, 1996. In addition, the landfill has an expansion potential of 3,850,000 tons, and is proposed to be enlarged in 1997. The Antelope Valley Public Landfill does not accept hazardous materials. When it is feasible, recyclable wastes are separated out by the Palmdale Disposal Company prior to dumping in the landfill.

On January 1, 1990, the California State Legislature enacted the California Integrated Solid Waste Management Act of 1989 (AB 939). The purpose of this Act is to reduce, recycle and reuse solid waste generated in the State to the maximum amount feasible. City and County jurisdictions must identify an implementation schedule to divert 25% of their total solid waste stream within the jurisdiction from landfill disposal by the year 1995 and 50% of the total waste stream from landfill disposal by the year 2000.

The City is presently in the process of adopting a Source Reduction and Recycling Element and a Household Hazardous Waste Element to the City's General Plan. These documents will provide long-term guidance on the City's policies on solid waste disposal and recycling in compliance with AB939. These documents will recommend methods of diverting waste from the Antelope Valley Landfill, prolonging the usable life of the facility.

Although the City of Palmdale has yet to implement any source reduction or curbside recycling programs, if AB 939 were fully implemented, at least 63,700 tons of waste per year would be diverted from the Antelope Valley Public Landfill.

5.18.2 Project Impacts

Development of the proposed project would generate an estimated 54,019 pounds of solid waste per day (Table 33), plus materials generated by regular maintenance of the project's proposed parks and golf course. Full development of the proposed project represents approximately a 7.7 percent increase in the current quantity of waste deposited at Antelope Valley Public Landfill. Assuming expansion of the landfill occurs, this increase in solid waste disposal by the proposed project would not be considered an adverse impact due to the sufficient amount of existing and potential landfill capacities. Future homeowners would be required to pay disposal service fees to Palmdale Disposal Company for trash removal and disposal.

5.18.3 Mitigation Measures

Although impacts related to solid waste disposal are not considered significant, implementation of the following measures would help to reduce solid waste generation:

- On-site source separation for commercial uses.

- "Curbside" recycling programs should be implemented to reduce the amount of solid waste brought to the Antelope Valley Landfill. The recycling program should focus on paper, glass, aluminum, tin, plastics and other recyclables.

- Where applicable, the applicant shall comply with the provisions of the City's Source Reduction and Recycling Element and the City's Household Hazardous Waste Element after those elements are adopted by the City Council.

TABLE 33

Proposed Project and Cumulative Solid Waste Generation

Land Use	Generation Factor (pounds per day)	Daily Solid Waste (pounds per day)
Proposed Project		
Residential		
3,253 single-family units (detached)	10/unit	32,530
1,634 townhomes (single-family attached)	10/unit	16,340
313 condominiums (multiple-family)	7/unit	2,191
Commercial		
260,000 sq.ft. retail	6/1,000 sq.ft.	1,560
Schools		
170,000 sq.ft.	7/1,000 sq.ft.	1,190
Recreation		
20,000 sq.ft.[1] recreation building	5/1,000 sq.ft.	100
15,000 sq.ft. golf course clubhouse	5/1,000 sq.ft.	75
Fire Station		
6,600 sq.ft.	5/1,000 sq.ft.	33
Subtotal Proposed Project		**54,019**
Related Projects		
Residential		
13,035 single-family units	10/unit	130,350
110 multi-family units	10/unit	1,100
Commercial		
5,143,496 sq.ft.	6/1,000 sq.ft.	30,861
Schools		
5,605,760 sq.ft.	7/1,000 sq.ft.	39,240
Public Library		
16,000 sq.ft.	7/1,000 sq.ft.	112
Subtotal Cumulative Projects		**201,663**
Total Cumulative Solid Waste Generation		**255,682**

Source of generation factors: City of Los Angeles, 1972 (modified).

1. For estimating purposes only.

5.18.4 Cumulative Impacts

Development of the cumulative projects would generate an estimated 201,663 pounds of solid waste per day (**Table 33**). Development of the proposed project combined with the cumulative projects would generate an estimated 255,682 pounds per day. Project-generated waste represents 21.1 percent of the cumulative quantity of solid waste. Cumulative solid waste generation represents approximately a 37.7 percent increase in the current quantity deposited at the Antelope Valley Public Landfill.

5.18.5 Unavoidable Adverse Impacts

In the event that expansion of the Antelope Valley Landfill does not occur in a timely manner, the project, along with the other surrounding developments would contribute to cumulative impacts to solid waste disposal.

5.19 COMMUNICATIONS

5.19.1 Existing Conditions

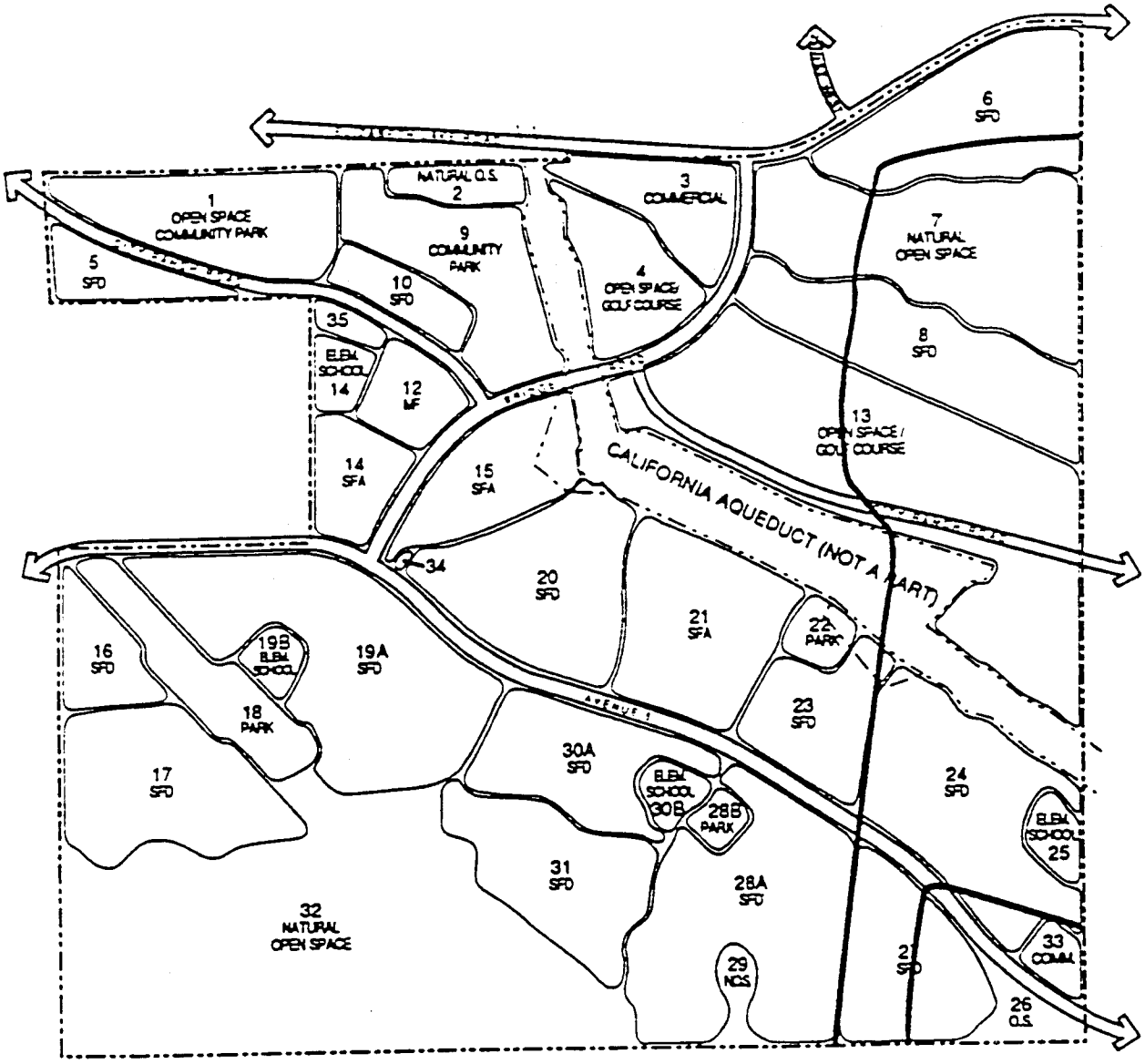
Telephone service and facilities in the vicinity of the project site are provided by Pacific Bell. Cable television service in Palmdale is provided by Jones Intercable TV. Jones Intercable presently services 50,000 homes in the Antelope Valley. They do not presently service the unincorporated areas of Los Angeles County in the sphere of influence of the City of Palmdale. The nearest Jones Intercable television cable line is located at the intersection of Elizabeth Lake Road and 20th Street West.

Pacific Bell's area central office is located at 9th Street East and Palmdale Boulevard in Palmdale. The closest Pacific Bell communication line is located along Avenue S southeast of the project site.

Two buried American Telephone and Telegraph (AT&T) high capacity transcontinental communications lines cross the project site (**Figure 67**). One line crosses from north to south across the eastern half of the project site. The other line crosses the southeast corner in a north-south then east-west direction. These lines are contained in AT&T Communications (AT&T-C) easements.

The City of Palmdale uses radios to communicate with field personnel on a day to day basis, as well as during emergency situations. As of July, 1991, the City of Palmdale maintains one repeater on top of the City's Cultural Center. This repeater has a tower height of 50 feet and is capable of providing service to an area of operations within a ten mile radius. At the present time, the City utilizes 70 handheld radios and 13 vehicular radios to communicate with field employees.

The City is currently experiencing difficulty in communicating in parts of the City. Certain areas are beyond the range of the repeater, or within "shadow" areas where radio signals do not penetrate. As a result of this known deficiency, the City is in the proces



LEGEND

PROJECT SITE BOUNDARY

BURIED AT & T TRANSCONTINENTAL COMMUNICATION LINES

N

0 900' 1800' 2700'

Envicom Macintosh Graphic

SOURCE: City Ranch Specific Plan, 1991
Azeka de Almeida Planning

COMMUNICATION LINES

FIGURE 67

of defining the parameters of a City-wide study to determine existing capabilities and projected needs for radio communications.

The City Ranch project site contains locations where the City's existing radio communications system is known to be ineffective.

5.19.2 Project Impacts

Pacific Bell which presently serves the project site and vicinity would be able to service the project site. However, in order to do so, telephone infrastructure would have to be brought out to the project site via communication line extensions. Lines would likely be extended from the existing line south of the site at Avenue S along the proposed extension of Avenue S through the project site. All communication lines would be placed underground in conduits. Manholes would likely be shared with Southern California Edison. Above-ground serving area interface (SAI) boxes would need to be installed along the conduit right-of-way. Existing Pacific Bell communication facilities on the project site will need to be removed. According to Pacific Bell, telephone service can be supplied to the project site without effecting existing levels of service. Therefore, project impacts with regard to provision of telephone service are not considered significant.

As a result of project construction, the AT&T-C high capacity transcontinental communications line easements may be encroached upon. Of particular concern is the installation of utility infrastructure south of Avenue S and the construction of storm drain facilities along the AT&T-C easement south of the California Aqueduct. According to the proposed plan for storm drains (Figure 33), the drainage channel south of Avenue S would be situated to the east of the AT&T-C easement. Therefore, development of the proposed storm drain would not have a significant impact with regard to the AT&T-C easement. Development of utility infrastructure, however, could result in physical damage to the AT&T lines causing unanticipated interruption of AT&T's long distance telephone service. This is considered a potentially significan

impact.

Jones Intercable TV have indicated that they would be able to provide service to the project site following annexation of the site into the City of Palmdale. Jones Intercable TV expects to be able to serve the project site via their microwave station located at 12th Street East and Palmdale Boulevard. They would use off-site Southern California Edison box facilities for access to the project site. Project impacts with regard to cable television service are not considered significant.

Development of the proposed project would exacerbate the existing communications problems experienced in the outlying portions of Palmdale. The development would increase the number of maintenance employees and field inspectors in the project area which, in turn, would increase the need for dependable radio communications. In cases of emergency situations where City staff is responsible for taking action, the lack of adequate radio communications could result in an impact to public health and safety.

5.19.3 Mitigation Measures

Implementation of the following protective measures would enable AT&T to protect the existing communication system(s), permit future growth and in most cases allow AT&T to make repairs without having to damage streets, landscaping, parks, fencing, trees, etc. and would reduce impacts on the AT&T's high capacity transcontinental communication lines to a level of "not significant":

- No work may take place within the boundaries of the AT&T-C easements without prior written approval.

- Any lowering of lines required to maintain the proper depth of cover shall be at the developer's expense.

- A dedicated easement for access to all splices, manholes, valves and load points is required. This access shall be shown on the final plot plans and be of size and width sufficient to permit the passage of AT&T maintenance and construction vehicles.

- The developer may be required to expose the existing communications systems and place spare ducts (4 inch PVC pipe) alongside the existing system and cover the duct and system with concrete top protection at various locations within the development. Long runs may require the installation of pull pits and dedicated access to them.

- The AT&T-C easement boundary shall be either the common boundary between the lots, if in side or back yards, or located within a lot in such a manner as to present the minimum exposure to future building additions and other hazards. Whenever possible, the system(s) should be located under a sidewalk area with the remaining easement width in the street.

- The AT&T-C easement description may be broad and may encumber or cloud a large area of a proposed development. In these cases AT&T-C may stake the system(s) location so the developer can survey the line and provide a certified survey and legal description. AT&T-C may then amend the easement and remove the broad description to satisfy the requirement of lenders, title companies, city planning and zoning agencies, etc.

- Structures shall not be permitted in the AT&T-C easement. This includes walls, concrete slabs, buildings, patios, etc. In the event of an emergency restoration of the communications system, the removal of unauthorized structures will be at the property owner's expense.

- Other utility easements (longitudinal) shall not be dedicated or plotted within the boundary of the AT&T-C easement. All crossings to be made by water line

sewers, gas, power, etc., need to be planned well in advance to arrange for proper clearances and protective measures. The crossing utility shall coordinate all crossings with AT&T-C prior to any construction.

- In those areas where AT&T-C consents to streets, curbs, parkways, sidewalks, parks, open space or other public use, AT&T-C would continue to require and maintain an easement and right-of-way for all the purposes for which the easement was acquired.

- Preliminary plot plans showing the easement and the proposed uses should be submitted to AT&T-C for approval prior to the preparation and filing of final plot plans. Four (4) copies of all plot plans, preliminary and final grading plans and any other engineering data affecting the easement shall be provided to AT&T-C as soon as possible.

- The developer shall provide their pro-rata share towards the implementation of the findings of the radio communications needs study currently being prepared by the City. This may include providing a site for the construction of a radio repeater, construction of the repeater, or providing funding for the acquisition and construction of such improvements, as determined necessary by the City's Emergency Services Coordinator.

5.19.4 Cumulative Impacts

According to Pacific Bell and Jones Intercable, development of the project and cumulative projects would not create significant service level problems with regard to telephone or cable TV service provision. It would, however, increase Jones Intercable and Pacific Bell service areas.

5.19.5 Unavoidable Adverse Impacts

None.

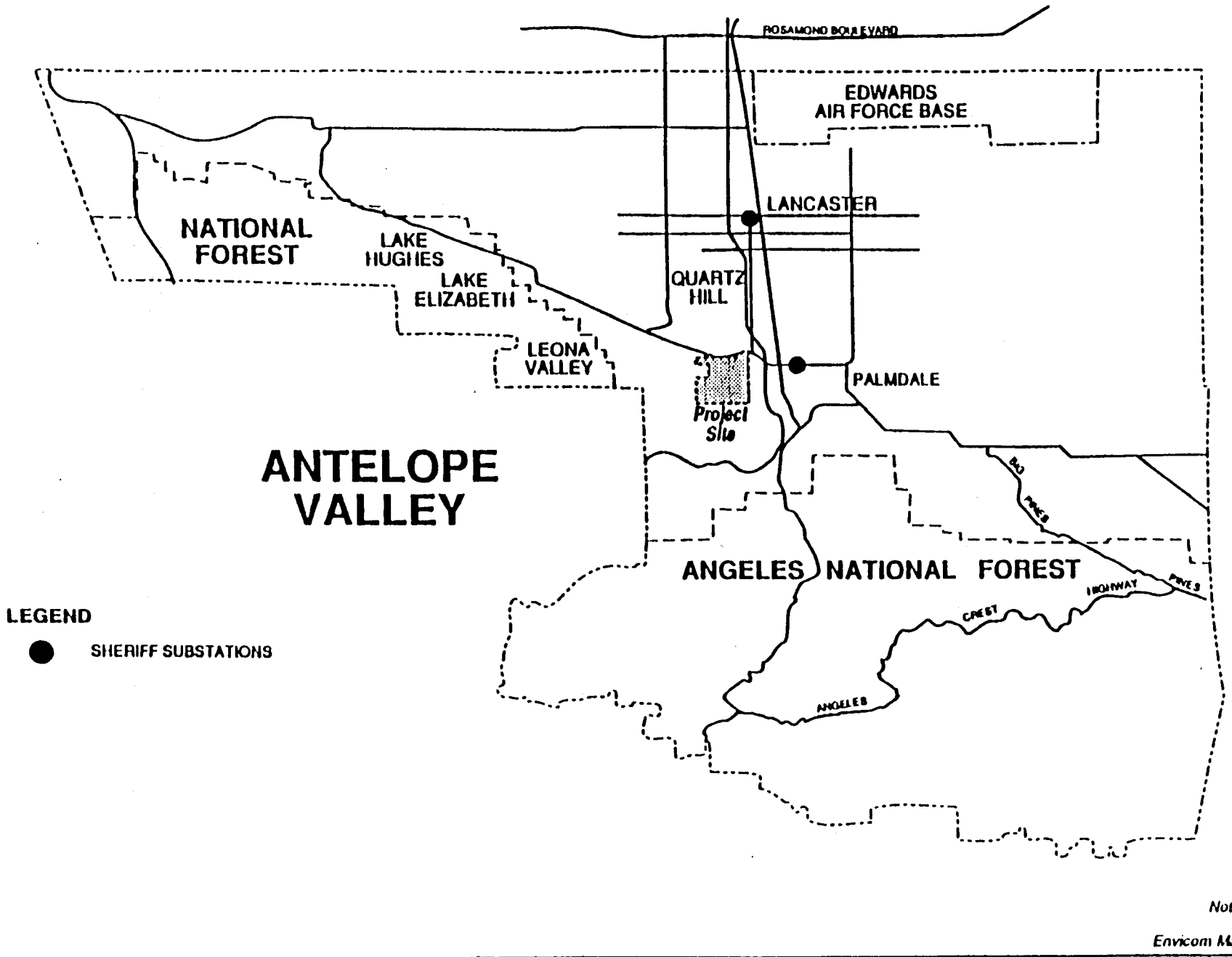
5.20 SHERIFF'S SERVICES

5.20.1 Existing Conditions

Police protection is provided to the proposed project site and vicinity by the Los Angeles County Sheriff's Department Antelope Valley Station located at 1010 West Avenue J in Lancaster. The Sheriff's Department Antelope Valley Station provides general law enforcement services covering 1,368 square miles and serving a population of approximately 220,000 (**Figure 68**). The California Highway Patrol Station located at 2041 West Avenue I in Lancaster provides traffic enforcement for the unincorporated areas of the Antelope Valley. The City of Palmdale contracts with the Sheriff's Department for both general law and traffic enforcement.

The proposed project site is located approximately 12 miles from the Sheriff's Department Antelope Valley Station. Average emergency response time to the project site from police cars on patrol is 3.2 minutes using lights and sirens and 7.9 minutes when obeying all rules of the road. The Sheriff's Department reports that these times are adequate for the Antelope Valley. Back-up police service is available from the Sheriff's Department Santa Clarita Valley Station located 35 miles away. The Los Angeles County Sheriff's Department provides a complete range of law enforcement services to the Antelope Valley including drug enforcement, special programs and jails. These services can be offered in an extremely efficient manner because of the Sheriff Department's large role and responsibility throughout Los Angeles County.

Currently, one Captain, seven Lieutenants, 23 Sergeants, 199 Deputies, and 12 Community Service Officers are assigned to the Antelope Valley Station of which approximately 40 Deputies and three Community Service Officers are assigned to the City of Palmdale. The 242 officers provide a 0.87 officers to 1,000 population ratio (**Table 34**) within the Antelope Valley Sheriff's Station's service area.



ANTELOPE VALLEY SHERIFF SUBSTATION LOCATIONS

FIGURE
68

TABLE 34

Proposed Project and Cumulative Sheriff's Officers to Population Ratios

Land Use	Population	Officers Per 1,000 Population Ratio (Based on 242 officers/population)
Existing Conditions	278,000[1]	0.87 officers
Proposed Project 5,200 dwelling units	+14,040[2]	0.83 officers
Cumulative Projects 13,145 dwelling units	+35,492[2]	0.74 officers

1. Los Angeles County Sheriff's Department, 1991.
2. From Table 2.

5.20.2 Project Impacts

Development of the proposed City Ranch project would create short-term impacts on the services of the Sheriff's Department during the project's construction phase. According to the Sheriff's Department, thefts of construction materials can be expected during the construction phase of the project. These short-term impacts on Sheriff's Department services are not considered significant.

According to the Sheriff's Department, any development in the Antelope Valley will have an impact on the ability of the Los Angeles County Sheriff's Department to provide law enforcement services. Manpower increases necessary to accommodate such a project are determined by computing response times, calls for service, and population. As the project develops, reports of burglary and theft to both the residential and commercial areas are expected, along with an increase in traffic enforcement calls and accidents. Generally, as additional calls for service are received, increased deployment of manpower is needed. Based on area averages implementation of the proposed project could increase the number of calls for police response by 5.1 percent [14,040 new residents (**Table 2**) in an area of approximately 278,000 residents]. The ratio of Sheriff's officers to 1,000 population will also decrease from 0.87 to 0.83 (**Table 34**).

Recently, the Los Angeles County Sheriff's Department has expressed an interest in locating a stations within Palmdale. No site has been determined for this facility, although several alternative locations are being considered in the developed area of Palmdale. The Sheriff's Department has estimated that a 15 to 20 acre site will be required to provide a full service sheriff's facility. A location central to the City is preferred to provide maximum service. Therefore, a site in the City Ranch Specific Plan area would be too remote to accommodate the needs of the Sheriff's Department, and is therefore, not being considered as an alternative.

Development of a station would increase the Antelope Valley area's Sheriff's staff and would greatly improve the area's officer-to-population ratio. The station's development would reduce the time needed to respond to emergency calls in the Palmdale area. Until expansion of Sheriff's facilities is accomplished, development of the proposed project may have a significant impact on their services.

Presently, the City of Palmdale provides funding for sheriff's services through the City's General Fund. Each year, the City negotiates a contract with the Los Angeles County Sheriff's Department for police protection for its residents as an alternative to providing a City Police force. When the City Ranch Specific Plan Area is annexed to the City, that area will also fall under the protection of the City's contract with the Sheriff's Department. The Los Angeles County Sheriff's Department does not have any mechanism for collecting development fees at this time to assist in bearing the cost of the increased need of manpower, facilities and services caused by continued development.

5.20.3 Mitigation Measures

The following measures are required to reduce the demands on the Sheriff's Department:

- During the construction phase of the project, the developer shall assist the Los Angeles County Sheriff's Department in preventing crime by providing adequate fencing, security, lighting, and access for Sheriff's Department personnel, as determined appropriate by the Los Angeles County Sheriff's Department.

- Proper street and address signs will be required for easy identification of locations in emergencies. Street signs and dwelling numbers will be installed prior to occupancy as each phase of project is developed.

- Landscape features shall be designed so as not to conceal potential criminal activities around residences, commercial buildings, and parking areas.

- Security devices, such as deadbolt locks on doors, should be installed in all residences.

- Review of the project site plan shall be conducted by the Sheriff's Department prior to final approval of the project in order to assure that all concerns of the Sheriff's Department are met.

There are no additional feasible mitigation measures which can be placed on this project to alleviate significant project-related impacts to sheriff services.

5.20.4 Cumulative Impacts

Development of the other projects within the vicinity of the proposed project site are expected to generate a population increase of 35,492 people (**Table 2**). This would decrease the existing officers per 1,000 persons ratio from 0.87 to 0.73 (**Table 34**), assuming no additional staffing increases. Based on area averages, development of cumulative projects in the vicinity of the proposed project site could increase the number of calls received by the Sheriff's Department by approximately 13.0 percent (35,492 new residents in an area of approximately 278,000 residents).

The proposed project and cumulative projects combined would create an estimated population increase of 49,532 residents (**Table 34**). The combined impacts create a potential 23.4 percent increase in calls over existing conditions and a decrease in the officer to 1,000 persons ratio from 0.90 to 0.73 assuming no increase in staffing by the year 2000 (**Table 32**). Manpower increases at the proposed new Sheriff's station will be determined by the number of additional calls received by the Sheriff's Department. The City of Palmdale has funded new sheriff department personnel as the City's population has increased, in an effort to maintain officer to 1,000 population ratios at acceptable levels.

5.20.5 Unavoidable Adverse Impacts

Development of the proposed project, as well as development of the other projects in the vicinity of the project site, could result in a significant impact on police services should the cost of providing Sheriff's services become prohibitively expensive in the future as to cause a reduction in manpower, facilities or services to the community as a whole.

5.21 FIRE AND EMERGENCY MEDICAL SERVICES

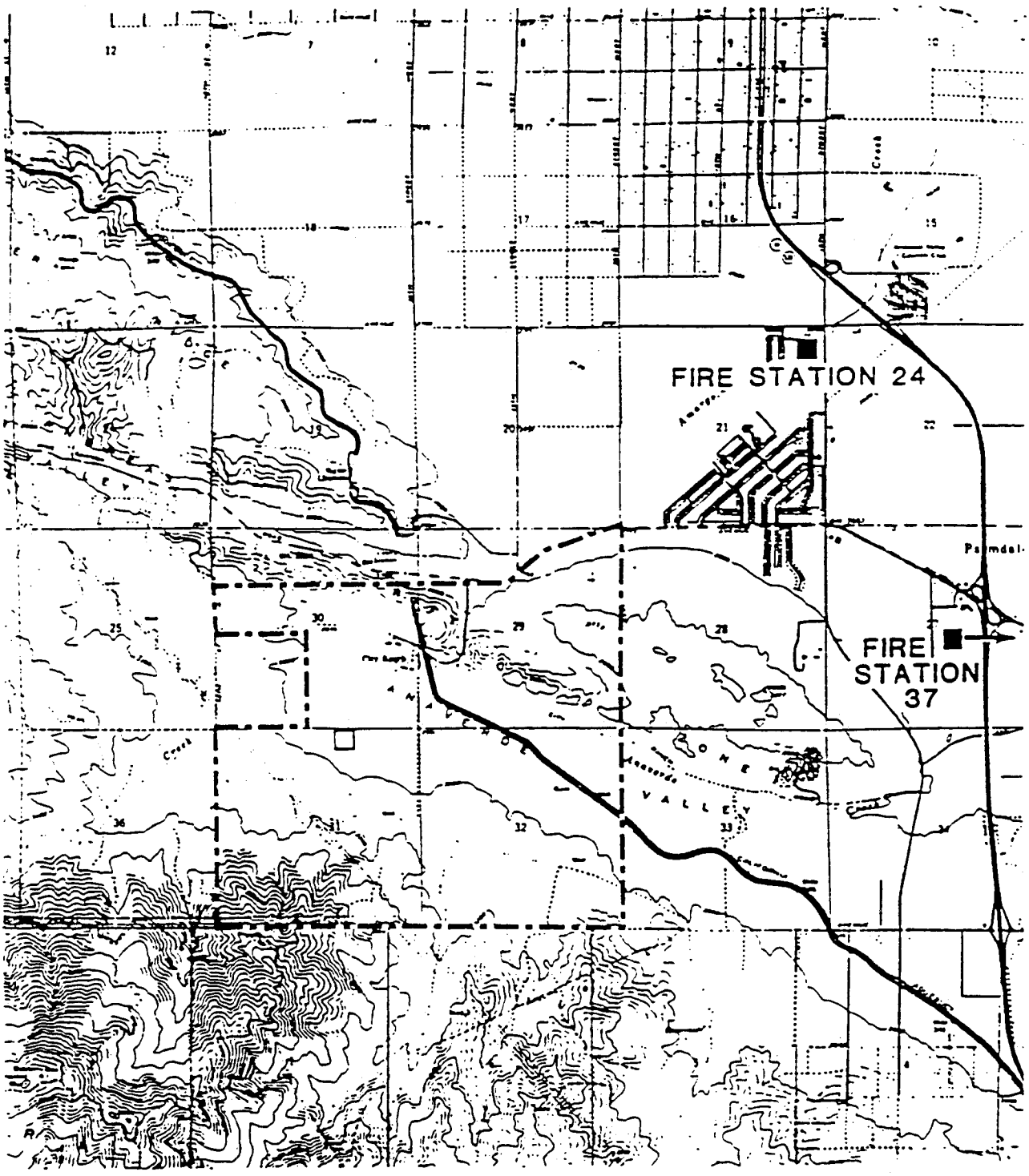
5.21.1 Existing Conditions

Fire protection and emergency medical service is provided to the project site and vicinity by the County of Los Angeles Fire Department. The closest or "first-in" fire station to the project site is Station No. 24, located at 1050 West Avenue P in Palmdale. Station No. 24 would receive back-up service from Station Nos. 37, located at 38318 9th Street East in Palmdale, and 129, located at 421 West Avenue M in Lancaster, for fire emergencies (**Figure 69**). The following table describes the three fire stations:

	Station 24	Station 37	Station 129
Distance to Site	2.5 miles	5.5 miles	6.5 miles
Response Time to Site	4.3 minutes	9.5 minutes	11.1 minutes
Equipment	1 engine company 1 truck company	1 engine company 1 paramedic squad	1 engine company
Personnel	5 persons	5 persons	3 persons

The project site is located within the area described by the County Forester and Fire Warden as Fire Zone 4 (high fire hazard), and must comply with all applicable code and ordinance requirements for construction, access, water mains, fire hydrants, fire flows and brush clearance.

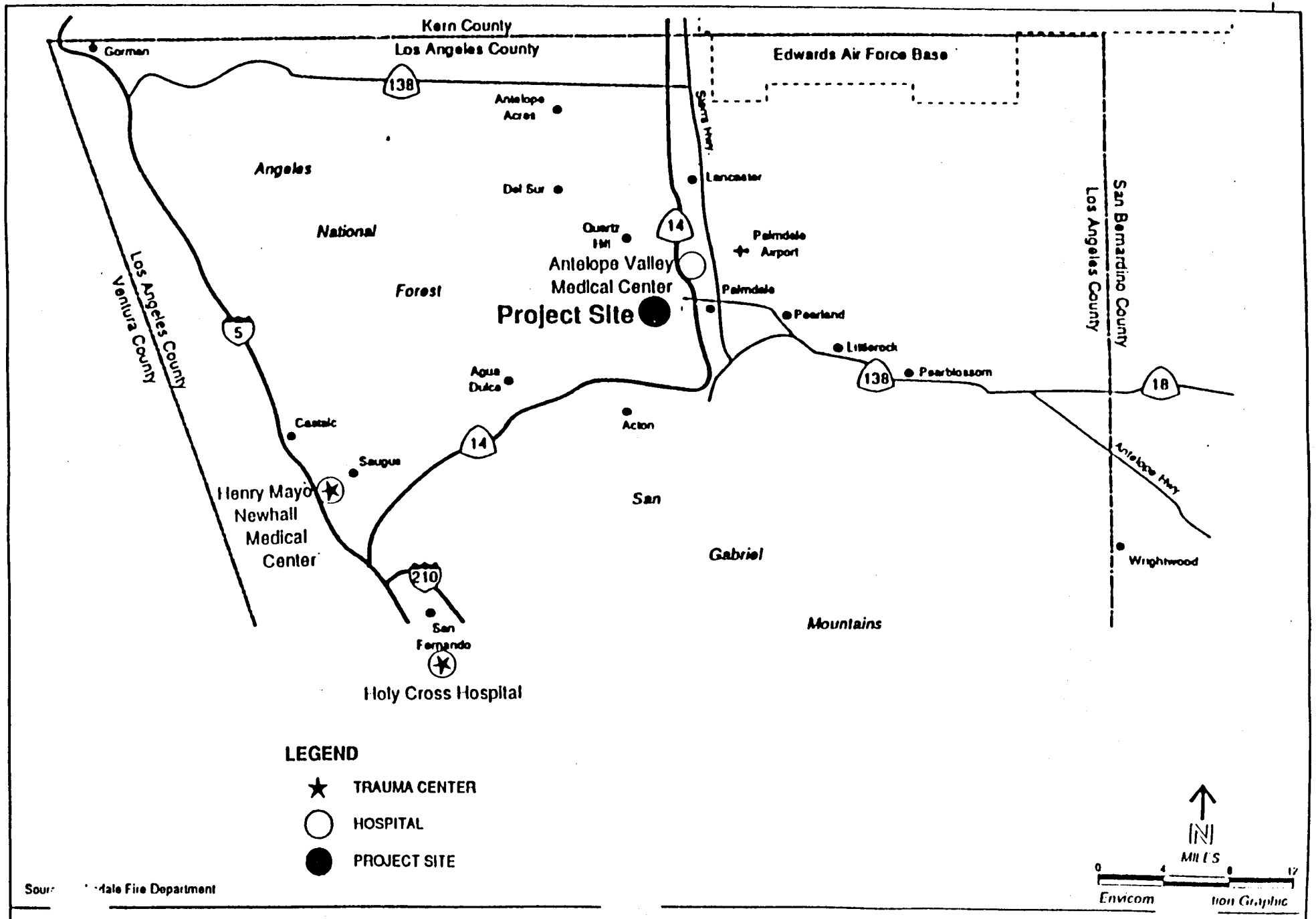
The Level I trauma hospitals servicing the Antelope Valley are Holy Cross Hospital located 29 miles by air from the project site at 15031 Rinaldi Street in Mission Hills, and Henry Mayo Newhall Medical Center located 26 miles away by air at 23895 McBean Parkway in Valencia. These hospitals are used when air ambulance/helicopter transportation is available (**Figure 70**). Otherwise, the patient(s) are taken 8 miles away to Antelope Valley Hospital Medical Center at 1600 West Avenue J in Lancaster. There are currently no trauma centers in the Antelope Valley since the Antelope Valley Medical Center withdrew from the trauma center system.



SOURCE: Palmdale Fire Department

FIRE STATION LOCATIONS

FIGURE 69



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5.21.2 Project Impacts

The addition of approximately 14,040 new residents (Table 2) to the project site is expected to increase the number of fire and paramedic calls received by the Fire Department. In addition, development of the Specific Plan area would increase exposure to the high fire hazards of the project site. The County Fire Department is currently developing a fee-based funding mechanism to provide additional facilities.

As part of the City Ranch Specific Plan Development Plan, a one-acre site at the intersection of Avenue S and Bridge Road (Planning Area 34) would be set aside to accommodate a fire station (Figure 2). According to Fire Department personnel, they anticipate developing an approximately 6,600 square-foot station staffed with two fire fighters, a fire specialist and a Captain and initially equipped with one truck (1,250-gallon pumper). As a result of development of a fire station on-site, response times to fire emergency calls to the project site and vicinity would substantially decrease. According to the Fire Department, fire protection service for the proposed project appears to be adequate.

Fire flow requirements, determined by the Fire Department, would vary from 1,250 gallons per minute at 20 pounds per square inch residual pressure for a two-hour duration in the residential areas to up to 5,000 gallons per minute at 20 pounds per square inch residual pressure for a five hour duration in the commercial areas. Water would be supplied to the project site by the Los Angeles County Waterworks District (LACWD) No. 34. The water infrastructure will consist of 24-, 20- and 12-inch mains, supply lines, two pumping stations and 7 million gallons of water storage in 3 reservoirs. After completion of on-site and off-site water system facilities and improvements, LACWD No. 34 would have the capability of delivering 5,000 gpm for five hours.

Because of the location of the San Andreas Rift Zone across the project site, and the probability of a maximum credible 8.3M Richter scale earthquake, earthquake hazard

potential at the project site is considered high. Residential development of the project site will expose additional population to this earthquake-prone area and will thus substantially increase the probability of earthquake-related damage and injury in the event of an earthquake. As with many areas in California, an earthquake could cause water infrastructure rupture and/or interruption of water flow preventing adequate fire flow to the project site. Those portions of the project site with access to the California Aqueduct could use the Aqueduct as an emergency back-up fire-fighting water supply in an earthquake event. Emergency medical response services could be greatly stressed in such an earthquake event. The proposed on-site fire station would provide adequate local emergency medical response and fire-fighting services on-site.

5.21.3 Mitigation Measures

Although project impacts on the Fire Department are not considered significant, the following measures are required to reduce demands on the Fire Department:

- The applicant shall provide a fire station in Planning Area 34, a 12,500-gallon per minute pumper and a fully equipped paramedic squad as determined by the Los Angeles County Fire Department. The applicant shall work with the Los Angeles County Fire Department to determine the final siting of the fire station in Planning Area 34.

- Water line placements and extensions shall ensure the delivery of 1,250 gallons per minute of fire flow for a two-hour duration at 20 pounds per square inch residual pressure with 150,000 gallons storage in the residential areas and 5,000 gallons per minute at 20 pounds per square inch residual pressure with 1,500,000 gallons of storage for a five hour duration in the commercial areas.

- Fire hydrants shall be located a maximum of 600 feet apart.

- Smoke detectors shall be installed in all residential structures.

- Fire sprinkler systems shall be installed in all commercial and public structures

- Roof materials shall be made of fire retardant materials such as clay tile, concrete tile or fire resistant composite shingles. No wood shake shingles or wood materials will be permitted.

- Access to all portions of the structures must be provided for the Fire Department.

- Driveways shall be a minimum of 26 feet wide. Cul-de-sacs shall have a maximum length of 750 feet and a minimum turning radius of 32 feet.

- Fire safety design, adequacy of access, fire flow and hydrant placement plans shall be reviewed by the County Fire Department Subdivision Committee prior to approval of tentative subdivision maps by the City.

Because the project site is located within Fire Zone 4 (high fire hazard), the following mitigation measures are required to reduce the potential loss of life and property in the event of a large fire:

- Natural vegetation shall be cleared within a 30-foot radius from all structures or farther if determined necessary by the Los Angeles County Fire Department. No flammable vegetation shall be placed within the 70 feet beyond the 30-foot line. To achieve this, the branches of all trees shall be trimmed to remain off the ground and leaf litter shall be collected from the grounds.

- Common open space areas in residential and commercial planning areas shall be landscaped with fire resistant plants native to California.

5.21.4 Cumulative Impacts

Development of the other surrounding projects is expected to increase the local population by approximately 35,492 persons (Table 2). Together with proposed project development, approximately 49,532 new residents are expected in the area. This number of people would create an increase in demand for the Fire Department and Emergency Medical Treatment (EMT) services. As each additional development creates greater demands on existing resources, these projects would likely have a significant cumulative impact on the adequacy of Fire Department and EMT levels of service. However, the Fire Department has indicated that all new developments will be required to provide for appropriate fire protection facilities in an amount proportionate to the demand created by these new developments. Thus, cumulative impacts related to Fire and Emergency Medical services are not considered significant.

5.21.5 Unavoidable Adverse Impacts

None.

5.22 SCHOOLS

5.22.1 Existing Conditions

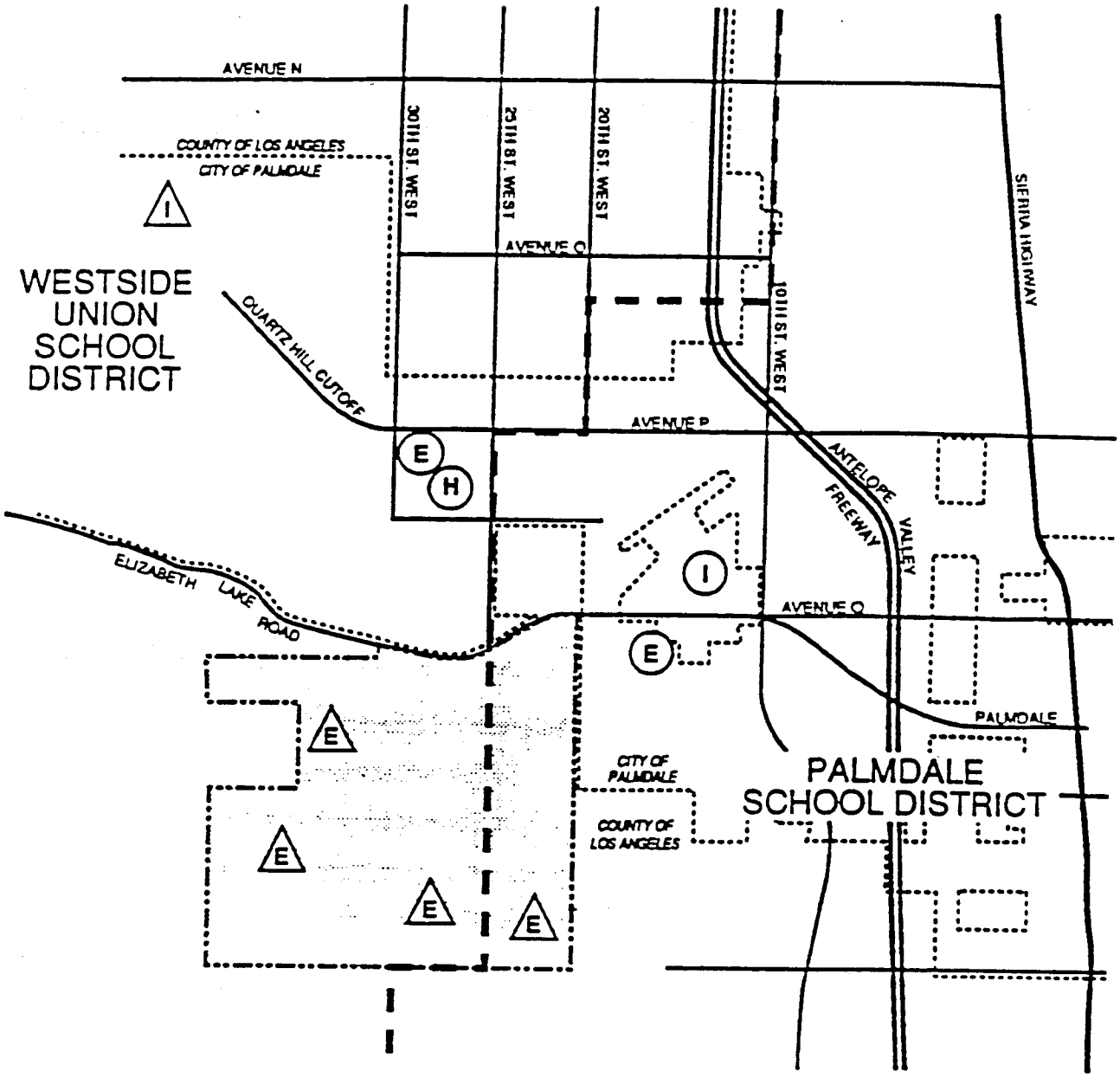
The City Ranch project site is located within the jurisdiction of three local school districts: the Westside Union and Palmdale School Districts, providing kindergarten through 8th-grade education, and the Antelope Valley Union High School District, providing 9th-through 12th-grade education. The jurisdictional boundary between the two elementary and intermediate school districts runs north-south along 25th Street West, extending south through the project site, thereby bisecting the site (**Figure 71**).

Westside Union School District's current capacity (in terms of permanent classrooms) is 4,358 students. Current districtwide enrollment is 4,500 or about four percent over permanent capacity (this number is expected to increase to 4,700 in the 1991-1992 school year).

In September, 1991, the Cottonwood Elementary School opened. Cottonwood Elementary is the closest elementary school to the proposed project site and is operated by the Westside Union School District. Cottonwood Elementary is a K-5th grade school and is located at 30th Street West, south of Avenue P-8 approximately one-half mile from the project site. The closest middle school, Joe Walker, is located 5 miles away at 5632 West Avenue L-8.

A new 6-8th grade middle school, Hill View School, slated to be open by September, 1993, will be located at Rancho Vista Boulevard and Peonza Lane four miles from the project site. Hill View School will have a capacity of 700-800 students.

Palmdale School District's current permanent capacity is 7,620 students. Current district-wide enrollment is 14,452 or 190% over permanent capacity. The Palmdale School District's closest elementary school is Ocotillo School, located less than one-half



LEGEND

- PROJECT SITE BOUNDARY
- SCHOOL DISTRICT BOUNDARY
- PROPOSED
- EXISTING
- E ELEMENTARY SCHOOL
- I INTERMEDIATE SCHOOL
- H HIGH SCHOOL

NOTE: Entire area is within the Antelope Valley Union High School District

SOURCE: Palmdale and Westside Union School Districts

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EXISTING AND PROPOSED SCHOOLS

FIGURE 71

mile from the project site at 38737 Ocotillo Drive. The closest middle school, Juniper Intermediate, is located approximately one mile away at 39066 Palm Tree Way. Ocotillo School's current enrollment is 903 students with permanent capacity for 720 students. Juniper Intermediate School's current enrollment is 955 students with permanent capacity for 780.

Palmdale School District has plans to renovate and expand the square footage of Juniper Intermediate School. However, these plans do not include the addition of classroom space. The District is not able to provide any additional schools near the project site at this time because it does not own any property there.

The Antelope Valley Union High School District opened Highland High School in September, 1991. Highland High School is located less than one mile north of the project site at Avenue P-8 and 25th Street West (Figure 71). Current enrollment at Highland High School is 1,938 students and permanent capacity is 2,079. Antelope Valley Union High School District's current permanent capacity is 9,341 students. Current districtwide enrollment for the Antelope Valley Union High School District is approximately 11,919 or 128% over capacity. Two other high schools are located approximately an equal distance from the project site: Quartz Hill High School, located at 6040 West Avenue L, and Palmdale High School located at 2137 East Avenue R. Quartz Hill High School has a current enrollment of 2,550 with a permanent capacity of 1,432. Palmdale High School has a current enrollment of 2,410 with a permanent capacity of 1,684. The District recently opened another High School in September, 1991, Little Rock High School, which is located at 110 East and Avenue R. Little Rock's enrollment is 1,342 students with a capacity of 2,079.

As indicated above, all three school districts are currently unable to construct schools fast enough to keep pace with the growth of the student population in the area. As a result, students awaiting construction of permanent classrooms and schools are accommodated in temporary classroom structures on existing school grounds.

5.22.2 Project Impacts

Development of the proposed project would increase the number of school children in all three school districts serving the project site. Based upon student generation factors provide by the individual school districts, the number of additional students generated by this project is estimated to be 4,024: 2,260 K-5th grade students, 724 6-8th grade students and 1,040 9th-12th grade students (Table 35). Because most of the project site is located within Westside Union School District's jurisdiction, the majority of the primary school students (2,439 students; 1,829 elementary and 610 middle school students), would attend Westside Union schools. A total of 545 students are expected to attend schools in the Palmdale School District: 431 elementary and 114 middle school students. All 1,040 of the estimated high school students would attend high schools in the Antelope Valley Union High School District.

The proposed project includes four elementary school sites, three located in Westside Union School District and one located in the Palmdale School District. The Westside Union School District is expected to accommodate a 660-student elementary school and the Palmdale School District sites will each accommodate 600 students for a total capacity of 2,460 students. The 431 K-5th grade students anticipated to reside within the Palmdale School District portion of the project site can be accommodated by the proposed on-site elementary school. It is expected that in addition 114 6-8th grade students would attend Juniper Intermediate School and other intermediate schools off-site. However, as noted previously, Juniper Intermediate School is already 175 students over capacity. Development of the proposed project would therefore have a significant impact with regard to intermediate schools in the Palmdale School District.

The 1,829 elementary students anticipated to reside in the Westside Union School District portion of the project site can be accommodated in the three proposed on-site elementary schools in the Westside Union District area of the site. The estimated 610 6-8th grade students would most likely attend the proposed new Hill View Intermediate School or other off-site intermediate schools. It is not certain at this time whether or

TABLE 35

Proposed Project and Cumulative Student Generation

School District	Households	School Grades	Student Generation Factor[1]	Number of Students
Proposed Project				
Westside Union	4,064	K-5	.45	1,829
		6-8	.15	610
Palmdale	1,136	K-5	.38	431
		6-8	.10	114
Antelope Valley Union	5,200	9-12	.20	1,040
Subtotal Proposed Project				4,024
Cumulative Projects[2]				
Westside Union	10,500	K-5	.45	4,725
		6-8	.15	1,575
Palmdale	2,675	K-5	.38	1,017
		6-8	.10	268
Antelope Valley Union	13,175	9-12	.20	2,635
Subtotal Cumulative Projects				10,220
Total Cumulative Student Generation				14,244

1. Factors provided by the Westside Union, Palmdale and Antelope Valley Union School Districts.
2. Numbers of Households attributed to each school district has been approximated.

not there will be remaining capacity in the intermediate schools at the time of the proposed project completion. Therefore, project impacts with regard to the Westside Union School District are considered potentially significant.

The Antelope Valley Union High School District indicates that by 1992, Highland High School will be over capacity. The District estimates that at least two additional high school sites will be required in the Highland High School attendance area and that development of the proposed project would have a significant impact on the District because of its contribution to this demand for the additional high schools.

5.22.3 Mitigation Measures

In order to reduce the significant and potentially significant adverse impacts with regard to schools to a level of "not significant", the following measures are required.

- (a) Palmdale School District: The developer sh comply with the terms of the agreement, dated October 8, 19! between the developer and the Palmdale School District mitigation for impacts caused by development of the project on the Palmdale School District. The terms of that agreement are as follows:

  (i) Participate in the Mello Roos Community Facilities District created by the Palmdale School District for financing school construction.

  (b) Westside Union School District: The developer shall comply with the terms of the agreement, dated January 22, 1992, between the developer and the Westside Union School District as mitigation for impacts caused by development of the project on the Westside Union School District. The terms of that agreement are as follows:

  (i) refer to agreement attached to this Exhibit.

  (c) Antelope Valley Union High School District:

  The Developer shall provide the following mitigation to the District, in order to provide its contribution to the District's fifty (50) percent share of funding a new high school to serve the City Ranch Specific Plan area, pursuant Government Code Section 65995 and Education Code Section 17 et. seq. (School Facility Funding Law):

(i) Mello-Roos Development Fees.

The applicant shall participate in a Mello-Roos Community Facilities District which will fund up to 50% of the cost of that portion of the school necessary to serve the City Ranch project based upon a student generation factor of .2 pupils per single family dwelling. Only residentially zoned property for which a building permit has been issued will be subject to the annual tax. The District may increase this annual tax by no more than 2% in each year. In lieu of paying an annual special tax, a property owner may prepay the annual special tax at the time a building permit is issued on the property. A fee equal to $1.30 per square foot of habitable residential construction shall serve to prepay the special tax. This fee shall be subject to an annual adjustment pursuant to increases or decreases in the School Construction Cost Index of the Office of Local Assistance with January 1, 1992 as the base. This prepayment fee shall be reduced to $1.20 per square foot if the school site is not located within Planning Area 3A of the Ritter Ranch Specific Plan.

(ii) Other Development Fees.

In addition to the fees specified in subparagraph (i) above, Developer shall pay to the District a fee of twenty-six cents ($.26) per gross leasable square foot of commercial construction prior to the issuance of each commercial building permit. All such fees shall be subject to annual adjustment pursuant to increases or decreases in the School Construction Cost Index of the Office of Local Assistance with January 1, 1992 as the base.

(iii) Site Preparation Expenses.

In the event that a high school is constructed in Planning Area 3A of the Ritter Ranch Specific Plan, and the site preparation work for a school to be located on that site, including provision of access to Elizabeth Lake Road and utilities, exceeds the amount of $4,650,000, the Developer shall pay the District fifty (50) percent of the District's costs for such work over $4,650,000, not to exceed a total of $350,000.

5.22.4 Cumulative Impacts

Based on a 1991 total of 13,175 dwelling units proposed for this area, an estimated 11,538 students would be generated as a result of other surrounding project buildout (**Table 35**). When the proposed project and the areawide surrounding projects list are combined, the total number of students generated will be 16,082. The proposed project represents 28% of total cumulative student growth. Of the two elementary school districts serving the area, Westside Union would receive the larger proportion of additional students. Because Westside's existing capacity is smaller, impacts on their facilities would be greater: Westside would experience a 289% increase in enrollment while Palmdale would experience a 207% increase based on students generated from the

cumulative projects list. Both of these school districts are already operating well over their capacities. Antelope Valley Union High School District which is already 128% over capacity would experience an additional 68% enrollment growth as a result of development of the proposed project and other cumulative projects. Cumulative impacts on the three area school districts are considered significant. Each individual project will need to offset school impacts via the provision of additional school sites, facilities, or fees.

5.22.5 Unavoidable Adverse Impacts

None.

