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"To Enrich Lives Through Effective and Caring Service"

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IN REPLY PLEASE
REFER TO FILE: WM-6

June 1, 2006

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:

SAN GABRIEL RIVER CORRIDOR MASTER PLAN AND PROGRAM ENVIRONMENTAL IMPACT REPORT
AUTHORITY TO PROCEED
SUPERVISORIAL DISTRICTS 1, 4, AND 5
3 VOTES

IT IS RECOMMENDED THAT YOUR BOARD:

1. Adopt the San Gabriel River Corridor Master Plan.

2. Certify that the final Program Environmental Impact Report (PEIR) for the San Gabriel River Corridor Master Plan (Master Plan) has been completed in compliance with the California Environmental Quality Act (CEQA) and the State and County guidelines related thereto and reflects the independent judgment and analysis of the County; find that the final PEIR was presented to the Board and the Board has reviewed and considered the information contained therein prior to approving the Master Plan; determine that the significant adverse effects of the Master Plan have been reduced to an acceptable level as outlined in the enclosed Findings of Fact for the Master Plan, which findings are adopted and incorporated herein by reference; and adopt the enclosed Programmatic Mitigation Monitoring and Reporting Program, finding that, pursuant to Public Resources Code Section 21081.6, the Programmatic Mitigation Monitoring

and Reporting Program is adequately designed to ensure compliance with the required mitigation measures during project implementation.

3. Authorize the Director of Public Works to submit $875 to the County Clerk for payment of the required processing fee and Fish and Game filing fee concurrent with the filing and processing of a Notice of Determination for the Master Plan.

PURPOSE/JUSTIFICATION OF RECOMMENDED ACTION

On September 7, 1999, Synopsis No. 18, your Board instructed the Director of Public Works, in conjunction with the Directors of Parks and Recreation and Regional Planning, to prepare a Master Plan. To develop the Master Plan, Public Works established a Steering Committee composed of cities adjacent to the river; other public agencies; water, community, and environmental groups.

The Master Plan that emerged from this stakeholder driven process integrates over 130 projects that meet the Steering Committee's goal to enhance habitat, recreation, open space, flood protection, water supply and quality, and economic development. In addition, it includes descriptions of programs and guidelines that may be developed in the future to continue to improve the San Gabriel River for the public's use and enjoyment.

Pursuant to CEQA, a public agency must consider the environmental impacts of a project prior to its approval. The Master Plan is a project that is subject to the requirements of CEQA. Therefore, a PEIR was prepared to consider the environmental impacts, mitigation measures, and alternatives of the Master Plan on a program level.

A fee must be paid to the Fish and Game when certain notices, required by CEQA, are filed with the County Clerk. Public Works will submit $850 to the County Clerk for this fee, in addition to a $25 processing fee, when the Notice of Determination is filed.

Implementation of Strategic Plan Goals

This action is consistent with the County Strategic Plan Goal of Service Excellence. Adoption of the Master Plan and approval of the final PEIR will facilitate processes as the Flood Control District and other stakeholders start implementing projects described in the Master Plan, which will provide for a better quality of life for the citizens of the County.

FISCAL IMPACT/FINANCING

Funding for the Fish and Game and Notice of Determination filing fees in the amount of $875 is included in the Fiscal Year 2005-06 Flood Control District funds. Individual projects will be funded separately by various project proponents. For projects in which Public Works is lead agency, we will return to your Board for approval of construction contracts that will be advertised for each of the projects in the future. Public Works will also work with other agencies to obtain grants and other sources of funds for projects.

FACTS AND PROVISIONS/LEGAL REQUIREMENTS

The Master Plan is an overall conceptual plan that focuses primarily on developing the river corridor to enhance habitat, provide recreational benefits, and protect open space while maintaining and enhancing flood protection and water resources. Additionally, the Master Plan is consistent with the applicable goals and policies set forth in the Los Angeles County General Plan.

The PEIR was prepared in compliance with CEQA. The purpose of the PEIR is to disclose the significant or potentially significant environmental effects of implementing the Master Plan, to identify possible ways to avoid or reduce those impacts, and to describe reasonable alternatives of the Master Plan. As projects identified in the Master Plan are proposed for implementation in the future, their sponsors will examine each project in light of the PEIR to determine what additional project-level environmental document must be prepared. The data on existing conditions and the programmatic analyses and mitigation measures presented in the PEIR will then serve as a source of background information and model to guide further project-level CEQA review.