5.23 PARKS AND RECREATION

5.23.1 Existing Conditions

The project site is currently served by the County of Los Angeles Department of Parks and Recreation. There are approximately 95 acres of County parkland in the Antelope Valley. Two County parks serve the project site, George Lane County Park and Apollo Community Regional County Park. Together Apollo and Lane Parks represent about 75 percent of the Antelope Valley area's County park space.

George Lane County Park, located at 5520 West Avenue L-8, is approximately six miles from the project site. This 15-acre park offers a variety of recreational opportunities including a recreational activity building with an auditorium and a crafts and meeting room, a lighted baseball diamond, soccer and football fields, a shuffleboard court, lighted basketball, volleyball and tetherball courts, a badminton court, picnic tables and park benches, a children's play area, a senior citizens area, and a swimming pool and bath house.

Apollo Community Regional County Park located at 4445 West Avenue G in Lancaster, is about 9 miles from the project site. This 56-acre park has three lakes for boating and fishing and contains the Apollo Space Capsule on permanent display.

According to the County Subdivision Ordinance (County of Los Angeles Code, Title 21), the Antelope Valley area should contain 561 acres of park space or approximately three acres of parkland per 1,000 people. Park acreage in the Antelope Valley is, therefore, deficient.

The City of Palmdale parkland standards are 2 acres of parkland per 100 single-family units, 2 acres per 160 duplex or triplex units and 2 acres per 200 apartment units. This standard roughly equates to five acres of parkland per 1,000 residents. According to the

City Department of Parks and Recreation, existing City park acreage in the City is substantially less than required by the City parkland standards.

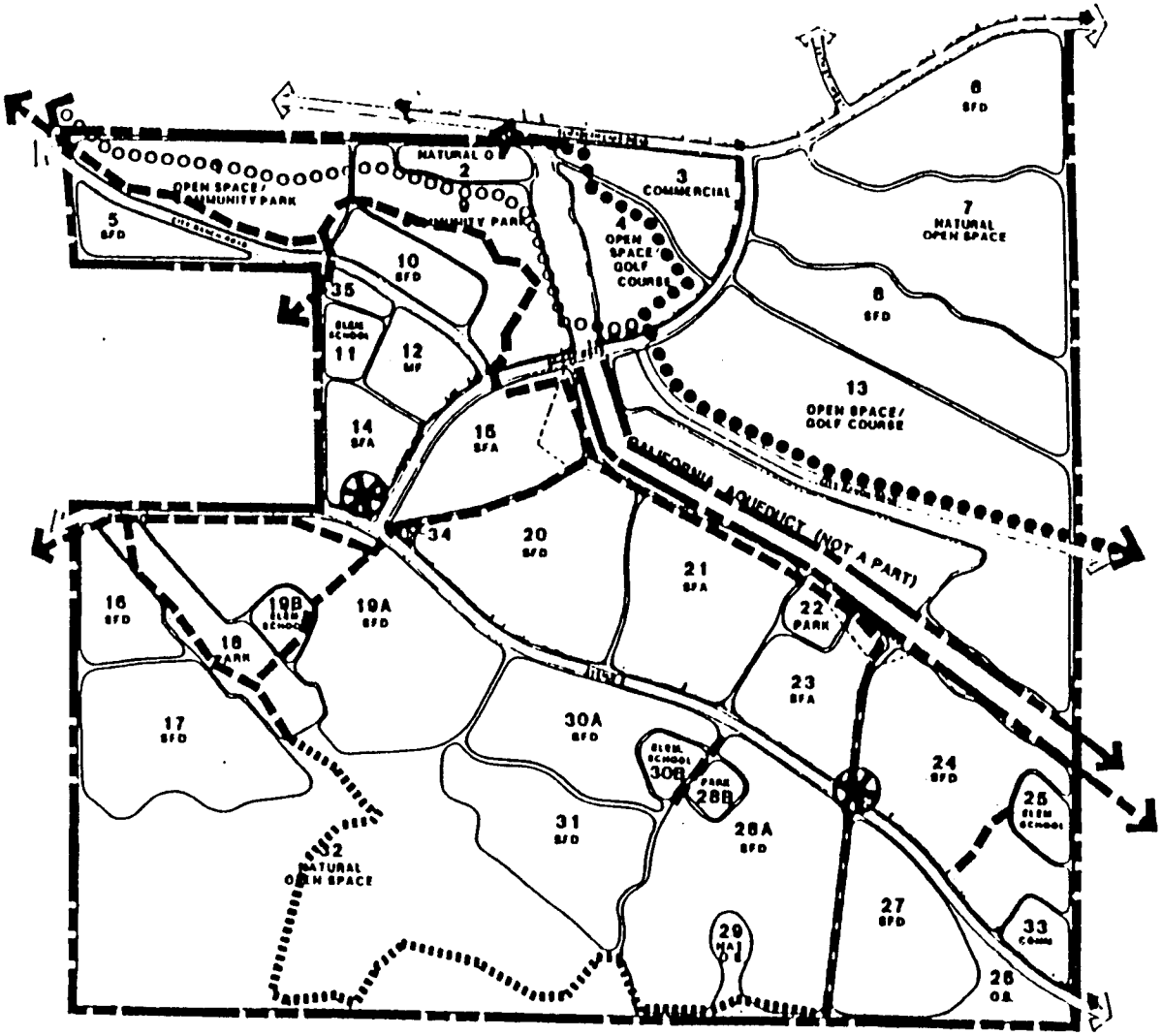
Proposed recreational facilities on the project site include the unimproved Northside Hiking and Riding Trail which traverses the project site east of the California Aqueduct. This regional recreational facility traverses the entire length of Los Angeles County.

5.23.2 Impacts

The City Ranch Specific Plan development plan contains several planning areas that can provide recreational opportunities: six park sites totaling 159.3 acres, a 216-acre golf course, and approximately 404 acres of natural open space (**Figure 2**). Buildable acreage in the six park sites total 38.3 acres. The Specific Plan also includes off-street bicycle paths and a 3.5 mile looped combined pedestrian/hiking/mountain bicycling trail and vista point opportunities (**Figure 72**). In addition, the four proposed elementary school sites could provide additional neighborhood recreational facilities such as ball fields, hard courts and activity space.

According to the City Ranch South Specific Plan, all six park sites shall be dedicated to the City for parkland credit. Each is proposed to provide both passive and active recreational opportunities for local and community residents. The majority of the land in park sites is gently sloping terrain suitable for the location of playgrounds, ball fields and other active play facilities, as well as picnic, barbecue, open turf and other passive recreational facilities (**Figure 73**).

Together Planning Areas 1 and 9 are proposed as one continuous community park. These sites contain a combined acreage of approximately 111 acres. About 2.9 acres of Planning Area 1, and 10.8 acres of Planning Area 9 are suitable for the construction of park or community facility structures such as a gymnasium, multi-purpose room, a pool, pool house, restrooms and park offices. Planning Area 35 contains no buildable acreage. According to the geotechnical report for the project site, the remainder of these



LEGEND

- PEDESTRIAN / HIKING TRAIL (SEE TRAIL STANDARDS)
- OFF-STREET 10' BICYCLE PATH
- EXISTING AQUEDUCT SERVICE ROAD TRAIL (WITHIN STATE LANDS)
- BICYCLE STAGING AREA
- HIKING/MOUNTAIN BIKE TRAIL
- NORTH SIDE TRAIL (EQUESTRIAN TRAIL)
- NORTH SIDE TRAIL ALTERNATE A ALIGNMENT (EQUESTRIAN TRAIL)

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SOURCE: City Ranch Specific Plan, 1991
de Almeida Planning

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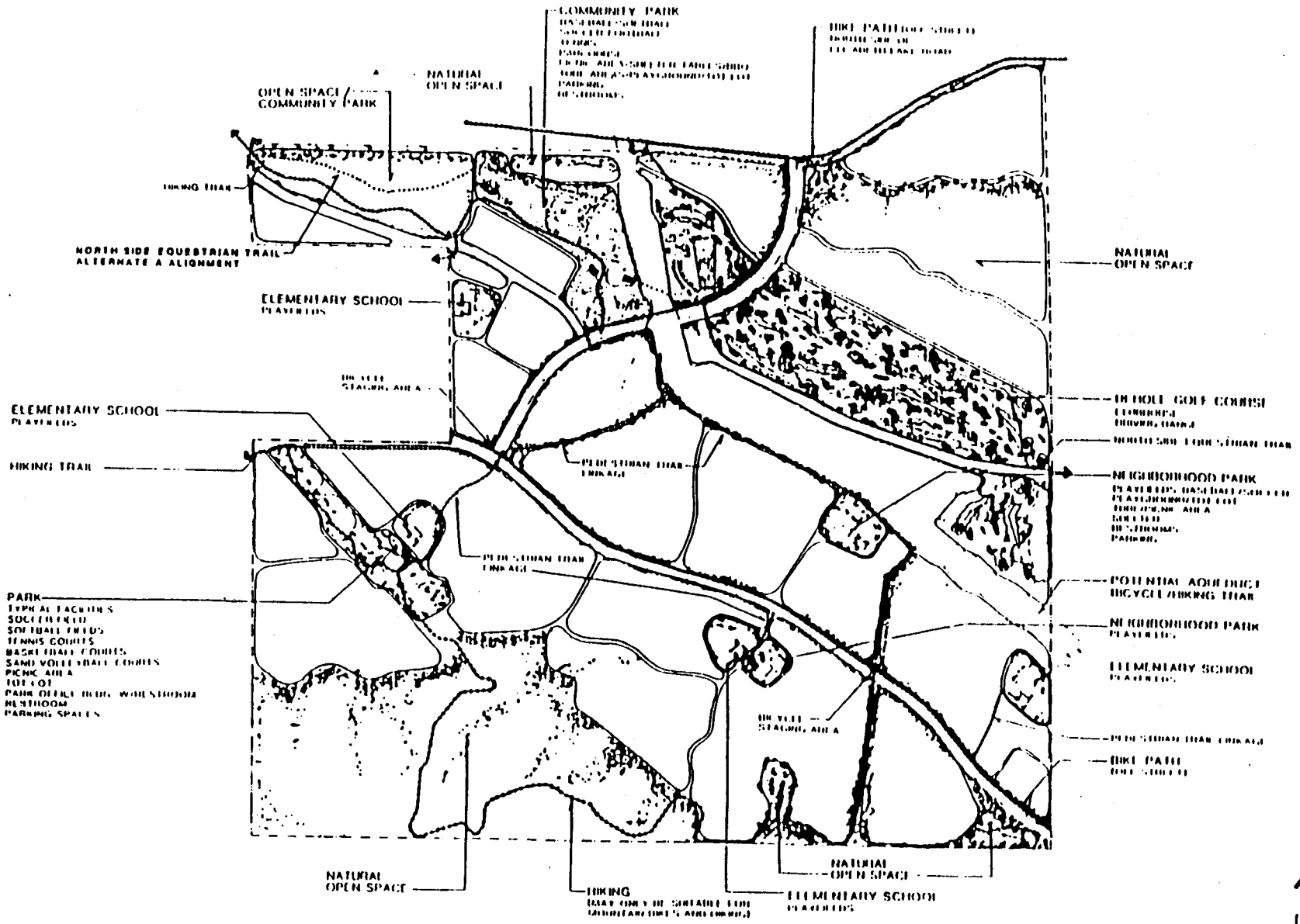

SOURCE: City Ranch Specific Plan, 1991
Azeka de Almeida Planning

OPEN SPACE AND RECREATION CONCEPT

FIGURE 73

planning areas which are situated in Fault Hazard Restricted Areas are suitable for picnic areas, ball fields, play courts, parking lots, playgrounds and other unenclosed activity facilities. According to the City of Palmdale Planning Department, the size and location of Planning Area 35 makes it inappropriate for community park designation. Instead, it would be more appropriate for use as a neighborhood park. Because it does not include any land suitable for habitable structures, full parkland credit may not be given to this site.

Planning Areas 18, 22 and 28B are designated as neighborhood park sites with approximate acreages of 33.3, 10.0 and 5.0 acres respectively. Each park is surrounded by residential areas, and is intended to serve residents within a 1/2 mile walking distance.

Recreational Planning Area 18 (neighborhood park) contains two high-voltage electric line easements. Approximately 10 acres of this site is situated outside the easement. Concern regarding proximity of habitable structures and active recreational uses to high-voltage power lines is discussed in Section 5.27 of this EIR. Although no structures are proposed within the easements, ballfields, play areas, paved hard courts, picnic and other park facilities and activity areas are proposed within the high-voltage electric line easements. According to the City of Palmdale Department of Parks and Recreation, only passive recreational uses shall be allowed within the easements. Thus, only partial credit towards the project's parkland dedication requirements would be considered for this area.

The 216-acre golf course is intended to contain an 18-hole golf course, a driving range, practice greens and a clubhouse. While the golf course is proposed to be located in seismically-restricted areas, the clubhouse would be constructed on a buildable site. The golf course is intended to be open to the public.

The natural open space areas, Planning Areas 2, 7, 29 and 32 generally coincide with areas of the site where elevations are highest and slopes exceed 25%. These natural

open space areas may be dedicated to the City of Palmdale, or other governmental agencies or conveyed to a private non-profit organization or HOA. These areas which would contain natural ridgelines and preservation areas for native vegetation would provide opportunities for hiking trails and scenic vistas. Planning Areas 29 and 32 would contain parts of the looped trail system. Equestrian and mountain bike access would be available on the portion of the trail traversing these planning areas.

Off-street bicycle and pedestrian trails are proposed to be located along the north sides of Avenue S, Elizabeth Lake Road, and Bridge Road. Trails would interconnect the residential areas to open space areas, parks, schools, commercial centers and the golf course. Two staging areas are proposed along Avenue S to provide trail rest areas and parking for hikers and bikers.

The existing Northside Trail currently passes through what would be the center of Planning Areas 4 and 13 proposed for golf course use. According to the City Ranch Specific Plan, the trail is proposed to be relocated. The two alternate alignments for the relocation of the Northside Trail currently under consideration are shown on **Figure 73**. The first alternate alignment traverses between Planning Areas 3 and 4, then turns to the west and continues along the south side of Elizabeth Lake Road. The second alternative alignment would instead cross the Aqueduct at the existing bridge, extend west through the Community Park in Planning Areas 9 and 1, and connect to Ritter Ranch at the west end of Planning Area 1. The ultimate trail alignment is subject to further refinement at the time of tentative tract maps or prior to site improvements of Planning Areas 1, 3, 4, 9, and 13, subject to conditions imposed by the Department of Water Resources of the State of California and preferred alignment requirements by the City of Palmdale Parks and Recreation and the Planning Department. Both realignments would avoid potential conflicts between golf course and biking and equestrian uses.
The City Department of Parks and Recreation standards require a total of 88.62 acres of park space to be developed as part of proposed project development (**Table 36**).

TABLE 36

City Park Space
Requirements for the Proposed Project

Proposed Project	Generation Rate	Required Park Acreage
City Requirement		
3,253 single-family units (single-family detached)	2 acres/100 units	65.06
1,634 duplex or triplex units (single-family attached)	2 acres/160 units	20.43
313 apartment units (multiple-family)	2 acres/200 units	3.13
Total		**88.62**

Source: City of Palmdale Department of Parks and Recreation Standards.

5.23.3 Mitigation Measures

Implementation of the following measures would reduce impacts with regard to parks and recreation to a level of "not significant":

- The relocation of the Northside Trail shall be approved by the County Department of Parks and Recreation.

- Trails shall be designed to connect existing and proposed trails on adjacent parcels.

- Design of Planning Areas located along the bicycle and hiking trails shall incorporate extensions and connections to the trail system. Each Planning Area adjacent to designated trails shall provide a minimum of two (2) connections to these trails at safe locations. Said connections shall be indicated on Tentative Tract Maps filed for all such Planning Areas. This shall include Planning Areas 1, 3, 4, 9, 12, 14, 16, 16, 17, 19A, 20, 21, 23, 24, 27, 28A, 30A, 32 and 33.

- The configuration, trail widths and clear areas adjacent to the trails must be designed to allow Sheriff and emergency vehicular access, but shall prohibit other non-emergency motor vehicle use.

- As set forth in the Development Standards of the City, Ranch Specific Plan, the development of recreational uses are subject to the Site Plan Review provisions.

- The applicant shall dedicate and construct the improvements for the proposed community, and neighborhood park facilities shown in the Specific Plan as approved by the Director of Parks and Recreation.

- The applicant shall install lighting along pedestrian trails located within the urban areas to provide adequate public safety as determined appropriate by the

City Traffic Engineer.

- Drought tolerant and native plant materials shall be used for park and golf course landscaping.

- Fertilizer and pesticide use shall be controlled in the golf course area.

- Exhibit 16 of the Final Specific Plan will be amended to include equestrian staging area in Planning Area 1, and if feasible, an equestrian staging area in Planning Area 18, and an equestrian tr through the powerline easement. Trails planned in the City Ranch Specific Plan will be coordinated with those planned for the Ritt Ranch Specific Plan. Future developments adjacent to this projec will be required to coordinate with the trails shown on the trail plan adopted for City Ranch.

5.23.4 Cumulative Impacts

Thirty-three of the 50 other surrounding projects, project numbers 1-33 (Figure 12) are proposed for locations within the jurisdiction of the City of Palmdale. Together these projects would add 10,432 single-family, and 110 multi-family dwelling units to the City. According to the City Parks and Recreation Standards, these projects would require the development of a total of 209.74 acres of park space.

The remaining seventeen cumulative projects are proposed for development in the jurisdiction of the County of Los Angeles. According to County park land requirements, development of these projects would require the development of 2.96 acres of County park land. Unless the cumulative projects provide on-site recreational facilities in accordance with City or County park land requirements, development of these projects would increase the pressure on existing County park land which is already deficient. However, the City Ranch project does not contribute to this cumulative parkland deficit.

5.23.5 Unavoidable Adverse Impacts

None.

5.24 FACILITIES MAINTENANCE

5.24.1 Existing Conditions

The County of Los Angeles Department of Public Works Palmdale Division currently provides road maintenance services such as road patching, curb repair, traffic marking, signal maintenance, weed clearing, and trash clearing in unincorporated areas of the County and within the City of Palmdale under a contract with the City. The Department also provides roadside tree-trimming service in unincorporated County areas only. The City of Palmdale Department of Public Works has its own tree-trimming service. According to the City and County Departments of Public Works, services provided by the City and County are presently adequate in terms of staffing and equipment.

As of July, 1991, the City is responsible for the maintenance of 210 miles of streets, 44 acres of parkway and 67.5 acres of parkland, and detention basins. Maintenance labor is provided by a mix of City personnel and public service contracts. The City employs 29 maintenance employees who are predominantly utilized for park and parkway maintenance. The remainder of the City maintenance services are contracted to Los Angeles County.

According to the City Department of Public Works, it is anticipated that road maintenance service will be provided by the City within the next few years. Initially, the City plans to maintain a small emergency crew of City employees and provide regular service via contracts with private contractors.

5.24.2 Project Impacts

The development of the City Ranch site will significantly increase the City's street drainage, parkway and park maintenance liability. It is estimated by the City's Public Works Department that this project would increase the City's maintenance inventory

and related annual maintenance costs in today's dollars by the following:

Maintenance	Unit	% Increase	Cost
Parks	159 acres	235	$2,385,000
Parkways	15 acres	34	426,000
Streets	56 miles	27	560,000
Trails	7.5 miles		22,500
Drainage Basins	20 acres		20,000
		Total	$3,413,500

A part of the costs shown above will be offset by an increase in the City's general fund revenue generated by the development, however, the increases will not be sufficient to meet the maintenance costs created by the development.

In addition to the maintenance costs, maintenance support facilities to serve the project site and surrounding developments will be needed in the vicinity of the project. In addition, maintenance equipment will need to be acquired as necessary to accommodate project maintenance. Costs for construction of the facility (excluding property acquisition) and acquisition of maintenance equipment may exceed $1.7 million. In addition, the Public Works Department has anticipated that more will need to be spent within 10 years following the project's completion to cover the costs of major public facility improvements and repairs which are not covered by the regular maintenance costs. These improvements to streets, parks, parkways, etc. may include overlays, seal coats, roof repairs and major facilities upgrades.

Development of the proposed project would include the construction of an internal landscaped roadway network. After the City of Palmdale has formally accepted the proposed streets as public streets, any additional road maintenance necessary on public streets within City Ranch, would be the responsibility of the City of Palmdale Department of Public Works.

Project development is anticipated to increase the need for winter snow removal, roadway tree-trimming and street-sweeping services for the internal roadways. The rate at which surrounding roads develop cracks and potholes would increase because of the addition of the estimated 49,970 project-related vehicle-trips onto the local roadways.

The need for additional tree-trimming service would decrease the City's current tree-trimming service levels. According to the City Department of Public Works, impacts with respect to providing additional tree-trimming service can be mitigated through additional staffing and equipment.

By the year 2000, it is anticipated that the City Department of Public Works would also be responsible for all other road maintenance activities, including snow removal and street sweeping. The project-related population increase would create a need for more road maintenance service. Impacts with regard to facilities maintenance are considered potentially significant.

5.24.3 Mitigation Measures

There are no feasible mitigation measures which can be placed on this project to alleviate significant project-related impacts to existing maintenance facilities.

5.24.4 Cumulative Impacts

The proposed project, along with the cumulative development, will also increase the need for maintenance services. According to the City's Public Works Department, the current annual cost of maintenance is summarized as follows:

Maintenance Area	Annual Cost	Unit
Parks	$15,000	Acre
Parkways	$28,400	Acre
Boulevards	$15,400	Acre
Streets	$10,000	Mile
Trails	$3,000	Mile
Drainage Basins	$1,000	Acre

As development in the area continues, the addition of new street mileage will necessitate the diversion of more City general fund revenues to maintenance operations. A small part of these costs will be offset by an increase in general fund revenue generated by the development, but the increases will not provide a significant fraction of the maintenance costs created by City Ranch and the surrounding developments. This shortfall could result in a cumulative fiscal impact to the City if additional revenue sources are not identified for maintenance purposes.

5.24.5 Unavoidable Adverse Impacts

The impacts to facilities maintenance will be partially mitigated by increases in the City's General Fund generated by the development. However, full mitigation of maintenance impacts by the project is determined to be infeasible, due to the inconsistency of such requirement with previous development project approvals within the City.

5.25 ARCHAEOLOGY

Reports prepared by Archaeological Associates, Ltd. entitled "Phase I Cultural Resources Study: City Ranch Property in the City of Palmdale, Los Angeles County, California", (April 24, 1989); Phase II Cultural Resources Study: City Ranch Property (October, 1990); and Phase II Archaeological Investigations at the City Ranch (July 23, 1991) were used in the preparation of this section. The full text of these reports (referred to as Appendix H) are available for review by qualified investigators at the City of Palmdale Planning Department.

5.25.1 Existing Conditions

The Sierra Pelona range was probably the territory of a people known today as a "Tataviam" or "Alliklik." There is so little known about these people that one could almost characterize them as "mysterious." The lack of information concerning the Tataviam is due to their assimilation into other cultures early in the historic era:

> *By 1810, virtually all of the Tataviam had been baptized at San Fernando Mission. By the time secularization occurred in 1834, the descendants of most of the missionized Tataviam had married members of other groups, either at the mission or in the Tejon region. By 1916, the last speaker of the Tataviam language was dead, and any real opportunity for collecting firsthand information on this obscure group had vanished forever. (King and Blackburn 1978:536).*

Several small settlements are recorded in the general region of the project site and these were probably the campsites of Tataviam people who traveled into the high elevations of the Sierra Pelona.

A review of the literature and archaeological site archives of the Archaeological Information Center, UCLA, by Archaeological Associates, Ltd. (April 24, 1989) indicates that one previously recorded site is present within the boundaries of the project site. The site, LAn-949, is located within the San Andreas Rift Zone.

LAn-949 was recorded in May, 1977 as a "thin lithic scatter consisting of silicates and rhyolites" measuring about 30 x 30 meters. Field inspection suggests that the area is probably closer to 50 x 50 meters and that the contents of the scatter are fairly diverse. Artifacts include manos and mano fragments, metate fragments, a pestle fragment, cores, hammerstones, flakes, and a cottonwood triangular point fragment. A Phase II investigation indicates the presence of two archaeological deposits at the site ranging from 40-60 centimeters in depth, covering areas of about 450 and 650 square meters. Prehistoric cultural materials recovered from these deposits include marine shell and stone beads, groundstone milling equipment and chipped stone implements. Because LAn-949 is believed to contain important data relating to the prehistory of the Palmdale area, the site is considered to be an archaeologically significant site.

Surface reconnaissance conducted in February and March of 1989 resulted in the discovery of 27 additional prehistoric sites, one historic site and 17 isolated finds. A list of the sites and artifacts found appears in Table 37. The prehistoric sites tend to be concentrated in the San Andreas Rift Zone in the northern area of the ranch and the Sierra Pelona foothill zone on the south. The historic archaeological site, probably the remains of one of the original ranch houses, was found in the southwestern area of the site. All 28 sites were also the subject of a Phase II investigation during September, 1990 to determine archaeological significance.

The historic site contains various historic artifacts such as metal equipment parts, nails, cans, glass, ceramic debris and shotgun shells dated "1901". The Phase II investigation revealed a stone enclosure, and two cut and fill pads. Analysis of historic USGS maps indicates a structure at that location, which perhaps was an early ranch house.

The prehistoric sites are of three different types. The most frequent site type consists of lithic scatters. The term "lithic," refers principally to chipped stone tools and the cores

TABLE 37

Archaeological Sites and Isolated Finds Found on the Project Site

Site No.	Site Type	Artifacts
LAn-949	Lithic scatter	Mano fragments, metate fragments, a pestle fragment, cores, hammerstones, flakes, and a cottonwood triangular point fragment.
S-1 (LAn-1746)	Lithic scatter (small)	Chert and quartz flakes, chert and quartz scrapers, a jasper core fragment, and a quartz hammerstone.
S-2 (LAn-1747)	Lithic scatter (large)	Chert and quartzite scrapers, a chert core, quartzite flakes, and a leaf-shaped point fragment.
S-3 (LAn-1748)	Lithic scatter (large)	Chert, quartz, and quartzite flakes, a granitic mano, a quartzite hammerstone, a scraper, and a core.
S-4 (LAn-1749)	Lithic and groundstone scatter (medium)	Granitic bowl fragment, metavolcanic and quartzite flakes and shatter.
S-5 (LAn-1750)	Lithic and groundstone scatter (small)	Two granitic mano fragments, quartz, quartzite, and jasper flakes, a scraper and a schist spatula.
S-6 (LAn-1751)	Lithic scatter (small)	Quartzite and andesite flakes, and a quartzite core.
S-7 (LAn-1752)	Lithic and groundstone scatter (small)	Chert, obsidian, quartzite, and rhyolite flakes, a granitic pestle fragment, a quartz hammerstone, quartzite and rhyolite cores, a rhyolite cottonwood triangular point and a jasper leaf shaped point.
S-8 (LAn-1753)	Lithic scatter (small)	Quartz and rhyolite flakes, and a fused shale Marymount point.
S-9 (LAn-1754)	Lithic scatter (small)	Quartz, quartzite and rhyolite flakes.
S-10 (LAn-1755)	Lithic and groundstone scatter (large)	Quartzite flakes, cores, and hammerstones, a schist pestle, a point tip, an intact schist slab metate and a fragment of either a second metate or a bowl.
S-11 (LAn-1756)	Groundstone scatter (large)	A bedrock milling feature, consisting of a single shallow mortar on a schist boulder, schist slab metates, a schist bowl fragment, three schist unifacial manos (one fragmentary) and one granitic bifacial mano.
S-12 (LAn-1757)	Lithic scatter (small)	Two rhyolite, one chalcedony flake, one obsidian flake, a fused shale flake and quartzite flakes.
S-13 (LAn-1758H)	Historic site	Stone foundation (kitchen area), two shallow pits, fragmented ceramic and glassware, square nails, ceramic tile (from a roof or well-lining), a fragment of a piece of jewelry (probably a cameo), shotgun shells, wood and sheet metal.
S-14 (LAn-1759)	Hunting blind	Single hunting blind.
S-15 (LAn-1760)	Hunting blind	Single hunting blind.
S-16 (LAn-1761)	Hunting blind	Single hunting blind, an asphaltum cache and a basket hopper mortar fragment.
S-17 (LAn-1762)	Hunting blind	Single hunting blind.
S-18 (LAn-1763)	Hunting blind	Four separate hunting blinds.

TABLE 37 (Cont.)

Site No.	Site Type	Artifacts
S-19 (LAn-1764)	Hunting blind	Single hunting blind and a flaking station (quartz flakes).
S-20 (LAn-1765)	Hunting blind	Single hunting blind.
S-21 (LAn-1766)	Hunting blind	Hunting blind/rock shelter.
S-22 (LAn-1767)	Rock art	Three cupule boulders.
S-23 (LAn-1768)	Rock art	Single cupule boulder.
S-24 (LAn-1769)	Hunting blind	Two hunting blinds.
S-25 (LAn-1770)	Hunting blind	Three hunting blinds, marine shell, quartz flakes, and a granitic bowl fragment.
S-26 (LAn-1771)	Hunting blind	Single hunting blind.
S-27 (LAn-1772)	Groundstone feature	A bedrock milling feature consisting of three rolling holes on a single schist boulder and a schist metate fragment.
S-28 (LAn-1773)	Groundstone scatter (small)	A schist slab metate, four fragmentary schist slab metates, four quartz cores, a two bifacial granite mano fragments.
S-29 (LAn-1774)	Groundstone scatter	Contains series of isolated millingstones.
I-1	Isolated find	Quartzite flake
I-2	Isolated find	Retouched quartz flake.
I-3	Isolated find	Double-sided schist metate.
I-4	Isolated find	Quartzite scraper.
I-5	Isolated find	Chalcedony flake.
I-6	Isolated find	Bifacial granitic mano.
I-7	Isolated find	Granitic mano fragment.
I-8	Isolated find	Granitic mortar/bowl fragment (has ground inner bottom).
I-9	Isolated find	Quartzite single platform core.
I-10	Isolated find	Granitic shallow basin metate fragment.
I-12	Isolated find	Quartz hammerstone and a portable schist metate fragment.
I-13	Isolated find	Bifacial granitic mano fragment.
I-15	Isolated find	Quartz scraper.
I-16	Isolated find	Portable schist mortar and a fragmented granitic basket hopper mortar.
I-17	Isolated find	Quartz flake scraper.
I-19	Isolated find	Granitic mortar fragment.
I-20	Isolated find	Schist slab metate fragment.

Note: I-11, 14, and 18 were ultimately associated with the above-listed archaeological sites.

(or nuclei) and chips (waste flakes) which normally accompany them. However, groundstone milling implements including milling stones (metates), handstone (manos), mortars, and pestles sometimes accompany the chipped material.

The second most frequent prehistoric sites on the project site are comprised of hunting blinds of which there are two kinds. The first consists of a low rock wall built around a natural niche or ledge in a rock outcrop. Normally, the walls consist simply of stacked or piled rocks of varying size. The second kind of hunting blind, which is found in open areas, consists of a circular rock wall which encloses a shallow depression. The enclosure generally measures between one and two meters in diameter. Usually the rock wall has fallen; probably most having been knocked over by cattle grazing in the area.

Rock art sites are the third classification of prehistoric site. However, it should be understood that the term "rock art" used by anthropologists describes virtually any type of aboriginal rock engravings of unknown function. The specimens found on and around the project site consists of "cupule" boulders or boulders exhibiting multiple shallow depressions.

Fifteen of the prehistoric sites are chipped stone scatters including groundstone milling equipment. Eleven of the sites had one or more stacked stone hunting blinds. Two of the sites contained rock art.

Lithic scatters are more frequent in the San Andreas Rift Zone while the hunting blinds are found in the foothills of the Sierra Pelona (a range in which hunting blinds have been recorded in the past, cf. Archaeological Associates (1985). The location of the latter is to be expected since the blinds would have been used to hunt deer as the Tataviam moved back and forth between the high elevations of the mountains and the valley lowland.

Milling equipment, on the other hand, tends to be concentrated in the Rift Zone. Thus, the San Andreas Rift Zone of the study area seems to have been used for plant food procurement and preparation. The focus in the foothill zone, on the other hand, seems to have been upon hunting. Nothing was found within the valley proper. Of course, this may be a function of the fact that surface visibility in the valley floor was extremely poor. Also, clearing of the fields in the valley may have resulted in removal of surface milling stones or other large stone cultural materials.

Except for the historical site (the remains of a ranch house) there were no definite signs of permanent or semi-permanent habitation observed on the project site. Clear signs of midden soil, the usual archaeological indicator of a heavily used location, were not observed anywhere within the study area. Similarly, there are no indications of mortuary remains.

The Phase I and II surveys and records search results indicate that the study area was intensively foraged during the prehistoric era but did not contain any villages, major camps, or cemeteries. With regard to the significance of all these sites, the Phase II investigation indicates that, in addition to LAn-949, only two other sites are important archaeological resources within the meaning of CEQA and are, therefore, considered significant sites. LAn-1756/1757 (later determined to be one archaeological site) has been identified as a resource which contains important data relating to the prehistory of the Palmdale region because the complex is dateable and contains materials which must have been imported over considerable distances during the prehistoric era. The complex is even believed to predate the deposits found at LAn-949, thereby adding to the project site's chronological sequence. The deposits at LAn-1756 is estimated to cover an area of approximately 300 square meters. The two deposits at LAn-1757 are estimated to cover 250 square meters each. LAn-1758H, which may represent the location of one of the original ranch houses, holds the potential for shedding considerable light on the material character of local ranching facilities at the turn of the century.

Two types of chronologically useful data were encountered during the Phase I and Phase II site surveys. The first consists of a time-sensitive artifact type in the form of Marymount style arrowhead found on the surface of LAn-1753 (S-8) in the Rift Zone. Like the vast majority of Marymount points, it is manufactured from fused shale, a curious stone which occurs only in the Grimes Canyon area, south of Fillmore, in eastern Ventura County. A fused shale flake was also found at LAn-1757. Marymount points are known only from sites in western Los Angeles and eastern Ventura Counties. Available chronological data suggest that Marymount points were in use principally in the period between 400-500 AD. and 1000-1100 A.D. Thus, the presence of a Marymount point at LAn-1753 (S-8) suggests that the study area was in use by prehistoric peoples at least as early as the first millennium A.D.

The second type of chronological data occurred in the form of three obsidian chips found on the surface of LAn-1752 (S-7) and one obsidian flake at LAn-1757. Obsidian is volcanic glass, a material which begins to absorb water from the atmosphere at a regular rate when a fresh surface is exposed (as when a new tool is flaked). The three obsidian chips were examined microscopically by Archaeological Associates. Hydration layers were discovered on two of the three specimens making it possible to date the artifacts.

The dates (1428 A.D. and 1461 A.D.) indicate a Late Prehistoric use of LAn-1753 (S-8). Combined with the date range inferred from the Marymount point, it is possible to conclude a probable period of use for the study area spanning the years 400 A.D. through 1461 A.D. or about 1,000 years. At a minimum, the data indicate site use between about 1,000 A.D. and 1461 A.D. or for a period of about 400 years.

The Marymount point found at LAn-1753 (S-8) and the stone spatula found on the surface of S-4, traits of the Shoshoean Indian sites observed along the Ballona Escarpment, hint that the desert counterparts of the early Shoshoneans of the Ballona Escarpment were foraging in the Rift Zone of the project site. If this is so, the sites in the study area could add important data to the pool of information being collected on th

problem of Shoshonean movement. The project site is situated at the gateway of a natural lowland route from the desert to the Pacific Coast (i.e., the Soledad Canyon/Santa Clarita Valley route to the Oxnard Plain).

According to the Archaeological Information Center, many other sites have been recorded in the San Andreas Rift Zone northwest and southeast of the study area. Their presence indicates that the sites found on the project site are part of a chain of prehistoric archaeological sites strung along the rift.

Records of five locations northwest of the study area indicate that apparently none have been excavated so that all available data are based upon surface observation. Four of the five locations are reported to be lithic scatters containing fairly diverse artifact arrays. The presence of steatite, olivella shell beads, and small projectile points (probably arrowheads) at several of these sites suggest that they are Late Prehistoric in date (post 500 A.D.). The fifth site is reported to be a "cemetery" but no descriptive data are provided.

LAn-405 recorded due west of the project site is of particular interest with regard to the project site. Recorded in December of 1969, it is described as a "Pit, ca. 2 M (sic) diameter, 50 cm. deep, bottom covered with hand to head-sized rocks (schist). No midden." The investigators interpreted this feature as a roasting pit, observing that some of the rocks "show some sign of oxidation and reduction when broken open." Archaeological Associates believe that the recorder's interpretation of LAn-450 is in error, that the site actually represents a fallen hunting blind. Several similar features were found during field reconnaissance of the project site.

LAn-1035, a second nearby site of particular interest, consists of a "cluster of 16 cupule petroglyphs on a single schistose outcrop." A probable schist slab metate was found next to the cupule boulder. The presence of this cupule boulder combined with the ones observed on-site seem to be sufficient to indicate that this type of rock art is typical of the region. LAn-1035 was recorded in September of 1979.

Two other locations reported east of the project site, LAn-875 and LAn-876, consist of "sandy blowouts exposing bone, soapstone, agate, beads, manos" and an area of dark soil including "Obsidian and agate flaking, burnt bone, broken manos, portable mortar with check marks, rhyolite flaking and soapstone" respectively. Both of these locations may be habitation areas, the latter may be a midden deposit. If this is the case, it is possible that LAn-875 and/or 876 are campsites used by individuals who conducted activities within the project site.

5.25.2 Project Impacts

Three significant historic or archaeological sites coincide with portions of the project site earmarked for development. Deposits at LAn-949 coincide with the proposed project's Bridge Road alignment; deposits at LAn-1756 coincide with Planning Area 35; deposits at LAn-1757 lie within Planning Area 11; and deposits at LAn-1758 lie within Planning Area 31. The other archaeological sites and isolated finds identified by Archaeological Associates (April 24, 1989) also fall within areas proposed for development. The processes of grading and construction would affect identified archaeological artifacts and could uncover additional cultural material below the surface. The additional population brought to the project site could increase the potential disturbance to existing or future identified sites.

The non-significant sites have been mapped and illustrated as part of the Phase II investigation. The disturbance of these sites by the proposed project is not considered significant. However, the disturbance of sites LAn-949, LAn-1756/1757 and LAn-1758H by the proposed project can be considered significant due to the significance of the sites themselves.

5.25.3 Mitigation Measures

The following mitigation measures would enable the proper removal and preservation of cultural materials found on the project site.

- All work will be done under the supervision of a qualified archaeologist.

- Excavation of 100 percent of Loci A through C as described in the Phase II Archaeological Assessment (July, 1991) shall be conducted at LAn-949. It is estimated that approximately 500 cubic meters of cultural deposit will have to be removed. An excavation plan detailing strategy and research goals shall be submitted to the City of Palmdale for review prior to excavation activities.

- At least a 4 x 4 meter square unit at the approximate center of the deposit at LAn-1756 and at LAn-1757 shall be excavated.

- If preservation of the site at LAn-1758H is not feasible, a Phase III Salvage Program shall be conducted. The Phase III Salvage Program shall include full excavation of the stone enclosure and machine excavation of six 4 x 4 meter units placed in a pattern across the site. All backdirt from the units shall be screened through 1/4-inch mesh.

- In the event that future development would adversely affect the cupule boulders (LAn-1767 and LAn-1768) or the bedrock milling feature (LAn-1772), it is recommended that they be carefully removed and relocated elsewhere on the subject property. A qualified archaeologist shall be consulted to arrange for relocation of these boulders if removal is necessary.

- The location of significant historic and archaeological resources shall be recorded with the Archaeological Information Center at the UCLA.

- Significant historic and archaeological materials recovered in the field shall be delivered to the collection of an appropriate archaeological repository.

- The following sites which were augered require additional testing for subsurface deposits: LAn-1746, LAn-1747, LAn-1748, LAn-1749, LAn-1750, LAn-1752, LAn-1753, LAn-1756, LAn-1772, LAn-1774, LAn-1 and LAn-1768. At least one additional 1x1 meter test unit needs to be excavated at each of these sites, within site areas with the greatest densities of surface artifacts. These excavations are important to determine whether auger testing has missed subsurfac deposits and to get a clearer, vertically-controlled picture of su deposits and their depositional context.

The following important petroglyph, bedrock mortar, and rock ring sites were not subject to any subsurface testing. They need to be tested through excavation of a minimum of one 1x1 meeter units utilizing 1/8" screen in the immediate vicinity of these features: LAn-1767, LAn-1768, LAn-1759, LAn-1760, LAn-1761, LAn-1762, LAn-1763, LAn-1765, LAn-1766, LAn-1769, LAn-1770, LAn-1771. The "hunting blind" sites are important structures whose function needs to be determined through further testing.

The important apparent habitation site, LAn-949, should b avoided through realignment of the proposed roadway. Howeve in the event that avoidance is not possible, salvage of t site shall be performed in accordance with an excavation plan.

The important apparent habitation site, LAn-949, should be avoided through realignment of the proposed roadway. However, in the event that avoidance is not possible, salvage of the site shall be performed in accordance with an excavation plan. Excavation of 100 percent of Loci A through C as described in the Phase II Archaeological Assessment (July, 1991) shall be conducted at LAn-949. It is estimated that approximately 500 cubic meters of cultural deposit will have to be removed. The excavation plan detailing strategy and research goals shall be submitted to the City of Palmdale for review and approval prior to excavation activities. In addition, this excavation plan shall contain a subregional analysis of the archaeological sites within and immediately adjacent to City Ranch to provide a basis for significance determinations. As part of the subregional analysis, a research design that would set standards for future work in the vicinity of the City Ranch project shall be proposed. The subregional analysis of the archaeological sites may be prepared in cooperation with other adjacent property owners, as approved by the Planning Director.

Those sites, not listed above, which contained surface artifacts but were only auger tested shall be tested with at least one standard test unit per site. The testing program shall be submitted to the City Planning Department for review and approval prior to commencement. In addition, untested cupule sites, rock rings and hunting blinds shall also be tested in this manner. Any additional mitigation recommended as a result of the additional testing shall be required as mitigation measures for initial and subsequent development applications, as appropriate.

Relocation of cupule boulders must be done under the direction of a qualified archaeologist who will give careful attention to orientation of the boulders. The boulders shall be moved prior to site disturbance in their immediate vicinity to a location approved by the Planning Director. Since context will be lost, some shall be relocated to a repository approved by the Planning Director where they can be used for educational purposes. Representative artifacts should be displayed at this repository.

The work described above shall be performed by a qualified archaeologist, retained by the applicant and approved by the Planning Director. Because the introduction of residents into the area will result in the degradation of archaeological sites, required testing shall be completed and approved by the Planning Director prior to recordation of the first parcel map or tract map for the project.

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5.25.4 Cumulative Impacts

Development of the cumulative projects has the potential to disturb th recorded archaeological sites in the project vicinity. It is unknown whether the cumulative project sites contain significant archaeological resources or whether the previously recorded sites in the vicinity contain significant archaeological resources. Unrecorded prehistoric sites may occur along the San Andreas Rift Zone. Several of the proposed projects fall within the Rift Zone. Development of these projects may disturb the prehistoric sites likely to occur in this area and contribute to the loss of archaeological resources in this area. Mitigation for this loss must occur on a project by project basis as development is proposed for the area. Mitigation for this loss must occur on a project by project basis as development is proposed for the area.

5.25.5 Unavoidable Adverse Impacts

Development of the proposed project would disturb the portions of the site containing archaeological site LAn-949, LAn-1756/1757 and LAn-1758H. Although disturbance of these sites is considered significant, implementation of the recommended mitigation measures would reduce these impacts to a level of "not significant."

5.26 PALEONTOLOGY

A report prepared by Paleo Environmental Associates entitled "Paleontologic Resource Assessment, City Ranch Specific Plan Area," April 23, 1990, included as Appendix I of this report, was used to prepare this section. The full text of this report is on file with the City of Palmdale Planning Department and will be released only to qualified investigators.

5.26.1 Existing Conditions

Paleontologic resources on the project site include fossil remains, seven recorded fossil sites and rock units with the potential to yield further paleontological resources. Rock units exposed on the project site contain pre-Tertiary igneous, metamorphic and late Miocene to Holocene nonmarine sedimentary rock units. Each rock unit exposed within the project site has been assigned a level of paleontologic importance based on the types and densities of fossil remains and recorded fossil sites it has produced on the project site and vicinity, and the potential for additional remains or sites to occur within the project site. The igneous and metamorphic rock units are considered to be of no paleontologic importance because they have no potential for containing any fossil remains. The sedimentary rock units, however, are of low to high paleontologic importance, based on their potentials for yielding fossil remains on the project site. The distribution of these rock units is presented in Appendix I.

Fossils of 21 species of land plants, including pine, palm, sycamore, cottonwood and oak, were identified at six of the seven fossil sites. These were all located in one of the late Miocene rock units. One of the Pleistocene rock units which is exposed on the project site has yielded a diversity of continental vertebrates, including bird, rabbit (two species), squirrel, pack rat, vole, pocket mouse, gopher, kangaroo rat, dire wolf, horse, camel, mastodon and mammoth at an off-site location approximately 3.5 miles to the southeast.

5.26.2 Project Impacts

Direct significant adverse impacts to paleontologic resources would result from ground-disturbing activities associated with development of the City Ranch Specific Plan. Impacts would arise primarily from grading to create building pads, parking lots, roads, parks, and the golf course. Portions of Planning Areas 1 and 9 proposed as community parks; Planning Areas 4 and 13 proposed as a golf course and Planning Area 10 proposed for single-family housing have rock units considered to be highly important paleontologically. Grading activities in these areas have high potential to disturb or bury fossil sites, as well as fossiliferous and potentially fossiliferous rocks, and would result in the loss of fossil specimens and associated geologic data. In addition, fossiliferous rock in these areas would become permanently unavailable for future investigation for fossil remains.

Portions of all of the rest of the planning areas on the project site contain paleontologic resources of low paleontologic importance. Potential to disturb fossil remains in thes areas is low.

Potentially significant indirect adverse impacts could occur as a result of collection of fossil remains by construction personnel, rock hounds, and amateur and commercial collectors. This could result in the loss of specimens and data.

5.26.3 Mitigation Measures

Implementation of the following mitigation measures would reduce impacts to paleontological resources:

- A paleontologist, approved by the City of Palmdale Planning Department shall submit a program for paleontologic resource recovery and preservation to the City of Palmdale Planning Department for approval prior to issuance of the development permit. Prior to initiation of construction, the paleontologist sha

conduct a field survey of exposures of the late Miocene fossil leaf-bearing rock unit on the project site to document locations of previously unrecorded fossil sites. All sites shall be plotted on a topographic map of the project site. Representative plant fossils shall be collected from each site. The paleontologist shall excavate those sites, including any previously recorded sites, having the highest potential for yielding comparatively well preserved and taxonomically diverse plant assemblages. If necessary, the applicant will supply a backhoe and operator to further expose a fossil site for hand excavation.

- The paleontologist shall collect rock samples from selected locations (including recorded fossil sites) and horizons (particularly paleosols and other fine-grained rocks) in the rock units of high and unknown paleontologic importance to process for smaller fossil remains. Each sample shall contain up to 1,000 pounds of rock. If fossil remains are found during processing, up to 5,000 pounds of rock shall be collected from the fossil-bearing rock unit and processed.

- Following completion of these tasks, the paleontologist shall prepare a report summarizing the results of the preconstruction phase of the mitigation program presenting an inventory and describing the significance of any accessioned fossil remains. The report shall be submitted to the City of Palmdale Planning Department.

- During the construction phase, the paleontologist shall monitor grading and any other ground-disturbing activity in areas underlain by rock units of high paleontologic importance on a full-time basis, moderate and unknown importance on a half-time basis and low importance on a quarter-time basis as identified in the preconstruction field survey. If more than 25,000 cubic yards of rock are moved per day, the level of monitoring effort shall be doubled. Monitoring shall consist of visually inspecting fresh exposures of rock for larger fossil remains and, where appropriate, dry screening excavated spoils for smaller

vertebrate remains. Grading in areas underlain by rock units of no importance shall not be monitored, except in the immediate vicinity of a fossil site.

- If larger fossil remains are uncovered by ground disturbance, the paleontologist shall divert the ground-disturbing activity away from the fossil site until the remains have been removed and a 1,000 pound rock sample has been collected. Grading of the fossil-bearing bed in the immediate vicinity of the site shall be monitored on a full-time basis. If sufficient sites are discovered in any rock unit during construction, earth-moving activities in the entire area underlain by this rock unit shall be monitored on a full-time basis.

- If fossil remains are found during grading by construction crews (including in areas underlain by rock units of low paleontologic importance), grading activities on the fossil site shall be stopped and the paleontologist shall be called to the site immediately to remove the remains. If sufficient sites are discovered, grading activities at the fossil site shall be monitored on a full-time basis.

- During grading, the paleontologist shall collect 1,000-pound rock samples from selected locations and stratigraphic levels (particularly paleosols or other fine-grained rocks) to process for small mammal and other microvertebrate remains. Additional 5,000-pound rock samples shall be collected from any productive sampling site, including any site discovered as a result of dry screening by the monitor, for processing. The grading contractor may be needed to assist in removing rock samples to an adjacent location for initial processing. Sampling sites shall be documented on the topographic map of the plan area.

- Both before and after construction, the paleontologist shall conduct the initial processing (wet and/or dry screening) of the rock samples for small age-diagnostic mammal remains and other microvertebrate specimens while on-site. The resulting concentrate shall be transported to a museum facility. If sufficient fossil sites and remains are found in a rock unit of unknown paleontological in

portance, this unit shall be reclassified as moderately or highly important. If no remains are recovered, this rock unit shall be reclassified as being of low paleontological importance.

- During grading, the paleontologist shall collect all identifiable vertebrate and plant remains. All fossil sites shall be plotted on the topographic map of the project site.

- All fossil remains collected before and during construction shall be prepared, identified, catalogued, curated and accessioned into the collection of a designated repository, such as the Vertebrate Paleontology Section of the Natural History Museum of Los Angeles County (LACM). Accompanying notes, maps, and photographs shall also be filed at the repository.

- Following completion of these tasks, the paleontologist shall prepare a report summarizing the results of the construction phase of the mitigation program and presenting an inventory and describing the significance of any accessioned fossil remains. The report shall be submitted to the City of Palmdale Planning Department and shall signify completion of the paleontologic mitigation program. Because development of the proposed project is phased, separate reports may be required to summarize mitigation for certain fossil sites.

- Subsequent to construction, the applicant shall allow future access to and investigation and excavation of exposed rocks, particularly at any fossil site set aside from development, by qualified paleontologists approved by the LACM to ensure fossil remains are recovered. (If paleontologists do not recover these fossil remains, the fossils and associated scientific data might be lost to weathering and erosion or to unauthorized fossil collecting.)

5.26.4 Cumulative Impacts

Development of the City Ranch project site and other future developments in the Palmdale area, may contribute to the progressive loss of fossiliferous rocks and fossil sites that can be investigated for fossil remains.

5.26.5 Unavoidable Adverse Impacts

The mitigation measures described above would allow the recovery and preservation of some scientifically important fossil remains and associated geologic data that might otherwise be discovered. If mitigation measures are carefully implemented, grading could be beneficial by exposing fresh rock and allowing the collection of fossil remains that otherwise might not have been collected. Moreover, these remains could be deposited in a museum, where they would be available for future study by qualified investigators.

While the mitigation measures proposed would reduce adverse impacts associated with development of the project site, they do not necessarily ensure that all direct and indirect adverse environmental impacts on paleontologic resources caused by development of the City Ranch project site would be reduced to an insignificant level and that all remains would be preserved. Unavoidable or residual impacts may still remain. Fossil remains and associated geologic data, recorded and possibly unrecorded fossil sites, and fossiliferous rocks may be lost to or made inaccessible by ground-disturbing activities; covering with fill, pavement, or structures; and unauthorized fossil collecting.

5.27 ELECTROMAGNETIC RADIATION

5.27.1 Existing Conditions

The City Ranch project site is traversed by five sets of high-voltage electric transmission lines (**Figure 63**). Two sets of these transmission lines carrying 220 kV each, within a 200-foot wide easement, cross the southwestern corner of the property diagonally. These two lines intersect each other at the approximate midpoint along their path across the project site. Immediately adjacent to this easement is a 155-foot wide easement which contains a single 500 kV transmission line. An additional line (500 kV) enters the project site approximately midway along the southern border and continues due west within a 330-foot easement. Another 500 kV line within a 330 foot easement cuts across the extreme southwest corner of the project site. A 220 kV line ("Sagebrush Power-Line") parallels the southwestern project boundary just outside the project site (**Figure 63**).

Immediately adjacent to the southern half of the western project site boundary and along the south side of the project site's western half of the southern boundary line is an easement containing a 220 kV electric transmission line. This transmission line was recently built to serve the proposed Sagebrush residential project to the south. This easement varies in width from 70-140 feet.

In addition to the high-voltage transmission lines, a 12 kV distribution line is located on the project site (**Figure 63**). The line, which is situated within a 6-foot easement, runs generally east-west across the southern half of the site. Several smaller power lines also cross the property. These lines link the former caretaker residence and Aqueduct facilities to the distribution lines.

All of the electrical power lines traversing the property have alternating currents (AC) with frequencies of 60 Hertz. All on-site lines are owned and maintained by Southern California Edison (SCE) and are located within SCE right-of-way easements. SCE

retains rights within the easements in order to maintain and repair all of these lines an their associated equipment. The easements were established to provide clearance area around the electrical lines, access to towers unimpeded by structures, and buffer distances for safety from contact with electrical equipment.

The design and electrical characteristics of the on-site high-voltage transmission lines are typical of lines of their respective voltage classifications. The basic electrical design used by SCE for the 220 kV lines is a single 60 Hertz circuit, with three phases per circuit, and each circuit arranged in a vertical phase configuration. SCE 220 kV transmission lines consist of two 1,033,500 circular mil, 1.244-inch diameter aluminum conductor steel-reinforced (ACSR) conductors per electrical phase. The transmission line towers are constructed with galvanized lattice steel members ranging in height and span lengths depending on topography and tower configuration.

Alternating electrical currents such as those transmitted by electric power lines create electromagnetic fields. Electromagnetic fields are composed of electric fields produced when electric charges are introduced into wire and magnetic fields which are created as a result of the motion of those electrical charges. Electromagnetic fields radiate with frequencies ranging from high frequency (short wave length) ionizing radiation such as x-rays to lower frequency (longer wave length) nonionizing radiation such as microwaves, television and radio transmissions. Magnetic fields pass through normal residential structures and are diminished only by barriers containing large amounts of ferrous or other specific metals, while electrical fields are diminished by barriers of all materials. The intensity of a magnetic field does, however, diminish with distance. The electric and magnetic fields of the lines on-site are similar to other lines in service in California and throughout the U.S.

There has been concern recently that nonionizing electromagnetic fields emitted by electricity installations and equipment using alternating currents at 50-60 Hertz might have long-term health effects on those living or working near electrical facilities. Electromagnetic radiation is strongly suspected of causing childhood cancers including

brain tumors and leukemia. High voltage power lines which produce electric and magnetic fields in excess of the ambient electromagnetic field levels of exposure may be potential sources of hazard. Although scientific investigators have been unable to demonstrate a statistically significant causal relationship between living near electric fields and deleterious health effects, several scientific review groups have postulated a link between 60 Hertz electromagnetic fields and adverse public health effects. Some scientific groups have recommended precautionary measures to limit electromagnetic field exposures and indicated that careful consideration should be exercised in planning for development of land that is likely to incur long-term exposure to electromagnetic fields. Specific standards do not currently exist for the determination of appropriate development setbacks.

Transmission lines can also produce interference with radio and television reception. This factor is primarily a nuisance and does not present a planning constraint for study purposes.

5.27.2 Project Impacts

The City Ranch South Specific Plan designates that the high-voltage transmission line easements be maintained either within park areas (Planning Area 18) or undeveloped open space (Planning Area 32) (Figure 63). The Specific Plan proposes residential uses (Planning Areas 16, 17 and 19A) and an elementary school site (Planning Area 19B) along the boundaries of the proposed park (Planning Area 18). The proposed park (Planning Area 18) has been designed to encompass the easements and to provide additional buffer where adjacent to the school site (Planning Area 19B). Residential Planning Areas 16 and 17 would be situated immediately adjacent to the off-site easement containing the 220 kV transmission line serving the proposed Sagebrush project.

The 12 kV distribution line crosses several planning areas (16, 10, 18, 19A, 19B, 30A, 30B, 28A, 28B, 27, 24 and 33), most of which are proposed for single-family or school uses.

Although these areas may be subject to electromagnetic fields from the power lines, no significant impacts are anticipated as long as habitable structures are not construct within the line's right-of-way.

No analysis of electromagnetic field strength for the 220 or 500 kV lines on-site has been conducted. However, it is anticipated that electromagnetic radiation levels would be expected to be higher within the easements than outside them. No structures for occupancy are proposed within the portions of Planning Areas 18 (park) and 32 (open space) containing the power line easements. It is anticipated that the EMF exposure of users of the park would be short in duration and intermittent in nature.

The proximity of the on-site high-voltage electric transmission lines to proposed residential Planning Areas 16, 17 and 19A and elementary school site (Planning Area 19B), and proximity of the off-site transmission line serving the proposed Sagebrush project to residential Planning Areas 16 and 17 could result in potential health risks to residents and users within these planning areas. Health risks associated with active recreation activity in close proximity to high-voltage electric lines are unknown. Activ recreational uses such as softball and soccer fields are proposed within the power line easements in Planning Area 18. Because there is disagreement in the scientific community on the relationship between electromagnetic radiation exposure and health effects, the location of these uses in proximity to the high-voltage electric lines is considered potentially significant. The California Department of Education requires buffer zones between high voltage power lines and school sites. California Department of Education requires an additional 100 foot buffer for 100 to 110 kV lines from the edge of right-of-way. A 150 foot buffer is required for 200 to 230 kV lines. A 250 foot buffer is required for 345 kV lines and a 350-foot buffer for 500 kV lines or larger. These buffers represent additional land on either side of the utility corridor (State Site Selection and Approval Guide, School Facilities Planning Division, Department of Education). Buffer area has been designed in Planning Area 18 to reflect State Department of Education buffer requirements adjacent to the school site (Planning Area 19B). The State of California requires that, at a minimum, potential residential ur

buyers be notified of conditions affecting the safety and value of residences. This could apply to residential lots adjacent to high-voltage transmission lines.

Noise from transmission lines is expected to affect areas outside high-voltage transmission line easements. Depending upon atmospheric conditions, this noise may be a moderate to severe nuisance.

5.27.3 Mitigation Measures

Implementation of the following mitigations would reduce impacts associated with the high-voltage electric lines:

- Residential areas abutting transmission line rights-of-way shall be separated by continuous six-foot-high non-conductive fencing.

- In accordance with California Department of Real Estate disclosure format and procedures, all potential buyers of real property within City Ranch within 500-feet of an easement containing a 220 kV or higher voltage electric transmission line shall be notified of the proximity to the easement and conditions regarding proximity.

- Active recreational uses shall be prohibited within the 220 kV and 500 kV powerline easements in Planning Area 18.

- All residential units constructed along the perimeter of high-voltage power line easements shall use double glazed windows on all sides that face these lines to minimize noise effects generated by the electrical transmission lines.

- The location of the proposed elementary school sites shall reflect the recommended guidelines of the California Department of Education regarding buffer zones between school site locations and high voltage power lines.

5.27.4 Cumulative Impacts

As discussed with regard to the proposed project, health effects may result from living and/or using areas containing high-voltage electrical lines. Cumulative development projects proposing permanent structures for occupancy within close proximity to high-voltage electric lines may subject future residents to adverse health effects.

5.27.5 Unavoidable Adverse Impacts

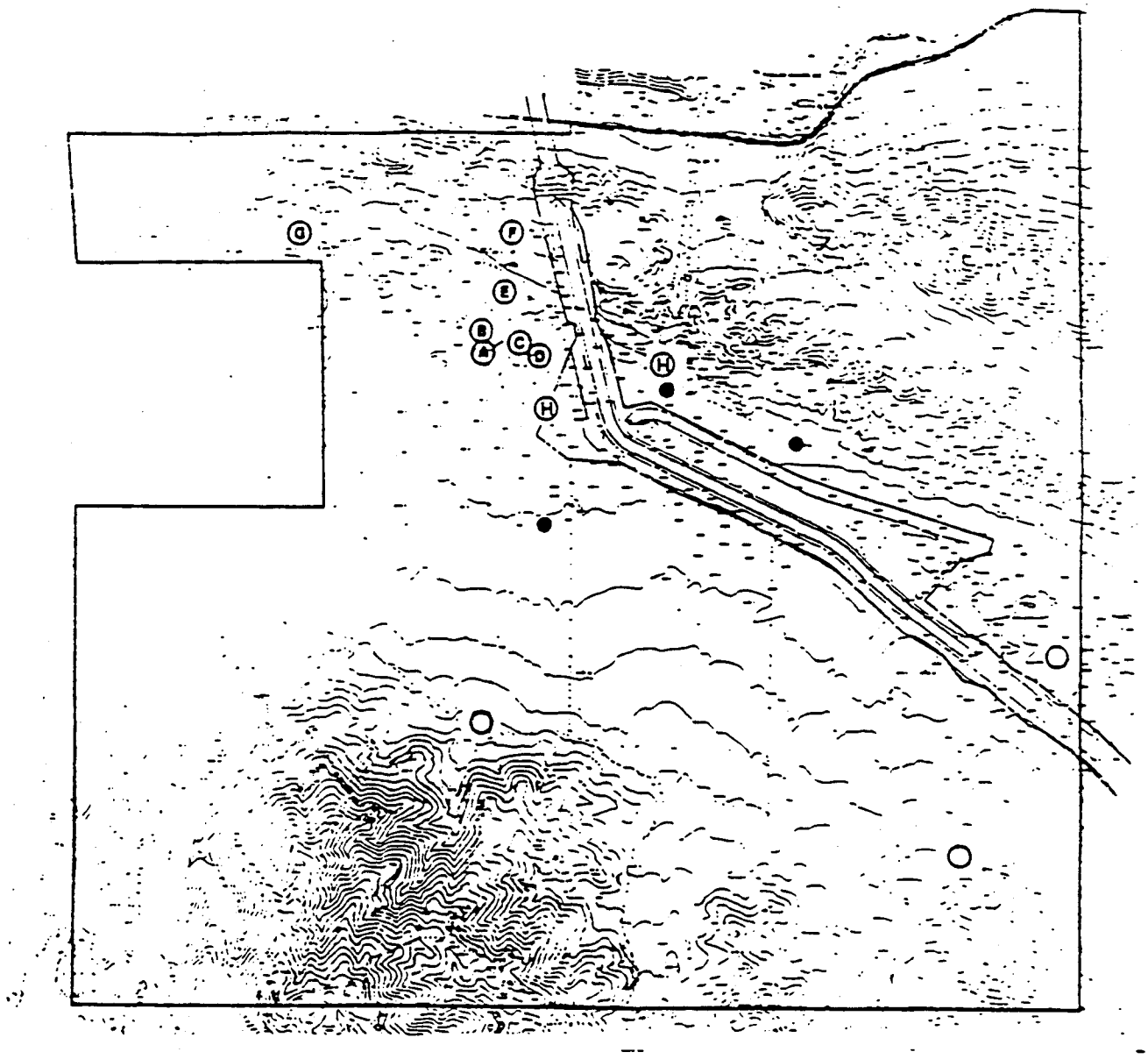
As proposed, the Specific Plan would locate a park within and residential uses adjacent to high-voltage power line easements. In addition, an elementary school is proposed near the easement. If in the future a clear link between proximity to high-voltage electric lines and deleterious health effects is determined, impacts would be considered unavoidable adverse impacts.

5.28 HAZARDOUS/TOXIC MATERIALS

5.28.1 Existing Conditions

The mountainous southern portion of the project site is in an essentially natural state, with the exception of the presence of five sets of electric transmission lines and associated service roads. The central portion of the project site, currently used for cattle grazing contains a former dairy ranch compound area consisting of small abandoned residences, shop buildings, storage sheds, corrals, stables and barns. Several water tanks, grain silos, a boiler and two propane tanks are also present in this area. The Ranch compound has been in its basic location since at least the late 1920's; buildings have been added and demolished during the last 60 years. Presently, the original Ranch structures are abandoned and in general disrepair. The nearest site documented by regulatory agencies as containing hazardous materials is approximately four miles to the east. Hazardous materials include materials that may be injurious to human health or the environment on contact and as defined by the State.

Four primary areas of environmental concern have been identified on the City Ranch property as a result of a site assessment investigation conducted on June 1 and 15, 1989 (Earth Systems Environmental, 1989, Appendix J): 1) an underground fuel storage tank in the ranch compound area; 2) surface storage areas for pesticides, herbicides, and veterinary supplies; 3) surface disposal areas containing both empty and partially full paint, paint thinner, pesticide containers, and other household items and apparently oil-stained soil; 4) six water wells observed or reported to be on the property; and 5) several septic systems used for the former ranch facilities and caretaker residence. These five areas are shown on Figure 74. The project site was not tested to determine levels of subsurface or other hazardous substances.



LEGEND

- PROJECT SITE BOUNDARY
- (A) UNDERGROUND STORAGE TANK
- (B) STORAGE BUILDING
- (C) "CHLORDANE" LOCATION
- (D) STAINED SOIL
- (E)(F) APPARENT NON-HAZARD REFUSE DISPOSAL AREAS
- (G) HAZARD REFUSE DISPOSAL AREA
- ● WELL LOCATION (OBSERVED, EARTH SYSTEMS ENVIRONMENTAL, 1989)
- ○ WELL LOCATION (AS SHOWN ON USGS RITTER RIDGE QUADRANGLE MAP)
- (H) SEPTIC SYSTEMS

N

0 900' 1800'

Envicom Corporation

Source: Preliminary Environmental Site Assessment, City Ranch Property, Palmdale, CA. July 1989. Earth Systems Environmental, Inc.

HAZARDOUS MATERIALS LOCATIONS

FIGURE 74

Underground Storage Tanks

At the ranch compound area, an abandoned gasoline pump and a fill riser for a 550-gallon underground storage tank containing regular gasoline were located south of the existing storage building (**Figure 74**, Location A).

In February, 1990, the underground tank was removed under permit from the Los Angeles County Department of Public Works and Building and Safety. The tank was rinsed, pumped out and removed in accordance with applicable regulations. Analytical testing of the soil samples taken beneath the tank detected elevated levels of total petroleum hydrocarbons and aromatic hydrocarbons (benzene, toluene, etc.). Subsequent excavation indicated that groundwater was located 19 feet below grade and may be contaminated with hydrocarbons. A more thorough characterization of the extent of soil and, possibly, groundwater contamination has not yet been completed.

The nearest existing water well to this location is situated approximately 2,000 feet to the southeast (**Figure 74**). Contamination of this water well is not expected due to the distance and direction of groundwater flow.

Surface Storage Area

To the north of the underground tanks a partially demolished storage building was found to contain empty and partially filled containers of paints, paint thinners and herbicides (**Figure 74**, Location B). Other items found in the building include veterinary supplies, motor oil, grease, antifreeze and car batteries. A second storage building located in this area was locked at the time of site inspection, therefore, its contents were not observed.

Four partly full one-gallon jugs of chlordane were found on the porch of an abandoned bunkhouse. No signs of spillage or leakage were observed in the area of the containers (**Figure 74**, Location C).

Surface Disposal Areas

On the east side of the ranch compound, a small area of stained soil, approximately 10 feet in diameter and about six inches deep was found (**Figure 74**, Location D). The nature of this stain is not known, although it appears to be oil.

Three ranch-related refuse disposal areas were found on the site. Two of these areas contain what appear to be non-hazardous materials comprising hay bales, tree cuttings, lumber, and scrap metal (**Figure 75**, Location E and F). The third area contains large amounts of tree and brush cuttings, large appliances, old farm equipment, tires as well as several containers of paint, paint thinner, and roofing tar. Also found in this area was a one-gallon metal container labeled "Black Leaf DDT Concentrate" which was partially buried and appeared to be leaking (**Figure 74**, Location G).

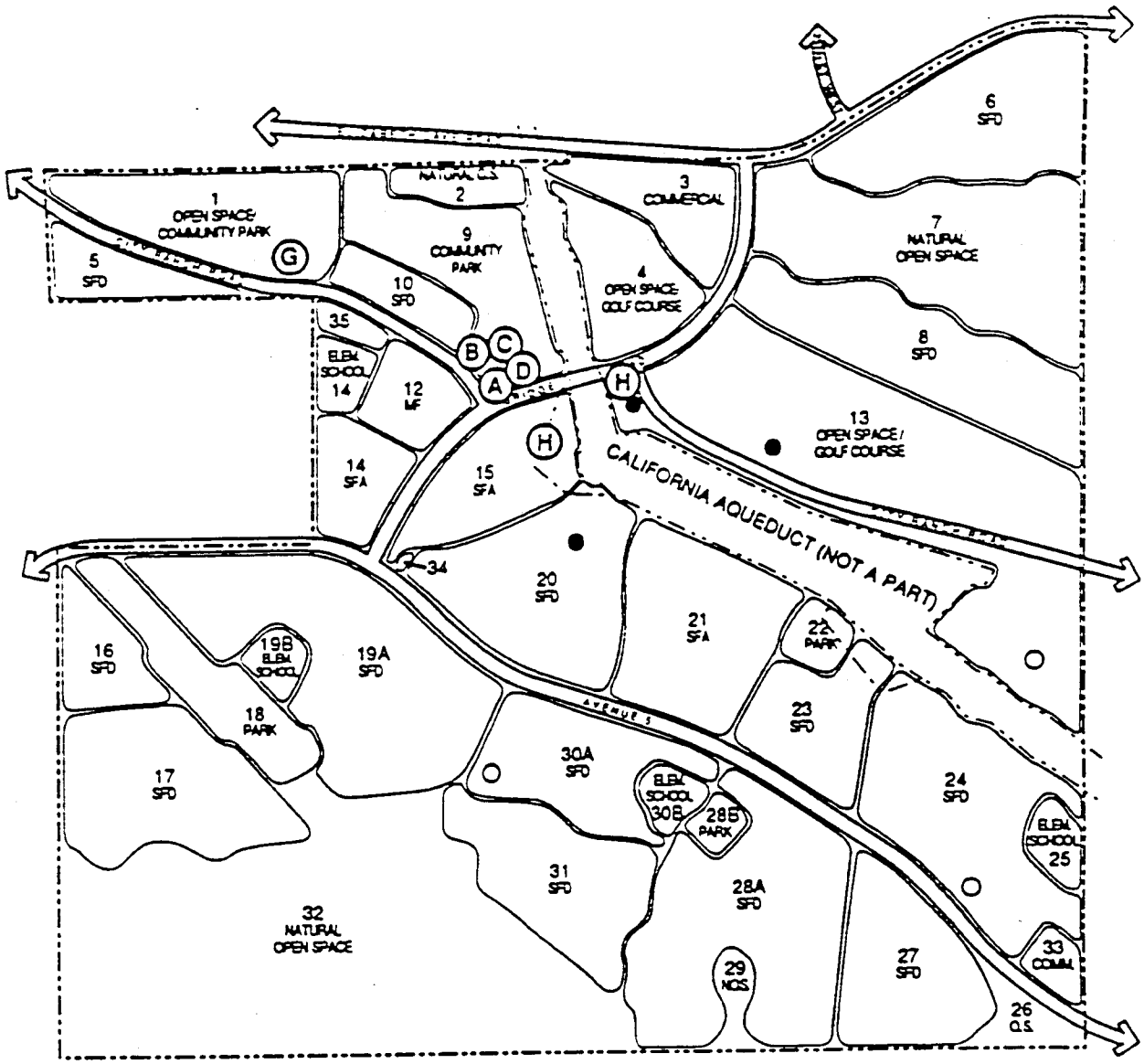
Wells

Six wells are located on the project site (see **Figure 74** for well location). Three wells are located in near proximity to the Ranch buildings (Earth Systems Environmental, 1989). Two of these wells, presently equipped with electric pumps, appear to be used for watering livestock. The third well, a two-inch diameter PVC piezometer is apparently used to monitor ground water levels beneath the site. Three other wells which appear to be inactive are located to the south and east of the Ranch buildings (USGS Ritter Ridge Quadrangle map).

Septic Tanks

Septic systems are located in the former ranch compound area and at the site of the former caretaker's residence east of City Ranch Road (**Figure 74**, Location H).

According to the Los Angeles County Agricultural Commissioner (June 1987), pesticide testing of surface waters, soils, and animal tissues in the Antelope Valley region had nc



LEGEND

- PROJECT SITE BOUNDARY
- (A) UNDERGROUND STORAGE TANK
- (B) STORAGE BUILDING
- (C) "CHLORDANE" LOCATION
- (D) STAINED SOIL
- (G) HAZARDOUS REFUSE DISPOSAL AREA
- (H) SEPTIC SYSTEMS
- ● WELL LOCATION (OBSERVED, EARTH SYSTEMS ENVIRONMENTAL, 1989)
- ○ WELL LOCATION (AS SHOWN ON USGS RITTER RIDGE QUADRANGLE MAP)

N

0 900' 1800' 2700'

Envicom Macintosh Graphic

Source: Preliminary Environmental Site Assessment, City Ranch Property, Palmdale, CA. July 1989. Earth Systems Environmental, Inc.

POTENTIAL HAZARD AREAS

FIGURE 75

revealed any residual pesticide contamination in the area. The Commissioner's office is currently not aware of any water quality concerns in the valley associated with the of pesticides or herbicides.

5.28.2 Project Impacts

Without proper remediation, hazardous materials found on the proposed project site could create health risks to project construction workers and future site residents. Public parkland and residential land uses are considered the most sensitive uses because these areas would be most heavily used by site residents. Potential areas of environmental concern found on the project site have been plotted on the site development plan (**Figure 75**) and are described below:

- Septic systems located in the area of the former caretaker residence coincide with Planning Area 13. Those in the ranch compound area coincide with Planning Area 15.

- Four partially full one-gallon jugs of "Chlordane" found on the porch of an abandoned bunkhouse (**Figure 75**, Location C), and a storage building containing empty and partially filled containers of paints, paint thinners and herbicides (**Figure 75**, Location B) coincide with Planning Area 9.

- One ground water well would be located in Planning Area 20, three in Planning Area 13, one within Planning Area 24, and another within Planning Area 30.

- At the location where the underground storage tank was removed (Location A), gasoline contamination still exists (Planning Area 9) (**Figure 75**). An oil-stained area approximately ten feet in diameter (**Figure 75**, Location D) coincides with Planning Area 9.

- In the southeast portion of Planning Area 1, a ranch-related disposal site was found (Figure 75, Location G). Several containers of paint, paint thinner, roofing tar and a metal container labeled "DDT Concentrate" were discovered at this disposal site.

Unless proper clean-up and disposal procedures are carried out, these sites contain potentially hazardous materials which could pose a health threat. Any exposure of hazardous materials to human population may be considered significant.

5.28.3 Mitigation Measures

Implementation of the following mitigation measures would reduce impacts to a level of "not significant".

- Septic systems shall be abandoned prior to grading operations in areas where they are located. Septic systems shall be cleaned and abandoned in accordance with Title 28, Chapter 11, Section 1119 of The Los Angeles County Health and Safety Code. A permit for this action will be required by the Los Angeles County Department of Public Works Building and Safety Division in Lancaster.

- Soil testing shall be conducted in all areas where hazardous/toxic materials were found. Soils contaminated with hydrocarbons (gas and oil spillage), specifically at the former underground storage tank site (Location A) and soil stained area (Location D) on the east side of the ranch compound, shall be removed and disposed of at a facility authorized to accept hazardous waste from the site prior to grading operations within the specified area. Soil removal shall be supervised by a qualified hazardous waste scientist. The final quantity of soil to be removed shall be determined. Contaminated soil shall be transported and disposed of in accordance with all applicable hazardous waste disposal regulations. A manifest, a formal document verifying receipt by an authorized hazardous waste facility of soils contaminated with hydrocarbons or other hazardous wastes shall

be provided to the County Department of Public Works. A closure report verifying complete removal of contaminants from the site shall be provided the County Department of Public Works. Both shall be approved prior to the acceptance of dedication.

- An additional study determining the lateral and vertical extent of soil contamination and the possible impact on groundwater shall be prepared for the former site of the underground fuel storage tank.

- Empty or partially full containers of pesticides, herbicides, and veterinary supplies (Locations B and C) shall be reviewed by a qualified hazardous waste scientist to determine which are considered hazardous as determined by state, county, or local statutes. Hazardous materials and hazardous waste shall be disposed of in accordance with all applicable hazardous waste disposal regulations.

- Hazardous materials in the disposal area at Location G, **Figure 75** shall be analyzed for chemical composition, removed and taken to a facility licensed to accept such material. Soil samples shall be examined in this area to ascertain whether soil has been impacted by manifested disposed contaminants. If the other disposal areas are excavated, a manifest for the contaminated soils and a site closure report shall be provided to the County Public Works Department prior to the acceptance of dedication.

- Wells on the property not used for irrigation or other non-potable uses shall be abandoned and sealed to eliminate the potential for degradation of ground water beneath the site in accordance with the requirements set forth in California Department of Water Resources Bulletin 71-88. Well destruction will require permitting through the Los Angeles County Department of Health Services, and possibly the local water agency.

- Groundwater testing for hydrocarbons shall be conducted prior to the construction of any future water wells within 1,000 feet of Location A (the abandoned subsurface gasoline storage tank, Figure 75 of the EIR). If pollutant levels in exceedance of threshold levels set by the California Health Services Department (CHSD) are discovered in the groundwater, those locations shall not be used as well sites. (Present CHSD thresholds include 0.7 parts per billion (ppb) benzene, 640 ppb ethyl benzene, 100 ppb toluene, and 680 ppb zylene).

- Refuse from disposal areas E and F (Figure 75) shall be collected and disposed of at an appropriate disposal site.

- The storage building near Location B which was not inspected on the site investigation and whose contents are, therefore, unknown, shall be opened and evaluated by a qualified site investigator. The contents of the building shall be inventoried and analyzed for potential health hazards. If hazardous materials are identified, appropriate remediation measures shall be implemented. All local, county, state and federal regulations shall be applied to ensure proper disposal of any hazardous material that may be found. If hazardous materials are found at this location, a manifest and a site closure report shall be provided to the County Department of Public Works prior to the issuance of a building permit.

5.28.4 Cumulative Impacts

Removal of potential hazardous materials and their disposal are site specific.

5.28.5 Unavoidable Adverse Impacts

Implementation of the recommended mitigation measures would reduce project impacts regarding hazardous/toxic materials to a level of "not significant."

5.29 ANTELOPE VALLEY PUBLIC LANDFILL

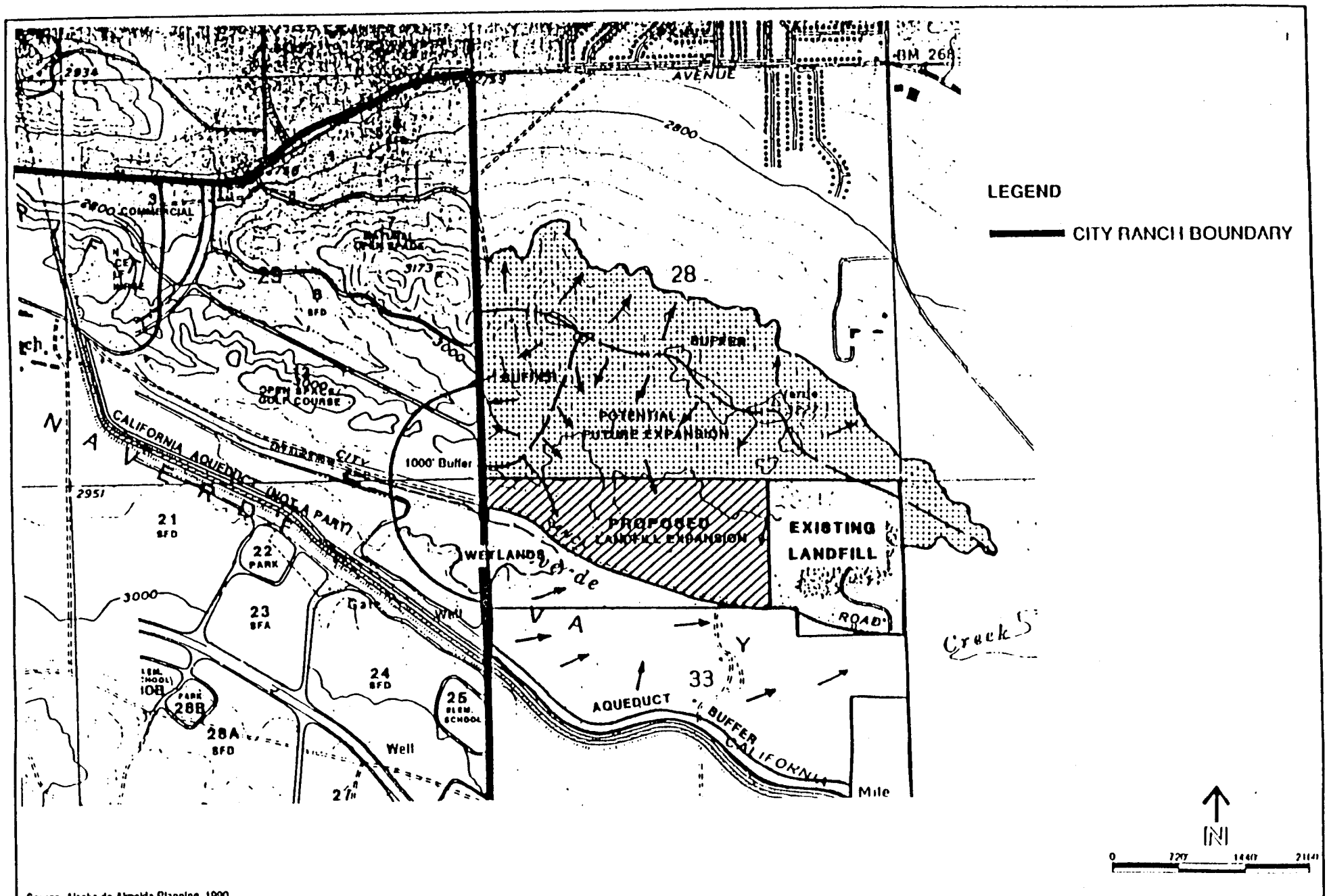
5.29.1 Existing Conditions

The Antelope Valley Public Landfill is located approximately 0.6 miles east of the project site's eastern boundary (Figure 76). Privately operated for 35 years by the Palmdale Disposal Company with a Class III permit (no acceptance of hazardous wastes), this public landfill accepts 230,000 tons of waste per year from the Antelope Valley area and is rapidly reaching its permitted capacity. Potential off-site impacts associated with operation of this landfill as with any landfill include noise, odors, landfill gas migration, dust, blowing of litter, and vectors.

Noise is generated at the landfill site from refuse collection trucks, compaction and grinding machinery, bulldozers and loaders. The significance of these noise sources on off-site receptors depends on wind direction, topographic barriers and distance.

Landfill odors are caused by uncovered refuse and by landfill gas. Landfill gas is the product of natural biological decomposition of organic materials and typically contains nearly equal amounts of carbon dioxide (CO_2) and methane (CH_4) and traces of other decomposition gases. It is the trace gases which contain odor-producing components. The maximum rate of gas generation in sanitary landfills occurs soon after the solid waste is buried and then decreases with time. If not properly controlled, landfill gas is capable of subsurface migration and escape into the atmosphere, causing potential odor problems. Safety problems could also occur if the gas were allowed to migrate underground laterally to off-site areas and to accumulate. In air, concentrations ranging from 5 to 15 percent, would be explosive if ignited. As required by the County, the landfill operator monitors both water quality and methane gas migration to ensure compliance with State and County standards.

Because of the great propensity of the local area for strong winds, dust blown fror graded surfaces or from loose soils could be another potential off-site impact. It is likel



Source: Alreka de Almeida Planning, 1990

LOCATION OF ANTELOPE VALLEY PUBLIC LANDFILL IN RELATION TO PROJECT SITE

FIGURE 76

that both dust and odors make their way to the proposed project site, on an average on 18 days per year when the wind blows from the east to the west.

Litter may also escape off-site from two sources: refuse collection trucks and daily landfill activity prior to covering with soil. Particularly during periods of strong winds, control of litter becomes more difficult, resulting in some litter, particularly plastic bags, blowing away off site.

The County Department of Health Services, responsible for enforcement of landfill regulations, noted only one complaint of landfill violations at the Antelope Valley Public Landfill in the last 10 years. Reported on May 15, 1990, a complaint of windblown newspapers and plastic bags from the Antelope Valley Public Landfill was submitted to the County Department of Health Services (County Department of Health Services, January, 1991). In addition, the City of Palmdale Planning Department has received numerous other complaints regarding blowing dust and trash.

Vectors (rodents and birds) pose a potential off-site impact. With regard to rodents, studies performed for Los Angeles County Sanitation Districts Landfill (LACSD, 1983) indicated that rodents brought into the disposal areas with the refuse were not able to survive the compaction process. Rodent species living at the landfill which are nocturnal would be killed outright in their burrows during daytime clearing operations; diurnal rodents would most likely seek shelter in burrows in their immediate vicinity when frightened, and would also be killed during operations. Therefore, migration of rodents off-site is not likely to be significant.

With regard to birds, some landfills host large numbers of gulls during winter months when storms at sea, drive the birds inland. Gulls may act as vectors by transporting small pieces of waste away from a landfill if they are allowed to land in the working areas of the landfill.

The County Department of Health Services, responsible for enforcement of landfill regulations, has/has not cited violations regarding the Antelope Valley Public Landfill. As required by the County, the landfill operator monitors both water quality and methane gas migration to ensure compliance with State and County standards.

5.29.2 Project Impacts

Development of the proposed project would bring residential uses within .6 miles of the Antelope Valley Public Landfill. However, Palmdale Disposal Company is currently seeking to obtain an expansion permit from the County Department of Public Works, the Department of Health Services and the Regional Water Quality Control Board to expand 85 acres westward from the existing landfill boundary (**Figure 76**). This would result in bringing the landfill's westernmost boundary alongside the proposed project's eastern boundary and, therefore, the uses to be developed on the project site in the future would abut the landfill. Specifically, a common boundary would exist for about 1,270 feet alongside the proposed project's golf course (Planning Area 13), north of City Ranch Road. The residential areas closest to that common boundary would be located approximately 600 feet to the north (Planning Area 8) and 1,860 feet to the south (Planning Area 24).

It should also be noted that the Palmdale Disposal Company proposes a potential further future expansion to the north of the existing and currently proposed landfill sites. This future expansion would occur on property which would also abut the proposed project boundary and would be directly adjacent to the homes in Planning Area 8. However, this property is not yet under the ownership of the landfill operator.

An established County setback regulation for developments adjacent to landfill does not exist (Los Angeles County, Building and Safety Department, 1990). The County, however, does require that land uses within 1,000 feet of a sanitary landfill be compatible with the operation of the landfill (California Department of Health Services, 1990). In addition, the California Government Code Section 66784.2 states that the

distance between a landfill site and a residential site be sufficient to prevent noise, odo and other landfill-associated impacts from affecting residential areas [Californ Integrated Waste Management Board (IWMB), 1990a]. The California Integrated Waste Management Board also recommends a one-quarter mile or 1,000-foot buffer zone to protect public health and safety, primarily from methane gas.

The City's proposed Solid Waste Management Plan is recommending residential uses be separated from landfill property lines by at least 1,000 feet. This would mean that 2.6 acres of Planning Area 8 which fall within 1,000 feet of the landfill property boundary would need to be in the buffer area. This would affect approximately 10 lots. Although all the uses within the proposed project area would to some extent be subject to off-site impacts associated with operation of a landfill (as described above), those homes within the 1,000-foot zone would likely be the most affected. Whereas dust, litter, vectors and odors would become an occasional nuisance to inhabitants of most of the project site, homes within the 1,000 foot buffer would be subject to significant levels of these impacts. The visual impacts of the landfill on the project site are discussed i Aesthetics, Section 5.11.

The proposed landfill expansion will require the preparation of a Disposal Site Information Report and an EIR, and is subject to approval by the County Department of Regional Planning (Los Angeles County, Public Works Department, 1990b).

It should be noted that the landfill operator will necessarily have to include several mitigation measures to minimize the off-site impacts to obtain and maintain permits to operate the landfill expansion. The measures are likely to include methane gas migration detection and prevention systems, lines or webbing across open refuse areas to prevent the scavenging by gulls, watering trucks for dust control and a small working area of open, exposed refuse. Operation of the Class III landfill will continue to be regulated by the County of Los Angeles (through a Conditional Use Permit) with additional oversight by State agencies such as the Regional Water Quality Control Board and Department of Health Services. Each of these Agencies can requir

additional mitigation measures to reduce potential impacts or to achieve regulatory requirements.

However, the location of residential uses within 1,000 feet of the expanded landfill remains a significant impact.

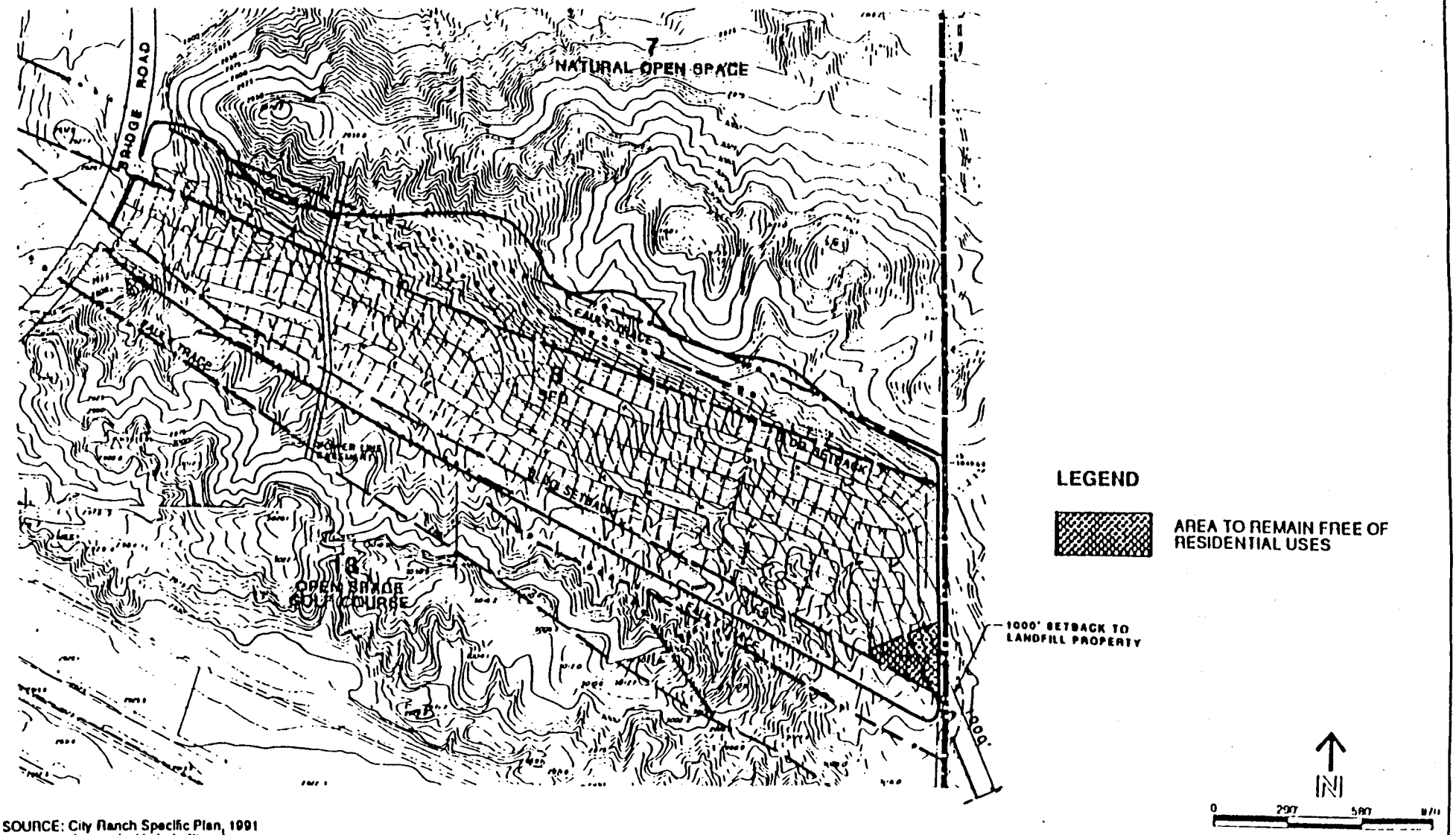
5.29.3 Mitigation Measures

Implementation of the following measures would reduce project impacts related to proximity to the Antelope Valley Public Landfill to a level of "not significant":

- The applicant shall to keep all residential development a minimum of 1,000 feet west of the proposed landfill expansion boundary in accordance with the City of Palmdale's proposed Solid Waste Management Plan. The southeast corner of Planning Area 8 would need to be in the landfill buffer area and kept free of residential development (Figure 77). Prior to development occurring within Planning Area 8, a permanent easement which includes land within 1,000 feet of the northwest and southwest corners of the landfill expansion area shall be recorded. Within this easement, the construction of residences shall be prohibited.

- To minimize dust and visual impacts, the applicant shall provide a landscape buffer of mature vegetation along the common boundary line with the Antelope Valley Public Landfill and along the boundary of Planning Area 8 or any other residential properties that may be affected.

- In accordance with California Department of Real Estate disclosure format and procedures, all potential buyers purchasing real estate in City Ranch located within 1,200 feet of the landfill boundary shall be notified of that circumstance.



SOURCE: City Ranch Specific Plan, 1991
A... de Almeida Planning

5.29.4 Cumulative Impacts

None.

5.29.5 Unavoidable Adverse Impacts

Although nuisances associated with operation of a landfill are likely to affect inhabitants and property within the proposed project site, implementation of the above mitigation measures and effective enforcement of landfill-associated mitigation procedures should reduce these impacts to non-significance.

5.30 LIBRARY SERVICES

5.30.1 Existing Conditions

Library Services in Palmdale are presently provided by the Palmdale City Library, located at the southeast corner of the intersection of Palmdale Boulevard and Sierra Highway. This facility is 12,400 square feet in size and can accommodate 75,000 volumes. However, according to the City Librarian, the need exists for a larger facility with more extensive services. The physical constraints of the library currently limit the types of services which can be offered and which are presently demanded by the community.

5.30.2 Project Impacts

National library standards provided by the City Librarian recommend 2.5 volumes per capita, 0.5 staff per thousand population and an area of 0.8 square feet per capita. The library needs for the City Ranch project, using these standards and a household size of 2.7 persons per dwelling unit, is 35,100 volumes, 7 staff persons, and 11,232 square feet of library facility. The adjoining Ritter Ranch Specific Plan area will be required to construct a branch library facility, 16,000 square feet in size. Therefore, a branch facility in the City Ranch project would be redundant. However, the applicant could provide a pro-rata share of funding for upgrading the main library or assist in the construction of the branch library proposed on the Ritter Ranch project. The location of the branch facility in the Ritter Ranch project with expanded library facilities at the main library would provide adequate library services for the City Ranch Specific Plan residents.

5.30.3 Mitigation Measures

There are no feasible mitigation measures which can be placed on this project to alleviate significant project-related impacts to library services.

5.30.4 Cumulative Impacts

Development of the cumulative projects would result in a need for library facilities of 28,393 square feet in size with 88,728 volumes and 17 staff persons. Mitigation on a project by project basis may not be feasible unless a City-wide financing mechanism can be developed to reduce the impacts of this cumulative development on library facilities. Therefore, development of the City Ranch and other cumulative projects may represent a significant cumulative impact to library services.

5.30.5 Unavoidable Adverse Impacts

Development of the proposed project will contribute to cumulative significant adverse impacts to library services.

6.0 GROWTH-INDUCING IMPACTS

In general terms, a project may be considered to foster spatial, economic or population growth in a geographic area if it meets any one of the four criteria identified below:

1) Removal of an impediment to growth (e.g., establishment of an essential infrastructure or the provision of new access to an area).

2) Economic expansion or growth (e.g., changes in revenue base, employment and population expansion, etc.).

3) Establishment of a precedent-setting action (e.g., an innovation or a radical change in land use).

4) Development or encroachment in an isolated or adjacent area of open space (being distinct from an "infill" type of project).

The growth-inducing impacts of the proposed project are evaluated below with regard to the above listed criteria.

6.1 REMOVAL OF AN IMPEDIMENT TO GROWTH

Development of the proposed project will require the extension of water supply, telephone, cable TV, sewer, natural gas and electrical infrastructure out to the project site. These utility extensions will bring service out to presently unserviced areas of Los Angeles County. In addition, Avenue S will be extended through the project site connecting its existing northern terminus southeast of the project site to the western edge of the project site. This will provide a new alternate access route to the project vicinity. The proposed project can for these reasons be considered growth-inducing under this criterion.

6.2 ECONOMIC GROWTH

Development of the proposed project would create economic growth in the area both during the construction period when construction-related job opportunities would be created, and as a result of project operation. In the short-term, secondary growth impacts would be expected in order to service construction crews during the approximately ten-year construction period. In the long-term, project development will result in the addition of 14,040 people to the Palmdale area and the creation of approximately 889 new jobs on-site.

This population and employment growth will subsequently increase the demand for public services and utilities which would in turn create secondary off-site employment demand. These would include services such as libraries, postal service, road maintenance, public transportation, day care, health care and other social services as well. It can be anticipated that additional developments will attempt to locate in close proximity to the project site in order to capture spillover demand for services and other commercial facilities currently not provided in the project vicinity. For the aforementioned reasons, the proposed project can be considered growth-inducing with respect to economic growth.

6.3 PRECEDENT-SETTING ACTION

Development of the proposed project is anticipated to include annexation of the project site into the jurisdiction of the City of Palmdale, and adjustment of the City's sphere of influence boundary. Project development will also require the adoption of the City Ranch Specific Plan by City Council ordinance. The proposed project is in conformance with the City of Palmdale General Plan which according to the Land Use Plan designates the site as "City Ranch Specific Plan". A General Plan Amendment to adopt the Specific Plan land use designations into the General Plan would be necessary. The area will also need to be pre-zoned SP (Specific Plan).

Because the City's intended land use designation, according to the Land Use Element of the General Plan, is Specific Plan with an overall density of three dwelling units per acre, adoption of the proposed City Ranch Specific Plan which conforms with the designations is not considered a radical change in land use. Therefore, the proposed project is not considered growth-inducing under this criterion.

6.4 DEVELOPMENT OF OPEN SPACE

The proposed project site is located adjacent to the City of Palmdale in an area of unincorporated Los Angeles County. Development of the proposed project would increase the jurisdictional area of the City of Palmdale by 3.1 square miles and would increase the suburbanized acreage in the City. Development of the site would permanently eliminate some open space on the project site. For these reasons the proposed project would also be considered growth-inducing with respect to the development of open space.

6.5 CONCLUSION

The proposed project meets three of the four growth-inducing criteria specified in this section. Therefore, development of the proposed project would be expected to foster growth of the economic and spatial environment of the local area and would be considered growth-inducing.

7.0 RELATIONSHIP BETWEEN LOCAL SHORT-TERM USE OF THE ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The project site presently contains undeveloped hillside areas with cattle grazing activities in the central portion of the site. Development of the proposed City Ranch Specific Plan would commit about 1,585 acres of the project site to a pattern of development that would preclude preservation of the site as natural open space, an agricultural area, or alternate future uses of the site.

Project development will result in long-term increases in local population; alteration of the project site landform; suburbanization of the project site; increases in local traffic generation, air pollutant emissions and ambient noise levels; exposure to geologic hazards and potential hazards associated with electromagnetic radiation; removal of Joshua trees; fragmentation of biological habitats; and consumption of energy.

Cumulative impacts associated with project development include an increase in areawide population and traffic, an incremental decrease in air quality, an increase in ambient noise levels in the area, suburbanization of the mostly rural properties in the unincorporated area of Los Angeles County adjacent to the City of Palmdale, decreased biological value in that area of the County, increased requirements for regional sewage treatment and solid waste disposal capacity, a decrease in the subregional jobs to housing ratio, increase in exposure to geologic hazards of the area, and increased areawide energy use.

Approval of the City Ranch Specific Plan would implement the City of Palmdale's General Plan land use designation for the project site, as a largely residentially developed area. Because residential communities are proposed or approved for properties to the north, south, east and west, development of the project site at this time (rather than reserving an option for further alternatives to the proposed project) is justified because it would allow development compatible with future surrounding uses

and provide the opportunity to develop and plan the area in an orderly fashion, especially with regard to area infrastructure, roadways, and public services. In addition, development of the proposed project would provide the opportunity to develop a local fire service station, thus fulfilling a long standing demand for location of such a facility in the Palmdale area of the County.

8.0 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES RESULTING FROM IMPLEMENTATION OF THE PROPOSED PROJECT

Construction of the proposed City Ranch Specific Plan will require the consumption of substantial amounts of non-renewable resources for use as building materials and to fuel construction-related vehicles and machinery. Project development will commit future generations to the use of fossil fuels for the lifetime of the project for project operation and maintenance.

Project development will remove existing on-site abandoned buildings and hazardous wastes and will permanently replace the existing undeveloped land with suburban land uses. Given the types of uses proposed, it is unlikely that existing environmental conditions would be restored subsequent to project development. The construction of Avenue S, Bridge Road and the internal street system will result in a new pattern of vehicular circulation and access to a previously inaccessible area. Proposed uses would pose the danger of an environmental accident due to exposure of increased numbers of people to seismic hazards.

In addition, development of the project site will result in the irreversible loss of archaeological sites and paleontological sites. Changes to biological resources will result in loss of habitat and potential loss of biological diversity.

9.0 ALTERNATIVES

Under the California Environmental Quality Act (CEQA), an Environmental Impact Report is required to compare impacts of the proposed project to alternatives which could feasibly achieve the objectives of the proposed project [CEQA Guidelines §15126(d)]. The discussion of alternatives should focus on optional development strategies which would be capable of reducing some or all of the significant adverse impacts associated with the proposed project to a level of nonsignificance. The "No Project" alternative must also be evaluated.

The range of alternatives to be addressed in an EIR by CEQA is governed by the "rule of reason" and requires the document to address only those alternatives necessary to permit a reasoned choice. The key issue in determining the range of alternatives evaluated is whether or not the selection and discussion of alternatives fosters informed decision making and public participation. The range of alternatives considered in comparison to the proposed project include the following:

- Alternative 1 - No Project
- Alternative 2 - Reduced Residential Density
- Alternative 3 - College Campus
- Alternative 4 - Alternate Site A: Willow Springs
- Alternative 5 - Alternate Site B: Quail Lake

A City Planning Department survey of the area determined that other sites in the City of Palmdale of comparable size to the project site had more severe environmental constraints than the project site. The only other feasible sites identified in the Antelope Valley area were the ones chosen as alternatives 4 and 5 listed above.

The potential impacts of the development of alternatives are compared to those potentially generated by development of the proposed project in Table 38. Impacts for the proposed project and the alternatives represent the impacts of development assuming

TABLE 38

Comparison of Proposed Project and Alternatives

Will the project result in:*	Proposed Project	Alternative 1 No Project	Alternative 2 Reduced Density	Alternative 3[1] College Campus	Alternative 4 Willow Springs	Alternative 5 Quail Lake
PROJECT DESCRIPTION	City Ranch Specific Plan	Existing Condition	3,120 Residential Units	4-year college	Same components as City Ranch Specific Plan	Same components as City Ranch Specific Plan
1. LAND USE						
a. An alteration of the present or planned land use of the area?	no	no	no	yes	yes	yes
Significant?	yes	no	yes	yes	yes	yes
2. POPULATION						
a. Change in the distribution density or growth rate of the human population in the area?	yes	no	yes	yes	yes	yes
b. Population increase	14,040	0	8,424	17,904	14,040	14,040
c. Employment opportunities	889	0	2,197	3,322	889	889
Significant?	no	no	no	no	no	no
3. HOUSING						
a. Affect the jobs to housing ratio?	yes	no	yes	yes	yes	yes
Significant?	yes	no	no	no	yes	yes

[illegible]timates and calculations are based on projections made in EIR for the [illegible]sity of Irvine, Long Range Development Plan, August 1989.

[illegible] issu[illegible] these [illegible] this [illegible] are those which were addressed in [illegible] the Initial Study for the proposed project. Impacts indicate[illegible]

TABLE 38 (Cont.)

Will the project result in:	Proposed Project	Alternative 1 No Project	Alternative 2 Reduced Density	Alternative 3 College Campus	Alternative 4 Willow Springs	Alternative 5 Quail Lake
4. EARTH (GEOLOGY)						
a. Unstable earth conditions or changes in geologic substructure?	yes	yes	yes	yes	yes	yes
b. Disruptions of the soil?	yes	no	yes	yes	yes	yes
c. Change in topography or surface features?	yes	no	yes	yes	yes.	yes
d. Exposure of people or property to geologic hazards?	yes	no	yes	yes	yes	yes
Significant?	yes	no	yes	yes	yes	yes
5. HYDROLOGY						
a. Changes in currents or course of fresh or marine waters?	no	no	no	no	unknown	unknown
b. Changes in absorption rates, drainage patterns or surface runoff?	yes	no	yes	yes	yes	yes
c. Alterations to the storm drain system?	yes	no	yes	yes	yes	yes
d. Exposure of people or property to water related hazards?	yes	yes	yes	yes	yes	yes
Significant?	yes	yes	yes	yes	yes	yes
6. BIOLOGY						
a. Change in diversity of species or number of any species	yes	no	yes	yes	yes	yes
b. Reduction of the numbers of any unique, rare, or endangered species?	yes	no	yes	yes	unknown	unknown
c. Introduction of new species or barrier to migration or existence of existing species?	yes	no	yes	yes	yes	yes
d. Destruction of wildlife habitat?	yes	no	yes	yes	yes	yes
Significant?	yes	no	yes	yes	maybe	maybe

TABLE 38 (Cont.)