ENVIRONMENTAL DOCUMENTATION

Public Works issued a Notice of Preparation for the PEIR in April 2003 and circulated it for a period of 30 days pursuant to State CEQA guidelines, Section 15082. Twenty written statements were received by Public Works in response to the Notice of Preparation. Additionally, a public scoping meeting for the project was held at Public Works headquarters in Alhambra on May 12, 2003. Oral comments were received at the meeting.

A draft PEIR was completed and released for public review on March 3, 2005. The draft PEIR identified significant environmental effects of the project in the areas of air quality, biological resources, cultural resources, geology and soils, hazards and hazardous

materials, hydrology and water quality, land use and mineral resources, noise, public services and utilities, recreation, and transportation and traffic.

Public Works initiated a 60-day public comment period by filing a Notice of Completion and a Notice of Availability with the State Office of Planning and Research. Pursuant to Section 21092 of the Public Resources Code, public notice of the draft PEIR was published in the *San Gabriel Valley Tribune, Whittier Daily News, Long Beach Press Telegram, and Seal Beach Sun* on March 11 and April 1, 2005. Copies of the draft PEIR and the Master Plan were also available for review at the Arcadia; Azusa; Baldwin Park; Clifton M. Brakensiek; Cerritos; Downey; Duarte; El Monte; Irwindale; George Nye, Jr.; La Puente; Long Beach; Los Alamitos – Ross Moor; Norwalk; Pico Rivera; Santa Fe Springs; Mary Wilson – Seal Beach; South El Monte; and Whittier Libraries and on the internet at www.sangabrielriver.com. Copies were also sent to the State Clearinghouse.

The public review period lasted for 60 days from March 3 through May 5, 2005. During that period, comments were received from two private residents and 22 public agencies and organizations: State of California Department of Conservation; State of California Department of Transportation; State of California Department of Fish and Game; San Gabriel River Water Master; Southern Council of Conservation Clubs, Inc.; Cities of Cerritos, Santa Fe Springs, and Seal Beach; San Gabriel River Water Committee; San Gabriel Valley Mosquito and Vector Control District; Main San Gabriel Basin Watermaster; Puente Hills Landfill Native Habitat Preservation Authority; Fly Fishers Club of Orange County; Southern California Edison; County of Orange – Resources and Development Management Department; Central Basin Municipal Water District; United Rock Products Corporation; Metropolitan Water District of Southern California; Law Offices of Susan M. Trager; Sanitation Districts of Los Angeles County; Vulcan Materials Company; and Southern California Association of Governments. Written responses to these comments are included in the final PEIR.

Public Works prepared the final PEIR and, pursuant to Public Resources Code Section 21092.5, provided copies of the responses to comments and the final PEIR to all commenting agencies.

The final PEIR analyzes the feasible mitigation measures necessary to avoid or substantially lessen the project's potential environmental impacts and a range of feasible alternatives capable of eliminating or reducing these effects in accordance with CEQA and the State CEQA guidelines.

The final PEIR concludes that all of the potentially significant impacts of the project can be eliminated or mitigated to below a level of significance with the imposition of feasible mitigation measures.

We have prepared the enclosed Programmatic Mitigation Monitoring and Reporting Program as required by State CEQA guidelines, Section 15097, which includes maintaining records to ensure compliance with environmental mitigation measures adopted as part of this project.

A Notice of Determination in accordance with the requirements of Section 21152(a) of the Public Resources Code will be filed within five working days after your Board's approval of the Master Plan.

IMPACT ON CURRENT SERVICES (OR PROJECTS)

The project will not have a significant impact on current services or projects currently planned.

CONCLUSION

Please return three adopted copies of this letter to Public Works.