Will the project result in:	Proposed Project	Alternative 1 No Project	Alternative 2 Reduced Density	Alternative 3 College Campus	Alternative 4 Willow Springs	Alternative 5 Quail Lake
7. TRANSPORTATION						
a. Generation of additional vehicular trips (trips per day)?	49,970	none	42,480	28,763	49,970	49,970
b. Effects on existing parking facilities or demand for new parking?	no	no	no	yes	no	no
c. Impacts upon existing transportation systems?	yes	no	yes	yes	yes	yes
d. Alterations to present patterns of circulation?	yes	no	yes	yes	yes	yes
e. Increase in traffic hazards to motor vehicles, bicyclists or pedestrians?	yes	no	yes	yes	yes	yes
Significant?	potentially	no	potentially	potentially	potentially	potentially
8. AIR QUALITY						
Total Emissions:						
CO (lbs. per day)	2,943	0	2,147	2,448	2,943	2,943
NOx (lbs. per day)	955	0	691	651	955	955
Particulates (lbs. per day)	199	0	145	128	199	199
ROG (lbs. per day)	244	0	178	195	244	244
Significant?	yes	no	yes	yes	yes	yes
9. NOISE						
a. Exceedance of State land use compatibility standards for noise?	yes	no	yes	yes	maybe	maybe
b. Exposure of people to severe noise levels?	yes: short-term impacts	no	yes: short-term impacts	yes: short-term impacts	yes: short-term impacts	yes: short-term impacts
Significant?	yes	no	yes	yes	maybe	maybe

TABLE 38 (Cont.)

Will the project result in:	Proposed Project	Alternative 1 No Project	Alternative 2 Reduced Density	Alternative 3 College Campus	Alternative 4 Willow Springs	Alternative 5 Quail Lake
10. AESTHETICS						
a. The obstruction of any public scenic vista or view?	no	no	no	no	no	no
b. The destruction of a locally recognized desirable aesthetic natural feature?	no	no	no	no	no	no
c. Any negative aesthetic effect?	no	no	no	no	no	no
Significant?	no	no	no	no	no	no
11. LIGHT AND GLARE						
a. Produce new light or glare from street lights or other sources?	yes	no	yes	yes	yes	yes
Significant?	no	no	no	no	unknown	unknown
12. ENERGY						
a. Increase in demand upon existing energy sources or require development of new energy sources?	yes	no	yes	yes	yes	yes
Significant?	no	no	no	no	no	no
13. ELECTRICITY						
a. Kilowatt-hours/day	98,975	0	72,123	90,011	98,975	98,975
Significant?	no	no	no	no	no	no
14. NATURAL GAS						
a. Million cubic feet/day	0.92	0	0.58	0.35	0.92	0.92
Significant?	no	no	no	no	no	no
15. WATER						
a. Million gallons per day	5.22	0	3.58	5.70	5.22	5.22
Significant	no	no	no	no	unknown	unknown

TABLE 38 (Cont.)

Will the project result in:	Proposed Project	Alternative 1 No Project	Alternative 2 Reduced Density	Alternative 3 College Campus	Alternative 4 Willow Springs	Alternative 5 Quail Lake
16. SEWAGE DISPOSAL						
a. Million gallons per day	1.28	0	0.86	0.95	1.28	1.28
Significant?	yes	no	yes	yes	yes	yes
17. SOLID WASTE						
a. Pounds per day	54,019	0	34,668	5,309	54,019	54,019
Significant?	no	no	no	no	no	no
18. COMMUNICATIONS						
Significant?	potentially	no	potentially	potentially	unknown	unknown
19. POLICE						
a. Officers to population ratio*	.83	.91	.85	.82	unknown	unknown
Significant?	no	no	no	yes	maybe	maybe
20. FIRE/EMERGENCY SERVICES						
Significant?	potentially	no	potentially	potentially	maybe	maybe
21. SCHOOLS						
a. Additional students?	4,544	0	2,808	776	4,544	4,544
Significant?	yes	no	yes	yes	maybe	maybe
22. PARKS AND RECREATION						
Significant?	no	no	no	no	no	no
23. ROAD MAINTENANCE						
Significant?	no	no	no	no	unknown	unknown
24. ARCHAEOLOGY						
a. Alteration or destruction of a prehistoric or archaeologic site?	maybe	no	maybe	maybe	unknown	unknown
Significant?	potentially	no	potentially	potentially	unknown	unknown

TABLE 38 (Cont.)

Will the project result in:	Proposed Project	Alternative 1 No Project	Alternative 2 Reduced Density	Alternative 3 College Campus	Alternative 4 Willow Springs	Alternative 5 Quail Lake
25. PALEONTOLOGY						
a. Disturbance or destruction of paleontological resources?	yes	no	yes	yes	unknown	unknown
Significant?	yes	no	yes	yes	maybe	maybe
26. ELECTROMAGNETIC RADIATION						
a. Exposure of people to health hazards?	maybe	no	maybe	maybe	maybe	maybe
Significant?	potentially	no	potentially	potentially	potentially	potentially
27. HAZARDOUS/TOXIC MATERIALS						
a. Exposure of people to health hazards?	yes	yes	yes	yes	unknown	unknown
Significant?	yes	no	yes	yes	maybe	maybe

no implementation of mitigation measures. Each of these alternatives is described and discussed below.

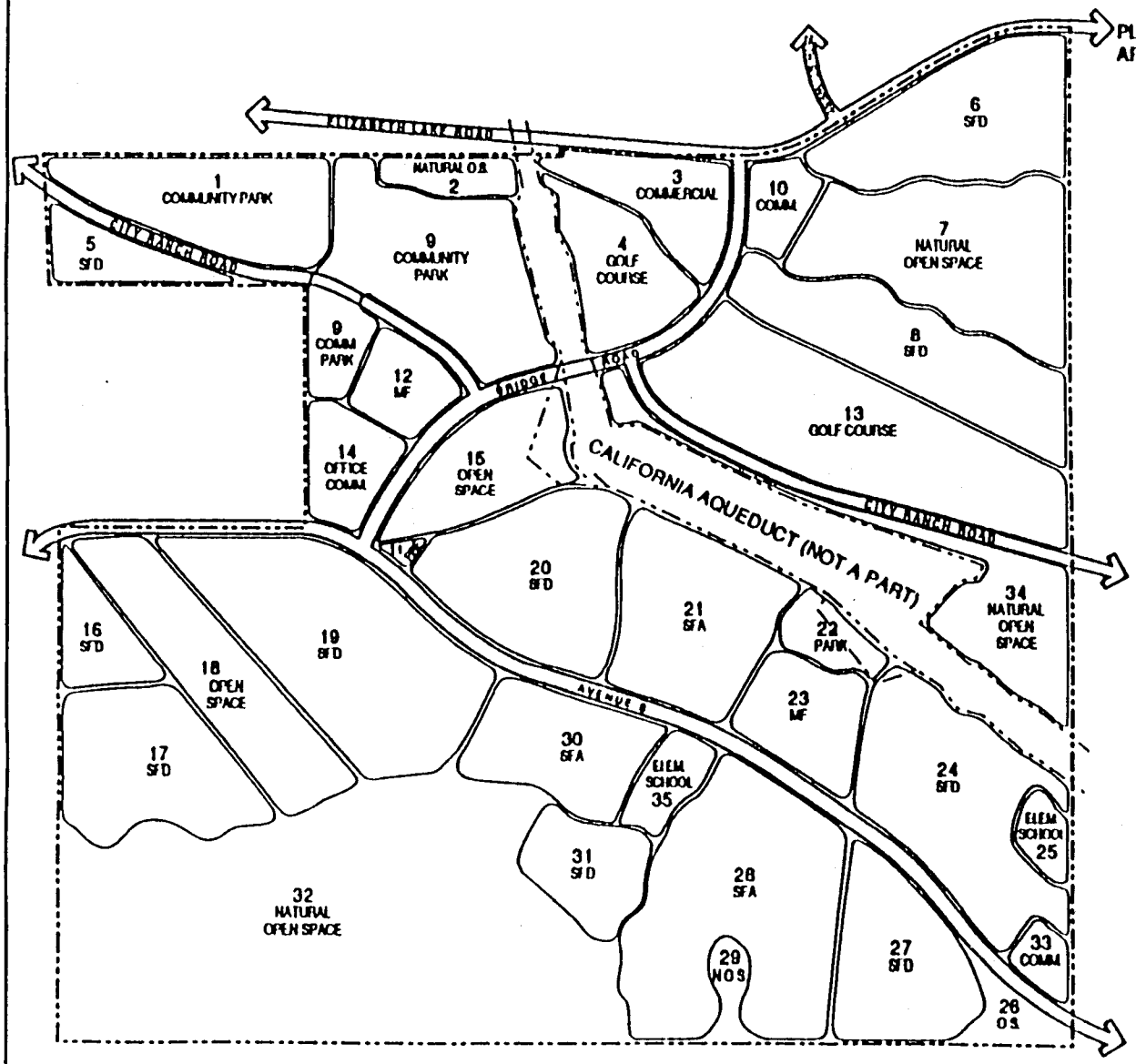
9.1 ALTERNATIVE 1 - NO PROJECT

Under the "No Project" alternative, the proposed project would not be developed and the project site would remain in its present undeveloped condition. The central portion of the project site would continue to be used for cattle grazing. Under this alternative, hazardous materials currently found on the site would not be removed. However, the potential project-related impacts discussed in Section 5.0 of this report would not occur.

9.2 ALTERNATIVE 2 - REDUCED RESIDENTIAL DENSITY ALTERNATE DEVELOPMENT SCHEME

Under this alternative, the 1,985-acre project site would be developed in a manner similar to the proposed project but with reduced residential density and some land u changes. Figure 78 shows the size, location and use of each of the 35 planning area assumed under this scenario. Components of this alternative include the following:

Land Use	Acres	% of Site
Residential	900.3	45.3
Commercial	52.9	2.7
Office	26.1	1.3
Schools	27.1	1.4
Parks	167.6	8.4
Open Space	122.6	6.2
Natural Open Space	475.2	23.9
Golf Course	157.1	7.9
Fire Station	1.0	0.1
Roadways	55.1	2.8
Total	1,985.0	100.0



LEGEND

PLANNING AREA	LAND USE	GROSS ACRES	PERMITTED UNITS	DENSITY
1	COMMUNITY PARK	60.3		
2	NATURAL OPEN SPACE	12.7		
3	COMMERCIAL	32.1		
4	GOLF COURSE	36.1		
5	SINGLE FAMILY DETACHED	22.2	67	3.02
6	SINGLE FAMILY DETACHED	68.8	207	3.01
7	NATURAL OPEN SPACE	89.2		
8	SINGLE FAMILY DETACHED	72.9	216	2.95
9	COMMUNITY PARK	97.3		
10	COMMERCIAL	10.8		
11	FIRE	1.0		
12	MULTIPLE FAMILY	21.6	150	6.94
13	GOLF COURSE	121.0		
14	OFFICE	26.1		
15	OPEN SPACE	38.3		
16	SINGLE FAMILY DETACHED	25.5	51	2.89
17	SINGLE FAMILY DETACHED	68.0	205	3.01
18	OPEN SPACE	69.8		
19	SINGLE FAMILY DETACHED	104.7	336	2.84
20	SINGLE FAMILY DETACHED	73.3	233	3.30
21	SINGLE FAMILY ATTACHED	68.2	238	3.49
22	PARK	10.0		
23	MULTI-FAMILY	35.6	225	6.32
24	SINGLE FAMILY DETACHED	87.9	297	3.38
25	ELEMENTARY SCHOOL	10.0		
26	OPEN SPACE	14.5		
27	SINGLE FAMILY DETACHED	55.3	166	3.00
28	SINGLE FAMILY ATTACHED	121.8	465	3.81
29	NATURAL OPEN SPACE	9.0		
30	SINGLE FAMILY ATTACHED	44.5	200	4.37
31	SINGLE FAMILY DETACHED	30.0	64	2.13
32	NATURAL OPEN SPACE	304.3		
33	COMMERCIAL	10.0		
34	NATURAL OPEN SPACE	60.0		
35	ELEMENTARY SCHOOL	17.1		
	ROADWAYS	55.1		
		1,985.0	3120	1.57

PROJECT SUMMARY	GROSS ACRES	% OF SITE
RESIDENTIAL	900.3	46.3%
COMMERCIAL	52.9	2.7%
OFFICE	26.1	1.3%
SCHOOLS	27.1	1.4%
PARKS	167.6	5.4%
OPEN SPACE	122.6	5.0%
NATURAL OPEN SPACE	475.2	23.3%
GOLF COURSE	157.1	7.0%
FIRE STATION	1.0	0.0%
ROADWAYS	55.1	2.8%
	1985.0	100.0%

N

0 900' 1800' 2700'

Envicom Macintosh Graphic

ALTERNATIVE 2 - REDUCED RESIDENTIAL DENSITY

FIGURE 78

Residential

The residential component of this alternative represents a 40% reduction in the number of dwelling units as compared to the proposed project. Under this alternative, approximately 900 acres of the site are proposed for residential uses. Overall residential density across the entire project site would be 1.57 dwelling units per gross acre. The residential mix is as follows:

Single-family detached	1,842 units
Single-family attached	903 units
Multi-family	375 units
Total	**3,120 units**

- Single-family detached - Planning Areas 5, 6, 8, 16, 17, 19, 20, 24, 27, and 31 would be developed with detached single-family homes. Planning Areas 16, 19, and 31 would contain larger residential lots.

- Single-family attached - Planning Areas 8, 21, 28, and 30 are designated to be developed with duplexes and townhome housing units. Residential densities on these sites would be 2.96, 3.49, 3.81, and 4.4 dwelling units per gross acre, respectively.

- Multi-family - Planning Areas 12 and 23 are designated to be developed with multi-family units at a density of 6.94 and 6.32 dwelling units per acre, respectively. Housing types in these areas would include townhomes and condominiums.

Commercial

Four neighborhood commercial sites are identified on the Alternative 2 site plan (Figure 78). Retail building space would total 300,000 square feet with Planning Areas 3, 10, and 33 containing 180,000, 60,000 and 60,000 square feet of retail space respectively.

Uses in these three areas would include a major chain department store, home improvement store and/or a supermarket or drug store. Planning Area 14 is designated for office use with a Floor-Area Ratio of 0.25. This would translate into approximately 285,000 sq.ft. of office space. Increased commercial retail and office acreage would reduce off-site project-generated trips and project-generated trip lengths. Employment opportunities on-site would increase to 2,197 jobs (as compared to 889 jobs which would be generated as a result of proposed project development), resulting in a more balanced jobs to housing ratio (JHR) of 0.70 (the future sub-regional balanced JHR goal is 0.72).

Open Space and Recreation

Alternative 2 would include increased amounts of natural open space as compared to the proposed project. Natural open space acreage would total 475.2 acres, open space 122.6 acres, parks 167.6 acres and golf course 157.1 acres.

Schools

A total of two elementary school sites are designated in Alternative 2. Planning Area 25 would support a 600 student school on 10 acres and Planning Area 35 would support 800 students on 17.1 acres.

Community Service Facilities

This alternative includes a 1-acre fire station site (Planning Area 11) as in the proposed project development.

9.3 ALTERNATIVE 3 - COLLEGE CAMPUS

Under the "College Campus" alternative, the proposed project would not be developed and the project site would instead be used as a campus for a four-year college.

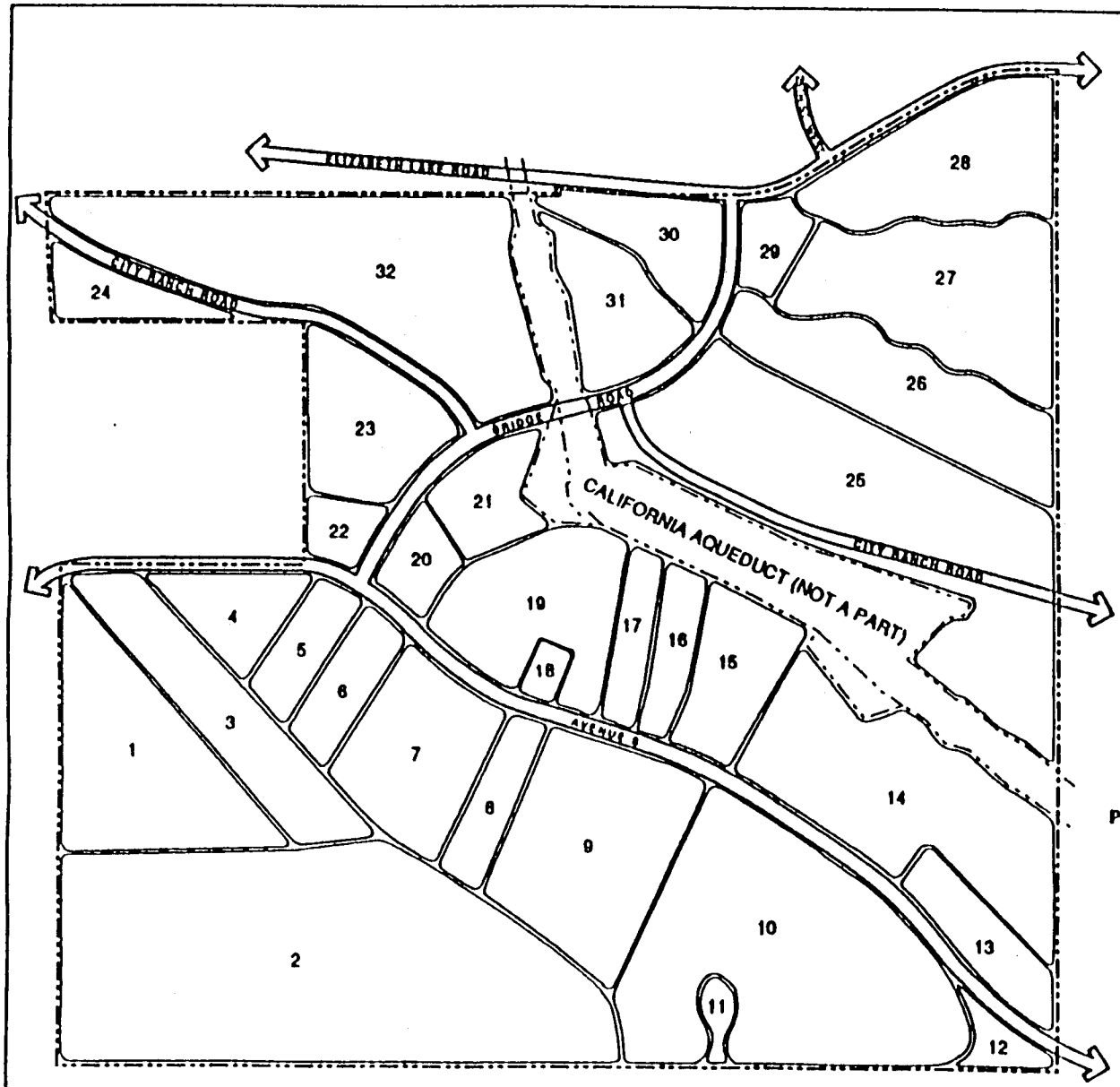
Development of this project would require an amendment to the General Plan to allow a college campus use. If open space and natural open space acreage is excluded fr the project site acreage, 1,524 acres remain. This land area closely matches the 1,510-acre campus of University of California, Irvine. Therefore, UCI was used as a model for a college campus of this size.

Land use of the college would be distributed in 32 Planning Areas. Figure 79 shows the location of the uses described under this scenario. Components of this alternative include the following:

Land Use	Acres	% of Site
Academic	209.9	10.6
University Facility	24.7	1.2
Research and Development	86.7	4.3
Commercial	54.2	2.7
Mixed-use	37.0	1.9
University Recreation	40.0	2.0
Housing	546.7	27.5
Park	172.0	8.7
Open Space	108.5	5.5
Natural Open Space	593.2	29.9
Parking	57.0	2.9
Roadways	55.1	2.8
Total	**1,985.0**	**100.0**

Academic

The core of the campus would be situated in the central portion of the project site and would contain the five major academic Quads including Biological Sciences, Engineering, Physical Sciences, Social Science, Health Sciences and Humanities and Fine Arts (Planning Areas 7, 9, and 19).



LEGEND

PLANNING AREA	LAND USE	GROSS ACRES
1	HOUSING	84.5
2	NATURAL OPEN SPACE	278.9
3	OPEN SPACE	72.6
4	CAMPUS HOUSING	24.4
5	RESEARCH & DEVELOPMENT	20.0
6	PARKING	18.8
7	ACADEMIC	55.9
8	UNIVERSITY FACILITY	17.6
9	ACADEMIC	88.3
10	HOUSING	177.5
11	NATURAL OPEN SPACE	9.0
12	OPEN SPACE	12.3
13	MIXED USE	37.0
14	HOUSING	118.6
15	UNIVERSITY RECREATION	40.0
16	PARK	16.4
17	PARKING	16.0
18	UNIVERSITY FACILITY	7.1
19	ACADEMIC	65.7
20	RESEARCH & DEVELOPMENT	16.4
21	OPEN SPACE	23.6
22	COMMERCIAL	11.3
23	RESEARCH & DEVELOPMENT	50.3
24	PARKING	22.2
25	NATURAL OPEN SPACE	180.0
26	HOUSING	72.9
27	NATURAL OPEN SPACE	89.2
28	HOUSING	68.8
29	COMMERCIAL	10.8
30	COMMERCIAL	32.1
31	NATURAL OPEN SPACE	36.1
32	PARK	155.6
	ROADWAYS	55.1
		1985.0

PROJECT SUMMARY	GROSS ACRES	% OF SITE
ACADEMIC	209.9	10.6%
UNIVERSITY FACILITY	24.7	1.2%
RESEARCH & DEVELOPMENT	86.7	4.3%
COMMERCIAL	54.2	2.7%
MIXED USE	37.0	1.9%
UNIVERSITY RECREATION	40.0	2.0%
CAMPUS HOUSING	546.7	27.5%
PARK	17.0	8.7%
OPEN SPACE	108.6	5.5%
NATURAL OPEN SPACE	593.2	29.9%
PARKING	57.0	2.9%
ROADWAYS	55.1	2.8%
	1985.0	100.0%

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Envicom Macintosh Graphic

ALTERNATIVE 3 - COLLEGE CAMPUS

FIGURE 79

University Facilities

Planning Areas 8 and 18 (totaling approximately 25 acres) would accommodate university facilities such as the central plant, public services and facilities management.

Research and Development

Buildings developed in Planning Areas 5, 20, and 23 (totaling nearly 87 acres) would house joint university and private sector projects.

Commercial

Planning Areas 22, 29, and 30 (totaling approximately 54 acres) are intended to accommodate student-oriented and on-site faculty and staff retail uses and activities.

Mixed-use

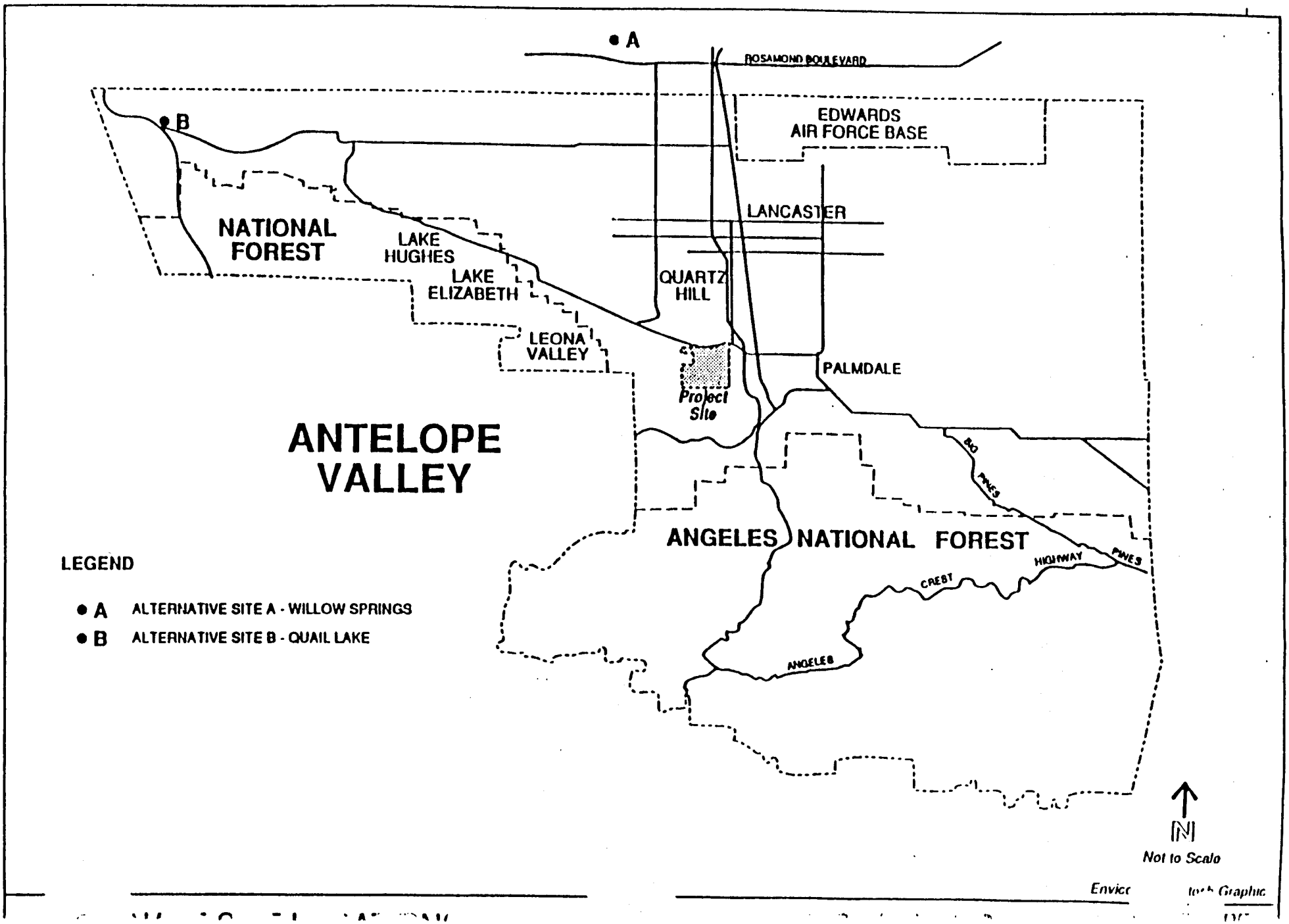
Planning Area 13 (37 acres) is designated for mixed-use facilities which would include research and development, support commercial and residential uses. The actual acreage devoted to each use would depend on need.

University Recreation

Planning Area 15 (40 acres) would be used for campus playing fields, tracks and sports stadiums. Buildings on the site may house indoor pools, courts and locker rooms.

Housing

A total of 1,573 dormitory rooms and 200 apartments would be provided for undergraduates in complexes 2-10 stories high. Graduate student/married student housing would be provided in apartment buildings. A total of 862 graduate/marri


A
ROSAMOND BOULEVARD
B
EDWARDS
AIR FORCE BASE
NATIONAL
FOREST
LAKE
HUGHES
LAKE
ELIZABETH
LANCASTER
QUARTZ
HILL
LEONA
VALLEY
PALMDALE
Project
Site
ANTELOPE
VALLEY
BIG
PINES
ANGELES NATIONAL FOREST
HIGHWAY
PINES
CREST
ANGELES
LEGEND
A ALTERNATIVE SITE A - WILLOW SPRINGS
B ALTERNATIVE SITE B - QUAIL LAKE
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Not to Scale

student units would be provided.

Additional housing would be provided for faculty and staff in the form of 80 mobile homes, 100 apartments, 18 condominiums, and 281 single-family detached homes. The areas of Planning Areas 1, 4, 10, 14, 26, and 28 total approximately 547 acres to be used for housing.

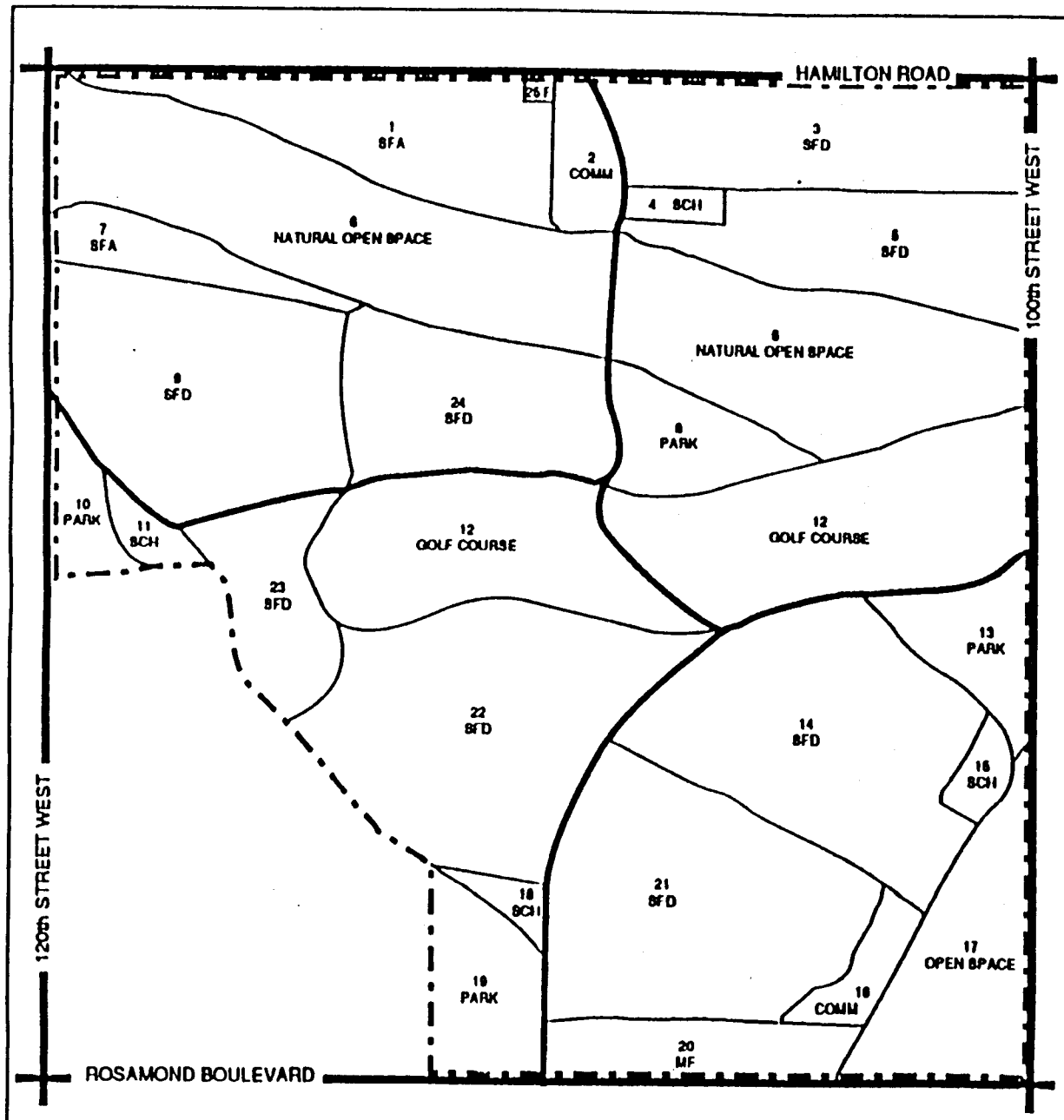
Parks and Open Space

Planning Areas 16 and 32 are proposed as park sites which could be developed with ball fields, tennis courts and other improvements. In addition, almost 600 acres of the campus would be comprised of open space suitable for hiking trails and equestrian trails.

9.4 ALTERNATIVE 4 - ALTERNATE SITE A: WILLOW SPRINGS

Under this alternative, all components of the proposed project would be developed on a 2,185-acre parcel of land in Willow Springs near the City of Rosamond, California. Willow Springs is located in the northwest portion of the Antelope Valley in Kern County (**Figure 80**). The Tehachapi Mountains lie to the northwest of Willow Springs and are visible from the project site. This alternate project site is bounded to the north by Hamilton Road, to the south by Rosamond Boulevard and is located between 100th Street West and 120th Street West.

The project site currently consists of an undeveloped desert vegetation area, with commercial agriculture and mineral resource management area land use designations. Overall site topography slopes less than five percent from 3,000 feet down to 2,400 feet above mean sea level. Flash flooding from intermittent streams could occur on the relatively flat terrain of the project site. High-voltage electric lines cross the southeast corner of the project site.



LEGEND

PLANNING AREA	LAND USE	GROSS ACRES	D/U	DENSITY
1	SINGLE FAMILY ATTACHED	113.3	930	8.21
2	COMMERCIAL	24.2		
3	SINGLE-FAMILY DETACHED	132.6	26	0.20
4	SCHOOL	10.1		
5	SINGLE-FAMILY DETACHED	97.0	290	2.99
6	NATURAL OPEN SPACE	321.5		
7	SINGLE-FAMILY ATTACHED	33.7	273	8.10
8	PARK	39.2		
9	SINGLE-FAMILY DETACHED	150.0	580	3.87
10	PARK	22.3		
11	SCHOOL	9.9		
12	GOLF COURSE	254.9		
13	PARK	57.0		
14	SINGLE-FAMILY DETACHED	156.0	624	4.00
15	SCHOOL	10.7		
16	COMMERCIAL	19.3		
17	OPEN SPACE	97.4		
18	SCHOOL	9.9		
19	PARK	48.0		
20	MULTI-FAMILY	43.9	625	14.24
21	SINGLE-FAMILY DETACHED	161.0	644	4.00
22	SINGLE-FAMILY DETACHED	154.0	616	4.00
23	SINGLE-FAMILY DETACHED	73.0	292	4.00
24	SINGLE-FAMILY DETACHED	90.0	300	3.33
25	FIRE STATION	1.0		
	ROADWAYS	55.0		
	TOTAL	2185.1	5200	2.38

PROJECT SUMMARY	GROSS ACRES	% OF SITE
COMMERCIAL DEVELOPMENT	43.5	2.0%
OPEN SPACE	97.4	4.5%
NATURAL OPEN SPACE	321.5	14.7%
GOLF COURSE	254.9	11.7%
PARKS	166.5	7.6%
RESIDENTIAL DEVELOPMENT	1204.7	54.9%
SCHOOLS	40.7	1.9%
ROADWAYS	55.0	2.5%
FIRE STATION	1.0	0.0%
TOTAL	2185.1	100.0%
GROSS DENSITY	2.38	DU/AC

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Envicom Graphic

Development of the Willow Springs site would include all the same components as the proposed project (Figure 81).

Residential

Total residential acreage on the Willow Springs site would be approximately 1,025 acres. Planning Areas 3, 5, 9, and 14 would contain 3,372 single-family detached units at a density of 3.31 units per acre. The area of single-family detached housing accounts for almost half of the total project site acreage. Single-family attached housing would be developed in Planning Areas 1 and 7 with 1,203 units on 153 acres of land at a density of 7.86 units per acre. All of the single-family attached housing units will be located in the northwest corner of the project site. Planning Area 20 on the southern border of the project site would be developed with 625 multi-family units at a density of 14.20 dwelling units per acre. As in the proposed project, a total of 5,200 dwelling units are proposed. Overall density at the Willow Springs site is 2.38 dwelling units per gross acre which is similar to the 2.62 units per gross acre proposed for the City Ranch site.

Commercial

Two commercial sites, Planning Areas 2 and 16 are provided on the Willow Springs site plan. The 43.5 acres would be developed with a total of 260,000 square feet of retail space. As in the proposed City Ranch site plan, one commercial area is in the north-central portion of the site and the other is in the southeast corner.

Open Space and Recreation

Planning Area 6 (321.5 acres) is designated as natural open space. Planning Area 12 (approximately 255 acres) is designated as golf course. Both of these areas are limited for development by seismic constraints. No habitable structures would be located in any area of seismic hazard. Planning Areas 8, 10, 13, and 19 are proposed as parks. These parks totaling 166.5 acres are located near and support the majority of the residential areas (Planning Areas 9, 14, 20, 21, 22, and 24). Planning Area 17 (open

space) is crossed by high-voltage electrical lines. The size of this planning area (97 acres) provides an open space buffer between areas that would contain habitable structures and areas that would contain the electric line easements.

Schools

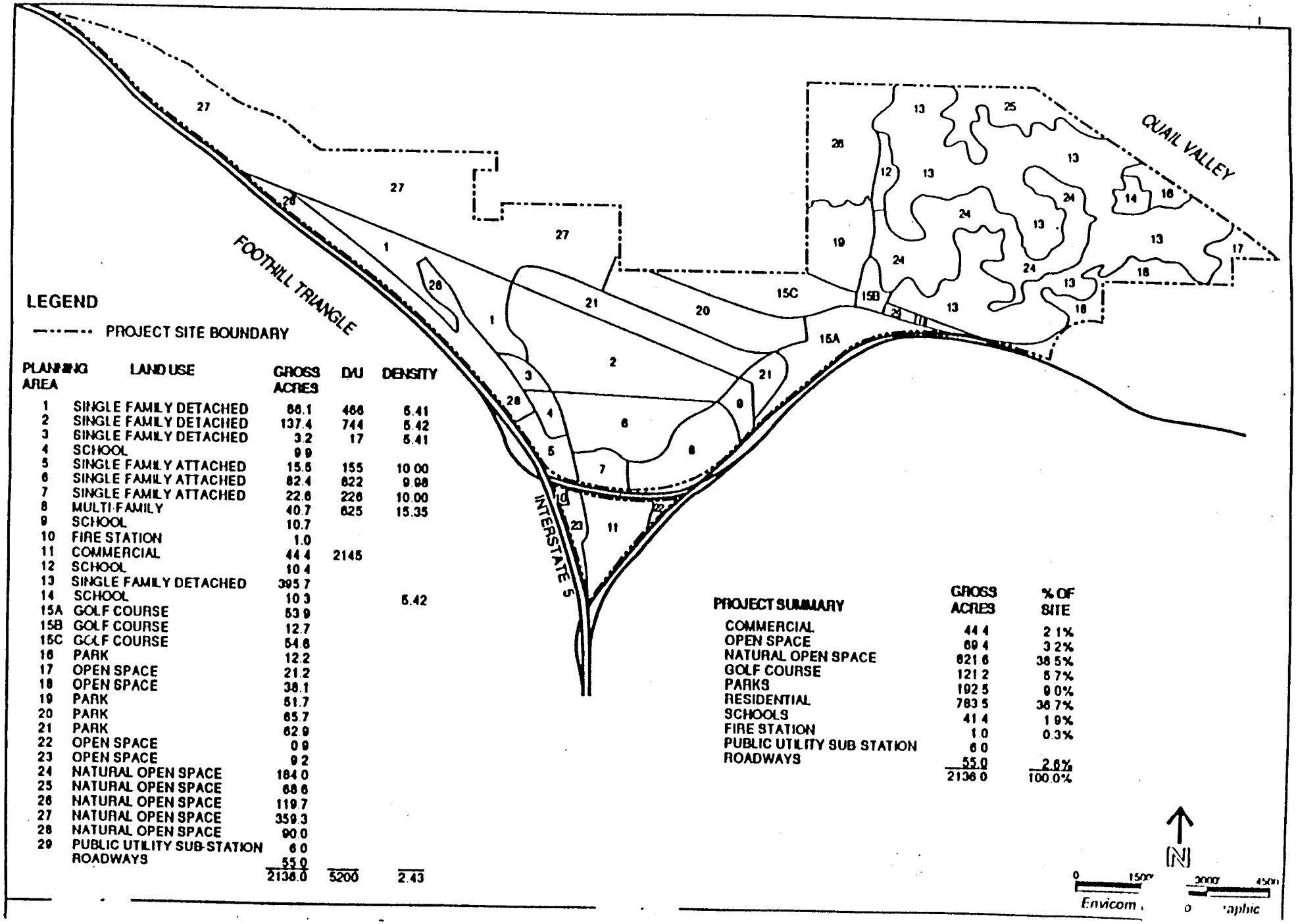
Four elementary school sites are provided on the Willow Springs site plan (Planning Areas 4, 11, 15, and 18). Each school site is approximately 10 acres in size and would provide space for approximately 600 students.

Community Service Facilities

This alternative includes a 1-acre fire station site (Planning Area 25) as in the proposed project development.

9.5 ALTERNATIVE 5 - ALTERNATE SITE B: QUAIL LAKE

Under this alternative, all components of the proposed project would be developed on a 2,136-acre parcel near Quail Lake in North Los Angeles County. This alternate project site is located at the intersection of Interstate Highway 5 and State Highway 138 south of Gorman in the Tejon Pass area (Figure 82). Gorman Peak is located northwest of the site, with Bald Mountain to the southeast. The broad valley formed by the San Andreas Rift Zone separates the two. The Quail Lake project site consists of moderately rugged hillside terrain separated by a broad alluvial valley. Drainage in the portion of the site south of State Highway 138 flows northerly toward the valley portion of the site. Drainage in the northwestern end of the property flows downslope in all directions from a prominent hill. The site contains a 100-year frequency flood area. Vegetation on the site is predominantly chaparral with oak trees on the northerly facing slopes and canyon bottoms.



PLANNING AREA	LAND USE	GROSS ACRES	D/U	DENSITY
1	SINGLE FAMILY DETACHED	86.1	466	5.41
2	SINGLE FAMILY DETACHED	137.4	744	5.42
3	SINGLE FAMILY DETACHED	3.2	17	5.41
4	SCHOOL	9.9		
5	SINGLE FAMILY ATTACHED	15.5	155	10.00
6	SINGLE FAMILY ATTACHED	82.4	822	9.98
7	SINGLE FAMILY ATTACHED	22.6	226	10.00
8	MULTI-FAMILY	40.7	625	15.35
9	SCHOOL	10.7		
10	FIRE STATION	1.0		
11	COMMERCIAL	44.4	2145	
12	SCHOOL	10.4		
13	SINGLE FAMILY DETACHED	395.7		
14	SCHOOL	10.3		5.42
15A	GOLF COURSE	53.9		
15B	GOLF COURSE	12.7		
15C	GOLF COURSE	54.6		
16	PARK	12.2		
17	OPEN SPACE	21.2		
18	OPEN SPACE	38.1		
19	PARK	51.7		
20	PARK	65.7		
21	PARK	62.9		
22	OPEN SPACE	0.9		
23	OPEN SPACE	9.2		
24	NATURAL OPEN SPACE	184.0		
25	NATURAL OPEN SPACE	68.6		
26	NATURAL OPEN SPACE	119.7		
27	NATURAL OPEN SPACE	359.3		
28	NATURAL OPEN SPACE	90.0		
29	PUBLIC UTILITY SUB-STATION	6.0		
	ROADWAYS	55.0		
		2136.0	5200	2.43

PROJECT SUMMARY	GROSS ACRES	% OF SITE
COMMERCIAL	44.4	2.1%
OPEN SPACE	69.4	3.2%
NATURAL OPEN SPACE	821.6	38.5%
GOLF COURSE	121.2	5.7%
PARKS	192.5	9.0%
RESIDENTIAL	783.5	36.7%
SCHOOLS	41.4	1.9%
FIRE STATION	1.0	0.3%
PUBLIC UTILITY SUB-STATION	6.0	
ROADWAYS	55.0	2.6%
	2136.0	100.0%

Development of the Quail Lake site would include all the same components as the proposed project (Figure 82).

Residential

Eight planning areas totaling 783.5 acres of the project site would be developed residentially. Planning Areas 1, 2, 3, and 13 would contain 3,372 single-family detached units on a total of 622.4 acres. Three other planning areas (5, 6, 7) are designated for a total of 1,203 single-family attached units. Planning Area 8 (40.7 acres) would provide 625 multi-family units. Overall residential density on the project site is 2.43 dwelling units per gross acres, which is similar to the density of the proposed project. The buildable area of Planning Area 1 is constrained by liquefaction potential and would require site-specific engineering studies and mitigation prior to development. Buildings in Planning Area 13 would require 50-foot setbacks from all faults. Building pads in Planning Area 5 would need to be raised to avoid damage from flash floods. Planning Areas 13 and 12 contain oak tree groves and other sensitive vegetation. Development in these areas would require some mitigation.

Commercial

Two commercial areas are designated (Planning Areas 10 and 11) on the Quail Lake development plan. Approximately 260,000 square feet of retail space would be provided on these sites. All commercial activity would be located on the southern tip of the project site bounded by Interstate 5.

Open Space and Recreation

Open space, park and golf course development is planned for the areas of the project site within the Alquist-Priolo special studies zone. (Planning Areas 15A, 15B, 15C, 18, 20, 21, and 27). Additional natural open space area is designated in Planning Areas 24, 25, and 26 in order to avoid areas with tree groves, chaparral vegetation, liquefaction

constraints and slide zones. The natural open space Planning Area 28 contains some land within the 100-year flood plain.

Schools

Four elementary school sites are provided on the Quail Lake site plan (Planning Areas 4, 9, 12, and 14). Each school site will be approximately 10 acres in size and accommodate approximately 600 students each. The sites are dispersed throughout the project site in order to serve all areas of the project site containing residential development.

Community Service Facilities

This alternative includes a 1-acre fire station site (Planning Area 10) as in the proposed project development.

Public Utilities

Planning Area 29 contains an existing electric utility substation. This facility is situated in the Alquist-Priolo Special Studies Zone.

9.6 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

In general, the environmentally superior alternative is the alternative which causes the least adverse impacts to the project site and the surrounding environment. Because the "No Project" alternative does not create any new impacts, it can generally be identified as being environmentally superior to a project which would create environmental impacts. However, CEQA requires the identification of another "environmentally superior" alternative when the "No Project" is chosen. In the present instance, any of the alternatives which reduce impacts with regard to land use, the jobs to housing ratio, geologic and hydrologic hazards, biological resources, traffic, air pollutant emissions

noise, sewage disposal, disruption of underground AT&T lines and schools could be considered environmentally superior to the proposed project.

Of the alternatives presented, Alternative 2 - Reduced Residential Density would create the least impacts. It would generate less population and therefore less vehicle trips, air pollutant emissions, mobile noise, students, utility and public service use and would expose less people to the geologic and hydrologic hazards associated with the project site. In addition, development of Alternative 2 would eliminate significant impacts with regard to housing, biological resources, and proximity of schools, parks and residential uses to the high-voltage electric lines. Development of this project would leave less unavoidable adverse impacts than would the proposed project.

Although development of Alternative 3 - College Campus would reduce school and utility use impacts, it still would create several significant impacts not generated by development of the proposed project. This alternative would require a General Plan amendment to allow a college campus use. Because this alternative does not create less impacts than those of the proposed project, it is rejected in favor of the proposed project.

Development of Alternatives 4 or 5 could have greater environmental impacts than the development of the City Ranch site. In addition to geologic and biological constraints, the Willow Springs site contains mineral resources and is subject to flash flooding. The Quail Lake site, in addition to geologic, hydrologic and biologic constraints, has protected oak trees and is harder to develop because of its irregular shape. Because these alternative sites have potentially greater constraints than the project site, they are rejected in favor of the proposed project.

10.0 ORGANIZATIONS AND PERSONS CONSULTED

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11.0 REFERENCES

11.1 PRINTED MATERIALS

Archaeological Associates, Ltd. "Phase I Cultural Resources Study: The City Ranch Property in the City of Palmdale, Los Angeles County, California." April 24, 1989.

Archaeological Associates, Ltd. "Phase II Cultural Resources Study: The City Ranch Property in the City of Palmdale, Los Angeles County, California." October, 1990.

Azeka De Almeida Planning. "City Ranch Specific Plan" (First Draft). November 14, 1989.

Bennett, C.L. Climate of the Southeast Desert Air Basin (July). Sacramento, CA: California Air Resources Board, Division of Technical Services, 1975.

Brazel, A.J. Urban Climatology. in: Oliver, J.E., & Fairbridge, R.W. (Eds.). The Encyclopedia of Climatology (pp.889-901). New York, NY: Van Nostrand Reinhold Company, 1987.

Buena Engineers, Inc. "Preliminary Geotechnical Engineering Report, City Ranch Property, Elizabeth Lake Road and 25th Street West, Palmdale, Los Angeles County, California". May 8, 1989.

Buena Engineers, Inc. "Supplements 1 through 7 to the Preliminary Geotechnic. Report, City Ranch Property." October 13, 1989 through August 31, 1990.

Buena Engineers, Inc. Restricted Use Zone Map. April, 1990.

Buffo, J., Fritschen, L.J., & Murphy, J.L. Direct solar radiation on various slopes from 0 to 60 degrees north latitude. Research Paper PNW-142. Portland, OR: USDA-Forest Service, Pacific Northwest Forest and Range Experiment Station, 1972.

California Air Resources Board. California Air Quality Data Annual Summary 17. Sacramento, CA: Technical Support Division, CARB, 1985.

California Air Resources Board. California Air Quality Data Annual Summary 18. Sacramento, CA: Technical Support Division, CARB, 1986.

California Air Resources Board. California Air Quality Data Annual Summary 19. Sacramento, CA: Technical Support Division, CARB, 1987.

California Air Resources Board. California Air Quality Data Annual Summary 20. Sacramento, CA: Technical Support Division, CARB, 1988.

California Air Resource Board. California Surface Wind Climatology. Sacramento, CA. Aerometric Data Division, CARB, 1984.

California Department of Finance. Los Angeles County Population and Housing Estimates, 1989.

DKS Associates. "Circulation and Transportation Needs Study for Palmdale Southwest Planning Area." July, 1990.

D. R. Sanders and Associates, Inc. "Wetlands Investigation of a Portion of City Ranch South Located West of the California Aqueduct." April 15, 1990.

D. R. Sanders and Associates, Inc. "Wetlands Investigation of a Portion of City Ranch South Located East of the California Aqueduct." April 17, 1990.

Donley, M.W., Allen, S., Caro, P., & Patton, C.P. Mean Daily Insolation. Atlas of California (p. 131). Culver City, CA: Pacific Book Center, 1979.

Earth Systems Environmental, Inc. "Preliminary Environmental Site Assessment, City Ranch Property, Palmdale, California." July 6, 1989.

Earth Systems Environmental, Inc. "Underground Storage Tank Removal Report, City Ranch South Site." April 5, 1990.

Economics Research Associates. Task 1.C.2 and 1.C.3 of the City of Palmdale General Plan Update. Los Angeles, CA, 1987.

Endo Engineering, "City Ranch South Supplemental Cumulative Traffic Analysis." October 24, 1989.

Endo Engineering. "City Ranch South Specific Plan Technical Studies." May 1990.

Endo Engineering. "City Ranch South Specific Plan Circulation Improvement Phasing and Relation to the DKS Palmdale Southwest Planning Area Circulation Needs Study." September 10, 1990.

Hayes, T.P., Kinney, J.J.R, & Wheeler, N.J.M. California Surface Wind Climatology (June). Sacramento, CA: State of California, Air Resources Board, Aerometric Data Division, Aerometric Projects and Laboratory Branch, Meteorology Section, 1984.

Lee Newman and Associates, Inc. "City Ranch Joshua Tree Survey." November 1989.

Los Angeles County. Antelope Valley Areawide General Plan, Department of Regional Planning, 1986.

Mather, J.R. The water budget and the distribution of climates, vegetation and soils Publications in Climatology 38(2). Elmer, NJ: Laboratory of Climatology, 1985.

National Oceanic and Atmospheric Administration (NOAA) Climatology of the United States No. 81., 1982.

National Research Council. "Liquefaction of Soils During Earthquakes", Committee on Earthquake Engineering, Commission on Engineering and Technical Systems, 1985.

Paleo Environmental Associates. "Paleontologic Resource Assessment, City Ranch Specific Plan Area, Palmdale, Los Angeles County, California." April 23, 1990.

PHB Engineering, Inc. "City Ranch Preliminary Hydrology Study," 1990.

Regional Planning Commission. County of Los Angeles, City of Palmdale Planning Program, Proposed Zoning Ordinance, Revised Draft, August, 1968.

Rowlands, P., Johnson, H., Ritter, E., & Endo, A. The Mojave Desert *in:* Bender, G.L. (Ed.). Reference Handbook on the Deserts of North America (pp.103-162). Westport, CT: Greenwood Press, 1982.

Sanitation Districts of Los Angeles County, California. Puente Hills Landfill Final Environmental Impact Report Volume 1. Los Angeles, CA: Solid Waste Management Department. January, 1983.