Respectfully submitted,

DONALD L. WOLFE
Director of Public Works

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Enc.

cc: Chief Administrative Office
County Counsel

a common thread rediscovered

san gabriel river corridor master plan

JUNE 2006

a common thread rediscovered

san gabriel river corridor master plan

JUNE 2006

Prepared for the

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Caltrans
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City of Azusa
City of Baldwin Park
City of Bellflower
City of Cerritos
City of Downey
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San Gabriel River Water Committee
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San Gabriel Valley Conservation Corps
San Gabriel Valley Council of Governments
San Gabriel Valley Gun Club
San Gabriel Valley Mosquito and Vector Control District
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San Gabriel Valley Water Association
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chapter 1 Introduction

1.1 PURPOSE OF THE MASTER PLAN

For many decades, the San Gabriel River effectively served the region by quietly performing essential flood protection, groundwater recharge and stormwater conservation functions. In recent years, there has been a growing desire to rediscover the river and offer more of its benefits to all the communities along its route, as well as to visitors from throughout the region. Communities want to establish and enhance habitat, recreational and open space resources along the river—in ways compatible with its core flood and water management functions.

In 1999, the County of Los Angeles Board of Supervisors directed the Department of Public Works to prepare a plan for the San Gabriel River corridor. During the past three years, a Steering Committee representing cities, other public agencies, water groups, and community and environmental groups has been meeting to develop a shared vision of the river and a plan for how to achieve it.

Figure 1-1. The San Gabriel River offers spectacular views as it travels through the Angeles National Forest.

The consensus-based Master Plan that emerged from this stakeholder-driven process integrates many objectives: habitat, recreation, open space, flood control, water supply and economic development. In the past, planning had focused on only one or two of these elements and could not adequately address the inherent complexities of a river system. This new multi-objective and multi-user perspective to planning the long-term future of the San Gabriel River is the foundation and purpose for this Master Plan.

The Master Plan identifies priorities, provides guidance, and coordinates multiple goals of the many jurisdictions and other stakeholders that share the river—reflecting the consensus of all these stakeholders. It integrates over 130 independently sponsored enhancement projects that were identified by the 19 cities along the river, the County of Los Angeles and the public agencies and community organizations that participated in developing the Master Plan. It summarizes projects and programs already underway or proposed, enabling the entire river community to see what's being done and what remains to be done in the future.

The Plan also provides suggestions on the types of projects to pursue, as well as how to design a project that reflects the agreed on vision and principles. This includes performance criteria that project sponsors can use to assess potential projects and, once implemented, to measure their progress in meeting the goals and objectives. Finally, the Master Plan includes five Concept Design Studies that demonstrate the multi-objective approach applied at the project level—providing lessons that project sponsors can use to guide their own efforts.

This framework is meant to guide the efforts of all cities along the river, encouraging them to join with the County of Los Angeles, other public agencies, non-profit groups, business interests, community organizations and other stakeholders in designing and planning projects that will make their shared vision of the river a reality.

Figure 1-2. The river is encased in concrete for 10 miles.

Figure 1-3. Enhancement of the pedestrian and bicycle trail along the San Gabriel River corridor is one of the Master Plan's primary objectives.

This combination of what is possible and the Master Plan's overarching multi-objective framework are more likely to achieve the shared vision than many unrelated, independent efforts, no matter how well-conceived each might be.

A coordinated plan will also help establish eligibility for federal, state and local funding. Funding agencies are more likely to support projects linked to a larger, comprehensive plan than they are to individual, disconnected ones. To facilitate the funding process, the Master Plan also includes a catalog of funding resources, which project sponsors will want to explore further.

A final note. The integrated planning process that guided the Master Plan during the past few years is as important as the plan itself. By working together to craft this vision and plan, a diverse group of people, interests and organizations have developed a better understanding of each other and of each other's respective goals. This mutual understanding and respect establish the foundation for collective action that will ensure lasting, positive benefits and the future of this great river.

Figure 1-4. The County of Los Angeles Department of Public Works hosted dozens of Steering Committee meetings, bringing together diverse groups and developing this consensus-based Master Plan.

PLAN ORGANIZATION

Starting with this introductory chapter, the San Gabriel River Master Plan consists of five chapters and appendices.

Chapter One

This chapter introduces concepts underlying the planning process and provides the overall context for this planning effort. It describes the geographic setting of the San Gabriel River, including the seven reaches that define the changing characters of the river throughout the project area. It also discusses how thinking about rivers has changed and how this new way of thinking directed this planning effort. The chapter concludes with a history of the Master Plan development process and explains how the Master Plan complements and relates to other ongoing planning efforts in the San Gabriel River watershed and the region at large.

Chapter Two

The first half of this chapter describes the natural processes that created and shaped the river over millions of years and how human habitation and the effort to manage and control the river changed those natural conditions—reaping many benefits while setting the stage for new challenges to be solved.