Scientific Resource Surveys, Inc. "Paleontological Resource Assessment, City Ranch Development, Palmdale, California." July 6, 1989.

South Coast Air Quality Management District. Rules and Regulations (January). El Monte, CA: SCAQMD, 1989.

Southern California Association of Governments (SCAG) Growth Management Plan. Los Angeles, CA, 1989.

Southern California Association of Governments Guidance for Implementation of Conformity Procedures. March 1990.

Tierra Madre Consultants. "City Ranch Specific Plan Biological Assessment." July 1989, revised November 1989, and May 1990.

Ultrasystems Environmental Services. "Analysis of Potential Adverse Health Risk Impacts Resulting From Proximity of Future Residents to Electrical Power Lines." June 1989, revised February, 1990.

USDC-NOAA-Environmental Data and Information Service. Monthly normals of Temperature, Precipitation, and Heating and Cooling Degree Days 1951-80

Climatography of the United States No. 81 (California). Asheville, NC: National Climatic Data Center, 1982.

Urban Land Institute. Employment and Parking in Suburban Business Parks: A Pilot Study. Washington, D.C., 1986.

Watson, D. Designing and Building a Solar House. Pownal, VT: Garden Way Publishing, 1985.

11.2 PERSONAL COMMUNICATIONS

American Telephone and Telegraph (AT&T), Denise Fowler, Supervisor, correspondence, February 17, 1989.

Antelope Valley Union High School District, John Joy, telephone conversation, August 24, 1989.

Antelope Valley Union High School District, Richard Aitken, District Engineer, telephone conversation, August 29, 1989.

Buena Engineers, Inc., Mark S. Spykerman, Vice President, correspondence, August 22, 1989.

California Integrated Waste Management Board, Jeannie Blakesleu, Waste Management Specialist, telephone conversation, March 1990a.

California Integrated Waste Management Board, Maurine Morrison, Esquire, Legal Services Division, telephone conversation, March 1990b.

California, State of, Department of Education, Michael Chambers, Senior Architect, telephone conversation, January 24, 1991.

California, State of, Department of Transportation, Gary McSweeney, JGR/CEQA Coordinator, correspondence, September 18, 1989.

California, State of, Department of Water Resources, Roland Williams, Operations Superintendent, telephone conversation, June 6, 1990.

California State University, David Rosso, Facility Planner, correspondence, October 10, 1989.

Converse Consultants, Greg Rzonca, Geologist, telephone conversation and visit, June 23, 1989.

Edwards Air Force Base, Pat Pignataro, telephone conversation, June 12, 1990.

Engineering and Environmental Geology, Kenneth Wilson, Geologist, correspondence, August 18, 1989.

Environmental Protection Agency, David M. Fagen, Section Chief for Corrective Action, Office of Solid Waste and Emergency Response, telephone conversation, March 1990.

Department of Water Resources, Tak Ryono, Supervising Engineer, telephone conversation, May 11, 1990.

HDR Engineering, Hugh Walker, Project Engineer, telephone conversation, September 6, 1990.

Korve Engineering, Inc., J. Michael Bates, Vice President, correspondence, June 30, 1989.

Lancaster Chamber of Commerce, Connie Wilson, telephone conversation, June 12, 1990.

Los Angeles County, California Department of Health Services, Barbara Marcotte, Toxic Substance Control Program, Land Use and Air Assessment, telephone conversation, March 1990.

Los Angeles County, Department of Health Services, Peter Wang, Civil Engineer I Building and Safety Department, telephone conversation, March 1990.

Los Angeles County, Department of Health Services, Solid Waste Section, John Edmunson, Environmental Health Specialist IV, telephone conversation, August 24, 1990.

Los Angeles County, Department of Health Services, Solid Waste Section, Richard Hanson, Director, telephone conversation, August 27, 1990, January 30, 1991.

Los Angeles County Department of Parks and Recreation, Clyde von Rosenberg, Park Planner, correspondence, August 16, 1989.

Los Angeles County Department of Parks and Recreation, Clyde von Rosenberg, Park Planner, correspondence, November 21, 1989.

Los Angeles County, Department of Parks and Recreation, Clyde von Rosenberg, Park Planner, telephone conversation, January 24, 1991.

Los Angeles County, Department of Public Works, Tom Boyd, Supervising Civil Engineer II, correspondence, November 21, 1989.

Los Angeles County Fire Department, Joseph Ferrara, Head Deputy Forester correspondence, March 22, 1989.

Los Angeles County Fire Department, Joseph Ferrara, Head Deputy Forester, correspondence, August 8, 1989.

Los Angeles County Fire Department, John Gee, Head of Planning, telelphone conversation, May 10, 1990.

Los Angeles County Fire Department, Leon Provost, Assistant Fire Chief, telephone conversation, May 11, 1990.

Los Angeles County Natural History Museum, Judy L. Bell, Samuel A. McLeod, Vertebrate Paleontologists, correspondence, Sept. 8, 1989.

Los Angeles County Office of the Sheriff, Gary E. Vance, Captain Commander, correspondence, February 17, 1989.

Los Angeles County Office of the Sheriff, Gary E. Vance, Captain Commander, correspondence, August 9, 1989.

Los Angeles County Public Works, Mike Montgomery, Geologist, telephone conversation, June 12, 1989.

Los Angeles County Regional Planning, Lee Stark, Publications, telephone conversation, May 30, 1989.

Los Angeles County, Department of Regional Planning, Impact Analysis Section, Pam Holt, Section Head, telephone conversation, August 27, 1990.

Los Angeles County Sanitation Districts, Charlotte Colon, Project Engineer, Solid Waste Management, telephone conversation, March 1990.

Los Angeles County Sanitation Districts, Paul A. Prestia, Project Engineer, correspondence, July 24, 1989.

Los Angeles County Sanitation Districts, Paul A. Prestia, Project Engineer, telephone conversation, June 11, 1990, January 24, 1991.

Los Angeles County Sanitation Districts, Foster Winter, Project Engineer, telephone conversation, January 22, 1991.

Los Angeles County Sanitation Districts, Refuse Section, David Nakagaki, Project Engineer, telephone conversation, August 24, 1989.

Los Angeles County Sanitation Districts, Refuse Section, Grace Chan, Supervisor of Planning, telephone conversation, August 24, 1990.

Los Angeles County Sanitation Districts, Hazardous Waste Management Section. Judy Korn, Project Engineer, telephone conversation, August 25, 1989.

Los Angeles County Sheriff, Lancaster Division, Captain Gary Vance, Commander, May 9, 1990.

Los Angeles County Solid Waste Management, Department of Health Services, John Edmondson, Environmental Health Specialist, telephone conversation, March 1990b, January 22, 1991.

Los Angeles County Solid Waste Management, Department of Health Services, Richard Huson, Environmental Health Specialist, telephone conversation, March 1990a.

Los Angeles County, Water Works District No. 34, telephone conversation, November 9, 1989.

Paleo Environmental Associates, Dr. E. Bruce Lander, Paleontologist, correspondence, June 8, 1989.

Paleo Environmental Associates, Dr. E. Bruce Lander, Paleontologist, correspondence, October 6, 1989.

Paleo Environmental Associates, Dr. E. Bruce Lander, Paleontologist, telephone conversation, January 22, 1991.

Palmdale, City of, Building Department, telephone conversation, August 2, 1989.

Palmdale, City of, Department of Public Works, Pat Vosse, Department Director, telephone conversation, June 1, 1990.

Palmdale, City of, Department of Public Works, Bill Lewallen, Maintenance Superintendent, telephone conversation, January 22, 1991.

Palmdale, City of, Parks and Recreation Department, John Lasagna, Director, telephone conversation, August 14, 1989.

Palmdale, City of, Planning Department, Laurie Lile, Associate Planner, correspondence, July 17, 1989.

Palmdale, City of, Planning Department, Laurie Lile, Associate Plan, telephone conversation, August 3, 1989.

Palmdale, City of, Planning Department, Laurie Lile, Associate Planner, correspondence, Sepember 1, 1989.

12.0 MITIGATION MONITORING PLAN

In compliance with Public Resources Code Section 21081.6, public agencies approving projects which have the potential to cause significant environmental impacts must adopt a reporting and monitoring program for adopted or required changes to the proposed project to mitigate or avoid the significant effects. Development of the proposed City Ranch Specific Plan would result in significant environmental impacts in the following areas: Land Use, Housing, Earth (Geology), Hydrology, Biology, Transportation, Air Quality, Noise, Aesthetics, Water, Sewage Disposal, Communications, Schools, Parks and Recreation, Archaeology, Paleontology, Electromagnetic Radiation, Hazardous/Toxic Materials, and Antelope Valley Public Landfill. This Mitigation Monitoring Plan ensures implementation of the mitigation measures identified in the findings of the Draft Environmental Impact Report.

The City Ranch Mitigation Monitoring Plan consists of the following elements: identification of the issue in which the significant impact occurs; a description of the specific environmental impact and its significance; the mitigation that shall be implemented to reduce the level of significance below threshold levels; the schedule for implementing the measure; and finally, the agency or individual responsible for regulation and enforcement of the mitigation measures.

*Issue- **Land Use***

Impacts- Development of the proposed project would transform the existing undeveloped site to a developed suburban site with up to 5,200 residential dwelling units (at a 2.62 units per gross acre density) comprised of a mix of single-family, townhouse and condominium units, along with 260,000 square feet of neighborhood commercial space, a golf course and clubhouse, hillside natural open space uses, and sites for four elementary schools, six public parks, and a fire station. Proposed uses would be compatible with other residential and mixed-used projects proposed in the project vicinity. Development of the proposed project would pose a potential land use conflict with regard to proximity of the proposed Antelope Valley Public Landfill expansion to the east.

Development of the proposed project would require the following approvals with regard to land use controls:

- The project site will need to be annexed into the City of Palmdale jurisdictional area. Annexation will include amending the City's sphere of influence boundary to include the entire project site.

- A General Plan Amendment will be necessary to formally incorporate the Specific Plan land use designations into General Plan Land Use Element.

- In order to establish site zoning, the project site will need to be prezoned to [illegible] (Specific Plan) with an overall limit of 5,200 permitted residential units.

- The project site will need to be subdivided into 38 planning area parcels.

- Certain uses within the Specific Plan (e.g., townhome and condo, recreational, commercial and community facilities) may also require Conditional Use Permits as delineated in the development regulations of the Specific Plan.

- Certain elements of the Specific Plan may require Site Plan Review.

- The Specific Plan will need to be adopted by City Council Ordinance.

- Amendments to the Specific Plan would require adoption by ordinance.

Without these approvals, project development would constitute a significant impact with regard to land use.

In addition to the required approvals listed above, the following actions may also be required as part of the permitting and approval process for the proposed project.

- California Department of Fish and Game Stream or Lake Alteratior Agreements (per Section 1603 of the State Fish and Game Code) for alteratio to the Anaverde and Amargosa Creeks.

- Army Corps of Engineers Section 404 Permit for the discharge of fill material into waters of the United States pursuant to the Clean Water Act of 1977, as amended, for any improvements made in the alkali meadow/transmontane alkali marsh portions of Planning Area 13 south of the proposed City Ranch Road alignment and north of the California Aqueduct, designated to be within the jurisdiction of the Corps. (At a minimum, lost wetland acreage will be replaced in kind on a one-to-one acre basis.)

Mitigation Measures

- Obtain required land use approvals.

- The annexation process and time frame for annexation shall conform to the City of Palmdale and Los Angeles County Local Agency Formation Commission (LAFCO) provisions.

- The proposed Specific Plan will comply with the State Specific Plan and Municipal Code requirements (California Government Code, Title 7, Division 1, Chapter 3, Article 8, Sections 65450 through 65457 and City of Palmdale Resolution No. 88-9).

- The proposed project shall comply with the site specific zoning and subdivision standards contained in the City Ranch Specific Plan and applicable City of Palmdale Zoning ordinances.

- The applicant shall cause to be prepared an annual monitoring report. The report shall evaluate compliance with the design guidelines and development standards of the City Ranch Specific Plan and the mitigation measures of the City Ranch Specific Plan Final EIR. The report shall be submitted to the Planning Director the first quarter of each year through the buildout of the project. In addition, aerial photos of the active construction areas of the project site will be taken and submitted to the Planning Director on a monthly basis during the construction process. The aerial photos shall be of a scale approved by the Public Works Department. Monitoring and verification of compliance with adopted Specific Plan development standards shall also be performed prior to subsequent approvals to determine if the proposed measures are achieving their intended purposed. Future discretionary approvals may include additional conditions based upon City staff review of the Annual Monitoring Report.

Implementation Procedures- The Director of the City of Palmdale Planning Department shall determine the order of the necessary land use approvals and will inform the applicant of the order. Planning Department staff shall review the Specific Plan for compliance with State and local requirements and will report to the City Planning Commission on the Plan's compliance.

Implementation Schedule- The Director of Planning shall report to the City Planning Commission on the compliance of the Specific Plan with State and local requirements before the City votes on approval of the Plan.

Regulatory/Enforcement Agency- The City of Palmdale Planning Department and possibly the California Department of Fish and Game and the United States Army Corps of Engineers.

*Issue- **Housing***

Impacts- Development of the proposed project would provide a range of housing types. The additional housing provided by the proposed project would increase the City's 1991 housing stock by 19 percent. The jobs to housing ratio of the proposed project is 0.17. Thus, this project would continue the existing development trend in the area (housing intensive with few local job opportunities) and would not markedly support SCAG's goal of becoming more "jobs rich." Development of this project would further exacerbate the imbalance of jobs and housing in the area, thus encouraging longer trip lengths between home and the work place. In this context, the increased housing resulting from development of the proposed project can be considered a significant impact.

Mitigation Measures- To mitigate the secondary impacts of the jobs/housin imbalance, the applicant shall implement the traffic and air quality mitiga measures listed in Sections 5.8 and 5.9 of this EIR.

Implementation Procedures- The applicant shall implement the mitigation measures set forth in the Transportation and Air Quality sections of the EIR. The applicant shall report to the City of Palmdale Planning Department the results of the implementation efforts.

Implementation Schedule- The schedule will be determined by the Transportation and Air Quality implementation schedules.

Regulatory/Enforcement Agency- The City of Palmdale Planning Department.

Issue- Earth (Geology)

Impacts- Development of the project site would expose residents and users of the project site to geologic hazards associated with faulting, seismic shaking, liquefaction, seismic settlement, seismic ground failure and landslides. These potential impacts are considered significant.

Sub-issue- Surface Fault Rupture

Mitigation Measures

- No structures intended for continuous use for human habitation shall be constructed in Restricted Use Zones I, II or III. Further specific fault hazard studies may reveal the existence of additional buildable areas within previously identified Restricted Use Zone areas.

- Special foundations have been recommended for select areas of the site adjacent to defined Restricted Use Zones (Figure 27 of the EIR). Special foundations should consist of more heavily reinforced foundations and concrete slabs. Actual design of the foundations should be determined by the project structural engineer as approved by the City Building and Safety Department.

- Each deed or other conveyance of Real Property shall include the following statement: "Portions of the City Ranch Specific Plan area are traversed by major traces of the San Andreas Rift Zone, a geologic feature capable of producing a magnitude 8.3 earthquake. The active fault zone has been identified by extensive site specific testing and analysis. All buildings are prohibited by the Specific Plan from being constructed across the trace of an active fault throughout the Specific Plan area. Due to the proximity of portions of the property to the San Andreas Fault, there is a higher risk of experiencing surface fault rupture than other locations not adjacent to

active fault. An active fault is any fault that has been determined to have experienced movement within the last eleven thousand (11,000) years." Additionally, where applicable, each disclosure statement and deed record shall contain language which denotes the possibility of building restrictions on residential additions for human occupancy on those parcels which are located in either the Special Seismic Foundation or Seismic Setback Zones.

Implementation Procedures- Construction of habitable structures shall be prohibited in Restricted Use Zones I, II, and III. The geotechnical consultant shall conduct necessary field studies to determine and map site-specific fault hazard areas and required setbacks. The results of the field studies including a detailed map showing specific fault hazard areas and required setbacks shall be provided by the applicant to the City. Foundation designs prepared by the structural engineer, for areas of the site where special foundations will be necessary shall be submitted to the Palmdale City Engineer for approval.

Implementation Schedule- A fault hazards/setback map, field study results and special foundation designs shall be provided to the Palmdale City Engineer before the issuance of building permits. The applicant shall provide Alquist-Priolo Special Studies Zone Act disclosure to all perspective buyers of real property within or adjacent to Restricted Use Zone areas prior to signing any purchase agreements.

Regulatory/Enforcement Agency- City of Palmdale City Engineer.

Sub-issue- Seismic Shaking

Mitigation Measures

- Develop site specific earthquake response spectra for critical facilities such as water tanks, schools and the fire station which consider effects of ground shaking associated with events in the San Andreas Rift Zone. These reports are intended to provide specific engineering design criteria related to structural design and selection of building materials.

- All structures on the project site shall be designed in accordance with at least the minimum code standards for Seismic Zone 4 as described in the Los Angeles County Building Code.

- Structural and foundation designs, detailed drawings and specifications shall be incorporated into architect designs and construction plans. Specifications for the construction plans may include soil improvements or other remedial measures.

- The project geotechnical consultant shall perform grading observation and testing to confirm adherence to specifications and recommendations and shall certify that all grading complies with the provisions of all approved

plans and specifications, pursuant to Los Angeles County Uniform Buildin- Code.

Implementation Procedures- A geotechnical consultant/earthquake engineer shall develop and execute a subsurface response spectra investigation for the location of critical structures on the project site. Design and remediation recommendations for all structures on the project site shall be presented by the applicant to the City. The recommendations shall be used by the City Engineer in the preparation of building and grading permits. During grading, the geotechnical consultant shall be present on-site to monitor compliance.

Implementation Schedule- The subsurface investigation and report, and design and remediation recommendations, shall be completed before the issuance of grading or building permits. During grading, the geotechnical consultant shall report on a weekly basis to the City Engineer the results of his testing and observations

Regulatory/Enforcement Agency- City of Palmdale City Engineer

Sub-issue- Liquefaction and Seismic Settlement

Mitigation Measures

- A liquefaction study of the site shall include the following:

  - Subsurface exploration (by borings) to depths of thirty to forty feet below existing native soil grades in areas of known shallow groundwater. Relatively undisturbed soil samples should be obtained from the borings for determination of soil density and grain-size analysis. (A sufficient number of borings should be drilled to obtain a reasonable amount of knowledge relative to the soil conditions and depths to groundwater.)

- Testing to determine engineering characteristics of the soil shall include the following:

  - Soil sampling blowcounts, soil density measurements, and grain-size analysis to determine the susceptibility of the soil in shallow groundwater areas to liquefaction. Recommendations for remedial grading or foundation design shall be made for areas in which it is determined that liquefaction is a significant hazard. Typical recommendations may include deeper foundations, densification of the susceptible soils, or construction of subdrains.

- Tests and observations shall be performed by the project geotechnical consultant during grading operations to assure adherence to recommendations in identified liquefaction hazard areas and shall certify that

all grading complies with the provisions of all approved plans and specifications, pursuant to Los Angeles County Uniform Building Code.

Implementation Procedures- The results of the geotechnical subsurface investigation shall be provided by the applicant to the City including a detailed map of areas susceptible to liquefaction and a location-specific materials model prior to the start of construction. In addition, the consultant shall provide the structural engineer written recommendations as to placement of structures and their design. The City of Palmdale City Engineer shall review all building plans to ensure that the plans are in compliance with the geotechnical recommendations. During construction, the geotechnical consultant shall report to the City Engineer, on a weekly basis, the results of testing and observations to assure compliance.

Implementation Schedule- A liquefaction map, materials model and recommendations shall be provided to the City Engineer for approval before issuance of building permits.

Regulatory/Enforcement Agency- City of Palmdale City Engineer.

Sub-issue- Landslides

Mitigation Measures

- Any hillside areas of the property where planned grading would result in artificial slopes greater than ten feet in height shall be evaluated specifically relative to slope stability by preparing the following geologic and geotechnical engineering studies:

  - Detailed geologic mapping of surface features in the areas of the proposed cut slopes.

  - Subsurface exploration with backhoe test pits and trenches to expose the shallow geologic conditions in and around the proposed graded areas.

  - Deep subsurface exploration with borings including small diameter auger borings or large diameter bucket borings at the specific cut slope locations. (It is suggested that the subsurface exploration be extended to depths at least equal to, and ideally greater than, the proposed depths of grading.)

  - Laboratory tests on the soils and rocks collected from the exploration programs for determination of density, moisture content, shear strength, and compaction characteristics.

  - Detailed engineering analyses utilizing the data obtained from the field exploration and laboratory testing programs relative to stability of the

existing and planned graded slopes. Recommendations shall be provided for remedial grading to repair or replace any potential unstable slopes.

- The findings and recommendations of the Slope Stability Study shall be incorporated into construction plans and site grading activities, and a slope maintenance plan. Grading, slope maintenance, and construction plans shall be reviewed and approved by the City Engineer.

- The project geotechnical consultant shall be responsible to perform confirmatory tests and observations during grading to assure that the geotechnical recommendations are being followed and shall certify that all grading complies with the provisions of all approved plans and specifications, pursuant to the Los Angeles County Uniform Building Code.

- Recommendations for slope planting and irrigation shall be prepared by a qualified landscape architect and reviewed by the City Planning Department and by the City Engineer. Approved plans by City Engineer will be required prior to approval of final map by Engineering.

- Temporary erosion control shall be accomplished as follows:

  - The surface of all slopes more than three (3) feet in vertical height and steeper shall be covered with City-approved erosion control blankets. Installation shall conform to the manufacturer's specifications.

  - Erosion mitigation measures shall be performed to the satisfaction of the City of Palmdale Landscape Architect prior to the acceptance of rough grading.

- Permanent erosion control shall be accomplished as follows:

  - The surface of all slopes more than three (3) feet in vertical height shall be covered with North American Green S 150 approved equal erosion control blankets or be permanently landscaped and irrigated per approved landscape plans, and have obtained 80 percent coverage of groundwater. Installation shall conform to manufacturer's specifications.

  - The surface of all slopes more than three (3) feet in vertical height shall be protected against damage from erosion by planting with groundcover plants. Slopes exceeding fifteen (15) feet in vertical height shall also be planted with shrubs at not to exceed 10 feet on centers; or a combination of shrubs and trees at equivalent spacing, in addition to the groundcover plants.

- Planting need not be provided for cut slopes rocky in character and not subject to damage by erosion and slopes protected against erosion damage by other

methods when such methods have been specifically recommended by a soils engineer, engineering geologist or equivalent authority, and found to offer erosion protection equal to that provided by the planting specified in this section.

- All required landscaping and irrigation shall conform to the City of Palmdale's Slope Erosion Control Landscaping Standards.

- All planting and irrigation shall be installed to the satisfaction of the City of Palmdale Landscape Architect prior to acceptance of final grading.

- All slope banks less than 30 feet in height within single-family residential lots shall be maintained by individual homeowners enforced through deed restrictions. Slopes in common open space areas of multi-family and attached single-family unit planning areas and slopes greater than 30 feet high in rear yards of private residential lots shall be maintained by homeowners associations. Slopes in landscape easements along public rights-of-way and roadway slopes within tracts shall be maintained by homeowners associations unless reviewed and approved by the Director of Engineering to be included in a maintenance district.. Slopes in park areas shall be maintained by the City of Palmdale. Where maintenance is to be provided by a maintenance district or homeowner's association, said area shall have an easement recorded over it for access and maintenance purposes.

- Slope plantings and irrigation systems shall be maintained.

- Berms, swales or devices shall be provided at the top of cut or fill slopes to prevent surface waters from overflowing onto and damaging the face of the slope. Gutters or other special drainage controls shall be provided where the proximity of runoff from buildings or other structures is such as to pose a potential hazard to slope integrity.

- Manufactured down slopes to property lines shall be prohibited except for corner lot conditions. Where walls occur at the tops of slopes, access shall be provided to the homeowner or designated maintenance party to permit maintenance of slopes and landscaping.

- The drainage outlets shall be periodically inspected and cleaned of silt and debris.

- In accordance with California Department of Real Estate disclosure format and procedures, all potential buyers of residential lots containing slopebanks greater than 30 feet in height shall be notified of the condition.

Implementation Procedures- The geotechnical consultant shall provide to the City Engineer, as part of the soils and bedrock investigation program, results of soils

stability tests along with recommendations regarding cut and fill operations. The City Engineer shall review site plans prior to issuance of grading and building permits. The geotechnical consultant shall provide weekly reports to the City Engineer on the results of tests and observations made during grading.

Implementation Schedule- The soils and bedrock investigation program and recommendations shall be made prior to the issuance of grading and building permits. All plans shall be reviewed by the City Engineer for compliance with the geotechnical recommendations prior to issuance of building permits. During grading, weekly reports shall be made by the geotechnical consultant to the City Engineer. Temporary control measures shall be implemented at the completion of rough grading. Permanent erosion control measures shall be implemented upon acceptance of final grading and prior to issuance of certificates of occupancy.

Regulatory/Enforcement Agency- City of Palmdale City Engineer and the City of Palmdale Landscape Architect.

Sub-issue- Soils

Mitigation Measures

- Soils engineering recommendations listed on pages 40-63 of the May, 1989 Buena Engineering report entitled "Preliminary Engineering Geotechnical Report, City Ranch Property" (Appendix D of the EIR) shall be strictly followed.

- Reshaping of the natural terrain to permit access and construction of facilities such as water tank sites, utility lines and easements, service roads, fire access, etc., shall be kept to a minimum in areas of greater than 25% slope.

- The geotechnical consultant shall control construction activities through confirmatory observations and testing and quality control procedures. Special attention must be given to the hydroconsolidation issue and specific plans for treating or removing the susceptible soils. Present recommendations appear adequate but may require reassessment depending on location specific conditions.

- For areas within "medium" or higher soil expansion potential (refer to Figure 24 of the EIR), post-tensioned foundations shall be required.

Implementation Procedures- The geotechnical consultant shall provide to the Department of Public Works, as part of their soils investigation, results and recommendations for cut and fill operations. The Department shall review site plans prior to issuance of grading and building permits. Landscape plans shall be reviewed and approved by the City Engineer prior to the issuance of building permits. The applicant shall provide to the first homeowner, a slope maintenance

plan developed by the geotechnical consultant. The slope maintenance plan shall be incorporated into the title of ownership of the property to ensure that slopes will be maintained past the first homeowner. The applicant shall also provide to the City the names of property owners to whom the applicant has transferred the responsibility of slope maintenance.

Implementation Schedule -Test results and recommendations are to be made prior to the issuance of grading and building permits. The Department of Public Works and the City Engineer shall review all plans for compliance with the soils investigation recommendations prior to issuing permits.

Regulatory/Enforcement Agency- City of Palmdale City Engineer.

*Sub-issue- **Seismic Ground Failure***

Mitigation Measures

- Prohibit construction of habitable structures in Restricted Use Zones I, II and III and conduct in-grading inspections and precautionary measures (e.g., enhance foundations, adjust building locations slightly) where trench exposures show evidence of soil filled cracks along lineaments or buried geologic contacts.

Implementation Procedures- Construction of habitable structures shall be prohibited in Restricted Use Zones I, II and III unless further subsurface study shows portions of these areas capable of supporting habitable structures. The geotechnical consultant shall conduct on-site in-grading inspections prior to grading to determine the exact potential ground failure sites. Recommendations for precautionary measures shall be submitted to the City Engineer for approval.

Implementation Schedule- Inspections shall occur prior to grading. A map showing exact potential ground failure sites shall be submitted City Engineer prior to issuance of grading permits for each phase of development.

Regulatory/Enforcement Agency- City of Palmdale City Engineer.

*Sub-issue- **Flooding Potential***

Mitigation Measures

- Construct flood control channels along the main washes and maintain drainage diversion devices locally (e.g., under roads, engineered fills and along the Aqueduct).

- For the Aqueduct embankment failure event, construct protective berms to the elevation sufficient to control the design flooding event specified by the

State for this area. In addition, the structures shall be elevated above the flooding levels by increasing the height of fills.

Implementation Procedures- The applicant shall provide to the Department of Public Works the designs for flood control channels and flood protective measures.

Implementation Schedule- Flood control designs shall be provided to the Department of Public Works prior to the issuance of any work permits.

Regulatory/Enforcement Agency- City of Palmdale Department of Public Works.

*Sub-issue- **Groundwater***

Mitigation Measures

- Provisions shall be made for adequate drainage of the site both during construction and operational phases of the project. To avoid problems associated with rising groundwater levels in Planning Area 15, subsurface drainage (for example, gravel drains, herring bone drains or french drains) would be required.

- If required during construction, a dewatering or drainage diversion program shall be developed and implemented subject to review by the County of Los Angeles Department of Public Works and/or the City of Palmdale as require by the City Engineer.

Implementation Procedures- Subsequent to site-specific investigations, the geotechnical consultant shall make recommendations regarding proper drainage of the site. If recommendations require dewatering or drainage diversion, a dewatering/drainage diversion program shall be prepared to be reviewed and approved by the City Engineer.

Implementation Schedule- Recommendations regarding site drainage shall be made prior to start of grading in coordination with the City Engineer.

Regulatory/Enforcement Agency- City of Palmdale City Engineer.

*Issue- **Hydrology***

Impacts- As part of the grading plan for the proposed project, building pads and roadways in areas situated within the existing 100-year floodplain of the Anaverde Creek will be raised above the 100-year floodzone and drainage will be channelized in these areas thereby eliminating 100-year flood hazards from the project site. However, following project development, portions of Planning Areas 2, 4, 9, 13 and 22 would be subject to flooding hazards from failure of the California Aqueduct. Any structures built in impacted portions of these park or golf course areas would b

damaged by flooding if an Aqueduct failure occurred. Of particular concern is the location of the golf course clubhouse. This is considered a significant impact.

Following project development, storm runoff for a 50-year storm event would increase by 9% over existing conditions A series of drainage improvements including closed conduits, open channels, earthen swales, debris basins, and detention basins would be needed to adequately handle post-development runoff.

Post-development runoff could pick up and transport urban pollutants. Of particular concern is low flow non-storm runoff in which water volumes are low and pollutant concentrations high. The low flow non-storm runoff poses a danger to the wetland habitat which is in the path of existing and future runoff flows.

Mitigation Measures

- Habitable structures and public facilities shall be constructed above the flood plain level noted on the Federal Emergency Management Agency Flood Insurance Rate Maps and Amendments thereto. Water will be conveyed off-site via proposed storm drainage facilities.

- Building pads and roadways in areas which would be flooded in the event of a failure of the California Aqueduct (Figure 31 of the EIR) shall be raised above the anticipated floodwater levels.

- All storm drainage improvements depicted on Figure 32 of the EIR shall be implemented as part of the proposed project. This includes storm drains, channels, and detention and debris basins.

- Low flow containment system will need to be constructed to accommodate and evaporate urban runoff flows during the dry seasons to prevent deterioration of water quality in wetland areas and streams as required by the City Engineer. (See Figure 34 of the EIR for a conceptual design of the kind of low flow containment system.) Approximately three 31,000 square foot basins shall be necessary to accommodate anticipated flows.

- The proposed golf course will need to have a separate runoff collection system along City Ranch Road to direct flows away from the wetland area. This collection system shall be subject to the applicable laws for point source discharge of the Regional Water Quality Control Board.

- The applicant shall submit an Erosion Control Plan for each development application for review and approval by the City Engineer prior to issuance of grading permits. In addition, the applicant will demonstrate each development application complies with the provisions of any National Pollution Discharge Elimination System permit requirements that may be required by other regulatory agencies. At the time of submittal of a

development application for the golf course, the applicant shall provide fo the controlled use of pesticides and fertilizers on the golf course by limiti the frequency and type of fertilizers/pesticides used and requiring applic by qualified persons.

- Modifications to natural drainage courses shall conform to City, County, State, and Federal Law.

- Fencing shall be installed along constructed drainage channels, as appropriate, for safety purposes.

- Modification of drainage patterns will not be permitted across property lines without written consent of affected property owners.

- Final Subdivision Maps shall be accompanied by Drainage Improvement Plans prepared by a licensed Civil Engineer and approved by the City Engineer.

- In accordance with California Department of Real Estate disclosure format and procedures, all potential purchasers of real property subject to flood inundation resulting from Aqueduct failure shall be notified of the situation.

  - In accordance with the California Department of Real Estate disclosure format and procedures, all potential purchasers of real property which is shown within the FEMA 100-year flood plain on the Flood Insurance Rate Maps most recently circulated by FEMA, shall be notified of the situation, regardless of whether the actual flood hazard has been abated by other methods. Also, the applicant shall contact FEMA as soon a possible after eliminating areas from the 100-yea flood hazard zone to request modifications of Flood Insurance Rate Maps. The applicant shall t diligently pursue revisions of the maps until t 100-year flood hazard zone as modified by the development is depicted on them.

Implementation Procedures- A licensed Civil Engineer shall prepare a drainage improvement plan which shall include all improvements depicted on Figure 32 of the EIR. The plan shall be reviewed by the City Engineer and the Director of Public Works. The Director of Public Works shall review design plans for modifications to the natural drainage for conformity with applicable laws. The applicant shall provide the City proof of written consent of property owners where proposed drainage modifications cross their property lines. Flood control basins shall be cleaned and residue removed from the site by the City of Palmdale Department of Public Works. Disclosure of properties located within the FEMA flood zone will be made pursuant to Department of Real Estate procedures for disclosure.

Implementation Schedule- The approved drainage improvement plan shall be built out prior to the issuance of building permits.

Regulatory/Enforcement Agency- City of Palmdale City Engineer and the City of Palmdale Department of Public Works.

Issue- Biology

Impact- Construction of the proposed project would result in direct elimination of plant and wildlife habitat and consequently the loss of biological resources withi areas of the project site where residential lots, streets, the golf course, commer development, school, and community parks are intended. Two sensitive pla known to occur on the site, Peirson's morning glory and the short-joint beaverta cactus, would be disturbed as a result of project development. Grading to construct

City Ranch Road may impact the east alkali meadow/transmontane alkali marsh habitat. As a result of project development, a large portion of the area of project site containing the Joshua tree woodland would be developed as a golf course (Planning Areas 4 and 13). Another portion of the Joshua tree woodland would be developed as a single-family residential area (Planning Area 8). The rest would be converted to community park space (Planning Areas 1 and 9) or would remain as natural open space (Planning Areas 2 and 7). The California juniper seedling area would be eliminated.

Development of the proposed project would result in the potential for impaired wildlife movements in an east-west direction along the foothills of the Sierra Pelona and the San Andreas Rift Zone. Construction of the proposed project would result in a reduction of habitat for five sensitive animal species that utilize the project site. Loss of this sensitive species habitat would adversely impact these territorial species which rely upon large expanses of land for their home ranges. Project development would result in the loss of part of the raptor foraging habitat in the region which would directly affect the raptor species known to be on-site: sharp-shinned hawk, golden eagle and prairie falcon. A trapping effort to locate the Mojave ground squirrel indicated that it is not present on the project site.

Overall, implementation of the proposed project would result in fragmentation of the existing habitat of plants and animals into smaller discontinuous parcels. After a few years, the species diversity on the remaining fragments would be expected to decline. Impacts with regard to biological resources are considered significant. The preservation of approximately 404 acres of the project site as natural open space would allow maintenance of a portion of the existing biological habitat, and provide an area into which plants dislocated elsewhere on the project site can be transplanted.

Sub-issue- Disturbance to or Loss of Sensitive Flora and Fauna

Mitigation Measures

- The Applicant shall consult with the California Department of Fish and Game in order that potential impacts to Mohave ground squirrel may be addressed. If an endangered species permit is warranted, the permit must be completed and mitigation measures fully dedicated before issuance of a grading permit. Therefore, the consultation with CDFG will occur prior to issuance of any grading permit for the proposed project.

- Individuals of short-jointed beavertail in the impacted areas of Planning Areas 17 and 31 shall be transplanted into Planning Area 32. Similarly, those individuals impacted in Planning Areas 8 and 13 shall be transplanted into Planning Area 7. A written plan for such relocation shall be prepared and shall be subject to approval by the City Planning Department (which may require independent review) prior to site grading. The plan shall be prepared and implemented by a qualified horticulturist/botanist/restoration biologist, with thorough familiarity of the Antelope Valley region and demonstrated experience in transplantation of cacti.

- A portion of Planning Area 31 shall be transferred to Planning Area 32 in order to preserve approximately 40 percent of the known occupied extent of Peirson's morning-glory located therein. The boundaries of Planning Areas

31 and 32 shall be modified as shown on Figure 38 of the EIR, or as approved by the Director of Planning at the time of approval of tentative maps Planning Area 31.

- A written plan for seed collection from impacted individuals of Peirson's morning-glory located in the portion of Planning Area 31 which shall be disturbed, for subsequent redistribution into Planning Area 32 shall be subject to approval by the City Planning Department (may require independent review) prior to site grading. The plan shall be prepared and implemented by a qualified botanist/horticulturist/restoration biologist, with thorough familiarity with the Antelope Valley region.

Implementation Procedure- A botanist, experienced in restoration biology and approved by the City of Palmdale Planning Department, shall prepare a plan for the relocation of the short-jointed beavertails and a plan for the Peirson's morning-glory mitigation. The beavertail relocation plan shall address the following:

- location of all impacted individuals
- selection of receptor sites
- methods for removal, transportation, interim care and transplantation to receptor sites
- schedule and timing designed to optimize success
- maintenance for a minimum of five years (starting at the date when all individual have been placed in their new locations)
- establishment criteria for success, monitoring and reporting of relocation program, and remedial actions or penalties which shall be taken should these criteria not be met after five years.

Specific elements to be addressed in the Peirson's morning-glory plan include the following:

- location of impacted individuals, and projection for percentage of total seed crop to be harvested
- selection of receptor sites
- method and timing of seed collection, interim storage (if necessary) and redistribution
- site or see pre-treatments proposed
- minimum five year monitoring, reporting program.

The botanist shall oversee the placement of fences to protect the individuals to be transplanted during grading and construction, shall oversee the actual transplantation of the beavertails, and shall arrange for the collection of morning-glory seeds.

Implementation Schedule- The Final Specific Plan development plan shall be modified per Figure 38 of the EIR with regard to the boundary between Planning Areas 31 and 32. The finalized Specific Plan shall be subject to Planning Department review. The Planning Department shall review the beavertail relocation plans and implementation measures and the Peirson's morning glory mitigation plans prior to the approval of affected area development applications. Grading permits shall reflect measures to protect the beavertails to be relocated. Individuals to be relocated shall be physically tagged by a qualified biologist prior to initiation of grading. Monitoring shall be conducted on a semi-annual basis for a period of three years following implementation of the measures to report on the success of the beavertail relocation and Peirson's morning glory mitigation plans. These plans shall be modified as necessary depending on the success of the mitigation measures. Consultation with the California Department of Fish and Game regarding potential impacts to Mohave ground squirrel shall occur prior to issuance of grading permits for the property.

Regulatory/Enforcement Agency- City of Palmdale Planning Department.

Sub-issue- Alkali Meadows/Transmontane Alkali Marsh

Mitigation Measures

- The land in Planning Area 13 south of the City Ranch Road alignment and north of the California Aqueduct property shall be set aside and designated as natural open space to preserve the east alkali meadow and transmontane alkali marsh habitat.

- The City Ranch Road alignment shall avoid the wetland areas. Landscaping, grading, and irrigation along the south side of the segment of City Ranch Road adjacent to the wetlands shall be kept to a minimum.

- If avoidance of the alkali meadow/transmontane alkali marsh is impossible, permits and agreements under Section 404 of the Clean Water Act and under 1603 of the State Fish and Game Code will be required from the U.S. Army Corps of Engineers and the California Department of Fish and Game, respectively. At a minimum, lost wetland acreage will be replaced in kind on a one-to-one-acre basis. Also, a mitigation and monitoring plan, subject to CDFG approval, will be required in the event of any loss of alkali meadow/transmontane marsh habitat.

- Provisions will be made to divert low-flow surface runoff from entering the east alkali meadow/transmontane alkali marsh habitat. (See Hydrology Section Mitigation Measures.)

Implementation Procedures- The applicant shall coordinate with the City Planning Department the boundaries of the portion of Planning Area 13 to be designated natural open space. The applicant shall provide to the Planning Department any permits required for any development occurring in areas of the meadows or marshes.

Implementation Schedule- The natural open space area shall be designated as natural open space as part of the project approval process. The applicant shall provide copies of necessary wetland permits before City issues any grading permits for wetland areas.

Regulatory/Enforcement Agency- City of Palmdale Planning Department and possibly the California Department of Fish and Game and the United States Army Corps of Engineers.

Sub-issue- Native Plant Landscaping

Mitigation Measure

- Native species such as California juniper, Great Basin sagebrush, four-winged saltbush, holly-leaf cherry (*Prunus ilicifolia*), and big-berry manzanita, and trees such as Joshua tree, Fremont cottonwood (*Populus fremontii*) and California sycamore (*Platanus racemosa*) for landscaping purposes to the maximum extent feasible. Use of these species may encourage some local wildlife species to continue to utilize the area. The construction of a golf course on the site provides an opportunity for a great number of native plants, particularly trees, to be incorporated into the project site. In addition to the encouragement of continued wildlife use of the area, all of these plants are drought tolerant.

Implementation Procedures- The applicant shall develop and submit for approval to the Planning Department landscape plans prepared by a licensed landscape architect, reviewed and approved by the City Landscape Architect, that provide for preferential use of native plants, on the project site. The applicant shall, for a period of ten years, from the commencement of construction of the project, report annually on the amount of area within the project site that is landscaped with native plants.

Implementation Schedule- The applicant shall provide landscape design plans to the Planning Department for approval by the City Landscape Architect as part of the development review process.

Regulatory/Enforcement Agency- City of Palmdale Planning Department.

Sub-issue- Joshua Trees and California Junipers

Mitigation Measures

- The applicant shall comply with all City of Palmdale policies regarding the preservation or transplantation of Joshua trees and California junipers on the project site.

- Development of Planning Areas 4, 8 and 13 shall include the preservation or relocation of Joshua trees such that approximately two trees per acre graded shall be preserved or transplanted into suitable natural open space areas or undisturbed areas of the golf course. As a result of this measure, approximately 398 trees would be preserved in Planning Areas 4, 8 and 13.

- California juniper seedlings located in Planning Areas 1, 9 and 10 shall be relocated to natural open space areas of the project site under the guidance of a certified botanist.

Implementation Procedures- A botanist, hired by the applicant and approved by the City, shall coordinate with the City of Palmdale Planning Department the Joshua tree and California juniper preservation and transplantation efforts. These efforts shall include mapping which trees shall be preserved in place and which trees shall be transplanted and marking in the field those trees to be preserved and those to be transplanted. All trees to be protected shall be fenced off to prevent damage to trees during grading. During grading of Planning Areas 4, 8 and 13, the botanist shall monitor grading to ensure that areas fenced off for preservation or transplantation of trees are not damaged. In addition, the botanist shall supervise the transplantation of any trees to be transplanted to ensure the survival of these trees. The biologist shall then monitor the success of the transplantation effort and modify plans as necessary.

Implementation Schedule- The botanist shall provide a tree preservation/transplantation map to the City of Palmdale Planning Department for review and approval by the City Landscape Architect prior to the approval of grading permits in Planning Areas 1, 4, 8, 9, and 13. Trees to be preserved or relocated shall be fenced off prior to the initiation of grading in affected planning areas. Results of the actual plant preservation/transplantation efforts shall be submitted to the Planning Department on a weekly basis during the preservation/transplantation efforts during grading and during the transplantation effort. In addition, long-term monitoring on the success of the transplantation effort shall be monitored on an annual basis for a period of three years following tree transplantation.

Regulatory/Enforcement Agency- City of Palmdale Planning Department

Sub-issue- Natural Open Space Maintenance

Mitigation Measures

- To preserve the biological integrity of the natural open space areas, measures shall be implemented assuring that off-road vehicles, ornamental or non-indigenous landscaping, domestic animals (especially dogs), hunting or other discharge of firearms, livestock grazing, plant, animal or rock collecting, pedestrian, equestrian or bicycle use off marked trails or at night are excluded from natural open space areas. This shall be accomplished by signing and the construction of exclusionary walls or fences. Provisions shall be made to maintain open space areas.

Implementation Procedures- The applicant shall offer natural open space planning areas to the City for dedication. In those areas accepted for dedication, indicated excluded uses shall be posted. Infractions shall be subject to penalty of law. Areas not dedicated to the City shall be subject to a conservation easement in favor of the City. Indicated excluded uses shall not be permitted under restrictions of the conservation easement.

Implementation Schedule- Natural open space areas shall be dedicated to the City prior to the issuance of building permits. All signage and exclusionary walls or fences shall be provided by the applicant during construction of planning area adjacent to natural open space areas.

Regulatory/Enforcement Agency- City of Palmdale Planning Department/County of Los Angeles Sheriff's Department.

Issue- Transportation

Impacts- Development of the proposed project is expected to generate approximately 49,970 daily trip-ends, of which 38,050 would have either an origin or a destination off-site (external trips). If the proposed project-related traffic volumes and the estimated 5% annual growth rate assumed in the traffic analysis conducted for this project are distributed onto the roadway system prior to construction of the off-site master-planned roadway improvements, project-related traffic impacts would be considered significant.

Mitigation Measures

- All roadways shall be built out by the applicant to City approved roadway cross-sections per Figure 42 of the EIR.

- The proposed internal cross-sections and circulation layout shall be subject to review and approval of the City Traffic Engineer during the developmen review process to insure compliance with City access and design standards.

- Collector roadways which cross Avenue S shall be signalized. The applicant shall be required to contribute funds on a pro rata basis toward the purchase and installation of the aforementioned traffic signals as determined by the City Traffic Engineer.

- Landscaping and signage on-site shall be low and shall not interfere with sight distances at the site access points or at internal intersections. Street lights and sidewalks shall be provided in accordance with City standards.

- Prior to future development application approvals, the Applicant will be required to submit a Transportation Demand Management Plan and a Focused Traffic Study for review and approval by the Director of Planning and the Traffic Engineer, as appropriate, to determine the necessary improvements for impacts generated by that project. These plans shall be prepared in accordance with the Los Angeles County Transportation Commission's Congestion Management Plan and the City's transportation analysis guidelines, the City's transportation plan, and the Engineering Design Standards. Necessary improvements shall be determined by the City Traffic Engineer, and shall include, but not be limited to, all on-site and off-site road improvements to achieve a Level of Service D (peak period) or better with ultimate traffic projections. On the basis of this and other studies, the developer will improve or fund a pro rata share of improvements. The developer shall pay appropriate traffic impact fees in accordance with City Ordinance 825, and all other fees for facilities and services that may be in place at the time of issuance of certificates of occupancy.

- The applicant shall participate in the construction of a park-and-ride facility to be located off-site at a location within the Palmdale Southwest Planning Area designated by the City of Palmdale as determined by the City Traffic Engineer.

- The project applicant shall pay applicable traffic impact fees or provide improvements pursuant to future agreements with the City of Palmdale in lieu of fees as required by City Ordinance or Resolution.

  - If, as a result of project impacts, the level of service falls below either the standards set by the Los Angeles County Transportation Commission's Congestion Management Plan, or the policies set by the City's General Plan, the applicant shall implement improvements or services necessary to bring the roadway segment into compliance. The Final Draft CMP, dated August 14, 1991, includes SR-14, and Route 138, and identifies Sierra Highway as a roadway requiring additional study.

- The applicant shall be required to contribute a pro-rata share of the cost of extension of Avenue S to Tierra Subida as determined by the City of Palmdale Traffic Engineer .

- Improvements to the portion of City Ranch Road east of Bridge Road shall be financed by the applicant and/or surrounding property developers determined by the City of Palmdale Traffic Engineer.

Implementation Procedures- The applicant shall make a payment of applicable fair share fees to help offset off-site master planned roadway improvements and park-and-ride facility costs or shall build indicated roadway improvements and park-and-ride facilities as determined by the City Traffic Engineer. Design elements of the Specific Plan regarding transportation improvements shall be reviewed by the City Planning Department during the site review process. Concurrently, the City Traffic Engineer shall review and approve circulation and trip reduction elements.

Implementation Schedule- Payment of fair share fees to the satisfaction of the City Traffic Engineer shall be made prior to the issuance of building permits. Review of design and circulation elements shall occur during the development review process and prior to approval of appropriate tract maps or other development applications.

Regulatory/Enforcement Agency- City of Palmdale Planning Department/City Traffic Engineer.

Issue- Air Quality

Impacts- Short-term Impacts - Significant short-term air quality impacts would primarily occur as a result of fugitive dust emissions generated during grading and construction activities and diesel emissions generated by heavy-duty construction vehicles.

Long-term Impacts - Development of the proposed project would result in the generation of approximately 2,943 pounds of carbon monoxide (CO), 955 pounds of nitrogen oxides (NOx), 199 pounds of particulates and 244 pounds of reactive organic gases (ROG). These long-term project-related mobile and stationary emissions would exceed South Coast Air Quality Management District (SCAQMD) daily emissions threshold criteria for all of these contaminants. Project stationary emissions alone exceed SCAQMD's suggested threshold for NOx only, while project mobile emissions exceed guidelines established for criteria air pollutants. Project-related air emissions are not expected to be reduced to non-significant levels in the long term. Odor and dust problems from the adjacent Antelope Valley Public Landfill to the east, would not be anticipated to create significant impacts at the project site. The proposed project would not be in conformance with SCAQMD's Air Quality Management Plan (AQMP) and therefore would be considered to have a significant adverse impact on air quality.

Sub-issue - Short-term Impacts

Mitigation Measures

- South Coast Air Quality Management District Rule 403 (Fugitive Dust) shall be adhered to, to ensure the clean up of construction-related dirt on approach routes to sites within the project site.

- Building construction shall comply with energy use guidelines in Title 24 of the California Administrative Code.

- Adequate watering techniques shall be employed to reduce by 50% construction-generated dust emissions.

- Diesel-powered construction equipment shall be preferred over gasoline-powered equipment to reduce exhaust emissions and reduce fuel evaporation and crankcase hydrocarbon emissions. Low sulfur diesel fuels shall be preferred in accordance with SCAQMD's Rule 431.

- Construction equipment shall be properly maintained and serviced to minimize exhaust emissions.

- Construction activities shall be suspended on days when ozone episodes are called.

- Operations that tend to create fugitive dust shall be suspended during times of high wind velocities and Stage 1 smog alerts in the project area.

- Grading activity, which creates dusty conditions, shall be suspended when, in the opinion of the City Engineer, local winds exceed acceptable levels. To validate wind velocities and/or rainfall amounts, the installation of a minimum of two remote weather stations in the vicinity of the project site's active grading areas will be required at locations determined by the City Engineer.

Implementation Procedures- Dust suppression procedures shall be part of the grading plans. The applicant shall specify in all construction contracts vehicle maintenance and fuel and fugitive dust reduction requirements.

Implementation Schedule- Grading plans including dust suppression procedures must be approved by the City Engineer prior to approval of grading permits. Construction contractors must have signed contracts stating agreement with vehicle maintenance, fuel, and dust reduction requirements prior to work start.

Regulatory/Enforcement Agency- City of Palmdale City Engineer.

Sub-issue- Long-term Operational Impacts

- The applicant shall implement all applicable quality control measures listed in SCAQMD's 1989 AQ.

- Energy efficient street and parking lot lighting shall be required on-site to minimize power plant emissions.

- Pedestrian walkways shall be provided throughout the project site in order to encourage walking as an integral mode of transportation between school and residences.

- Bus turnouts shall be provided along major arterials in accordance with transit district requirements in order to facilitate use of public transit.

- Traffic signals installed in conjunction with development of the proposed project shall be synchronized with other signals in the vicinity.

- The applicant shall participate in appropriate future trip reduction programs adopted by the City for future development applications.

- The project applicant shall submit a Transportation Demand Management Plan that will 1) create a City Ranch Transportation Management Association; 2) investigate the feasibility of developing telecommuting center on site; and, 3) start a vanp demonstration program for City Ranch residents. plan will be submitted to the Planning Director pric to issuance of any certificates of occupancy for the proposed project.

- The project shall comply with all SCAQMD Rules and Regulations, including those pertaining to paving materials and architectural coatings. Specifically, use nonsolvent based, high-solid, or water based coatings on buildings where feasible.

- In order to provide additional reductions in air emissions, the following list of mitigation measures was provided by the SCAQMD. Because these measures cannot be applied to all development applications that may be submitted for the City Ranch Specific Plan, each development application will be reviewed and those measures from the list which are deemed appropriate by the Planning Director will be applied to that development application.

Minimize Construction Activity Emissions:

- Schedule construct activity during off-peak hours and require a phased-schedule of construction to even out emissions peaks.
- Remove silt by paving construction roads, sweepir streets, and washing trucks leaving construct site.

- Suspend grading operations during first and second stage smog alerts.
- Maintain construction equipment engines by keeping them tuned.
- Use low-sulfur fuel for equipment.
- Use existing power sources; avoid using temporary power generation.

Reduce Construction-Related Traffic Congestion:

- Provide rideshare and transit incentives for construction personnel.
- Configure construction parking to minimize traffic interferences.
- Minimize obstruction of through traffic lanes.
- Provide a flagperson to guide traffic properly.
- Schedule operations affecting traffic for off-peak hours.

Limit Emissions from Vehicle Trips:

- Establish telecommuting programs, alternative work schedules, and satellite work centers.
- Schedule goods movements for off-peak traffic hours.
- Provide local shuttle and regional transit systems, transit shelter, bicycle lanes, storage areas and amenities, and ensure efficient parking management.
- Provide dedicated turn lanes as appropriate.
- Work with cities/developers/citizens in the region to implement TDM goals.
- Ensure streamlined traffic synchronization.
- Provide park-and-ride facilities.
- Implement parking management at commercial facilities and other places attracting traffic.
- Provide preferential parking to high occupancy vehicles and shuttle services; and charge parking lot fees on low occupancy vehicles.

- Provide temporary roadway controls at peak-hours, such as one-way streets; and install directional traffic signs; and synchronize traffic signals to relieve congestion on surrounding streets; and manage street intersections to improve level of service.

Maximize Energy Conservation:

- Implement energy conservation measures beyond state and local requirements.
- Include energy costs in capital expenditure analysis.
- Landscape with native drought-resistant species to reduce water consumption and to provide passive solar benefits.
- Improve thermal integrity of buildings, and reduce thermal load with automated time clocks or occupant sensors.
- Introduce glazed windows, wall insulation, and efficient ventilation methods; install window-systems to reduce thermal gain and loss.
- Introduce energy efficient heating and other

appliances.

- Incorporate appropriate passive solar design.
- Ensure sealing of all buildings.
- Control mechanical systems, or equipment with time clocks or computer systems.
- Implement waste separation and recycling programs."

Limit Emissions from Architectural Coatings and Asphalt Usage:

- Nonsolvent-based coatings should be used on buildings. Solvent-based coatings, if used, should minimize solvent emissions.
- Use of high-solid or water-based coatings should be encouraged.

Implementation Procedures- The applicant shall incorporate the design measures described above into future development applications prior to submittal.

Implementation Schedule- Design guidelines for providing additional job opportunities shall be provided to the City of Palmdale Planning Department prior to final project approval The Transportation Demand Management Plan will be submitted t the Planning Director prior to issuance of certificates ot occupancy for the project.

Regulatory/Enforcement Agency- City of Palmdale Planning Department.

Issue- Noise

Impacts- Short-term Impacts - Project-related grading and construction activities would result in increased noise levels in areas adjacent to area access routes and on the project site. Construction and grading noise impacts are considered significant short-term impacts.

Long-term Impacts- Operation of the proposed project would result in increased noise levels on-site and in the surrounding area. This increase would primarily result from increased vehicular traffic and human-related activities on the site. The proposed project would generate an audible noise increase (greater than 3.0 decibels) along 25th Street West, 20th Street West, Elizabeth Lake Road (east and west of 25th Street West) and Avenue S. A potentially audible noise increase (greater than 1.0

dB(A)) could occur along Tierra Subida Avenue (north of Barrel Springs Road), Elizabeth Lake Road, (west of 10th Street West), Rayburn Road and Barrel Springs Road. As these roadways are master planned as either secondary or major highways, future off-site adjacent uses to these roadways must anticipate increased noise levels and are required, through the planning and design process, to mitigate current and future noise to acceptable levels. Significant noise level increases would result on Elizabeth Lake Road, Bridge Road and Avenue S (south of Elizabeth Lake Road). Unless site design measures are incorporated as part of the proposed project or attached as conditions of approval, significant on-site noise impacts could occur as a result of ultimate motor vehicle volumes on Avenue S and Elizabeth Lake Road and City Ranch Road.

Sub-issue- Short-term Impacts

Mitigation Measures

- Construction activities adjacent to residential areas shall take place only between the hours of 6:30 a.m. and 8:00 p.m., Monday through Saturday, as specified by the City of Palmdale Noise Ordinance.

- Grading and construction equipment shall be stored at the project site.

- Repair of construction vehicles on-site shall be restricted to the same working hours stated above, 6:30 a.m. to 8:00 p.m., Monday through Saturday.

- All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers.

- Stationary equipment shall be placed such that emitted noise is directed away from sensitive noise receivers.

- Temporary noise attenuation barriers, such as walls and/or berms, shall be placed between construction areas and sensitive noise receivers.

Implementation Procedures- Violations of the City of Palmdale Noise Ordinance and the noise mitigation measures shall be reported during grading and construction as part of regular inspections by City inspectors.

Implementation Schedule- Reports on compliance with noise mitigation measures shall be included as part of regular inspection reports during grading and construction.

Regulatory/Enforcement Agency- City of Palmdale, Planning Department

Sub-issue- Long-term Impacts

Mitigation Measures

- Reduction of intrusive noise levels in residential and school areas shall be accomplished through the incorporation of design measures or structural measures which will reduce noise levels to acceptable levels within the living or recreational portions (as defined by the City) of any lot. The measures that may be utilized to reduce noise impacts include, but are not limited to, placement of parking structures in such a manner as to act as a buffer, increasing the setbacks along the roadway, creation of landscaped berms, or construction of other barriers such as walls. The acceptable noise level CNEL which will be applied to future projects will be that level which is in place, either by ordinance, resolution or General Plan policy, at the time that future development applications are deemed complete.

- Carports and parking areas in multi-family residential areas shall be located adjacent to the heavily traveled roadways to create building setbacks and shield more sensitive uses.

- Multi-family structures shall be oriented away from adjacent roadways to insure that room arrangements, window size and placement, and balcony, roof and courtyard design minimize intrusive noise levels.

- Truck access, parking area design and air conditioning refrigeration units within commercial land uses shall be carefully designed and evaluated at more detailed levels of planning to minimize the potential for acoustic impacts to adjacent noise sensitive development.

- The design of the elementary schools shall locate administration buildings, noise-insulated structures (such as gymnasiums and auditoriums), locker facilities, parking areas and bus loading zones adjacent to roadways to buffer more sensitive uses such as classrooms and playgrounds.

Implementation Procedure- Final lot layout, pad elevations and building and noise attenuation designs shall be reviewed by a qualified acoustic consultant, retained by the applicant and approved by the Planning Department prior to approval of development applications.

Implementation Schedule- Prior to the approval of development applications, the acoustic consultant's review shall be submitted to the Planning Department. Noise attenuation structures shall be shown on the development plan prior to the approval of development applications. Noise attenuation structures and structural improvements shall be constructed prior to the issuance of building permits.

Monitoring to verify effectiveness of noise reduction measures shall demonstrate adequate noise reduction prior to the issuance of occupancy permits in affected areas.

Regulatory/Enforcement Agency- City of Palmdale Planning Department.

Issue- Aesthetics

Impacts- Development of the proposed project would transform the project site from an essentially undeveloped area to a largely suburban setting. The majority of the residential development would occur in the flatter portions of the project site along the Anaverde Valley. These areas would not be visible off-site. Following project development approximately 793 acres of the project site or more than 40% would supply visual open space opportunities by being developed as parks, golf course, open space, or natural open space. In addition, the school sites would also provide visual open space opportunities. Although the site would be substantially altered visually as a result of project development, areas of the project site that would be developed are not visually prominent. The ridgelines, the most prominent visual resources on the project site, would remain intact subsequent to project development. Therefore, in this respect, project impacts are not considered significant. However, as a result of project development, many areas of the project site would have views of the Antelope Valley Public Landfill located to the east. These views, if not properly shielded, can be considered offensive and therefore potentially significant.

Mitigation Measures

- All roadways within the project site shall be tree lined and landscaped in accordance with City of Palmdale street design requirements and the streetscape guidelines provided in the Specific Plan.

- All new and relocated utility distribution lines shall be placed underground within developed areas.

- All storage, including cartons, containers or trash, shall be shielded from view within a building or area enclosed by a masonry wall not less than six (6) feet in height. No such area shall be located within fifty (50) feet of any residential area.

- Screening shall be required when the following abut residential uses:

  a) Loading areas;

  b) Visually obtrusive above-ground utility equipment and appurtenances;

  c) Antelope Valley Public Landfill

- A screen, as referred to above, may consist of two (2) of the following types:

  a) Walls: A wall shall consist of concrete, stone, brick, tile or similar type of solid masonry material a minimum of four (4) inches thick.

  b) Berms: A berm shall be constructed of earthen materials and it shall be landscaped.

  c) Fences, solid: A solid fence shall be constructed of masonry, wood or other materials a minimum thickness of two (2) inches and it shall form an opaque screen.

  d) Landscaping: Plant materials, when used as a screen, shall consist of densely planted evergreen or deciduous plants.

- Screening established near intersections shall consider safe sight distances so that adequate visual conditions are maintained for pedestrians and drivers of motor vehicles.

- Rooftop mechanical equipment shall be fully screened from view.

- Landscaping, consisting of trees, shrubs, and/or ground cover, shall be installed and maintained subject to the following standards:

  a) Landscaping shall be required along all property lines abutting streets except where provided in landscape easements adjacent to rights-of-way. Minimum tree and shrub size shall be fifteen (15) gallon and spaced a minimum of 30 feet average.

  b) Landscaping shall be required along all property lines abutting residential uses.

  c) Planting shall be designed so as not to hinder sight distance at intersections.

  d) Permanent irrigation facilities shall be provided for landscaped areas.

  e) Landscaping shall be maintained by property owners in a neat, clean and healthy condition.

  f) Areas of native vegetation within all open space and natural open space areas are exempted from the landscape standards identified above except that they shall be maintained free of trash and debris. Fuel modification zones will be required where fire hazards warrant them.

- Residential structures shall be limited to 35 feet in height.

- The colors and textures of building materials shall blend with the landscape as set forth in Section VI, Design Guidelines of the City Ranch Specific Plan.

- All downdrains shall utilize colored concrete chosen to blend with the adjacent terrain. Downdrains shall be located in less visually prominent locations where practical. When this is not feasible, downdrains shall be aesthetically mitigated by the use of a combination of landscaping, rock, and screening, or may be diagonally angled down the slope when practical and when it will reduce the visual impact. These measures shall be designed to the satisfaction of the Director of Planning and City Engineer, and shall be reviewed for conformance at the Tentative Tract Map stage. Details of these conditions shall be indicated on the Tentative Tract Map.

- On-site water tanks shall be painted in earth tone colors.

- City Ranch Specific Plan grading standards shall be strictly adhered to, to avoid negative impacts with regard to hillside grading. The Specific Plan policies which govern grading design and may affect aesthetics of the site are as follows:

  a) Major ridgelines shall be preserved. Specifically, the Sierra Pelona and Verde Ridge ridgelines shall be preserved in their existing states with ridgetop elevations retained at natural elevations.

  b) Large contiguous open spaces shall be preserved. Specifically areas of natural slope above 45 percent which total over one-half acre in size and which are visible from off-site areas shall be preserved in their existing state. This condition occurs in Planning Areas 2, 7, 29 and 32.

  c) No construction shall be permitted in areas above 40 percent slope except for isolated pockets of steep slope which are not visually prominent, and only if required for reasons of health, safety, welfare, protection of property and for necessary public facilities. Isolated pockets of steep slope shall be defined as sloping areas up to 50 feet in height and up to 200 feet in horizontal length.

  d) Grading design and site planning design shall consider the aesthetic impacts of proposed slopes and structures as seen from off-site developed areas of the City of Palmdale, and shall employ measures to lessen the visual impacts to off-site areas if required. Criteria for mitigation required shall include visual prominence, height of slope banks, "visual length of slope banks", landscaping and erosion control.

e) Mass graded "mega pads" shall be prohibited. Design of residential subdivisions shall utilize grade breaks, curvilinear streets and small steps of grade change rather than single large slopes. The grading of the commercial site at Planning Area 3 may utilize a large graded pad design provided slope height does not exceed thirty (30) feet in height and provided the buildings are placed to provide nearly complete visual screening of slopes above twenty (20) feet in height.

f) Large manufactured slopes greater than three hundred feet in "visual length" shall be designed so as to simulate the curvature of a naturally shaped slope, or shall be blended into natural slopes by gradually adjusting the contours and slope orientation.

Implementation Procedures- Landscape plans prepared by a qualified landscape architect and building designs prepared by qualified architects, shall be reviewed by the City of Palmdale Planning Department and by the City Landscape Architect. All utility providers shall be required to underground all utility lines; all above ground facilities shall be painted in earth tones. Grading plans shall be approved by the Palmdale Department of Planning with regard to aesthetics issues. In particular, adequacy of screening in areas with direct visibility of the Antelope Valley Public Landfill shall be reviewed by the Palmdale Planning Department.

Implementation Schedule- Landscape, architectural, utility and grading plans shall be reviewed and approved prior to approval of the development applications.

Regulatory/Enforcement Agency- City of Palmdale Planning Department.

Issue- Water

Impacts- Estimated water consumption by the proposed project's combined uses is expected to be 5.22 million gallons of water per day. Approximately 1.25 million gallons per day of this amount would be required for irrigation. In order to supply and distribute the water necessary to support the proposed project's domestic, emergency and fire flow demands, the City Ranch property will need to be annexed into Los Angeles County Water Works District No. 34 (District 34) and water infrastructure extensions to and through the project site would be necessary. District 34 has indicated that they would be capable of delivering water necessary to serve the proposed project through existing and proposed supply facilities and irrigation water is available from an existing on-site non-potable water supply. However, without annexation into District 34 and the construction of necessary water infrastructure extensions, development of the proposed project would create significant impacts.

Mitigation Measures

- The City Ranch property shall be annexed into District 34.

- Following annexation into District 34, the applicant shall negotiate the provision of and financing for major infrastructure facilities (reservoir sites, transmission lines, pumping equipment, etc.) as part of a water system agreement with District 34.

- All water infrastructure extensions and improvements shall be constructed by the applicant as depicted on Figures 64 and 65 of the EIR and described in the Project Impacts subsection of the Water section of the EIR.

Interior Water Consumption Reduction Measures:

- Install a pressure regulator on all water services and maintain a building water pressure of 40 pounds per square inch or less;
- Use ultra-low flush toilets (1.5 to 1.6 gallons per flush) in all residential buildings.
- Use water-saver type shower heads.
- Use low-flow faucet fixtures.

Exterior Water Consumption Reduction Measures:

All mitigation measures listed below shall be in accordance with City standards as approved by the City Engineer and the Planning Director.

- Non-potable water shall be used for all golf course, park and community landscaping irrigation needs where available and determined feasible by the City Engineer.
    - Landscape street rights-of-way, easements, medians, project entry statements, and all manufactured slopes with drought tolerant species where feasible.
- Lawn turf shall consist of drought tolerant species, warm season grasses, hybrid fescues, or lawn substitutes (i.e., Achillea species etc.).
- Landscape easements, right-of-way medians, entry statements, and all manufactured slopes shall be landscaped with drought-tolerant species.
- Improve the soil to increase water retention. Use mulch and other inorganic and organic groundcover extensively in appropriate landscaped areas. Ground covering applied on top of soil will improve the water-holding capacity of the soil by reducing evaporation and soil compaction.
- Group plants of similar water demand to reduce over-irrigation of low-water-using plants.
- Install efficient irrigation systems that minimize runoff and evaporation and maximize the water applied to reach plant root zones.

Implementation Procedures- The applicant shall make arrangements for annexation of the project site into Los Angeles County Water Works District No. 34 and provision of water infrastructure facilities up to and through the project site. Water infrastructure plans shall be reviewed by the City of Palmdale City Engineer. The

City Landscape Architect shall review the landscape plans to ensure that drought-tolerant plants are included in the landscape plans.

Implementation Schedule- Infrastructure plans shall be approved by the Department of Public Works prior to infrastructure construction. Construction of water infrastructure up to and through the project site shall be completed prior to issuance of Certificates of Occupancy. The water conservation measures shall be included as conditions of approval of building permits and landscape plans.

Regulatory/Enforcement Agency- City of Palmdale City Engineer and City Landscape Architect.

Issue- Sewage Disposal

Impacts- In order to provide sewage service to the proposed project, a trunk sewer would need to be extended to the project site. Without implementation of the recommended infrastructure extensions, the proposed project would create significant impacts with regard to sewage infrastructure. The proposed project would generate an estimated 1,272,832 gallons of wastewater per day. This would exceed Palmdale WRP's current capacity by 1.27 mgd. The Palmdale WRP is scheduled for a 1.5 mgd expansion which will begin construction in late 1991. This and other future expansions will be able to treat the proposed project's wastewater generation.

Mitigation Measures

- All sewer infrastructure extensions and improvements depicted on Figure 66 and described in the project impacts subsection of this section of the EIR shall be constructed by the applicant. In the event that Assessment District 90-1 is not formed, and Developer constructs off-site trunk sewer lines within the San Andreas fault zone, the developer shall use state-of-the-art designs for the trunk sewer line to minimize the risk of rupture, and subsequent contamination, caused by a seismic event. Also the developer shall cause the preparation of an emergency spill response plan. The plan shall include provisions for spilled sewage retention, spill response measures, cleanup and disinfection measures, and training and funding for implementation of the spill plan. The plan shall be reviewed by the Lahontan Regional Water Quality Control Board and Sanitation District No. 20, and reviewed and approved by the Director of Public Works and the Director of Planning."

- Sizing of these lines shall be dependent upon County of Los Angeles Sanitation Districts specifications. The Districts may require over-sizing of sewer lines to accommodate future growth in the area. (The responsibility of installing relief sewers and expanding District No. 20's wastewater treatment plant (WTP) to accommodate flows generated by the proposed project and other developments belongs to County Sanitation District No. 20.)

- The Los Angeles County Sanitation Districts are empowered by the California Health and Safety Code to charge a fee (approximately $1,350.00 per dwelling unit) for the privilege of connecting to the Sanitation Districts' sewer system. The applicant will pay this connection fee.

- The applicant shall consider the installation of an on-site water reclamation plant to provide a source of non-potable water suitable for landscaping irrigation. Consideration shall be based on final siting of project components and economic environmental, and regulatory agency requirements.

Implementation Procedures- The applicant shall provide to the County Sanitati Districts, for approval, designs for the on- and off-site sewer line infrastructu extensions and improvements. Once County approval has been received, the applicant shall present the sewer plans to the City of Palmdale City Engineer to obtain necessary permits to begin construction of sewer lines.

Implementation Schedule- The applicant shall submit County Sanitation Districts approved sewer plans to the City of Palmdale City Engineer prior to the approval of grading permits. Sewer infrastructure must be completed as approved prior to the issuance of Certificates of Occupancy.

Regulatory/Enforcement Agency- City of Palmdale City Engineer, County of Los Angeles Sanitation Districts.

Issue- Communications

Impacts- In order to service the project site, telephone and cable TV infrastructure would have to be brought out to the project site via communication line extensions. According to Pacific Bell, who serve the site, telephone service can be supplied to the project site without effecting existing levels of service. Therefore, project impacts with regard to telephone service are not considered significant. Jones Intercable TV who provide cable television service to the project site, have indicated that they would be able to provide service to the project site following annexation of the si into the City of Palmdale. Project impacts with regard to cable television service a not considered significant. As a result of project construction, the AT&T-C high capacity transcontinental communication line easements on the project site may be encroached upon. Disturbance to these lines could damage the lines or cause unanticipated interruption of AT&T's long distance telephone service. This is considered a potentially significant impact.

Mitigation Measures

- No work may take place within the boundaries of the AT&T-C easements without prior written approval.

- Any lowering of lines required to maintain the proper depth of cover shall be at the developer's expense.

- A dedicated easement for access to all splices, manholes, valves and load points is required. This access shall be shown on the final plot plans and be of size and width sufficient to permit the passage of AT&T maintenance and construction vehicles.

- The developer may be required to expose the existing communications systems and place spare ducts (4 inch PVC pipe) alongside the existing syste

and cover the duct and system with concrete top protection at various locations within the development. Long runs may require the installation of pull pits and dedicated access to them.

- The AT&T-C easement boundary shall be either the common boundary between the lots, if in side or back yards, or located within a lot in such a manner as to present the minimum exposure to future building additions and other hazards. Whenever possible, the system(s) should be located under a sidewalk area with the remaining easement width in the street.

- The AT&T-C easement description may be broad and may encumber or cloud a large area of a proposed development. In these cases AT&T-C may stake the system(s) location so the developer can survey the line and provide a certified survey and legal description. AT&T-C may then amend the easement and remove the broad description to satisfy the requirement of lenders, title companies, city planning and zoning agencies, etc.

- Structures shall not be permitted in the AT&T-C easement. This includes walls, concrete slabs, buildings, patios, etc. In the event of an emergency restoration of the communications system, the removal of unauthorized structures will be at the property owner's expense.

- Other utility easements (longitudinal) shall not be dedicated or plotted within the boundary of the AT&T-C easement. All crossings to be made by water lines, sewers, gas, power, etc., need to be planned well in advance to arrange for proper clearances and protective measures. The crossing utility shall coordinate all crossings with AT&T-C prior to any construction.

- In those areas where AT&T-C consents to streets, curbs, parkways, sidewalks, parks, open space or other public use, AT&T-C shall continue to require and maintain an easement and right-of-way for all the purposes for which the easement was acquired.

- Preliminary plot plans showing the easement and the proposed uses should be submitted to AT&T-C for approval prior to the preparation and filing of final plot plans. Four (4) copies of all plot plans, preliminary and final grade plans and any other engineering data affecting the easement shall be provided to AT&T-C as soon as possible.

- The developer shall provide their pro-rata share towards the implementation of the findings of the radio communications needs study currently being prepared by the City. This may include providing a site for the construction of a radio repeater, construction of the repeater, or providing funding for the acquisition and construction of such improvements, as determined necessary by the City's Emergency Services Coordinator.

Implementation Procedure- The applicant shall provide a written schedule o grading and construction activities to AT&T-C and receive written approval to carr out grading and construction in areas of the project site containing AT&T-C easements. The approval letter shall be provided to the City Planning Department.

Implementation Schedule- The approval letter from AT&T-C shall be provided to the Planning Department prior to issuance of grading and construction permits in areas of the project site containing the AT&T-C easements.

Regulatory/Enforcement Agency- City of Palmdale Planning Department.

Issue- Schools

Impacts- Development of the proposed project would increase the number of school children in all three school districts serving the project site. Based upon student generation factors provided by the individual school districts, a total of 4,544 students are estimated to be generated by this project. The proposed project includes the designation of four elementary school sites, three located in Westside Union School District and one in the Palmdale School District. In the Palmdale District portion of the project site, it is expected that the anticipated 431 elementary students generated by the proposed project could be accommodated in the proposed on-site school. The 114 6-8th grade students in Palmdale District would attend Juniper Intermediate School which is already 175 students over capacity. Project development would, therefore, have a significant impact with regard to intermediate schools in the Palmdale School District. In the Westside Union District area of the site, the 1,829 elementary school students generated by the proposed project could be accommodated in the three proposed on-site elementary schools in that district. An estimated 610 6-8th grade students would most likely attend the proposed new Hill View Intermediate School or other off-site intermediate schools. It is not certain at this time whether or not there will be remaining capacity in the Westside Union District intermediate schools at the time of the proposed project completion. Therefore, project impacts with regard to the Westside Union School District are also considered potentially significant. The 1,560 9-12th grade students generated by the proposed project are considered to create a significant impact on the Antelope Valley Union High School District because of their contribution to the need for two additional high schools in the Highland High School attendance area of which the project site is a part.

Mitigation Measures

In order to reduce the significant and potentially significant adverse impacts with regard to schools to a level of "not significant", the following measures are required.

(a) Palmdale School District: The developer shall comply with the terms of the agreement, dated October 8, 1990, between the developer and the Palmdale School District as mitigation for impacts caused by development of the project on the Palmdale School District. The terms of that agreement are as follows:

(i) Participate in the Mello Roos Community Facilities District created by the Palmdale School District for financing school construction.

(b) Westside Union School District: The developer shall comply with the terms of the agreement, dated January 22, 1992, between the developer and the Westside Union School District as mitigation for impacts caused by development of the project on the Westside Union School District. The terms of that agreement are as follows:

(i) refer to agreement attached to this Exhibit.

(c) Antelope Valley Union High School District:

The Developer shall provide the following mitigation to the District, in order to provide its contribution to the District's fifty (50) percent share of funding a new high school to serve the City Ranch Specific Plan area, pursuant to Government Code Section 65995 and Education Code Section 17700 et. seq. (School Facility Funding Law):

(i) Mello-Roos Development Fees.

The applicant shall participate in a Mello-Roos Community Facilities District which will fund up to 50% of the cost of that portion of the school necessary to serve the City Ranch project based upon a student generation factor of .2 pupils per single family dwelling. Only residentially zoned property for which a building permit has been issued will be subject to the annual tax. The District may increase this annual tax by no more than 2% in each year. In lieu of paying an annual special tax, a property owner may prepay the annual special tax at the time a building permit is issued on the property. A fee equal to $1.30 per square foot of habitable residential construction shall serve to prepay the special tax. This fee shall be subject to an annual adjustment pursuant to increases or decreases in the School Construction Cost Index of the Office of Local Assistance with January 1, 1992 as the base. This prepayment fee shall be reduced to $1.20 per square foot if the school site is not located within Planning Area 3A of the Ritter Ranch Specific Plan.

(ii) Other Development Fees.

In addition to the fees specified in subparagraph (i) above, Developer shall pay to the District a fee of twenty-six cents ($.26) per gross leasable

square foot of commercial construction prior t the issuance of each commercial building permi All such fees shall be subject to ann adjustment pursuant to increases or decreases the School Construction Cost Index of the Office of Local Assistance with January 1, 1992 as the base.

(iii) Site Preparation Expenses.

In the event that a high school is constructed in Planning Area 3A of the Ritter Ranch Specific Plan, and the site preparation work for a school to be located on that site, including provision of access to Elizabeth Lake Road and utilities, exceeds the amount of $4,650,000, the Developer shall pay the District fifty (50) percent of the District's costs for such work over $4,650,000, not to exceed a total of $350,000.

Implementation Procedures- The applicant shall pay fees to the applicable school districts and shall dedicate sites for four elementary schools and construct new and/or interim school facilities as determined necessary by all three school districts. The applicant shall provide a letter from each school district to the City of Palmdale Planning Department confirming conformance with district requirements.

Implementation Schedule- The elementary school sites shall be approved by the school districts and the City Planning Department. The developer shall then dedicate the sites approved by the school districts prior to approval of appropriate tract maps. The applicant shall pay fees to the appropriate school district at the commencement of construction of each building phase. The applicant shall pay its pro rata share of funds for an additional high school site and related facilities as determined by the Antelope Valley Union High School District.

Regulatory/Enforcement Agency- Palmdale and Westside Union School Districts, Antelope Valley Union High School District and the City of Palmdale Planning Department.

*Issue- **Parks and Recreation***

Impacts- The City Ranch Specific Plan designates six park sites totaling 159.3 acres (38.3 acres of which are buildable), a 216-acre golf course, and approximately 404 acres of natural open space. The Specific Plan also includes off-street bicycle paths and a 3.5 mile looped combined pedestrian/hiking/mountain biking trail and vista point opportunities. According to the Specific Plan, all six parks sites shall be dedicated to the City of Palmdale for parkland credit. The City Department of Parks and Recreation standards requires a total of 88.62 acres of park space to be developed as part of proposed project development. The proposed project park acreage exceeds

this standard by over 70 acres. However, several of the park sites contain development constraints and may not, therefore, qualify for full parkland dedication requirement credit. Impacts regarding to parks and recreation are considered potentially significant.

Mitigation Measures

- The relocation of the Northside Trail shall be approved by the County Department of Parks and Recreation.

- Trails shall be designed to connect existing and proposed trails on adjacent parcels.

- Design of Planning Areas located along the bicycle and hiking trails shall incorporate extensions and connections to the trail system. Each Planning Area adjacent to designated trails shall provide a minimum of two (2) connections to these trails at safe locations. Said connections shall be indicated on Tentative Tract Maps filed for all residential and commercial Planning Areas containing trails. This shall include Planning Areas 1, 3, 4, 9, 12, 14, 15, 16, 19A, 20, 21, 23, 24, 27, 28A, 30A, and 33.

- The configuration, trail widths and clear areas adjacent to the trails must be designed to allow Sheriff and emergency vehicular access, but shall prohibit other non-emergency motor vehicle use.

- As set forth in the Development Standards of the City Ranch Specific Plan, the development of recreational uses are subject to the Site Plan Review provisions.

- Drought tolerant and native plant materials shall be used for park and golf course landscaping.

- Fertilizer and pesticide use shall be restricted in park and golf course areas.

  - **Exhibit 16 of the Final Specific Plan will be amended to include an equestrian staging area in Planning Area 1, and if feasible, an equestrian staging area in Planning Area 18, and an equestrian trail through the powerline easement. Trails planned in the City Ranch Specific Plan will be coordinated with those planned for the Ritter Ranch Specific Plan. Future developments adjacent to this project will be required to coordinate with the trails shown on the trails plan adopted for City Ranch.**

Implementation Procedures- The applicant shall submit park site plans indicating power line easements and seismic restricted use areas to the Department of Parks and Recreation for an evaluation of parkland dedication credit. If parkland dedication requirements are not fully satisfied, additional parkland, park fees, or improvements in-lieu-of fees shall be provided by the applicant to the satisfaction of the Department of Parks and Recreation. A preferred alignment plan for the relocation of the Northside Trail shall be submitted to the County of Los Angeles Department of Parks and Recreation for approval. A final trails plan for the entire project site shall be submitted to the City of Palmdale Planning Department for review and approval. The approved trails plan shall be translated into trail easements indicated on the Tentative Tract Maps for portions of Planning Areas containing trails and submitted to the Planning Department and County of Los

Angeles Sheriff's Department for review and or approval. Landscape pla developed for parks and the golf course shall be reviewed by the City of Palm Planning Department.

Implementation Schedule- The City of Palmdale Planning Department shall report to the City of Palmdale Planning Commission regarding fulfillment of parkland dedication requirements prior to approval of the Specific Plan and regarding compliance with parks and recreation mitigation prior to tentative tract approvals in residential and commercial planning areas containing trails. Trails shall be built prior to issuance of occupancy permits in residential and commercial planning areas containing or adjacent to trails.

Regulatory/Enforcement Agency- City of Palmdale Department of Parks and Recreation, County of Los Angeles Department of Parks and Recreation, Los Angeles County Sheriff's Department, and City of Palmdale Planning Department.

Issue- Archaeology

Impacts- Development of the proposed project would disturb two significant archaeological sites and one significant historical site located on the project site. This is considered a significant adverse impact.

Mitigation Measures

- All work will be done under the supervision of a qualified archaeologist.
- Excavation of 100 percent of Loci A through C as described in the Phase II Archaeological Assessment (July, 1991) shall be conducted at LAn-949. It is estimated that approximately 500 cubic meters of cultural deposit will have to be removed. An excavation plan detailing strategy and research goals shall be submitted to the City of Palmdale for review prior to excavation activities.
- At least a 4 x 4 meter square unit at the approximate center of the deposit at LAn-1756 and at LAn-1757 shall be excavated.
- If preservation of the site at LAn-1758H is not feasible, a Phase III Salvage Program shall be conducted. The Phase III Salvage Program shall include full excavation of the stone enclosure and machine excavation of six 4 x 4 meter units placed in a pattern across the site. All backdirt from the units shall be screened through 1/4-inch mesh.
- In the event that future development would adversely affect the cupule boulders (LAn-1767 and LAn-1768) or the bedrock milling feature (LAn-1772), it is recommended that they be carefully removed and relocated elsewhere o the subject property. An archaeologist shall be consulted to arrange fo relocation of these boulders if removal is necessary.

- The location of significant historic and archaeological resources shall be recorded with the Archaeological Information Center at the UCLA.

- Significant historic and archaeological materials recovered in the field shall be delivered to the collection an appropriate archaeological repository.

  - The following sites which were augered require additional testing for subsurface deposits: LAn-1746, LAn-1747, LAn-1748, LAn-1749, LAn-1750, LAn-1752, LAn-1753, LAn-1756, LAn-1772, LAn-1774, LAn-1767, LAn-1768. At least one additional 1x1 meter test units need to be excavated at each of these sites, within site areas with the greatest densities of surface artifacts. These excavations are important to determine whether auger testing has missed subsurface deposits and to get a clearer, vertically-controlled picture of such deposits and their depositional context.

    The following important petroglyph, bedrock mortar, and rock ring sites were not subject to any subsurface testing. They need to be tested through excavation of a minimum of one 1x1 meeter units utilizing 1/8" screen in the immediate vicinity of these features: LAn-1767, LAn-1768, LAn-1759, LAn-1760, LAn-1761, LAn-1762, LAn-1763, LAn-1765, LAn-1766, LAn-1769, LAn-1770, LAn-1771. The "hunting blind" sites are important structures whose function needs to be determined through further testing.

    The important apparent habitation site, LAn-949, should be avoided through realignment of the proposed roadway. However, in the event that avoidance is not possible, salvage of the site shall be performed in accordance with an excavation plan. Excavation of 100 percent of Loci A through C as described in the Phase II Archaeological Assessment (July, 1991) shall be conducted at LAn-949. It is estimated that approximately 500 cubic meters of cultural deposit will have to be removed. The excavation plan detailing strategy and research goals shall be submitted to the City of Palmdale for review and approval prior to excavation activities. In addition, this excavation plan shall contain a subregional analysis of the archaeological sites within and immediately adjacent to City Ranch to provide a basis for significance determinations. As part of the subregional analysis, a research design that would set standards for future work in the vicinity of the City Ranch project shall be proposed. The subregional analysis of the archaeological sites may be prepared in cooperation with other adjacent property owners, as approved by the Planning Director.

    Those sites, not listed above, which contained surface artifacts but were only auger tested shall be tested with at least one standard test unit per site. The testing program shall be submitted to the City Planning Department for review and approval prior to commencement. In addition, untested cupule sites, rock rings and hunting blinds shall also be tested in this manner. Any additional mitigation recommended as a result of the additional testing shall be required as mitigation measures for initial and subsequent development applications, as appropriate.

Relocation of cupule boulders must be done under th direction of a qualified archaeologist who will giv careful attention to orientation of the boulders. boulders shall be moved prior to site disturbance their immediate vicinity to a location approved b Planning Director. Since context will be lost, shall be relocated to a repository approved by Planning Director where they can be used fo educational purposes. Representative artifacts shoul be displayed at this repository.

The work described above shall be performed by a qualified archaeologist, retained by the applicant and approved by the Planning Director. Because the introduction of residents into the area will result in the degradation of archaeological sites, required testing shall be completed and approved by the Planning Director prior to recordation of the first parcel map or tract map for the project."

Implementation Procedures- An archaeologist, approved by the City of Palmdale Planning Department, shall perform the additional testing required in the mitigation measures and carry out any excavation or salvage as indicated by that testing or as described in the mitigation measures in Section 5.25.3. All significant historic and archaeological site locations shall be recorded with the Archaeological Information Center at UCLA. If relocation of resources is necessary, the archaeologist shall monitor the relocation. The artifacts will be provided to an approved repository pursuant to the mitigation measure.

Implementation Schedule- The archaeological testing shall be completed and the findings reviewed by the City of Palmda Planning Department prior to recordation of any subdivision for the project. Excavations will be completed and prior o the start of grading on the property. Any relocatio materials shall be scheduled and monitored by archaeologist, who shall also inform the Planning Department before the relocation is initiated. Results of the relocation efforts will be reported to the Planning Department within thirty days of completion of the relocation. Recordation of significant archaeological sites and delivery of significant materials recovered to appropriate repository shall be carried out as sites and materials are identified and recovered."

Regulatory/Enforcement Agency- City of Palmdale Planning Department.

Issue- Paleontology

Impacts- Direct significant adverse impacts to paleontologic resources would result from ground-disturbing activities associated with development of the City Ranch Specific Plan. Grading activities in areas containing rock units of high paleontological importance have the potential to disturb or bury fossil sites, as well as fossiliferous and potentially fossiliferous rocks, and would result in the loss of fossil specimens and associated geologic data. In addition, fossiliferous rock in these areas would become permanently unavailable for future investigation of fossil remains. Potentially significant indirect adverse impacts could occur as a result of collection of fossil remains by construction personnel, rock hounds, and amateur and commercial collectors. This could result in the loss of specimens and data.

Mitigation Measures

- A paleontologist, approved by the City of Palmdale Planning Departm shall submit a program for paleontologic resource recovery and preserva to the City of Palmdale Planning Department for approval prior to issuanc the development permit. Prior to initiation of construction, the paleontologist shall conduct a field survey of exposures of the late Miocene

fossil leaf-bearing rock unit on the project site to document locations of previously unrecorded fossil sites. All sites shall be plotted on a topographic map of the project site. Representative plant fossils shall be collected from each site. The paleontologist shall excavate those sites, including any previously recorded sites, having the highest potential for yielding comparatively well preserved and taxonomically diverse plant assemblages. If necessary, the applicant will supply a backhoe and operator to further expose a fossil site for hand excavation.

- The paleontologist shall collect rock samples from selected locations (including recorded fossil sites) and horizons (particularly paleosols and other fine-grained rocks) in the rock units of high and unknown paleontologic importance to process for smaller fossil remains. Each sample shall contain up to 1,000 pounds of rock. If fossil remains are found during processing, up to 5,000 pounds of rock shall be collected from the fossil-bearing rock unit and processed.

- Following completion of these tasks, the paleontologist shall prepare a report summarizing the results of the preconstruction phase of the mitigation program presenting an inventory and describing the significance of any accessioned fossil remains. The report shall be submitted to the City of Palmdale Planning Department.

- During the construction phase, the paleontologist shall monitor grading and any other ground-disturbing activity in areas underlain by rock units of high paleontologic importance on a full-time basis, moderate and unknown importance on a half-time basis and low importance on a quarter-time basis as identified in the pre-construction field survey. If more than 25,000 cubic yards of rock are moved per day, the level of monitoring effort shall be doubled. Monitoring shall consist of visually inspecting fresh exposures of rock for larger fossil remains and, where appropriate, dry screening excavated spoils for smaller vertebrate remains. Grading in areas underlain by rock units of no importance shall not be monitored except in the immediate vicinity of a fossil site.

- If larger fossil remains are uncovered by ground disturbance, the paleontologist shall divert the ground-disturbing activity away from the fossil site until the remains have been removed and a 1,000 pound rock sample has been collected. Grading of the fossil-bearing bed in the immediate vicinity of the site shall be monitored on a full-time basis. If sufficient sites are discovered in any rock unit during construction, earth-moving activities in the entire area underlain by this rock unit shall be monitored on a full-time basis.

- If fossil remains are found during grading by construction crews (including in areas underlain by rock units of low paleontologic importance), grading

activities on the fossil site shall be stopped and the paleontologist shall be called to the site immediately to remove the remains. If sufficient sites discovered, grading activities at the fossil site shall be submitted on a full time basis.

- During grading, the paleontologist shall collect 1,000-pound rock samples from selected locations and stratigraphic levels (particularly paleosols or other fine-grained rocks) to process for small mammal and other microvertebrate remains. Additional 5,000-pound rock samples shall be collected from any productive sampling site, including any site discovered as a result of dry screening by the monitor, for processing. The grading contractor may be needed to assist in removing rock samples to an adjacent location for initial processing. Sampling sites shall be documented on the topographic map of the plan area.

- Both before and after construction, the paleontologist shall conduct the initial processing (wet and/or dry screening) of the rock samples for small age-diagnostic mammal remains and other microvertebrate specimens while on-site. The resulting concentrate shall be transported to a museum facility. If sufficient fossil sites and remains are found in a rock of unknown paleontological importance, this unit shall be reclassified as moderately or highly important. If no remains are recovered, this rock unit shall be reclassified as being of low paleontological importance.

- During grading, the paleontologist shall collect all identifiable vertebrate and plant remains. All fossil sites shall be plotted on the topographic map of the project site.

- All fossil remains collected before and during construction shall be prepared, identified, catalogued, curated and accessioned into the collection of a designated repository, such as the Vertebrate Paleontology Section of the Natural History Museum of Los Angeles County (LACM). Accompanying notes, maps, and photographs shall also be filed at the repository.

- Following completion of these tasks, the paleontologist shall prepare a report summarizing the results of the construction phase of the mitigation program and presenting an inventory and describing the significance of any accessioned fossil remains. The report shall be submitted to the City of Palmdale Planning Department and shall signify completion of the paleontologic mitigation program. Because development of the proposed project is phased, separate reports may be required to summarize mitigation for certain fossil sites.

- Subsequent to construction, the applicant shall allow future access to and investigation and excavation of these exposed rocks, particularly at any fossil site set aside from development, by qualified paleontologists approved by t

LACM to ensure fossil remains are recovered. (If paleontologists do not recover these fossil remains, the fossils and associated scientific data might be lost to weathering and erosion or to unauthorized fossil collecting.)

Implementation Procedures- The applicant shall retain the services of a City-approved paleontologist to conduct a field survey of the project site to identify previously unrecorded fossil sites. The paleontologist shall plot the fossil site locations, both vertebrate and plant, on a topographic map of the project site and shall report to the Planning Department those sites to be excavated and those areas of the project site to be monitored during grading. The paleontologist shall recommend which portions of the site need to be monitored full, half or quarter time. During grading, the paleontologist shall be empowered to stop grading if fossils are uncovered. The paleontologist shall report to the Planning Department results of monitoring activities, including number of hours present on-site, sites monitored, whether sites were monitored on a full- or part-time basis, the number and types of fossils found, amount of material graded or disturbed, methods used to recover fossils, any occurrence of having to stop grading activities and the repository to which recovered fossils are being placed.

Implementation Schedule- Prior to grading, the paleontologist shall complete a field survey, recommend sites to be excavated, and identify areas of the project site to be monitored during grading. During grading, the paleontologist shall monitor and report findings to the Planning Department on an on-going basis. All paleontological resources shall be provided to an appropriate repository as they are recovered. The Final Paleontology Reports shall be submitted to the Planning Department no later than six months following final grading in affected planning areas.

Regulatory/Enforcement Agency- City of Palmdale Planning Department

Issue- Electromagnetic Radiation

Impacts- The proximity of the high-tension electric lines to proposed residential Planning Areas 16, 17 and 19A and elementary school site (Planning Area 19B), could result in potential health risks to residents and users within these planning areas. Health risks associated with active recreational activity in close proximity to high-tension electric lines are unknown. Active recreational uses such as softball and soccer fields are proposed within the power line easements in Planning Area 18. These impacts are considered potentially significant. Noise from transmission lines is expected to affect areas outside high-tension transmission line easements. Depending upon atmospheric conditions, this noise may be a moderate to severe nuisance.

Mitigation Measures

- Residential areas abutting transmission line rights-of-way shall be separated by continuous six-foot-high non-conductive fencing.

- In accordance with California Department of Real Estate disclosure format and procedures, all potential buyers of real property within City Ranch within 500-feet of an easement containing a 220 kV or higher voltage electric transmission line shall be notified of the proximity to the easement and conditions regarding proximity.

- Active recreational uses shall be prohibited within the 220 kV and 500 kV power line easements in Planning Area 18.

- All residential units constructed along the perimeter of high-tension power line easements shall use double glazed windows on all sides that face these lines to minimize noise effects generated by the electrical transmission lines.

- The location of the proposed elementary school sites shall reflect the recommended guidelines of the California Department of Education regarding buffer zones between school sites locations and high-voltage power lines.

Implementation Procedures- The applicant shall prepare for Planning Department approval, a buyer information package indicating the location of high-voltage electrical transmission lines.

Implementation Schedule- The City of Palmdale Planning Department shall show evidence of compliance with the mitigation measure outlined above, with regard to the high-voltage power line easements, before approval of appropriate tract maps. The City-approved buyer information package shall be supplied to all prospective buyers of property within 500 feet of 220 kV or higher voltage electric transmission lines. The applicant shall provide to the City Planning Department signed disclosure statements from prospective buyers of real property within 500 feet of any easement containing a 220 kV or higher voltage electric transmission line, prior to finalization of any purchase agreements.

Regulatory/Enforcement Agency- City of Palmdale Planning Department.

Issue- Hazardous/Toxic Materials

Impacts- Without proper remediation and clean up procedures, hazardous materials found on the project site including partially filled jugs of chlordane, partially filled cans of paint, paint thinner, herbicides, roofing tar and DDT concentrate, septic systems and gasoline and oil contaminated soils could create health risks to project

construction workers and potential site residents. Any exposure of hazardous materials to a human population may be considered significant.

Mitigation Measures

- Septic systems shall be abandoned prior to grading operations in areas where they are located. Septic systems shall be cleaned and abandoned in accordance with Title 28, Chapter 11, Section 1119 of The Los Angeles County Health and Safety Code. A permit for this action will be required by the Los Angeles County Department of Public Works Building and Safety Division in Lancaster.

- Soil testing shall be conducted in all areas where hazardous/toxic materials were found. Soils contaminated with hydrocarbons (gas and oil spillage), specifically at the former underground storage tank site (Location A) and soil stained area (Location D) on the east side of the ranch compound, shall be removed and disposed of at a facility authorized to accept hazardous waste from the site prior to grading operations within the specified area. Soil removal shall be supervised by a qualified hazardous waste scientist. The final quantity of soil to be removed shall be determined. Contaminated soil shall be transported and disposed of in accordance with all applicable hazardous waste disposal regulations. A manifest, a formal document verifying receipt by an authorized hazardous waste facility of soils contaminated with hydrocarbons or other hazardous wastes shall be provided to the County Department of Public Works. A closure report verifying complete removal of contaminants from the site shall be provided to the County Department of Public Works. Both shall be approved prior to the acceptance of dedication.

- An additional study determining the lateral and vertical extent of soil contamination and the possible impact on groundwater shall be prepared for the former site of the underground fuel storage tank.

- Empty or partially full containers of pesticides, herbicides, and veterinary supplies (Locations B and C) shall be reviewed by a qualified hazardous waste scientist to determine which are considered hazardous as determined by state, county, or local statutes. Hazardous materials and hazardous waste shall be disposed of in accordance with all applicable hazardous waste disposal regulations.

- Hazardous materials in the disposal area at Location G, **Figure 74** of the EIR shall be analyzed for chemical composition, removed and taken to a facility licensed to accept such material. Soil samples shall be examined in this area to ascertain whether soil has been impacted by manifested disposed contaminants. If the other disposal areas are excavated, a manifest for the

contaminated soils and a site closure report shall be provided to the County Public Works Department prior to the acceptance of dedication.

- Wells on the property not used for irrigation or other non-potable uses shall be abandoned and sealed to eliminate the potential for degradation of ground water beneath the site in accordance with the requirements set forth in California Department of Water Resources Bulletin 71-88. Well destruction will require permitting through the Los Angeles County Department of Health Services, and possibly the local water agency.

- Groundwater testing for hydrocarbons shall be conducted prior to the construction of any future water wells within 1,000 feet of Location A (the abandoned subsurface gasoline storage tank, **Figure 74** of the EIR). If pollutant levels in exceedance of levels set by the California Health Services Department (CHSD) are discovered in the groundwater, those locations shall not be used as well sites. (Present CHSD pollutant level thresholds include 0.7 parts per billion (ppb) benzene, 640 ppb ethyl benzene, 100 ppb toluene, and 680 ppb zylene.)

- Refuse from disposal areas E and F (**Figure 74** of the EIR) shall be collected and disposed of at an appropriate disposal site.

- The storage building near Location B which was not inspected on the site investigation and whose contents are, therefore, unknown, shall be opened and evaluated by a qualified site investigator. The contents of the building shall be inventoried and analyzed for potential health hazards. If hazardous materials are identified, appropriate remediation measures shall be implemented. All local, county, state and federal regulations shall be applied to ensure proper disposal of any hazardous material that may be found. If hazardous materials are found at this location, a manifest and a site closure report shall be provided to the County Department of Public Works prior to the issuance of a building permit.

Implementation Procedures- The applicant shall retain the services of a certified hazardous materials consultant to remove the hazardous materials from the locations identified on the project site. The consultant shall coordinate clean up with the City, County, State and Federal agencies responsible for clean-up of hazardous materials. The consultant shall report to the City Planning Department on progress of the clean-up of the site including information as to what non-City agency requirements were fulfilled.

Implementation Schedule- Hazardous materials shall be removed from the site prior to the issuance of grading permits in affected areas of the site.

Regulatory/Enforcement Agency- City of Palmdale Planning Department. Los Angeles County Public Works Department, Los Angeles County Department of Health Services.

Issue- Antelope Valley Public Landfill

Impacts- Development of the proposed project would bring developed uses up to the boundary of the Antelope Valley Public Landfill's proposed expansion area. This area would abut a 1,270 foot length of Planning Area 13 (golf course) north of City Ranch Road. A portion of residential Planning Area 8 would be within 1,000 feet of the landfill expansion boundary. This is considered a significant adverse impact.

Mitigation Measures

- The applicant shall keep all residential development a minimum of 1,000 feet west of the proposed landfill expansion boundary in accordance with the City of Palmdale's proposed Solid Waste Management Plan. The southeast corner of Planning Area 8 would need to be in the landfill buffer area and kept free of residential development (**Figure 77** of the EIR). Prior to development occurring within Planning Area 8, a permanent easement which includes land within 1,000 feet of the northwest and southwest corners of the landfill expansion area shall be recorded. Within this easement, the construction of residences shall be prohibited.

- To minimize dust and visual impacts, the applicant shall provide a landscape buffer of mature vegetation along the common boundary line with the Antelope Valley Public Landfill and along the boundary of Planning Area 8 or any other residential properties that may be affected.

- In accordance with California Department of Real Estate disclosure format and procedures, all potential buyers purchasing real estate in City Ranch located within 1,200 feet of the landfill boundary shall be notified of that circumstance.

Implementation Procedures- Tract maps for Planning Area 8 shall be designed to keep residential structures out of the area within 1,000 feet of the Antelope Valley Public Landfill property line. Landscape plans shall be reviewed by the Planning Department with regard to the adequacy of screening in areas from which the Antelope Valley Public Dump would be visible. The applicant shall prepare a buyer information package indicating the location of the Antelope Valley Public Landfill and areas of the site where the landfill would be visible.

Implementation Schedule- Tentative tract maps for tracts within 1,000 feet of the Antelope Valley Public Landfill boundary shall be submitted by the applicant to the Los Angeles County Department of Health Services for review prior to approval by

the Palmdale Planning Department. Landscape plans shall be reviewed by the Ci Landscape Architect with regard to adequacy of screening against the Antelo- Valley Public Landfill prior to issuance of building permits for affected lots. The C approved buyer information package shall be supplied by the applicant to all prospective owners of property within 1,200 feet of the Antelope Valley Public Landfill. Prior to the finalization of any purchase agreements for property within 1,200 feet of the Antelope Valley Public Landfill, the applicant shall provide to the City Planning Department signed disclosure statements from prospective buyers of such property.

Regulatory/Enforcement Agency- City of Palmdale Planning Department and the Los Angeles County Department of Health Services.

APPENDICES

APPENDIX A

Notice of Preparation

City of Palmdale
Planning Department
712 East Palmdale Boulevard
Palmdale, California 93550

CALIFORNIA ENVIRONMENTAL QUALITY ACT

NOTICE OF PREPARATION

TO: [Responsible or Trustee Agency]

_____

_____

_____

FROM: [Lead City Agency]

Planning Department

712 East Palmdale Boulevard

Palmdale, California 93550

SUBJECT: NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT

Project Title: City Ranch Specific Plan Case No. _____

Project Applicant (if any): Kaufman & Broad Land Company of Southern California, Inc.

The City of Palmdale will be the Lead Agency and will prepare an environmental impact report for the project identified above. We need to know the views of your agency as to the scope and content of the environmental information which is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency will need to use the EIR prepared by this City when considering your permit or other approval for the project.

The project description, location and the probable environmental effects are contained in the attached materials.

☒ A copy of the Initial Study is attached.

☐ A copy of the Initial Study is not attached.

Because of the time limits mandated by state law, your response must be sent at the earliest possible date but not later than 30 days after receipt of this notice.

Please send your response to _____ at the address of the lead City Agency as shown above. We will need the name of a contact person in your agency.

NOTE: If the responsible or trustee agency is a state agency, a copy of this form must be sent to the State Clearinghouse in the Office of Planning and Research, 1400 Tenth Street, Sacramento, California 95814. A state identification number will be issued by the Clearinghouse and should be thereafter referenced on all correspondences regarding the project, specifically on the title page of the draft and final EIR and on the Notice of Determination.

Signature: _____ Date: _____

tle: _____ Telephone No. (805) 272-9673

City of Palmdale
Planning Department
712 East Palmdale Boulevard
Palmdale, California 93550

CALIFORNIA ENVIRONMENTAL QUALITY ACT

INITIAL STUDY AND CHECKLIST

Lead City Agency | Date

Planning Department

Project Title/No. | Case No.

City Ranch Specific Plan

Project Description: The City Ranch Specific Plan is a Land Use Regulatory Plan and Master Plan Development. The project site consists approximately 1,985 acres proposed for residential (1,110.1 acres commercial (14.7 acres), open space/parkland/schools (823.4 acres) and roadways (36.8 acres). The residential uses will include 3,691 single-family detached units, 962 single-family attached units and 547 multi-family units.

Project Location: Approximately 1,985 acres approximately two (2) miles west of the Antelope Valley Freeway (SR14) south of Elizabeth Lake Road.

Existing Zoning Specific Plan Zone	Max. Density Zoning 3.0 du/acre	
Planned Land Use & Zone City Ranch Specific Plan	Max. Density Plan 3.0 du/acre	[X] Does conform to Plan [ ] Does not conform to Plan
Plan Density Range 3.0 du/acre	Project Density 2.62 du/acre (gross)	

DETERMINATION (to be completed by Lead City Agency)
On the basis of the attached initial study checklist and evaluation:

NEGATIVE DECLARATION [ ] I find the proposed project could not have a significant effect on the environment, and a Negative Declaration will be prepared.

MITIGATED NEGATIVE DECLARATION [ ] I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described on an attached sheet have been added to the project. A Mitigated Negative Declaration will be prepared. (See attached condition(s).)

ENVIRONMENTAL IMPACT REPORT [Y] I find the proposed project may have a significant effect on the environment, and an Environmental Impact Report is required.

Signature: _____ Title: _____

INITIAL STUDY CHECKLIST (to be completed by Lead City Agency)

BACKGROUND

Proponent Name
Kaufman & Broad Land Company of Southern California, Inc.
Antelope Valley Division

Phone
(213) 312-1200

Proponent Address
11601 Wilshire Boulevard, 11th Floor
Los Angeles, California 900025-1748

Contact
Greg McWilliams

Agency Requiring Checklist

Date Submitted

Proposal Name (if applicable)

ENVIRONMENTAL IMPACTS (Explanations of all "yes" and "maybe" answers are required to be attached on separate sheets.)

	YES	MAYBE	NO
1. EARTH. Will the proposal result in:			
a. Unstable earth conditions or in changes in geologic substructure?....	x		
b. Disruptions, displacements, compaction or overcovering of the soil?	x		
c. Change in topography or ground surface relief features?.....	x		
d. The destruction, covering or modification of any unique geologic or physical features?.....		x	
e. Any increase in wind or water erosion of soils, either on or off the site?.....		x	
f. Changes in deposition or erosion of beach sands, or changes in siltation, deposition or erosion which may modify the channel of a river or stream or the bed of the ocean or any bay, inlet or lake?.....			x
g. Exposure of people or property to geologic hazards such as earthquakes, landslides, mudslides, ground failure, or similar hazards?...	x		
AIR. Will the proposal result in:			
a. Air emissions or deterioration of ambient air quality?.....	x		
b. The creation of objectionable odors?.....			x
c. Alteration of air movement, moisture or temperature, or any change in climate, either locally or regionally?.....			x
d. Expose the project residents to severe air pollution conditions?.....		x	
3. WATER. Will the proposal result in:			
a. Changes in currents, or the course or direction of water movements, in either marine or fresh waters?.....		x	
b. Changes in absorption rates, drainage patterns, or the rate and amounts of surface water runoff:?.....		x	
c. Alterations to the course or flow of flood waters?.....		x	
d. Change in the amount of surface water in any water body?.....		x	
e. Discharge into surface waters, or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen or turbidity?.....			x
f. Alteration of the direction or rate of flow of ground waters?.....			x
g. Change in the quantity of ground waters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations?.....		x	
h. Reduction in the amount of water otherwise available for public water supplies?.....		x	
i. Exposure of people or property to water related hazards such as flooding or tidal waves?.....		x	
j. Changes in the temperature, flow, or chemical content of surface thermal springs?.....			x

(Cont.)

	YES	MAYBE	NO
4. PLANT LIFE. Will the proposal result in:			
a. Change in the diversity of species, or number of any species of plants (including trees, shrubs, grass, crops and aquatic plants)?	X		
b. Reduction of the numbers of any unique, rare or endangered species of plants?		X	
c. Introduction of new species of plants into an area, or is a barrier to the normal replenishment of existing species?			X
d. Reduction in acreage of any agricultural crop?		X	
5. ANIMAL LIFE. Will the proposal result in:			
a. Change in the diversity of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms or insects)?		X	
b. Reduction of the numbers of any unique, rare or endangered species of animals?		X	
c. Introduction of new species of animals into an area, or result in a barrier to the migration or movement of animals?			X
d. Deterioration to existing fish or wildlife habitat?		X	
6. NOISE. Will the proposal result in:			
a. Increases in existing noise levels?	X		
b. Exposure of people to severe noise levels?		X	
7. LIGHT AND GLARE. Will the proposal			
a. Produce new light or glare from street lights or other sources?	X		
b. Reduce access to sunlight of adjacent properties due to shade and shadow?		X	
8. LAND USE. Will the proposal result in an alteration of the present or planned land use of an area?	X		
9. NATURAL RESOURCES. Will the proposal result in:			
a. Increase in the rate of use of any natural resources?			
b. Depletion of any non-renewable natural resource?			
10. RISK OF UPSET. Will the proposal involve:			
a. A risk of an explosion or the release of hazardous substances (including, but not limited to, oil, pesticides, chemicals or radiation) in the event of an accident or upset conditions?			X
b. Possible interference with an emergency response plan or an emergency evacuation plan?		X	
11. POPULATION. Will the proposal result in:			
a. The relocation of any persons because of the effects upon housing, commercial or industrial facilities?			X
b. Change in the distribution, density or growth rate of the human population of an area?	X		
12. HOUSING. Will the proposal:			
a. Affect existing housing, or create a demand for additional housing?			X
b. Have an impact on the available rental housing in the community?			X
c. Result in demolition, relocation or remodeling of residential, commercial, or industrial buildings or other facilities?			X
13. TRANSPORTATION/CIRCULATION. Will the proposal result in:			
a. Generation of additional vehicular movement?	X		
b. Effects on existing parking facilities, or demand for new parking?	X		
c. Impact upon existing transportation systems?	X		
d. Alterations to present patterns of circulation or movement of people and/or goods?	X		
e. Alterations to waterborne, rail or air traffic?			X
f. Increase in traffic hazards to motor vehicles, bicyclists or pedestrians?		X	

(Cont.)

	YES	MAYBE	NO
14. PUBLIC SERVICES. Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas:			
a. Fire protection?	x		
b. Police protection?	x		
c. Schools?	x		
d. Parks or other recreational facilities?	x		
e. Maintenance of public facilities, including roads?	x		
f. Other governmental services?	x		
15. ENERGY. Will the proposal result in:			
a. Use of exceptional amounts of fuel or energy?		x	
b. Increase in demand upon existing sources of energy, or require the development of new sources of energy?		x	
16. UTILITIES. Will the proposal result in a need for new systems, or alterations to the following utilities:			
a. Power or natural gas?	x		
b. Communications systems?	x		
c. Water?	x		
d. Sewer or septic tanks?	x		
e. Storm water drainage?	x		
f. Solid waste and disposal?	x		
17. HUMAN HEALTH. Will the proposal result in:			
a. Creation of any health hazard or potential health hazard (excluding mental health)?		x	
b. Exposure of people to potential health hazards?		x	
18. AESTHETICS. Will the proposed project in:			
a. The obstruction of any scenic vista or view open to the public?		x	
b. The creation of an aesthetically offensive site open to public view?			x
c. The destruction of a stand of trees, a rock outcropping or other locally recognized desirable aesthetic natural feature?		x	
d. Any negative aesthetic effect?		x	
19. RECREATION. Will the proposal result in an impact upon the quality or quantity of existing recreational opportunities?		x	
20. CULTURAL RESOURCES:			
a. Will the proposal result in the alteration of or the destruction of a prehistoric or historic archaeological site?		x	
b. Will the proposal result in adverse physical or aesthetic effects to a prehistoric or historic building, structure, or object?			x
c. Does the proposal have the potential to cause a physical change which would affect unique ethnic cultural values?			x
d. Will the proposal restrict existing religious or sacred uses within the potential impact area?			x
21. MANDATORY FINDINGS OF SIGNIFICANCE.			
a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		x	

(Cont.)

	YES	MAYBE	N
b. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals?.....	____	X	_
c. Does the project have impacts which are individually limited, but cumulatively considerable*?	X	____	
d. Does the project have environmental effects which cause substantial adverse effects on human beings, either directly or indirectly?.....	____	____	____

DISCUSSION OF ENVIRONMENTAL EVALUATION (Attach additional sheets if necessary.)

Discussions of environmental evaluation for earth, air, water, plant life, animal life, noise, light and gla use, risk of upset, population, transportation/circulation, public services, energy, utilities, human hea thetics, recreation, cultural resources and mandatory findings of significance are attached.

Prepared by	Title	Telephone	Date
		(805) 277-9673	

* "Cumulatively considerable" means that the incremental effects of an individual project are considerable when connection with the effects of past projects, the effects of other current projects, and the effects of probable future pr

Discussion of Environmental Evaluation
City Ranch Specific Plan Initial Study
City of Palmdale

1. Earth

The proposed project site is located in an area that can be divided into three geomorphic regions. Each region exhibits a different geologic character.

The southern portion of the site is located along the northern flank of the Sierra Pelona. This is an area of steep mountain slopes with deeply incised drainage courses. Runoff from the Sierra Pelona flows onto the site predominantly by sheet flow.

The central portion of the site consists of gently sloping alluvial fans that have relatively uniform topographic expression. The surfaces are moderately dissected with intervening drainage courses which direct runoff to the north and northeast. Slopes are relatively flat or gently sloping to the north or northeast.

The northern portion of the site is located within the San Andreas rift zone and includes two prominent northwest-southeast trending ridges with intervening parallel valleys. Within this area, slopes range from very steep along the ridge flanks to flat within the valley floors. Drainage in this area varies but is predominately to the east, south of the San Andreas fault and to the north/northwest elsewhere.

The site is located across both the San Andreas and Little Rock fault zones and may be subject to severe seismic intensities. A portion of the site is subject to the Alquist-Priolo Special Studies Zone provisions.

According to Plate No. 14.7 of the Palmdale Community Plan (November, 1975), a portion of site appears to be an area of moderate to high soil erosion potential. According to Plate No. 14.5, a portion of the site appears to be located in an area designated as having moderately unstable to unstable slopes.

2. Air

The proposed development of the site will increase both stationary and mobile emissions. The proposed 5,200 residential living units and commercial uses will require an increase in electrical power plant generation which will result in off-site increases in stationary emissions. Additionally, vehicle traffic to and from the site will increase mobile emissions. No uses are anticipated on-site that would generate extraordinary emissions.

3. Water

The site is located in an area that drains predominately to the north and ea Development of the site may require alteration of existing drainages. Additionally, the California Aqueduct crosses the northeastern portion of the site. Because the southern portion of the site is adjacent to the steep mountain slopes of the northern flank of the Sierra Pelona, portions of the site are exposed to sheetwash and local flooding potential. Several of the drainages crossing the site are identified as blue-line streams. A portion of the site is in the 100-year flood line of the Anaverde Creek.

Wells may be developed on the property to provide irrigation water. Potable water will be acquired by the County Waterworks District No. 34 who have indicated that most of the water supply will be taken through AVEK's allotment of aqueduct water. However, should that supply be interrupted, groundwater would be pumped from existing off-site wells to provide continued service.

4. Plant Life

The existing vegetation of the site consists of primarily low brush, wild grassland and native desert vegetation including junipers and Joshua trees. At least one rare plant, the beaver tail cactus, has been located on-site.

5. Animal Life

The site is primarily vacant and adjacent areas that provide habitat for various animals and birds. Although no unique habitat exists on-site, it provides an area of transition for migratory wildlife. The area may provide habitat for Mohave ground squirrel (*Spermophilus mohavensis*), Le Conte's thrasher (*Toxostoma lecontei*), Cooper's hawk (*Accipiter cooperii*), San Diego horned lizard (*Phrynosoma coronatum blainvillei*), southern rubber boa (*Charina bottae umbratica*), and possibly, Least Bell's vireo (*Vireo bellii arizonae*).

6. Noise

As a result of development, ambient noise levels will most likely increase. During grading and construction, noise levels may be intense. The majority of the site is proposed for residential development. Depending upon project phasing, grading and construction activities may generate noise levels that exceed 65 dB(A), the state standard for exterior noise levels in residential areas.

7. Light and Glare

Development will introduce new sources of light and glare. Street lighting, exterior home/commercial lighting and automobile traffic will substantially increase ambient evening light conditions.

8. Land Use

The project site is currently within the sphere of influence of the City of Palmdale and is included in the planning area of the City's General Plan Land Use Element; the site is designated as City Ranch Specific Plan, maximum density 3 dwelling units per acre. The site is designated in the County of Los Angeles' Antelope Valley Areawide General Plan as "non-urban." Development of the site would result in a substantial change in land use (agricultural to residential).

9. Natural Resources

No discussion required.

10. Risk of Upset

With the presence of the California Aqueduct on-site and its proximity to the San Andreas rift zone, emergency response plans, if they exist, need to be considered in light of potential changes that may be required as a result of the proposed development.

11. Population

The population of the area will change. Based on 2.698 persons per household (Department of Finance), the proposed project will increase area population by 14,030 people. The resultant density will be 4,524 people per square mile.

12. Housing

No discussion required.

13. Transportation/Circulation

The proposed project will have significant effects on the local road system; as a result of the residential developments, 43,444 average daily trips (ADT) will be generated; depending on the commercial uses realized, the commercial area can generate 5,000 and 15,000 ADTs.

Increased traffic demands will likely occur on Elizabeth Lake Road/Avenue Q, Avenue S, 25th Street West and corresponding interchanges with SR14 (Antelope Valley Freeway). Specific intersections that may be impacted include:

Elizabeth Lake Road/25th Street West
Elizabeth Lake Road/Avenue P-8
Elizabeth Lake Road/Palmdale Boulevard/10th Street West
Avenue S/10th Street West

Avenue Q/SR 14
Avenue S/SR14
Avenue R/10th Street West

As a result of increased traffic, potential traffic hazards to motor vehicles, bicycli and pedestrians may increase.

14. Public Services

The proposed development will have a need for fire and police protectic Presently, the area is serviced by the County of Los Angeles for both fire and poli requirements.

The project is located in the Antelope Valley School District and will generate a su stantial number of students at all levels. The project is proposing two elementa school sites of 10 acres each with an additional two potential sites identified.

The proposed project has identified open space and parklands including:

- 393.8 acres of open space/conservation area
- 109.4 acres of open space/public parks
- 232.2 acres of open space/golf course

The site will be accessed through a site circulation plan consisting of public ways.

15. Energy

The project may require an increase in demand upon existing electric and natura sources.

16. Utilities

A complete infrastructure will need to be constructed for the site. New or improved service supply systems for natural gas and electricity, water, sewer and communications will be required. Although the project area is serviced by the Palmdale Wastewater Reclamation Plant, lines do not extend to the project site. Water supply to the site is provided by District No. 34. Because of the site's proximity to the California Aqueduct, storm water drainage systems will need to be designed to direct surface water runoff away from the aqueduct. As a result of the increased site population, additional solid waste will be generated.

TE OF CALIFORNIA—THE RESOURCES AGENCY

GEORGE DEUKMEJIAN, Governor

EPARTMENT OF CONSERVATION

ION OF ADMINISTRATION
SION OF MINES AND GEOLOGY
ION OF OIL AND GAS
SION OF RECYCLING

1416 Ninth Street
SACRAMENTO, CA 95814
TDD (916) 324-2555
ATSS 454-2555
(916) 445-6723

September 28, 1989

RECEIVED
OCT - 4 1989

Ms. Laurie Lile
City of Palmdale
Planning Department
38306 - 9th Street, East
Palmdale, CA 93550

Dear Ms. Lile:

Subject: Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) for the City Ranch Specific Plan
SCH# 89090619

The Department of Conservation's Division of Mines and Geology has reviewed the NOP for the City Ranch Specific Plan project. We offer the following comments.

Due to the proximity of the San Andreas fault to the project site, the Draft EIR should include a detailed geologic and geotechnical investigation. Emphasis should be given to the potential for severe ground shaking and surface fault rupture in the project area.

If you have any questions regarding these comments, please contact Zoe McCrea, Division of Mines and Geology Environmental Review Officer, at (916) 322-2562.

Sincerely,

Dennis J. O'Bryant
Environmental Program Coordinator

DJO:RBS:skk

cc: Zoe McCrea, Division of Mines and Geology
Richard B. Saul, Division of Mines and Geology

STATE OF CALIFORNIA—BUSINESS AND TRANSPORTATION AGENCY GEORGE DEUKMEJIA

EPARTMENT OF TRANSPORTATION
DISTRICT 7, 120 SO. SPRING ST.
LOS ANGELES, CA 90012
☎ (213) 620-2550

(213) 620-2376

September 18, 1989

NOP - DEIR
City Ranch Specific Plan
City of Palmdale
Vic-LA-14-R59.80

City of Palmdale
Planning Department
38306 - 9th Street East
Palmdale, CA 93550

Attn: Ms. Laurie Lile

Dear Ms. Lile:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above-referenced project. Items which should be covered in the draft environmental report for the project include, but are not limited to:

A. Trip generation/distribution including the method used to develop the percentages and assignment.

B. ADT, AM and PM peak-hour volumes for both the existing and future conditions. This should also include State Route 14 (Antelope Valley Freeway) and its interchanges with Palmdale Boulevard and Avenue S.

C. An analysis of future conditions which include project traffic and the cumulative traffic generated for all approved developments in the area.

D. Any mitigation proposed should be fully discussed in the document. These discussions should include, but not be limited to, the following:

* financing
* scheduling considerations
* implementation responsibilities
* monitoring

RECEIVED
SEP 20 1989

17. Human Health

Because the site has been previously used for agricultural purposes, residue from herbicides/pesticides that may have been used on-site may be present in on-site soils. Presence of high-tension electric transmission lines traversing the project site may expose future residents to electromagnetic radiation. Underground gasoline tanks present on-site must be assessed for a determination of proper abandonment and the possibility of leakage. Proximity of the Antelope Valley Landfill, in light of proposed expansion plans, may pose potential health impacts to project residents.

18. Aesthetics

Development of the site will substantially alter the present aesthetic conditions of the site. The primarily open rural condition will be transformed, albeit gradually, into a developed urbanized environment. The site is located below areas (topographically) and along hiking trails (North Side Trail) that will experience significant change in the viewshed.

19. Recreation

The proposed project may require additional recreational services/areas to accommodate the anticipated site population.

20. Cultural Resources

As a result of grading activities, archaeological or paleontological resources on-site may be disturbed.

21. Mandatory Findings of Significance

The proposed project may negatively impact rare plants known to exist on-site.

As a result of the environmental analyses resulting from the City's General Plan update and the consideration given to the project site under proposed land use designation changes (from "non-urban" to "specific plan"), long-term impacts may be identified.

The proposed project and cumulative projects will have impacts on traffic, air quality and other issues when considered together.

APPENDIX B

Responses to the
Notice of Preparation

September 18, 1989

City of Palmdale
Attn. Ms. Laurie Lile

E. Other strategies, such as:

* ridesharing
* park-and-ride lots
* staging areas

The number of parking spaces should be determined based on a ratio of 25 spaces per 1,000 dwelling units.

We look forward to reviewing the DEIR. We expect to receive a copy from the State Clearinghouse. However, to expedite the review process, you may send two copies in advance to the undersigned at the following address:

Gary McSweeney
District 7 IGR/CEQA Coordinator
Transportation Planning & Analysis Branch
120 So. Spring Street
Los Angeles, CA 90012

Thank you for this opportunity to comment. If you have any questions regarding these comments, please contact me at (213) 620-2376.

Sincerely,

GARY McSWEENEY
IGR/CEQA Coordinator
Transportation Planning & Analysis Branch

cc: State Clearinghouse

S: See Y: Sent by SCH

[X] Bob Fletcher
Air Resources Board
1102 Q Street
Sacramento, CA 95814
916/323-8287

[ ] Karen Cogle
Dept. of Boating & Waterways
1629 S Street
Sacramento, CA 95814
916/445-6281

[ ] Gary L. Holloway
California Coastal Commission
631 Howard Street, 4th Floor
San Francisco, CA 94105
415/543-8555

[ ] Terry Mathews
California Energy Commission
1516 Ninth Street, Rm. 200
Sacramento, CA 95814
916/324-3227

[ ] Sandy Hunnard
Cal/OSHA - Division of Administration
P.O. Box 942874
Sacramento, CA 94236-0001
916/324-1833

[ ] George Bradley
California - Planning
P.O. Box 942896
Sacramento, CA 94274-0001
916/445-3570

[X] Brenda O'Bryant
Dept. of Conservation
1416 Ninth Street, Room 1326-3
Sacramento, CA 95814
916/322-2011

[ ] Div. of Mines and Geology

[ ] Div. of Oil and Gas

[ ] Land Preservation Project, Unit

[ ] Vaughn Cardoza
Dept. of Food and Agriculture
1220 N Street, Room 104
Sacramento, CA 95814
916/322-3227

[ ] Douglas Whitlatch
Dept. of Forestry
1416 Ninth Street, Room 1516-3
Sacramento, CA 95814
916/323-0120

[ ] Robert Sleppy
Dept. of General Services
400 P Street, Suite 2400
Sacramento, CA 95814
916/324-0214

[X] Arthur Chavez
Dept. of Health
714 P Street, Room 1253
Sacramento, CA 95814
916/653-6111

[ ] Long Range Planning Section
Planning and Analysis Division
3333 Bear Avenue
Sacramento, CA 95816
916/454-1901

[X] William A. Johnson
Native American Heritage Commission
915 Capitol Mall, Room 364
Sacramento, CA 95814
916/653-4082

[ ] Steve Lewis-Berg
Office of Historic Preservation
P.O. Box 942896
Sacramento, CA 94296-0001
916/653-9831

[X] Mike Boyle
Dept. of Parks and Recreation
P.O. Box 942896
Sacramento, CA 94296-0001
916/653-6423

[ ] Gary Hardy
Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102
415/557-1373 (p 397)

[ ] Anne Lenore Brennan
Reclamation Board
1416 Ninth Street Room 704
Sacramento, CA 95814
916/323-3960

[ ] Marcel [illegible]
S.F. Bay Conservation & Dev't. Comm.
30 Van Ness Avenue, Room 2011
San Francisco, CA 94102
415/557-3686

[ ] Jerome Delacruz
Calif. Waste Management Board
1020 Ninth Street, Room 300
Sacramento, CA 95814
916/327-0434

[ ] Ted Mondabon
State Lands Commission
1807 13th Street
Sacramento, CA 95814
916/653-7813

[ ] Nadel Gayou
Dept. of Water Resources
1416 Ninth Street, Room 213-4
Sacramento, CA 95814
916/653-3416

[ ] Reed Holderman
State Coastal Conservancy
1330 Broadway, Suite 1100
Oakland, CA 94612
415/464-1015

[ ] DHS/TSCD: _____

[ ] Caltrans, [illegible]
1656 Union Street
Sacramento, CA 95203
707/445-6328 (8 3-5)

[ ] Mike Mello On Raghar
Caltrans, District 2
1657 Riverside Drive
Redding, CA 96001
916/225-3230 (8 4-5)

[ ] Brian J. Smith
Caltrans, District 3
703 B Street
Marysville, CA 95901
916/741-4237 (8 4-5)

[ ] Gary Adams
Caltrans, District 4
P.O. Box 7310
San Francisco, CA 94120
415/557-8371 (8 5-7)

[ ] Jerry Lemmer
Caltrans, District 5
P.O. Box 6114
San Luis Obispo, CA 93403-8114
805/549-3461 (8 4-5)

[ ] Matthew Smith
Caltrans, District 6
P.O. Box 12616
Fresno, CA 93778
209/445-6000 (8 4-5)

[X] Gary McGreevey
Caltrans, District 7
120 South Spring Street
Los Angeles, CA 90012
213/620-2278 (8 4-5)

[ ] Harvey Berger
Caltrans, District 8
247 West Third Street
San Bernardino, CA 92408
714/383-4908 (8 4-5)

[ ] Andy Kathman
Caltrans, District 9
500 South Main Street
Bishop, CA 93514
619/873-3037 (8 4-5)

[ ] Al Johnson
Caltrans, District 10
P.O. Box 2048
Stockton, CA 95201
209/948-7830 (8 4-5)

[ ] Jim Cheatham
Caltrans, District 11
P.O. Box 85406
2829 Juan Street
San Diego, CA 92138-5406
619/237-6153 (8 4-5)

[ ] Robert Joseph
Caltrans, District 12
2501 Pullman St.
Santa Ana, CA 92705
714/724-2041 (8 4-5)

[ ] A. Peyton, Regional Manager
Department of Fish and Game
601 Locust
Redding, CA 96001
916/225-2300 (8 4-5)

[ ] Jim Messersmith, Regional Manager
Department of Fish & Game
1701 Nimbus Road, Suite A
Rancho Cordova, CA 95670
916/355-4973 (8-4:30)

[ ] B. Hunter, Regional Manager
Department of Fish and Game
P.O. Box 47
Yountville, CA 94599
707/944-2011 (8 3-5)

[ ] G. Mohr, Regional Manager
Department of Fish and Game
1234 East Shaw Avenue
Fresno, CA 93710
209/222-3761 (8 4-5)

[X] Fred A. Worthley, Jr., Reg. Manager
Department of Fish and Game
330 Golden Shore, Suite 50
Long Beach, CA 90802
213/590-3113 (8 4-5)

[ ] Rolf E. Mehl
Marine Resources Region
330 Golden Shore, Suite 50
Long Beach, CA 90802
213/590-3123 (8 4-5)

State Water Resources Control Board

[ ] Allen Pulver
State Water Resources Control Board
Division of Lands & Claims
P.O. Box 944213
Sacramento, CA 94244-2120
916/739-4414

[ ] Ed Anker
State Water Resources Control Board
Division of Water Quality
P.O. Box 100
Sacramento, CA 95801
916/445-9233

[ ] Dave Bacigalupi
State Water Resources Control Board
Delta Unit
P.O. Box 2000
Sacramento, CA 95810
916/323-9970

[ ] Mike Falkenstein
State Water Resources Control Board
Division of Water Rights
901 P Street
Sacramento, CA 95814
916/324-2630

[ ] OTHER: _____

[ ] [illegible] (1)
[illegible]
Santa Rosa, 95401
707/576-2220 (8-5:30)

[ ] SAN FRANCISCO BAY REGION (2)
1111 Jackson Street, Room 6000
Oakland, CA 94607
415/464-1255 (8-5:30)

[ ] CENTRAL COAST REGION (3)
1102 A Laurel Lane
San Luis Obispo, CA 93401
805/549-3147 (8-4:30)

[ ] LOS ANGELES REGION (4)
107 South Broadway, Room 6027
Los Angeles, CA 90012
213/620-4460 (8-4:30)

[ ] CENTRAL VALLEY REGION (5)
3443 Routier Road, Suite A
Sacramento, CA 95827-3098
916/361-5400

[ ] Fresno Branch Office
3374 East Shields Avenue, Room
Fresno, CA 93726
209/445-5116 (8-4:30)

[ ] Redding Branch Office
100 East Cypress Avenue
Redding, CA 96002
916/225-3043 (8-4:30)

[ ] LAHONTAN REGION (6)
2092 Lake Tahoe Boulevard
P.O. Box 9428
South Lake Tahoe, CA 95731
916/544-3481

[X] Victorville Branch Office
14440 Civic Drive, Suite 100
Victorville, CA 92392-2359
619/241-6583

[ ] COLORADO RIVER BASIN REGION
73-271 Highway 111, Suite 21
Palm Desert, CA 92260
619/346-7491

[ ] SANTA ANA REGION (8)
6809 Indiana Avenue, Suite 200
Riverside, CA 92506
714/782-4130 (8-4:30)

[ ] SAN DIEGO REGION (9)
9771 Clairemont Mesa Blvd., Suite B
San Diego, CA 92124-1331
619/265-5114 (8-4:30)

[X] CDFG/AQUA South Coast

_____

TATE OF CALIFORNIA—OFFICE OF THE GOVERNOR

GEORGE DEUKMEJIAN Governor

OFFICE OF PLANNING AND RESEARCH
TENTH STREET
AMENTO, CA 95814

DATE: September 7, 1989

TO: Reviewing Agencies

RE: The Palmdale Planning Department's NOP for the City Ranch Specific Plan
SCH# 89090619

Attached for your comment is the Palmdale Planning Department's Notice of Preparation of a draft environemntal Impact Report (EIR) for the City Ranch Specific Plan Project.

Responsible agencies must transmit their concerns and comments on the scope and content of the EIR, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of this notice. We encourage commenting agencies to respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Ms. Laurie Lile
Palmdale Planning Department
38306 9th Street East
Palmdale, CA 93550

with a copy to the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the review process, call Garrett Ashley at 916/445-0613.

Sincerely,

David C. Nunenkamp
Chief
Office of Permit Assistance

Attachments

cc: Laurie Lile

Appendix L

Notice of Determination

LA COUNTY CLERK

APR 07 1992
By D. Coleman Deputy

NOTICE OF DETERMINATION

TO: County Clerk
County of Los Angeles
111 North Hill Street
Los Angeles, CA 90012

FROM: City of Palmdale
Planning Department
38306 9th Street East
Palmdale, CA 93550

Case Planner:	Laurie Lile
Applicant:	Kaufman and Broad of Southern California
Address:	38345-A 30th Street East Palmdale, CA 93550
Case:	Environmental Impact Report 89-03 (City Ranch) for General Plan Amendment 91-04, Prezone 89-06 and Specific Plan 89-03 (City Ranch Specific Plan)
Description of Project:	Specific Plan 89-03, General Plan Amendment 91-04, Prezone 89-06 and Annexation of 1,985 acres of territory into the City of Palmdale. The City Ranch Specific Plan allows the development of 5,200 dwelling units, 42 acres of commercial uses, and parks and schools on the 1,985 acre site. The General Plan Amendment and Prezone support the Specific Plan.
Location:	The project is generally located south of Elizabeth Lake Road, east of the alignment of 40th Street West, north of the alignment of Avenue S, and west of 20th Street West.

The Environmental Impact Report was certified by the City Council of the City of Palmdale on March 24, 1992. It has been determined that the project will have a significant effect on the environment in the following areas: electromagnetic radiation, population impacts in regard to air quality, off-site noise due to traffic, solid waste disposal, sheriff services, facilities maintenance, library services,

THIS NOTICE WAS POSTED
FROM APR 10 1992 TO MAY 11 1992
DEPUTY COUNTY CLERK
D. Coleman

1953

jobs/housing balance, geologic hazards due to ground shaking and rupture associated with a seismic event, aesthetic and light and glare impacts caused by loss of open space and vegetation and grading and viewshed impacts, paleontological resources, and cumulative impacts to land use due to the change of land use on the site from existing agriculture uses to a suburban use. The City Council adopted a Statement of Overriding Considerations for the project in compliance with the provisions of the California Environmental Quality Act, as amended.

The EIR is on file and available for review at the City of Palmdale, Planning Department, 38306 9th Street East, Palmdale, California 93550

Dated: March 25, 1992

Molly Bogh

Molly Bogh, Director of Planning
City of Palmdale

MEB/lob

wp9266

CITY RANCH

EXHIBIT “C”

ENVIRONMENTAL FINDINGS ADOPTED BY THE CITY OF PALMDALE

Appendix M

City Council Resolution

CITY OF PALMDALE

COUNTY OF LOS ANGELES, CALIFORNIA

RESOLUTION NO. 92-58

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PALMDALE, CALIFORNIA CERTIFYING ENVIRONMENTAL IMPACT REPORT 89-03 AND APPROVING GENERAL PLAN AMENDMENT 91-04 RELATING TO THE CITY RANCH PROJECT, SUBJECT TO CERTAIN SPECIFIED CONDITIONS

THE CITY COUNCIL OF THE CITY OF PALMDALE DOES HEREBY RESOLVE AS FOLLOWS:

Section 1. Applications were duly filed by the applicant, Kaufman and Broad, with respect to 1,985 acres of real property (hereinafter referred to as "the Territory") which is described in Exhibit "A" and depicted on Exhibit "B", attached hereto, requesting approval of General Plan Amendment 91-04, Pre-Zone 89-06 and Specific Plan 89-03. The Territory is within an area generally bounded by Elizabeth Lake Road on the north, the alignment of the extension of Avenue S on the south, the alignment of the extension of 20th Street West on the east and the alignment of the extention of 40th Street West on the west.

Section 2. The Territory is currently outside the territorial limits of the City and is the subject of a request for annexation to the City of Palmdale. The existing County General Plan Land Use designation for the Territory is Non-Urban 1 (.5 du/acre), and the existing zoning designation of the Territory is A-2-2 (Light Agricultural 2-acre minimum lot size). The City of Palmdale's existing General Plan Land Use designation for the Territory is City Ranch Specific Plan (maximum density 3 du/ac gross). The Territory is surrounded by property containing single family residences, a landfill, vacant County land having a County Zoning designation of A-2-2 (Light Agricultural 2-acre minimum lot size) and the proposed Ritter Ranch Specific Plan.

Section 3. General Plan Amendment 91-04 consists of two proposals: (1) eliminate the designation of individual planning areas in the City Ranch Specific Plan on the General Plan Land Use Map; and, (2) to amend the Land Use Plan and Land Use Element of the Palmdale General Plan to establish a designation of "City Ranch Specific Plan (2.62 du/gross acre)" for the 1,985-acre Territory.

Section 4. An initial study was prepared for the Project by the Planning Department Staff, pursuant to Section 15063 of the State CEQA Guidelines. The initial study, which was completed on September 1, 1989, identified that there was substantial evidence that the Project may have a significant environmental impact on several environmental resources and governmental services. Pursuant to State CEQA Guidelines 15064 and 15081, a decision was made to prepare an Environmental Impact Report ("EIR") for the Project.

Section 5. On September 6, 1989, a Notice of Preparation for the EIR was prepared and sent to the State Clearinghouse in the Office of Planning and Research for the

State of California and to other responsible agencies.

Section 6. On November 10, 1989 a contract was entered into between the City, the applicant and Envicom Corporation ("Envicom") of Calabasas, California whereby Envicom agreed to be the lead consultant for the preparation of the Draft EIR for the Project. Thereafter, screencheck versions of the Draft EIR were presented to the City in June 1990, October 1990, and January 1991.

Section 7. On October 1, 1991, the Draft EIR was completed. Pursuant to State CEQA Guidelines Section 15085, the City prepared a Notice of Completion of the Draft EIR which was filed with the State Office of Planning and Research on October 3, 1991. The EIR was circulated to interested agencies between October 3, 1991 and November 18, 1991 for a 45 day comment period pursuant to State CEQA Guidelines Section 15087. Comments were received and responses prepared and incorporated into the EIR. A copy of the EIR is on file in the office of the Planning Department.

Section 8. On March 8, 1991, a contract was entered into between the City, the applicant and Gruen Associates ("Gruen") of Los Angeles, California, whereby Gruen agreed to be the lead consultant for the preparation of the Final EIR for the Project. Thereafter, responses were prepared and incorporated in the EIR for comments received during the 45-day comment period.

Section 9. The Planning Commission held a public hearing on the Draft EIR on January 15, 1992 and conducted public hearings on General Plan Amendment 91-04, Prezone 89-06 and Specific Plan 89-03 on January 20, 1992, January 23, 1992, January 27, 1992, January 30, 1992, February 5, 1992, February 6, 1992 and February 24, 1992 at City Hall Council Chambers, 708 E. Palmdale Blvd., Palmdale California. Notice of the time, place and subject matter of the public hearing was published in the Antelope Valley Press on October 4, 1991, and January 5, and January 28, 1992, in accordance with the requirements of Public Resources Code Section 21092 and a copy of such notice was filed with Los Angeles County Clerk, in accordance with the requirements of Public Resources Code Section 21092.3.

Section 10. Evidence, both written and oral, was duly presented to and considered by the Planning Commission at the aforesaid public hearings, including but not limited to staff reports dated December 18, 1991, January 15, 1992, and the additional correspondence provided for the Planning Commission meetings of January 15, January 20, January 23, January 27, January 30, February 5, February 6, and February 24, 1992, along with testimony by the applicant and other members of the public.

Section 11. The Planning Commission adopted Resolution No. 91-114 on February 24, 1992, recommending that the City Council certify the EIR, and certain amendments thereto as contained in Exhibits "A" and "B", attached to that Resolution.

Section 12. The Planning Commission adopted Resolution No. 92-13 on February 24, 1992, recommending that the City Council approve General Plan Amendment 91-04, Pre-Zone 89-06 and Specific Plan 89-03 for the Territory described in Exhibit "A", depicted on Exhibit "B" subject to the following conditions: (1) that the Draft "City Ranch Specific Plan (2.62 du/gross acres)" dated August 1, 1991 be revised to incorporate the changes to the text and exhibits of the Specific Plan which are listed in Exhibit "C" to Planning Commission Resolution 92-13; (2) that a development agreement within the meaning of California Government Code Sections 65864 through 65869.5 and acceptable to the City of Palmdale be approved and adopted by the City Council concurrently with the City Ranch Specific Plan; and (3) that the ordinance approving the development agreement between the City of Palmdale and the applicant for the area covered by the City Ranch Specific Plan become effective prior to the approval and completion of annexation of the Territory into the City. Additionally, the Planning Commission expressed its concern regarding the fiscal impacts of the Project and recommended that the City Council review such fiscal impacts and ensure that provisions are included in the development agreement to address any fiscal impacts to the City that have not adequately been addressed in the Specific Plan.

Section 13. The City Council conducted public hearings on EIR 89-03, General Plan Amendment 91-04, Pre-Zone 89-06 and Specific Plan 89-03 on March 17, 1992 and conducted a further public meeting on the applications and documents on March 24, 1992 at 7:30 p.m. at City Hall, Council Chambers, 708 E. Palmdale Blvd., Palmdale California. Notices of the time, place and purpose of the aforesaid meetings were duly provided in accordance with California Government Code Sections 65355 and 65090, and Public Resources Code Section 21092. A copy of the final EIR, including the Draft EIR, the comments to the EIR, the responses to the comments, the Planning Commission's Resolution with amended language to the EIR and mitigation measures, and copies of Planning Commission minutes, have been available for public inspection in the Planning Department of the City and in the Council Chambers during public meetings on the Project.

Section 14. Evidence, both written and oral, was duly presented to and considered by the City Council at the aforesaid public hearings, including but not limited to staff reports dated March 10, and March 18, 1992, along with testimony by the applicant and other members of the public.

Section 15. With respect to General Plan Amendment 91-04, Pre-Zone 89-06, and Specific Plan 89-03, the City Council finds that the Draft EIR, the comments to the EIR and the responses to those comments have been received by the City Council, that the City Council has reviewed and considered those documents prior to acting on the applications, and finds, pursuant to State CEQA Guidelines Section 15090, that the Final EIR has been completed in compliance with CEQA, the State CEQA Guidelines and the City's CEQA guidelines. The City Council further finds, pursuant to Public Resources Code Section

21082.1 and State CEQA Guidelines Section 15084 (e) that the EIR has been independently analyzed by City Staff, the Planning Commission and the City Council, and that the EIR represents and reflects the independent judgement of the City with respect to these applications. With respect to Development Agreement 92-2, the City Council withholds any environmental determination until it has reviewed the Development Agreement for consistency with the Environmental Impact Report.

Section 16. The City Council finds that the additional information provided in the staff reports accompanying the EIR, and the evidence presented in written and oral testimony presented at the above reference hearings and meetings, does not represent significant new information so as to require recirculation of the EIR pursuant to Public Resources Code Section 21092.1

Section 17. With respect to the potential significant environmental effects identified in the EIR, the City Council finds as follows:

A. PUBLIC HEALTH AND SAFETY: The EIR identifies the Project as having potential significant effects to health and safety caused by the possible existence of electromagnetic radiation, hazardous/toxic materials, and the proximity of the Project to the Antelope Valley Landfill.

1. Electromagnetic Radiation. With respect to possible health effects cause by extremely low frequency (ELF) electromagnetic fields associated with overhead power lines, mitigation measures have been added (Section 5.27.3 of the EIR) to require a continuous six (6) foot high non-conductive fence along the perimeter of the high-voltage power line right of way. Additionally, active recreational uses have been prohibited in the powerline easement in Planning Area 18.

However, even with these mitigation measures, there may still be some potential unavoidable adverse impacts caused by locating housing and other uses in proximity to power transmission lines. The City Council finds that based upon the current state of scientific knowledge of this issue, these risks are speculative and do not warrant increased regulations beyond what is specified in the EIR and Specific Plan. The City Council finds that such potential health risks have not been proven and thus do not warrant more significant changes to the Project. Thus, pursuant to Public Resources Code Section 21081(c), the City Council finds that the potential health risks associated with the construction of habitable structures near overhead transmission lines cannot be reasonably reduced unless greater setbacks are imposed which would have a significant effect on the available uses of the Project site and the overall design of the Project. The benefits of reducing the potential, but still unknown, health risks associated with residing near these lines do not outweigh the benefits of the proposed Project, including the economic benefits to the City from the creation of new jobs and the construction of important and needed public improvements and infrastructure.

2. Hazardous/Toxic Materials. Development of the Project would be constrained by the presence of seven sites identified in the EIR as potential hazard areas. Unless proper cleanup and disposal procedures are carried out, the hazards contained in these sites could pose a health threat. Requirements have been imposed on the Project to investigate, test, remove and dispose of soil contaminated with hazardous/toxic materials (Section 5.28.3 of the EIR). Implementation of the mitigation measures as set forth in that section of the EIR will reduce Project-related impacts with regards to hazardous/toxic materials to less than significant levels.

3. Antelope Valley Landfill. Development of the proposed Project will bring residential units within .6 miles of the existing landfill, and within approximately 600 feet of the common boundary between the two properties. With respect to the Landfill, a 1,000 foot setback has been required between the residential portions of the Project and the landfill. Mitigation measures have been included (Section 5.29.3 of the EIR) which require disclosure of the landfill to residents within a 1,200 feet of the landfill and a landscape buffer of mature vegetation along the eastern boundary of Planning Area 8 to minimize dust and visual impacts. Implementation of these mitigation measures will reduce Project-related impacts to the Antelope Valley Landfill to less than significant levels.

B. LAND USE: The EIR identifies that the proposed Project will result in an increase in population, and a subsequent increase in demands for City services, in traffic volumes, in air pollution emissions, and other human-related impacts. Theses issues are specifically addressed in Sections 5.4, 5.8, 5.9, 5.10, 5.13, 5.14, 5.15, 5.16, 5.17, 5.18, 5.19, 5.20, 5.21, 5.22, 5.23 and 5.24 of the EIR. Discussion of potentially significant effects and proposed mitigation measures relative to these issues are discussed in Section 17 (C), subparagraphs 1 through 4 of this Resolution.

Mitigation measures have been required which will reduce significant adverse Project-related land use impacts to a level of insignificance if implemented. These mitigation measures require that the proposed Project comply with the site specific zoning and subdivision standards contained in the City Ranch Specific Plan and that an annual monitoring report indicating compliance with the Specific Plan document be provided.

However, the EIR additionally indicates that the Project will contribute to significant cumulative land use impacts due to the change of land use on the site from existing agriculture uses to a suburban use. With respect to these cumulative effects, the City Council finds, pursuant to Public Resources Code Section 21081, that the remaining environmental effects are acceptable due to the fact that a reduction in the size of the Project or adoption of the environmentally superior alternative to the Project is not economically feasible in this instance because significant public infrastructure for the Project will be required to serve the Project even if the

Project is developed at reduced densities. The ability of the Project applicant and property owners to pay the costs of those infrastructure improvements requires a project of sufficient size to make the required public infrastructure costs affordable. Thus, the feasibility of the Project is dependent on the proposed size of the Project. Consequently, these economic factors, as further defined in Section 17 of this Resolution, make infeasible further mitigation alternatives to the Project which would lessen or reduce the impacts of the Project on open space. In addition, the Project is anticipated to provide needed economic benefits to the City, including the creation of new jobs, needed facilities for schools, parks and other public facilities, and will assist in the orderly expansion of the City of Palmdale.

C. POPULATION: The EIR identifies that the Project will result in an increase in population. This increase in population will affect Air Quality, Traffic, Noise and Public Services and Infrastructure as described in Sections 5.9, 5.10, 5.8 and 5.13 through 5.24 of the EIR. Mitigation measures listed in the EIR will lessen the impact of increased population. However, many of the natural resources on site will be significantly impacted by the Project even after mitigation is applied to them. These are discussed in the following paragraphs.

1. Air Quality. The EIR indicates that the Project will have a potentially significant environmental effect on air quality (EIR pages 5-165 through 5-171). Long and short term impacts include an increase in the fugitive dust emissions generated during grading and construction activities and from motor vehicle and stationary source emissions during and after Project buildout. Mitigation measures have been incorporated into the Project which reduce but not eliminate the environmental impacts. The measures include compliance with dust control regulations and cessation of grading construction activities during times of high winds or stage 2 smog alerts. The applicant shall be required to comply with applicable regulations of the South Coast Air Quality Management District, to provide pedestrian walkways throughout the Project, bus turnouts along major arterials and participate in any trip reduction programs adopted by the City for future development applications (Section 5.9.3, 1 through 15 in the EIR).

With respect to the significant impacts to air resources that cannot be mitigated to a level of insignificance, the City Council finds, pursuant to Public Resources Code Section 21081(c), that the benefits of the Project, including but not limited to the creation of new jobs and the expansion and improvement to the economy of the Antelope Valley area, the preservation of a significant amount of open space, and the establishment of recreational areas for the public, outweigh the unavoidable impact that the Project will have on air quality.

2. Transportation. The EIR indicates that the Project will have significant environmental impacts on traffic circulation. Mitigation measures have been imposed to change

the Project so as to reduce significant circulation impacts associated with the Project to a level of insignificance. These measures, as contained in Section 5.8.3 of the EIR, require that the applicant construct all necessary roadways subject to City standards and that the applicant prepare a Transportation Demand Management Plan to determine the necessary improvements for impacts generated by the Project. Also, the applicant will participate in the construction of a park-and-ride facility located on- or off-site to reduce vehicle trips and vehicle miles traveled. Additional mitigation to alleviate impacts to State Route 14 cannot feasibly be applied to this project due to the fact that these impacts are regional in nature and will be addressed in the Los Angeles County Transportation Commission's Congestion Management Plan.

3. Noise. The EIR identifies the Project as having potentially significant short-term impacts from increased noise levels due to construction activities, and long-term impacts from increased noise levels resulting from vehicular traffic and human-related activities on the site. Construction impacts will primarily result from Project-related grading and construction and may present a short-term nuisance to residents occupying dwelling units in the Project area and to residents of the residential projects to the north. To mitigate these short-term impacts, measures contained in Section 5.10.3 of the EIR require that hours of construction activities be limited, that temporary noise attenuation barriers be provided, and that stationary equipment be placed such that emitted noise is directed away from sensitive noise receivers.

Long-term impacts associated with increased noise levels will necessitate the placement of noise attenuation barriers along certain arterials adjacent to residential and school planning areas (Section 5.10.3 of the EIR). Also, residential and school site planning shall be designed to locate noise sensitive areas away from adjacent roadways to minimize intrusive noise levels (Section 5.10.3 of the EIR).

Provided the recommended mitigation measures are properly applied, construction and operation of the proposed Project are not expected to create significant noise impacts on-site. However, some off-site areas along Elizabeth Lake Road containing sensitive receptors such as residences and schools may be significantly impacted. With respect to this significant impact, the City Council finds pursuant to Public Resources Code Section 21081(c) that the benefits of the Project, including but not limited to the creation of jobs and the expansion and improvement to the economy of the Antelope Valley area, the preservation of open space and the creation of recreational areas, outweigh the unavoidable impact that the Project will have on noise levels.

4. Public Services and Infrastructure. The EIR identifies the Project as having a potentially significant effect on various public services and utilities (as addressed in Section 5.16.2, Water; Section 5.17.2 Sewage Disposal; Section 5.18.2, Solid Waste; Section 5.19.2 Communications, Section 5.20.2, Sheriff Services; Section 5.21.2, Fire and Emergency Medical Services; Section 5.13.2, Energy; Section 5.14.2, Electricity; Section 5.15.2, Natural Gas; Section 5.22.2, Schools; Section 5.23.2, Parks and Recreation; and,

Section 5.24.2, Facilities Maintenance.

a. Water Service. The Project site will require annexation to Los Angeles County Waterworks District No. 34. The Waterworks District obtains its water from groundwater wells and the State Water Project supplier, AVEK. On-site, groundwater wells and a turnout from the aqueduct provide a supply of untreated water suitable for landscape irrigation and construction water. After development, the Project will require 5.22 million gallons per day of water, 3.97 million gallons per day of which must be potable. District 34 has indicated that they would be capable of delivering the water necessary to serve the proposed Project through existing and proposed water delivery systems, and through existing sources of water supply.

With respect to potentially significant effects to ground water supply, the impacts were considered in the EIR, the comments to the EIR and the responses to those comments, as well as at the public hearing on the Project. Based upon the evidence presented, the City Council finds that this Project will not have a significant individual or cumulative effect on ground water supplies due in part to water conservation measures incorporated into the Project, including the use of low-flow toilets, faucets and shower heads, low water-consuming landscape plantings and drip irrigation systems as specified in Section 5.16.3 of the EIR and the "conjunctive use policy" (use of State Water Project water in conjunction with ground water resources) of the Project's water supplier, Los Angeles County Waterworks District Number 34. The conjunctive use policy of the Waterworks District will use State Water Project water in times when plentiful to recharge the groundwater basin and use groundwater in times when State water is scarce. Application of this policy is anticipated to keep groundwater levels above the 1980 historic low so as to preserve the capability to replenish the aquifer while at the same time providing sufficient water to serve the growing needs of the Antelope Valley.

b. Sewage Disposal. A trunk sewer line will need to be constructed in the vicinity of the Project site to accommodate the 1.27 million gallons of wastewater generated by the Project. Although this amount of wastewater would exceed the current capacity of the Water Reclamation Plant by 1.27 mgd, planned expansions to the plant will accommodate this volume of wastewater. The applicant will be required to construct all sewer infrastructure extensions and improvements as specified in the EIR and pay a fee in order to connect to the Sanitation District's system. The mitigation measures will reduce the Project-related impact to sewage disposal to less than significant levels (Section 5.17.3 of the EIR).

c. Solid Waste. The proposed Project would generate approximately 54,000 pounds of solid waste per day. This waste would be deposited in the Antelope Valley Landfill. Assuming that the landfill expansion occurs, the contribution of solid waste by this Project could be accommodated. However, in the event that the expansion does not occur, impacts to solid waste disposal could be

significant. In the event that expansion of the Antelope Valley Landfill does not occur in a timely manner, the Project, along with the other surrounding developments, would contribute to cumulatively significant impacts to solid waste disposal (Section 5.19.3 of the EIR).

With respect to the significant impacts to the need for solid waste disposal facilities that cannot be mitigated to a level of insignificance, the City Council finds, pursuant to Public Resources Code Section 21081(c), that some of these impacts will be mitigated in the future by the City's Recycling Element and that the benefits of the Project, including but not limited to the creation of new jobs and the expansion and improvements to the economy of the Antelope Valley area, the preservation of open space, and the establishment of recreational areas for the public, outweigh the unavoidable impacts that the Project will have on the generation of solid waste and the need for solid waste disposal facilities.

d. Communications. Development of the Project site will require the extension of telephone infrastructure into the Project area. Pacific Bell has indicated that provision of service to the Project site will not affect existing service levels. The high capacity transcontinental lines are contained within easements which may be encroached upon with development of the site. Development along the AT&T easement could result in physical damage to the lines causing unanticipated interruption of AT&T's long distance telephone service. Also, development of the Project site will exacerbate the existing radio communications problems experienced in the outlying portions of Palmdale.

In order to mitigate impacts on telephone service, the applicant will be required to get written approval for all work proposed within the boundaries of the AT&T easements. Additionally, the applicant will be required to mitigate the impacts on the need for emergency communications facilities by the contribution of a fair share towards the implementation of the findings of the radio communications needs study currently being prepared for the City (Section 5.19.3 of the EIR).

e. Sheriff Services. Development of the Project would necessitate additional sheriff personnel to accommodate the increased demand on sheriff services. Short-term impacts will occur during the construction phase of the Project caused by construction material thefts. After residents occupy the area, impacts typical of any suburban development will occur. The Project's impacts to sheriff services will be partially mitigated through payment of property taxes to the County of Los Angeles, a portion of which is returned to the City of Palmdale and utilized to finance police services. Full mitigation of impacts to police services by the Project is determined to be infeasible at this time, due to fiscal constraints and the City's lack of authority to determine sheriff facility construction and operation. With regard to this impact, the City Council finds that the benefits of the Project, including but not limited to creation of new

jobs and the expansion and improvements to the economy of the Antelope Valley area, as contained in Section 19 of this Resolution, will outweigh sheriff service impacts.

f. Fire and Emergency Medical Services. Development of the Project would increase the need for additional fire services within and adjacent to the Project. Impact to the need for fire services will be mitigated by the requirement that the applicant provide a fire station in Planning Area 34 of the Specific Plan (Section 5.21.3 of the EIR). The proposed on-site fire station would provide adequate local emergency medical response and fire-fighting services for the proposed Project and reduce Project-related impacts to fire and emergency medical services to less than significant levels.

g. Energy Sources. Development of the Project as currently proposed would result in the expenditure of 98,975 kilowatt hours of electrical energy, 924,300 cubic feet of natural gas, and 21,845 gallons of gasoline on a daily basis. No unavoidable adverse impacts are expected to occur due to consumption of electricity. Impacts on natural gas consumption will be mitigated by the provision of thermal wall and ceiling insulation, double glazed windows, pilotless ignition stoves, water heaters and heating and cooling systems (Section 5.15.3 of the EIR).

h. Schools. In order to mitigate the impacts of the Project on the need for school facilities, the applicant will be required to dedicate school sites and construct new and/or interim school facilities as determined necessary by the applicable School District (Section 5.22.3 of the EIR). Additionally, mitigation measures as specified in Section 5.22.3 include the applicant's participation in a Mello-Roos district, and payment of a percentage of school construction costs. With these mitigation measures, the City Council finds that the Project's impacts on school facilities have been mitigated to a level of insignificance.

i. Parks and Recreation. The need for park and recreational facilities caused by the Project will be mitigated by the dedication and construction of one community park and four neighborhood parks (Section 5.23.3 of the EIR). Additionally, hiking, bicycling and equestrian trails will be provided throughout the Project site.

j. Facilities Maintenance. Development of the proposed Project will increase the City's maintenance responsibilities by adding significant areas of streets, drainage facilities, parks and parkways. These increases will be partially mitigated by increases in the City's general fund generated by the development. However, full mitigation of maintenance impacts by the Project is determined to be infeasible, due to the inconsistency of such requirement with previous development Project approvals within the City. The City Council finds that impacts to maintenance services will be outweighed by the benefits of the Project, including but not limited to creation of new jobs and the expansion and improvements to the economy of the Antelope Valley area, as

described in Section 19 of this Resolution.

k. Library Services. Development of the City Ranch project would result in a population requiring library services equal to 35,100 volumes, 7 staff persons, and 11,232 square feet of library facilities. The Project's impacts to library services have not been mitigated to a level of non-significance through the provisions of the Specific Plan and Environmental Impact Report. The City Council has determined that full mitigation of library impacts by this Project would be inconsistent with previous City approvals of development projects, and is therefore infeasible. With regard to library impacts, the City Council finds that the benefits of the Project, including but not limited to creation of new jobs and the expansion and improvements to the economy of the Antelope Valley area, as contained in Section 19 of this Resolution, will outweigh library service impacts.

D. HOUSING: The EIR identifies as a potential significant environmental effect, the impact to the jobs/housing balance. Should the Project be developed as proposed, it would exacerbate the region's declining jobs/housing balance ratio. Mitigation measures (Section 5.8.3 and Section 5.9.3 of the EIR) require that the applicant implement traffic and air quality measures to mitigate the secondary impacts associated with increased residents and housing. However, even after implementation of the recommended mitigation measures, the proposed Project's impact on the jobs/housing balance cannot be fully mitigated and remains a significant unavoidable adverse impact.

With respect to significant impacts to the jobs/housing balance that cannot be mitigated to a level of insignificance, the City Council finds, pursuant to Public Resources Code Section 21081(c), that the benefits of the Project, including but not limited to the creation of new jobs and the expansion and improvements to the economy of the Antelope Valley area, the preservation of open space, and the establishment of recreational areas for the public, outweigh the unavoidable impacts that the Project will have on the jobs/housing balance of the subregion.

E. EARTH (Geology): The EIR identifies that the Project will be subject to certain geologic risks from seismic shaking, liquefaction, seismic settlement, seismic ground failure, earthquake-induced flooding, and landslides. Changes or alterations have been required in, or incorporated into, the Project which will reduce the geologic risks to the Project from landslides and adverse soil conditions. These changes include requiring detailed geotechnical investigations, including recommended design, construction and maintenance measures to reduce these risks, as required by qualified engineering geologists, as approved by the City Engineer (Section 5.5.3, Landslides, of the EIR).

Changes or alterations have also been required in, or incorporated into, the Project which will reduce the geologic risks to the Project from liquefaction and seismic settlement, and seismically related flooding to a level of insignificance

and reduce but not eliminate risks caused by ground shaking and rupture. These changes include requiring comprehensive geotechnical investigations prior to construction, exploratory fault trenching prior to issuance of grading permits, more heavily reinforced foundations within certain active fault areas, and elevation of structures above flooding levels (Section 5.5.3 of the EIR).

Implementation of the recommended mitigation measures would reduce many adverse geological impacts. However, they would not eliminate all the significant impacts associated with geologic hazards, specifically hazards associated with ground shaking and rupture caused by a seismic event. With respect to certain unavoidable risks to the Project caused by seismic activity on the San Andreas/Fault, the City Council finds that similar risks exist throughout the Antelope Valley and depend more on the type of soil on which structures are constructed than on the proximity to the fault line. Pursuant to Public Resources Code Section 21081 (c), the City Council also finds that the benefits of the proposed Project, including but not limited to, the creation of new jobs, and the Project's contribution to the expansion and improvement in the economy of the Antelope Valley area outweigh the unavoidable risks of seismic activity that are left unmitigated.

F. HYDROLOGY: The EIR identifies as a potential significant environmental effect the Project's impacts on Drainage. Implementation of the Project is anticipated to create a risk of flooding and to significantly alter the existing drainage patterns of the site. Changes or alterations to the Project have been make to reduce the risk of flooding to a level of insignificance. These changes include construction of Drainage facilities required by the City Master Plan of Drainage so as to accomodate a 50-year Los Angeles County Capital Flood (Section 5.6.3 of the EIR) and that final subdivision maps be accompanied by Drainage Improvement Plans prepared by a licensed Civil Engineer and approved by the City. With the incorporation of these measures, the environmental impacts associated with hydrology will be reduced to a level of insignificance.

G. BIOLOGY: With regard to significant effect to biological resources, including the loss of 3,044 Joshua trees and numerous California junipers and 1,581 acres of plant and animal habitat, changes have been made to the Project to partially mitigate these impacts. These changes include the transplantation of short-jointed beavertail cactus from Planning Areas 17 and 31 to Planning Area 32, and the modification of Planning Areas 31 and 32 in order to preserve the Peirson's Morning-Glory located in these areas (Section 5.7.3 of the EIR). Implementation of the recommended mitigation measures would reduce Project impacts on biological resources to acceptable levels. However, the development of the Project will contribute to a cumulatively significant loss of habitat in the vicinity of the Project.

With respect to these significant cumulative effects, the City Council finds, pursuant to Public Resources Code Section 21081, that the remaining environmental effects are

acceptable due to the fact that a reduction in the size of the Project or adoption of the environmentally superior alternative to the Project is not economically feasible in this instance because significant public infrastructure for the Project will be required to serve the Project even if the Project is scaled down substantially. The ability of the applicant and the property owners in the Project to pay the costs of those infrastructure improvements requires a project of sufficient size to make the required public infrastructure costs affordable. Thus, the feasibility of the Project is dependent on the proposed size of the Project. Consequently, these economic factors, as further defined in Section 17 of this Resolution, make infeasible further mitigation or Project alternatives which would lessen or reduce the impacts of the Project on biological resources. In addition, the Project is anticipated to provide needed economic benefits to the City, including the creation of new jobs, needed facilities for schools, parks and other public facilities, and will assist in the orderly expansion of the City of Palmdale.

H. AESTHETICS AND LIGHT AND GLARE: The EIR identifies as a potential significant environmental effect the aesthetic and light and glare impacts associated with the proposed Project. Impacts are anticipated to occur to scenic views and from the introduction of new sources of light and glare.

Changes or alterations have been required in, or incorporated into, the Project which reduce aesthetic impacts. For the aesthetic impacts caused by grading, mitigation measures require that large contiguous open space areas and major ridgelines be preserved and that mass graded pads "mega pads" be prohibited in the Project area (Section 5.11.3 of the EIR). Measures in Section 5.11.3 additionally require that all water tanks be earth tone colors and that all storage or trash areas be shielded from view by an enclosed masonry wall no less than six (6) feet in height.

For impacts associated with light and glare, Project design is required to incorporate methods for reduction of light and glare, such as photometric lighting plans, and minimizing the amount of direct light necessary for public safety (Section 5.12.3 of the EIR).

With respect to unmitigated aesthetic and light and glare impacts caused by loss of open space and vegetation, and grading and viewshed impacts from adjacent and surrounding areas, the City Council finds, pursuant to Public Resources Code Section 21081(c) that these remaining environmental effects are acceptable due to the fact that a large portion of the Project site will be preserved as open space and that important scenic and viewshed areas, such as the Verde Ridge and Sierra Pelona foothills, will be preserved in their natural state. In addition, the Project will provide new jobs new public facilities and will help expand and support the economic and business base of the Antelope Valley area. The City Council further finds that a reduction in the size of the Project or adoption of the environmentally superior alternative to the Project is not economically feasible in this instance because significant public infrastructure for the Project will

be required to serve the Project even if the Project is scaled down substantially. The ability of the applicant and the property owners in the Project to pay the cost of those infrastructure improvements requires a project of sufficient size to make the required public infrastructure costs affordable. Thus, the feasibility of the Development is dependent on the Project size. Consequently, these economic factors, as further discussed in Section 17 of this Resolution, make infeasible further mitigation or alternatives to the Project which would lessen or reduce the impacts of the Project on aesthetics and light and glare.

I. ARCHAEOLOGY: The EIR identifies the Project as having a potentially significant effect on archaeological resources. Development of the Project, as proposed, would result in the loss of three significant prehistoric sites, as well as most of the other sites identified in the initial archaelogical survey. Measures have been imposed on the Project to reduce the impacts to archaeological resources. These measures include the requirement that research, salvage and/or protection of known archaelogical sites occur under the direction of an archaelogist during the grading of the Project (Section 5.23.3 of the EIR). Implementation of the mitigation measures proposed in the EIR will reduce Project-related impacts to archaeological resources to less than significant levels.

J. PALEONTOLOGY: The EIR identifies the Project as having a potentially significant effect on paleontological resources. Ground disturbing activities associated with development of the Project will adversely impact paleontological resources present on-site. Grading within the areas containing sedimentary rock would disturb or bury fossil sites, and could destroy fossil specimens. In addition, fossiliferous rock in these areas would become permanently unavailable for further study. Measures have been imposed on the Project to reduce impacts to paleontological resources. These measures include the requirement that a Paleontological Monitoring Program be imposed which requires monitoring, salvaging and/or protection of exposed fossils (Section 5.26.3 of the EIR). However, even with mitigation measures, there will still be some inadvertent loss of significant paleontological resources.

With respect to unmitigated impacts to paleontological resources, the City Council finds, pursuant to Public Resources Code Section 21081(c) that this remaining impact is acceptable due to the fact that a portion of the Project site will be preserved as open space and that economic benefits to the City from the creation of new jobs and the construction of important and needed public improvements and infrastructure.

The City Council further finds that a reduction in the size of the Project or adoption of the environmentally superior alternative to the Project which may reduce ground-disturbing activity lessening potential significant impacts to paleontology, is not economically feasible in this instance because significant public infrastructure for the Project will be required to serve the Project even if the Project is scaled

down substantially. A need exists for this infrastructure due to the fact that the Project site does not presently have the required infrastructure inside or around it. The ability of the applicant and the property owners in the Project to pay the costs of those infrastructure improvements requires a project of sufficient size to make the required public costs affordable. Thus, the feasibility of the Project is dependent on the proposed size of the Project. Consequently, these economic factors, as further discussed in Section 17 of this Resolution, make infeasible further mitigation or alternatives to the Project which would lessen or reduce the impacts of the Project on land use.

K. The City Council recognizes that during buildout of the City Ranch Specific Plan Project, substantial changes may occur with respect to the circumstances under which the Project is undertaken or that new information of substantial importance may become available which shows that the Project may have substantially more severe environmental effects than shown in the EIR. The City Council therefore expresses its intent to reserve the City's authority to require additional environmental review of the Project under those and other circumstances pursuant to State CEQA Guidelines Sections 15162 and 15163 and any other applicable laws and regulations, with regard to one or several of the environmental and public resources discussed in paragraphs A through J of this Section 17.

Section 18. The City Council has reviewed and considered the alternatives to the Project discussed in the EIR. Those alternatives are: (1) a "No Project" alternative (page 9-8); (2) a "Reduced Residential Density Alternate Development Scheme" alternative (pages 9-8 to 9-11); (3) a "College Campus" alternative (pages 9-11 to 9-15); (4) an "Alternative Site A - Willow Springs" alternative (pages 9-15 to 9-19); and (5) an "Alternative Site B - Quail Lake" alternative (pages 9-19 to 9-22).

With respect to these alternatives to the Project, the City Council finds, pursuant to Public Resources Code Section 21081, that there are economic, social and other considerations of the Project that make these alternatives infeasible. Specifically, the City Council finds that the Reduced Residential Density Alternate Scheme alternative, which the City Council finds to be the environmentally superior alternative to the Project, is not economically feasible in this instance because the significant public infrastructure required for this Project could not be financed by the applicant or by the property owners of the Project if the size of the Project is reduced. One reason for this conclusion is that the Project on this site will generate a need for significant infrastructure improvements to serve the Project. Such infrastructure presently does not exist at all or does not exist in a sufficient capacity in and around the site to serve a project on this site. The need for infrastructure improvements will exist even if the Project is substantially scaled down in size. However, the ability of the applicant and the property owners in the Project to pay the cost of those infrastructure improvements requires a project of sufficient

size to make the required public infrastructure costs affordable. The City Council has received written evidence and oral testimony during the public hearings and public meetings on this Project of the cost of these infrastructure improvements and the required size of the Project in order to properly finance and support the cost of these improvements. Based on this evidence, the City Council finds that these economic factors require a project of the size proposed which makes infeasible the alternatives to the Project discussed in the EIR. The City Council further finds that other benefits of the Project as contained in Section 19 of this Resolution, provide additional social and economic benefits to the Project that outweigh the remaining environmental effects of the Project, as set forth more specifically in Section 17 of this Resolution.

In addition to the general reasons stated above, the Council specifically finds the following: 1) that Alternative 1, "No Project," is not feasible due to the fact that this alternative does not meet the goals and policies of the General Plan and the Specific Plan; 2) that Alternative 2, "Reduced Residential Density," (the environmentally superior alternative) is not economically feasible for the reasons stated in the preceding paragraph; 3) that Alternative 3, "College Campus," is not feasible because this alternative would not result in less environmental impacts than the proposed Project; and, 4) that Alternative 4, "Alternative Site A - Willow Springs," and Alternative 5, "Alternative Site B - Quail Lake," involve proposed sites that have greater site constraints than the proposed Project site and thus could result in potentially greater environmental impacts.

Section 19. The City Council finds that individual and cumulative adverse impacts generated by the Project will be mitigated to the extent feasible through the Mitigation Measures as contained in the Environmental Impact Report. Irrespective of these measures, the City Council finds that some impacts cannot be feasibly mitigated to a level of non-significance. In addition, the City Council finds that the Project may result in significant individual or cumulative impacts which have not been identified at this time. The City Council finds that the benefits provided by the Project, as contained in the Specific Plan and Environmental Impact Report, will outweigh any adverse impacts caused by the Project. These benefits are found by the Council to include the following, based upon information in the Specific Plan, the EIR, and as provided by the applicant in public testimony and written correspondence at the above-referenced meetings and hearings:

A. The property is being planned as a comprehensive and cohesive recreational community with sufficient commercial development, schools, parks, trails, golf, community facilities and other elements to support the residents of the City Ranch Project as well as provide regional benefits to the City of Palmdale.

B. Preserving 419 acres of natural open space, not previously accessible to the public, where biological resources and wildlife will be protected and where public passive

enjoyment of these resources in a protected environment will be enhanced.

C. Providing quality housing opportunities which meet the needs of a variety of lifestyles and income levels.

D. Providing approximately 1,093 permanent jobs created by service and supply demands from Project residents and commercial tenants as well as providing a significant number of construction related and real estate sales related jobs.

E. Designing and developing the property with a circulation system that meets local needs and provides safe and efficient transportation solutions.

F. Protecting scenic viewsheds both to and from the property and preserving the Verde Ridge and Sierra Pelona ridgeline.

G. Designing and developing regional infrastructure to distribute the use of Antelope Valley East Kern and Los Angeles County Waterworks water for use by City of Palmdale residents.

H. Providing quality community design and circulation elements conducive to efficient public health and safety issues as well as efficient operations for Sheriff services.

I. Developing infrastructure improvements to meet Project requirements and serve other regional needs for water, sewage disposal, storm drainage, utilities, etc.

Section 20. With respect to General Plan Amendment 91-04, the City Council finds that such Amendment is consistent with the goals and policies of the existing General Plan for the reasons indicated in Section III of the City Ranch Specific Plan and as specified below:

A. The proposed General Plan Land Use designation of "City Ranch Specific Plan (2.62 du/gross acre)" is consistent with the General Plan Land Use Element in that it will allow for the development of the Project under a comprehensive specific plan document as encouraged in the Land Use Element.

B. The proposed General Plan Land Use designation of "City Ranch Specific Plan (2.62 du/gross acre)" is consistent with the intent of the General Plan Land Use Element in that the proposed amendment will result in a mix of different, but compatible land uses with a cohesive land use pattern taking into consideration adjacent uses, hazard areas and topography.

C. The proposed General Plan Land Use designation of "City Ranch Specific Plan (2.62 du/gross acre)" is consistent with the General Plan Land Use Element in that approximately 419 acres of permanent open space are proposed on the City Ranch which is consistent with the Land Use policy of

utilizing open space to create a visually pleasing environment as well as distinguish City and neighborhood boundaries.

D. The proposed General Plan Amendment is consistent with the intent of the General Plan in that the City Council has reviewed all applicable policies of the General Plan Elements and has determined that the adoption of the "City Ranch Specific Plan (2.62 du/gross acre)" land use designation is consistent with such policies.

Section 21. Based upon the afore-mentioned findings, the City Council hereby certifies Final EIR 89-03 which consists of the Draft EIR, any comments received, any responses of the City to the comments received, and other materials as set forth in the staff reports specified in Section 14 of this Resolution with respect to the Annexation of Territory, General Plan Amendment 91-04, Pre-Zone 89-06 and Specific Plan 89-03, subject to the following conditions:

A. That Revisions to the Environmental Impact Report Text are made as contained in Exhibit "C" of this Resolution;

B. That revisions to specified mitigation measures are made as contained in Exhibit "D" of this Resolution;

Section 22. With respect to Development Agreement 92-2, the City Council withholds any environmental findings until such time as it has reviewed the Development Agreement for consistency with the Environmental Impact Report.

Section 23. The City Council has reviewed and considered the Mitigation Monitoring Program for the EIR that has been prepared pursuant to the requirements of Public Resources Code Section 21081.6 and finds that such Program is designed to ensure compliance with the mitigation measures during Project implementation. The City Council hereby adopts the Mitigation Monitoring Program for EIR 89-03, subject to the following condition:

A. That revisions to the Mitigation Monitoring Program be made so as to reflect changes to Mitigation Measures as specified in Exhibit "D" of this Resolution.

Section 24. Based upon the aforementioned findings, the City Council hereby approves General Plan Amendment 91-04 for the Territory described in Exhibit "A, depicted on Exhibit "B", subject to the condition that these approvals shall not be effective until Ordinance 971 approving Prezone 89-06 and Specific Plan 89-03 becomes effective and the ordinance approving Development Agreement 92-2 becomes effective.

Section 25. The City Clerk shall certify to the adoption of this Resolution, and shall transmit a copy of this Resolution to the applicant.

PASSED, APPROVED and ADOPTED this 24th day of March, 1992, by the following vote:

AYES: Councilmembers Ledford, Davies, DeLaTorre, Root & Mayor Knight

NOES: None

ABSENT: None ABSTAIN: None

William J. Knight, Mayor

ATTEST:

Victoria L. Denham, City Clerk

Approved As to Form:

City Attorney

wp 9175

LIST OF ATTACHMENTS

Exhibit A -	Legal Description of Territory
Exhibit B -	Map of Territory
Exhibit C -	Text Changes to the City Ranch EIR
Exhibit D -	Changes to Mitigation Measures Contained in the City Ranch EIR

LEGAL DESCRIPTION, CITY RANCH SOUTH

PARCEL 1:

All of Section 29, Township 6 north, Range 12 west, San Bernardino Meridian, in the County of Los Angeles, State of California, according to the official plat of said land, except those portions described as follows:

Beginning at the northwest corner of said Section 29; thence south 89° 50' 17", east 2639.96 feet along the north line of said Section 29; thence south 89° 45' 48" east, 2153.59 feet to the beginning of a tangential curve concave southerly and having a radius of 500.00 feet, said curve being the centerline of Elizabeth Lake Road; thence southwesterly along said curve through a central angle of 33° 07' 30" a distance of 289.07 feet; thence south 56° 38' 18" west, 532.73 feet to the beginning of a tangential curve concaved northerly and having a radius of 1,000.00 feet; thence westerly along said curve through a central angle of 18° 36' 40" a distance of 324.83 feet; thence south 75° 14' 58" west, 583.29 feet to the beginning of a tangential curve concaved to the southeast and having a radius of 500.00 feet; thence southwesterly along said curve through a central angle of 34° 19' 25" a distance of 299.53 feet; thence south 40° 55' 33" west, 549.86 feet to the beginning of a tangential curve concaved to the north and having a radius of 500.00 feet, thence along said curve through a central angle of 54° 36' 24" a distance of 476.53 feet; thence north 84° 28' 03" west 2173.21 feet to the intersection of the west line of said section 29; thence north 00° 42' 26" west along said westerly line of section 29, 1,186.88 feet to the point of beginning.

Also except those portions included within the lines of the lands conveyed to the State of California by Parcels 2 and 18 of the deed recorded on October 04, 1968 as Document No. 415 in Book D-4153 Page 623 official records, in the office of the county recorder of said County.

PARCEL 2:

The southeast quarter and also the south half of the north half of Section 30, Township 6 north, Range 12 west, San Bernardino Meridian, in the County of Los Angeles, State of California, according to the official plat of said land.

Except that portion included within the lines of the land conveyed to the State of California by Parcel 1 of the deed recorded on October 04, 1968 as Document No. 415 in Book D-4153 Page 623 official records, in the office of the county recorder of said County.

PARCEL 3:

All of Section 31, Township 6 north, Range 12 west, San Bernardino Meridian, in the County of Los Angeles, State o California, according to the official plat of said land.

PARCEL 4:

All of Section 32, Township 6 north, Range 12 west, San Bernardino Meridian, in the County of Los Angeles, State of California, according to the official plat of said land.

Except that portion included within the lines of land conveyed to the State of California by Parcel 11 of the deed recorded on October 04, 1968 as Document Nol 415, in Book D-41 Page 623 official records, in the office of the county recorde of said County.

PARCEL 5:

All those certain easements, non-exclusive easements, rig of ways and permanent easements, for roads, bridges and ingres and egress, as reserved by Geo. E. Platt Company, in the deed the State of California, recorded on October 04, 1986 as Docum No. 415 in Book D-4153 Page 623 official records, in the offic of the county recorder of said County.

Known as City Ranch South, containing 1985 acres, more o less.

ASSESSOR'S PARCEL NUMBERS

WITHIN THE CITY RANCH SPECIFIC PLAN

Section 29

3206-019-02 (portion)
3206-019-03
3206-019-04
3206-019-05
3206-019-07
3206-019-10
3206-019-11 (portion)

Section 30

3206-020-01
3206-020-02
3206-020-03
3206-020-06
3206-020-07
3206-020-08

Section 31

3206-023-01
3206-023-02

Section 32

3206-024-01
3206-024-02
3206-024-03

EXHIBIT B

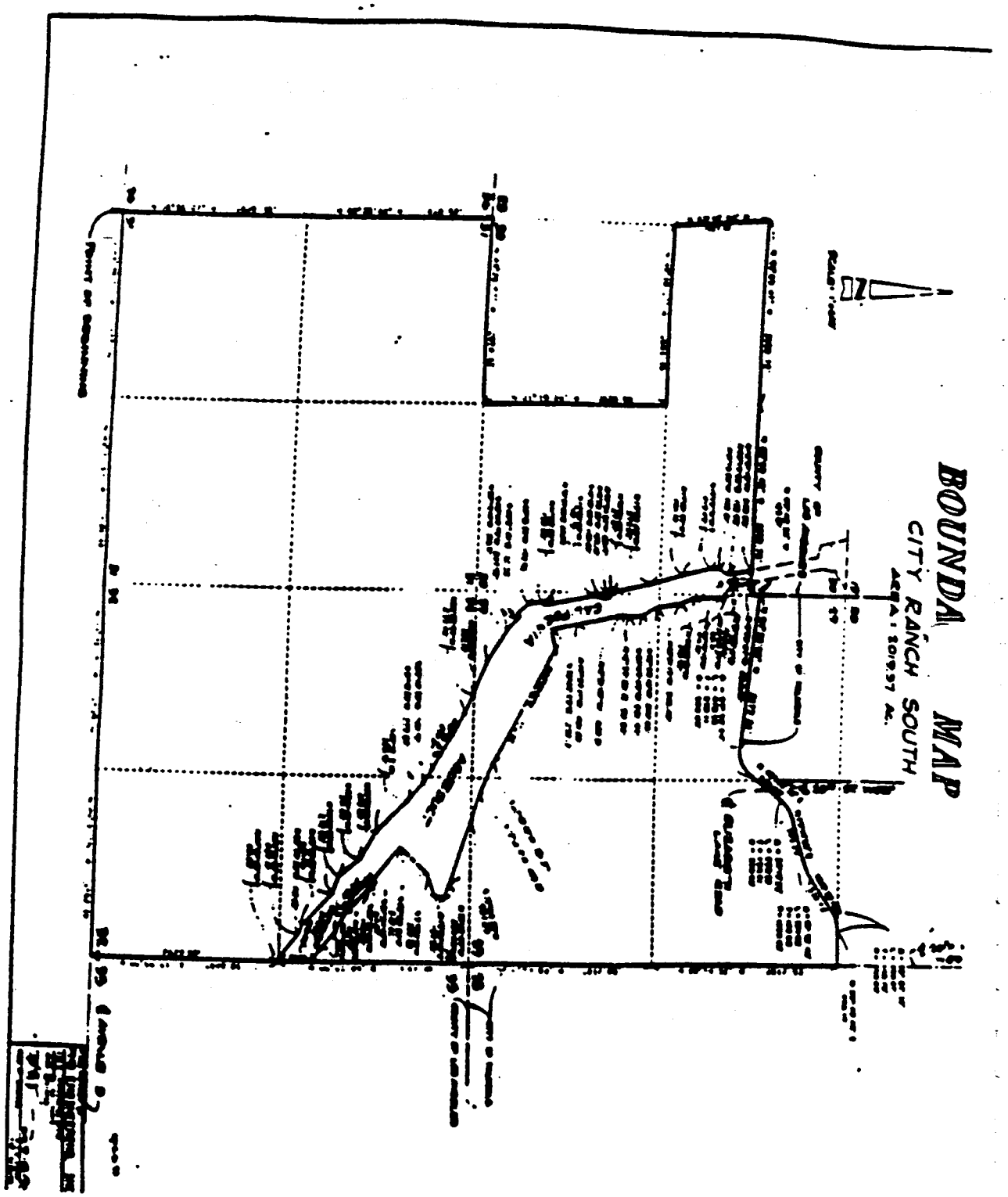

EXHIBIT C

EIR TEXT

The City Council's certification of EIR 89-03 is subject to the following changes being made to the text of the Final EIR:

General:

Where a future park and ride facility is referenced, revise the text to indicate that the facility may be constructed on-site.

Where the number of permanent jobs which would be created by the project area is discussed, revise the number to 1,093.

Page 2-16 (paragraph two, last sentence) delete: "~~A 22/5-foot-wide landscape easement will be provided on the south side of the road, and will include a sidewalk and equestrian trail.~~"

Page 5-136 (paragraph five, last line): "the 2010 AM and PM peak hour volumes are shown in Table 16."

Page 5-266 (paragraph one, second sentence) revise to read: "Based upon student generation factors provided by the individual school district, the number of additional students generated by this project is estimated to be 4,024/~~4,544~~: 2,260 K-5th grade students, 724 6-8th grade students, and 1,040/~~1,560~~ 9-12th grade students (Table 35)."

Page 5-266 (paragraph one, last sentence) revise to read: "All 1,040/~~1,560~~ of the estimated high school students would attend high schools in the Antelope Valley Union High School District."

Page 5-151 (paragraph one, second sentence) revise to read: "Figure 47/~~Table 18~~ shows that the contribution to the congestion along Elizabeth Lake Road from project related traffic is .5% (from 20th to 10th Street West) and 0% (east of 10th Street West).

Figure 8, modify Figure 8 to revise cross-section (D) and (F) to conform with correct cross-sections in the Specific Plan.

Figure 40, revise source to read: "City Ranch South Specific Plan Technical Studies August 5, 1991, Endo Engineering.

Figure 47, revise label for Elizabeth Lake Road between 10th Street West and 20th Street West to show "*".

Figure 68, delete the word "Proposed" from the legend.

Table 14, Second land use category, revise to state: "Commercial/Recreation/~~Police~~/Fire/Educational Trips."

Table 35, revise high school student generation rate from .3 to .2; revise number of students accordingly.

Section 5.16.2, add the following text: "With regards to groundwater supply, several different studies were reviewed that appear to have conflicting opinions concerning the ability of the aquifer to accommodate additional growth in the Antelope Valley. The following studies were reviewed with respect to groundwater supply: Proposal for Antelope Valley Subsidence and Groundwater Resources Evaluation, prepared by U.S.G.S, May

30, 1991; Water Resources Study of the Antelope Valley, prepared by the Antelope Valley United Water Purveyors, April 1991; Report on Existing and Projected Water Demands and Source of Supply For the Antelope Valley, prepared by Los Angeles County Waterworks Districts, March 1991; Ground Water Supply Study for the Ritter Ranch, Antelope Valley Los Angeles County, California, prepared by C.B. Loundagin, February 1990; Hydrogeologic Assessment for Construction of New Emergency Supply Water Well, Antelope Valley, Los Angeles County, prepared by Richard Slade, August 1989; Geohydrology of the Antelope Valley Area California and Design for a Ground-water-quality Monitoring Network, prepared by U.S.G.S, 1987; and Planned Utilization of the Water Resources in the Antelope Valley, prepared by State of California Department of Water Resources, October, 1980.

The conclusions expressed in the various groundwater studies demonstrate that a disagreement exists between experts on groundwater supply, groundwater recharge and, safe yield from the aquifer. For example, the report prepared by Los Angeles County Waterworks District, March 1991, concludes that the Valley's existing water resources (groundwater and state-imported water) were sufficient to support SCAG's 2010 population projection for the Antelope Valley. However, the water resources study prepared by the Antelope Valley United Water Purveyors concluded that the overdraft in the aquifer in 1990 was at least 60,500 acre-feet, and implied that additional growth would jeopardize the availability of water in the future. Two of the studies reviewed discussed water levels in various locations of the aquifer; in one study location, well levels were rising, in the other, water levels were falling (Loundagin, Slade). Also, estimates of the annual recharge to the aquifer, and therefore, the safe yield, was reported to be 76,000 acre-feet, 58,000 acre-feet and 40,700 acre-feet in the various studies.

However, Los Angeles County Waterworks District No. 34 has repeatedly indicated that there is sufficient water supply using a conjunctive use policy to accommodate this project, as well as other planned development. The Waterworks District has described their conjunctive use policy in the following manner: state water project water will be used in times when water is plentiful to recharge the groundwater basin; in times when state water project water is scarce, the groundwater stored in the aquifer will be withdrawn and used as the primary source of supply. Application of this policy is anticipated to keep the groundwater levels above the 1980 historic low so as to preserve the capability to replenish the aquifer while at the same time providing sufficient water to serve the growing needs of the Antelope Valley.

Therefore, based upon the evidence presented, development of the project will not result in significant cumulative effects on the groundwater supply. However, if, in the future imported water is not available to support project development, a supplemental EIR would be required to address project impacts to regional groundwater resources."

Section 5.17 Revisions:

Section 5.17.1, paragraph: "The project site is located outside of area served by the Los Angeles County Sanitation Districts (LACSD). Annexation of the project site into the

City of Palmdale and into the LACSD will locate the project site within LACSD No. 20. The District presently serves a population of approximately 72,800 in the Antelope Valley area. Sewage generated within District No. 20 is conveyed through trunk sewers to the Palmdale Water Reclamation Plant (Palmdale WRP) located approximately 5.7 miles east of the project site at 39300 30th ~~40th~~ Street East in Palmdale. The Palmdale WRP currently has an average daily flow capacity of 8.0 ~~7.3~~ million gallons per day (mgd). At this time, the Palmdale WRP is operating at capacity, with daily flows often ranging from 7.3 to 8.2 ~~7.0/to/7.5~~ mgd. Expansion of the Palmdale WRP, scheduled for completion in March 1992, will increase the plant capacity to an influent capacity of 12.0 mgd and an effluent discharge limitation of 10.0 mgd. There will be additional capacity added to the Palmdale WRP in the future to a maximum capacity of 15.0 mgd, however, there is not definite work schedule established for this expansion (Sakai, 1992 ~~Visser, 1991~~)."

Subsection 5.17.1, paragraph 2: revise second and third sentences: "The point of connection to Trunk "C" is located approximately 3 ~~1.5~~ miles away at the intersection of Division Street and Avenue P-8 ~~10th/Street/West/and Avenue/P-4~~. The Trunk "C" Relief Sewer operates by gravity flow and is a 21 to 39-inch~~/27/to/33-inch~~ diameter vitrified clay pipe sewer which varies in capacity from 18.3 to 36.7 mgd~~/23.0/to/28.6/mgd~~."

Subsection 5.17.1, paragraph 3: revise fourth sentence to read: "At 15th Street East and Avenue P, the sewer increases from 18 to 24 inches in diameter with a capacity of 5.6 mgd and a 60%~~/50%~~ flow; and at 30th Street East near the Palmdale WRP, it is a 30 inch sewer with 9.2 mgd capacity and a 37%~~/30%~~ flow."

Subsection 5.17.2, paragraph 2: revise first sentence to read: "From the point of connection of the Trunk "C" Relief Sewer at 10th Street West and Amargosa Creek~~/Avenue P-4~~, the Amargosa Creek Trunk Sewer (shown on Figure 66) would need to be extended to the project site."

Section 12 (page 12-31): delete the text following "Interior Water Consumption Reduction Measures" and "Exterior Water Consumption Reduction Measures." (The text under these headings is incorrect; the correct text appears on the following page.)

Add the following section:

5.30 LIBRARY SERVICES

5.30.1 Existing Conditions

Library Services in Palmdale are presently provided by the Palmdale City Library, located at the southeast corner of the intersection of Palmdale Boulevard and Sierra Highway. This facility is 12,400 square feet in size and can accommodate 75,000 volumes. However, according to the City Librarian, the need exists for a larger facility with more extensive services. The physical constraints of the library currently limit the types of services which can be offered and which are presently demanded by the community.

5.30.2 Project Impacts

National library standards provided by the City Librarian recommend 2.5 volumes per capita, 0.5 staff per thousand population and an area of 0.8 square feet per capita. The library needs for the City Ranch project, using these standards and a household size of 2.7 persons per dwelling unit, is 35,100 volumes, 7 staff persons, and 11,232 square feet of library facility. The adjoining Ritter Ranch Specific Plan area will be required to construct a branch library facility, 16,000 square feet in size. Therefore, a branch facility in the City Ranch project would be redundant. However, the applicant could provide a pro-rata share of funding for upgrading the main library or assist in the construction of the branch library proposed on the Ritter Ranch project. The location of the branch facility in the Ritter Ranch project with expanded library facilities at the main library would provide adequate library services for the City Ranch Specific Plan residents.

5.30.3 Mitigation Measures

There are no feasible mitigation measures which can be placed on this project to alleviate significant project-related impacts to library services.

5.30.4 Cumulative Impacts

Development of the cumulative projects would result in a need for library facilities of 28,393 square feet in size with 88,728 volumes and 17 staff persons. Mitigation on a project by project basis may not be feasible unless a City-wide financing mechanism can be developed to reduce the impacts of this cumulative development on library facilities. Therefore, development of the City Ranch and other cumulative projects may represent a significant cumulative impact to library services.

5.30.5 Unavoidable Adverse Impacts

Development of the proposed project will contribute to cumulative significant adverse impacts to library services.

EXHIBIT D

MITIGATION MEASURES

The City Council's certification of EIR 89-03 is subject to the following changes being made to the text of the mitigation measures listed below:

To Section 5.6.3, add: "In accordance with the California Department of Real Estate disclosure format and procedures, all potential purchasers of real property which is shown within the FEMA 100-year flood plain on the Flood Insurance Rate Maps most recently circulated by FEMA, shall be notified of the situation, regardless of whether the actual flood hazard has been abated by other methods. Also, the applicant shall contact FEMA as soon as possible after eliminating areas from the 100-year flood hazard zone to request modifications of the Flood Insurance Rate Maps. The applicant shall then diligently pursue revisions of the maps until the 100-year flood hazard zone as modified by the development is depicted on them."

To Section 5.7.3, add: "The Applicant shall consult with the California Department of Fish and Game in order that potential impacts to Mohave ground squirrel may be addressed. If an endangered species permit is warranted, the permit must be completed and mitigation measures fully dedicated before issuance of a grading permit. Therefore, the consultation with CDFG will occur prior to issuance of any grading permit for the proposed project."

To Section 5.7.3, revise existing mitigation measure to state: "If avoidance of the alkali meadow/transmontane alkali marsh is impossible, permits and agreements under Section 404 of the Clean Water Act and under 1603 of the State Fish and Game Code will be required from the U.S. Army Corps of Engineers and the California Department of Fish and Game, respectively. At a minimum, lost wetland acreage will be replaced in kind on a one-to-one-acre basis. Also, a mitigation and monitoring plan, subject to CDFG approval, will be required in the event of any loss of alkali meadow/transmontane marsh habitat."

In Section 5.8.3, revise existing mitigation measure to state: "If, as a result of project impacts, the level of service falls below either the standards set by the Los Angeles County Transportation Commission's Congestion Management Plan, or the policies set by the City's General Plan, the applicant shall implement improvements or services necessary to bring the roadway segment into compliance. The Final Draft CMP, dated August 14, 1991, includes SR-14, and Route 138, and identifies Sierra Highway as a roadway requiring additional study."

In Section 5.9.3, revise existing mitigation measure as follows: The applicant shall participate in ~~any~~ appropriate future trip reduction programs adopted by the City for future development applications.

In Section 5.9.3, add: "The project applicant shall submit a Transportation Demand Management Plan that will 1) create a City Ranch Transportation Management Association; 2) investigate the feasibility of developing a telecommuting center on site; and, 3) start a vanpool demonstration program for City Ranch residents. The plan will be submitted to the Planning Director prior to issuance of any certificates of occupancy for the proposed project."

In Section 5.9.3, delete: "In order to conform to the jobs/housing balance criteria of the AQMP, additional job

opportunities should be provided on the project site."

In Section 5.9.3, add a mitigation measure that states: "The project shall comply with all SCAQMD Rules and Regulations, including those pertaining to paving materials and architectural coatings. Specifically, use nonsolvent based, high-solid, or water based coatings on buildings where feasible.

In Section 5.9.3, add a mitigation measure that states: "In order to provide additional reductions in air emissions, the following list of mitigation measures was provided by the SCAQMD. Because these measures cannot be applied to all development applications that may be submitted for the City Ranch Specific Plan, each development application will be reviewed and those measures from the list which are deemed appropriate by the Planning Director will be applied to that development application.

Minimize Construction Activity Emissions:

- Schedule construct activity during off-peak hours and require a phased-schedule of construction to even out emissions peaks.
- Remove silt by paving construction roads, sweeping streets, and washing trucks leaving construction site.
- Suspend grading operations during first and second stage smog alerts.
- Maintain construction equipment engines by keeping them tuned.
- Use low-sulfur fuel for equipment.
- Use existing power sources; avoid using temporary power generation.

Reduce Construction-Related Traffic Congestion:

- Provide rideshare and transit incentives for construction personnel.
- Configure construction parking to minimize traffic interferences.
- Minimize obstruction of through traffic lanes.
- Provide a flagperson to guide traffic properly.
- Schedule operations affecting traffic for off-peak hours.

Limit Emissions from Vehicle Trips:

- Establish telecommuting programs, alternative work schedules, and satellite work centers.
- Schedule goods movements for off-peak traffic hours.
- Provide local shuttle and regional transit systems, transit shelter, bicycle lanes, storage areas and amenities, and ensure efficient parking management.
- Provide dedicated turn lanes as appropriate.
- Work with cities/developers/citizens in the region to implement TDM goals.
- Ensure streamlined traffic synchronization.
- Provide park-and-ride facilities.
- Implement parking management at commercial facilities and other places attracting traffic.
- Provide preferential parking to high occupancy vehicles and shuttle services; and charge parking lot

fees on low occupancy vehicles.

- Provide temporary roadway controls at peak-hours, such as one-way streets; and install directional traffic signs; and synchronize traffic signals to relieve congestion on surrounding streets; and manage street intersections to improve level of service.

Maximize Energy Conservation:

- Implement energy conservation measures beyond state and local requirements.
- Include energy costs in capital expenditure analysis.
- Landscape with native drought-resistant species to reduce water consumption and to provide passive solar benefits.
- Improve thermal integrity of buildings, and reduce thermal load with automated time clocks or occupant sensors.
- Introduce glazed windows, wall insulation, and efficient ventilation methods; install window-systems to reduce thermal gain and loss.
- Introduce energy efficient heating and other appliances.
- Incorporate appropriate passive solar design.
- Ensure sealing of all buildings.
- Control mechanical systems, or equipment with time clocks or computer systems.
- Implement waste separation and recycling programs."

Limit Emissions from Architectural Coatings and Asphalt Usage:

- Nonsolvent-based coatings should be used on buildings. Solvent-based coatings, if used, should minimize solvent emissions.
- Use of high-solid or water-based coatings should be encouraged.

<u>To Section 5.10.3, add:</u> "Reduction of intrusive noise levels in residential and school areas shall be accomplished through the incorporation of design measures or structural measures which will reduce noise levels to acceptable levels within the living or recreational portions (as defined by the City) of any lot. The measures that may be utilized to reduce noise impacts include, but are not limited to, placement of parking structures in such a manner as to act as a buffer, increasing the setbacks along the roadway, creation of landscaped berms, or construction of other barriers such as walls. The acceptable noise level CNEL which will be applied to future projects will be that level which is in place, either by ordinance, resolution or General Plan policy, at the time that future development applications are deemed complete."

<u>From Section 5.10.3, delete:</u> "Reduction of intrusive traffic-related noise levels in residential and school areas shall be accomplished through the placement of noise attenuation barriers along Avenue S and Bridge Road and Elizabeth Lake Road and City Ranch Road where they front on residential and school planning areas." Delete: "The location of bedrooms and quiet living ares in residential dwellings shall face away from noise sources while areas (such as kitchens, garages, bathrooms and playrooms) that are more noise tolerant shall face the source." Delete: "Two-story

residential units located within the ultimate unattenuated 60 dB(A) CNEL contour as specified by City Standards will require architectural treatments which should be addressed at more detailed levels of planning."

To Section 5.13.3, add: "Encourage the placement of dwelling units to take full advantage of solar energy for natural heating and cooling in order to reduce the use of electricity and natural gas within the project area."

In Section 5.16.3, delete: "Landscape street right-of-ways, entry statements, manufactured slopes, etc. with drought tolerant plants where feasible."

In Section 5.16.3, revise the following measure to state: "Landscape street rights-of-way, easements, medians, project entry statements, and all manufactured slopes with drought tolerant species where feasible."

In Section 5.17.3, revise existing mitigation measure to state: "All sewer infrastructure extensions and improvements depicted on Figure 66 and described in the project impacts subsection of this section of the EIR shall be constructed by the applicant. In the event that Assessment District 90-1 is not formed, and Developer constructs off-site trunk sewer lines within the San Andreas fault zone, the developer shall use state-of-the-art designs for the trunk sewer line to minimize the risk of rupture, and subsequent contamination, caused by a seismic event. Also the developer shall cause the preparation of an emergency spill response plan. The plan shall include provisions for spilled sewage retention, spill response measures, cleanup and disinfection measures, and training and funding for implementation of the spill plan. The plan shall be reviewed by the Lahontan Regional Water Quality Control Board and Sanitation District No. 20, and reviewed and approved by the Director of Public Works and the Director of Planning."

To Section 5.20.3, state: "There are no additional feasible mitigation measures which can be placed on this project to alleviate significant project-related impacts to sheriff services."

Within Section 5.22.3, replace existing Mitigation Measure with: "(a) Palmdale School District: The developer shall comply with the terms of the agreement, dated October 8, 1990, between the developer and the Palmdale School District as mitigation for impacts caused by development of the project on the Palmdale School District. The terms of that agreement are as follows:

(i) Participate in the Mello Roos Community Facilities District created by the Palmdale School District for financing school construction.

(b) Westside Union School District: The developer shall comply with the terms of the agreement, dated January 22, 1992, between the developer and the Westside Union School District as mitigation for impacts caused by development of the project on the Westside Union School District. The terms of that agreement are as follows:

(i) refer to agreement attached to this Exhibit.

(c) Antelope Valley Union High School District:

The Developer shall provide the following mitigation to the District, in order to provide its contribution to the District's fifty (50) percent share of funding a new high school to serve the City Ranch Specific Plan area, pursuant to Government Code Section 65995 and Education Code Section 17700 et. seq. (School Facility Funding Law):

(i) Mello-Roos Development Fees.

The applicant shall participate in a Mello-Roos Community Facilities District which will fund up to 50% of the cost of that portion of the school necessary to serve the City Ranch project based upon a student generation factor of .2 pupils per single family dwelling. Only residentially zoned property for which a building permit has been issued will be subject to the annual tax. The District may increase this annual tax by no more than 2% in each year. In lieu of paying an annual special tax, a property owner may prepay the annual special tax at the time a building permit is issued on the property. A fee equal to $1.30 per square foot of habitable residential construction shall serve to prepay the special tax. This fee shall be subject to an annual adjustment pursuant to increases or decreases in the School Construction Cost Index of the Office of Local Assistance with January 1, 1992 as the base. This prepayment fee shall be reduced to $1.20 per square foot if the school site is not located within Planning Area 3A of the Ritter Ranch Specific Plan.

(ii) Other Development Fees.

In addition to the fees specified in subparagraph (i) above, Developer shall pay to the District a fee of twenty-six cents ($.26) per gross leasable square foot of commercial construction prior to the issuance of each commercial building permit. All such fees shall be subject to annual adjustment pursuant to increases or decreases in the School Construction Cost Index of the Office of Local Assistance with January 1, 1992 as the base.

(iii) Site Preparation Expenses.

In the event that a high school is constructed in Planning Area 3A of the Ritter Ranch Specific Plan, and the site preparation work for a school to be located on that site, including provision of access to Elizabeth Lake Road and utilities, exceeds the amount of $4,650,000, the Developer shall pay the District fifty (50) percent of the District's costs for such work over $4,650,000, not to exceed a total of $350,000.

<u>To Section 5.23.3, add:</u> "Exhibit 16 of the Final Specific Plan will be amended to include an equestrian staging area in Planning Area 1, and if feasible, an equestrian staging area in Planning Area 18, and an equestrian trail through the power line easement. Trails planned in the City Ranch Specific Plan will be coordinated with those planned for the Ritter Ranch Specific Plan. Future developments adjacent to this project will be

required to coordinate with the trails shown on the trails plan adopted for City Ranch."

<u>To Section 5.24.3, replace existing text with the following language:</u> "There are no feasible mitigation measures which can be placed on this project to alleviate significant project-related impacts to existing maintenance facilities."

<u>To Section 5.25.3, add:</u> "The following sites which were augered require additional testing for subsurface deposits: LAn-1746, LAn-1747, LAn-1748, LAn-1749, LAn-1750, LAn-1752, LAn-1753, LAn-1756, LAn-1772, LAn-1774, LAn-1767, LAn-1768. At least one additional 1x1 meter test units need to be excavated at each of these sites, within site areas with the greatest densities of surface artifacts. These excavations are important to determine whether auger testing has missed subsurface deposits and to get a clearer, vertically-controlled picture of such deposits and their depositional context.

The following important petroglyph, bedrock mortar, and rock ring sites were not subject to any subsurface testing. They need to be tested through excavation of a minimum of one 1x1 meeter units utilizing 1/8" screen in the immediate vicinity of these features: LAn-1767, LAn-1768, LAn-1759, LAn-1760, LAn-1761, LAn-1762, LAn-1763, LAn-1765, LAn-1766, LAn-1769, LAn-1770, LAn-1771. The "hunting blind" sites are important structures whose function needs to be determined through further testing.

The important apparent habitation site, LAn-949, should be avoided through realignment of the proposed roadway. However, in the event that avoidance is not possible, salvage of the site shall be performed in accordance with an excavation plan. Excavation of 100 percent of Loci A through C as described in the Phase II Archaeological Assessment (July, 1991) shall be conducted at LAn-949. It is estimated that approximately 500 cubic meters of cultural deposit will have to be removed. The excavation plan detailing strategy and research goals shall be submitted to the City of Palmdale for review and approval prior to excavation activities. In addition, this excavation plan shall contain a subregional analysis of the archaeological sites within and immediately adjacent to City Ranch to provide a basis for significance determinations. As part of the subregional analysis, a research design that would set standards for future work in the vicinity of the City Ranch project shall be proposed. The subregional analysis of the archaeological sites may be prepared in cooperation with other adjacent property owners, as approved by the Planning Director.

Those sites, not listed above, which contained surface artifacts but were only auger tested shall be tested with at least one standard test unit per site. The testing program shall be submitted to the City Planning Department for review and approval prior to commencement. In addition, untested cupule sites, rock rings and hunting blinds shall also be tested in this manner. Any additional mitigation recommended as a result of the additional testing shall be required as mitigation measures for initial and subsequent development applications, as appropriate.

Relocation of cupule boulders must be done under the direction of a qualified archaeologist who will give careful attention to orientation of the boulders. The boulders shall be moved prior to site disturbance in their immediate vicinity to a location approved by the Planning Director. Since context will be lost, some shall be relocated to a repository approved by the Planning Director where they can be used for educational purposes. Representative artifacts should be displayed at this repository.

The work described above shall be performed by a qualified archaeologist, retained by the applicant and approved by the Planning Director. Because the introduction of residents into the area will result in the degradation of archaeological sites, required testing shall be completed and approved by the Planning Director prior to recordation of the first parcel map or tract map for the project."

<u>In Section 12 of the EIR (Mitigation Monitoring Program) the following revisions shall be made</u>:

Page 12-14, Implementation Procedure for Hydrology, add the following sentence: "Disclosure of properties located within the FEMA flood zone will be made pursuant to Department of Real Estate procedures for disclosure."

Page 12-17, Implementation Schedule for Biology/Disturbance to or Loss of Sensitive Species, add the following sentence: "Consultation with the California Department of Fish and Game regarding potential impacts to Mohave ground squirrel shall occur prior to issuance of grading permits for the property.

Page 12-24, Implementation Schedule for Air Quality/Long-term Operational Impacts, add the following sentence: "The Transportation Demand Management Plan will be submitted to the Planning Director prior to issuance of certificates of occupancy for the project."

Page 12-41, Implementation Procedure for Archaeology, revise the paragraph to read: "An archaeologist, approved by the City of Palmdale Planning Department, shall perform the additional testing required in the mitigation measures and carry out any excavation or salvage as indicated by that testing or as described in the mitigation measures in Section 5.25.3. All significant historic and archaeological site locations shall be recorded with the Archaeological Information Center at UCLA. If relocation of resources is necessary, the archaeologist shall monitor the relocation. The artifacts will be provided to an approved repository pursuant to the mitigation measure."

Page 12-41, Implementation Schedule for Archaeology, revise the paragraph to read: "The archaeological testing shall be completed and the findings reviewed by the City of Palmdale Planning Department prior to recordation of any subdivision map for the project. Excavations will be completed and prior to the start of grading on the property. Any relocation of materials shall be scheduled and monitored by the archaeologist, who shall also inform the Planning Department before the relocation is initiated. Results of the relocation

efforts will be reported to the Planning Department within thirty days of completion of the relocation. Recordation of significant archaeological sites and delivery of significant materials recovered to appropriate repository shall be carried out as sites and materials are identified and recovered."