The second half of the chapter presents the river as it exists today, the starting point for reaching the ideal future of the river as envisioned by the stakeholders.

Chapter Three

This is the heart of the Master Plan. It details current and proposed projects, programs and policies that can close the gap between present reality and a future that reflects the aspirations of those who have shaped this plan. The plan framework includes the vision statement and goal statements developed by the Steering Committee, the objectives that underlie each goal, and performance criteria used to assess progress toward those goals and objectives.

Each of the 134 projects along the San Gabriel River, as proposed by project sponsors, is listed by the seven reaches, beginning in the San Gabriel Mountains near the river's headwaters and ending near its mouth at the Pacific Ocean. Additional corridor-wide projects, policies and programs reinforce the efforts underlying the more site-specific projects, and forge an identity for the river as a whole.

The chapter concludes with five Concept Design Studies, selected by the Steering Committee to illustrate how a multi-objective planning approach can be applied at the project level.

Chapter Four

Chapter Four builds on the projects outlined in the preceding chapter, identifying additional opportunities for river enhancement that can be pursued in the near- and long-term future. These opportunities complement the many stakeholder-driven projects described in Chapter Three.

Chapter Five

This chapter introduces the organizational and financial strategies that will be required to shift from planning to implementation of the Master Plan. It includes a summary of the full Environmental Impact Report that accompanies the Master Plan, and concludes with ideas to support the Master Plan and its vision over the long term.

Appendices

The appendices provide resources that will be useful for project sponsors and all those interested in the future of the San Gabriel River: a Project Action Grid of all 134 projects and other reference material.

1.2 THE RIVER SETTING

The San Gabriel River is the central backbone of the San Gabriel River Watershed—an area that is drained by the river and its tributaries. The watershed for the San Gabriel River is one of several coastal watersheds in Southern California that drain hundreds of square miles of mountainous and urban lands to the Pacific Ocean. The character of the river changes dramatically during its 58-mile journey from Cogswell Dam, near the headwaters of the San Gabriel's West Fork in the San Gabriel Mountains, to its mouth at the Pacific Ocean.

The Regional Context

The San Gabriel River Master Plan focuses on the main corridor and the West Fork of the San Gabriel River. It is a north-to-south oriented river system, flowing from its headwaters in the San Gabriel Mountains to the Pacific Ocean. On its run to the sea, it passes through 19 different cities. It traverses the rugged, diverse terrain of the San Gabriel Mountains and San Gabriel Canyon, major flood management and water conservation facilities, densely populated and ethnically-rich suburban communities of the inland valleys and coastal plain, and Southern California beach communities. Major historical, economic, natural and cultural resources

COURTESY OF GABI MCLEAN ©2003

Figure 1-5. Downtown Los Angeles, as viewed from the San Gabriel Mountains above the City of Duarte.

COURTESY NASA/JPL-CALTECH

Figure 1-6. Los Angeles and vicinity from space.

along this corridor have had and continue to have profound impacts on all of Southern California.

The San Gabriel River is one of seven major watersheds partly or completely within Los Angeles County. Most of the river lies in southeastern Los Angeles County, bordering San Bernardino County, but a small section crosses northern Orange County. The other major watersheds in Los Angeles County are the Los Angeles River, the Santa Clara River, Antelope Valley/Mojave Basin, Malibu Creek, Ballona Creek/Santa Monica Bay, and Dominguez Channel Watersheds.

Three watersheds immediately surround the San Gabriel River Watershed. To the west is the Rio Hondo, a tributary and sub-watershed of the Los Angeles River Watershed, which totals 834 square miles. The Antelope Valley/Mojave Basin to the north covers 1,200 square miles within Los Angeles County and additional land in Kern and San Bernardino Counties. To the east, is the 2,800-square-mile Santa Ana River Watershed, which encompasses parts of Los Angeles, San Bernardino, Riverside and Orange Counties.

San Gabriel River Watershed

The entire San Gabriel River Watershed covers more than 640 square miles and includes portions of 37 cities in Los Angeles and Orange Counties, as well as communities in unincorporated Los Angeles County. More than one-third of the upper watershed falls within the Angeles National Forest, including significant portions of the San Gabriel Mountains. The watershed also contains the Merced and San Jose Hills, and the Puente-Chino Hills,

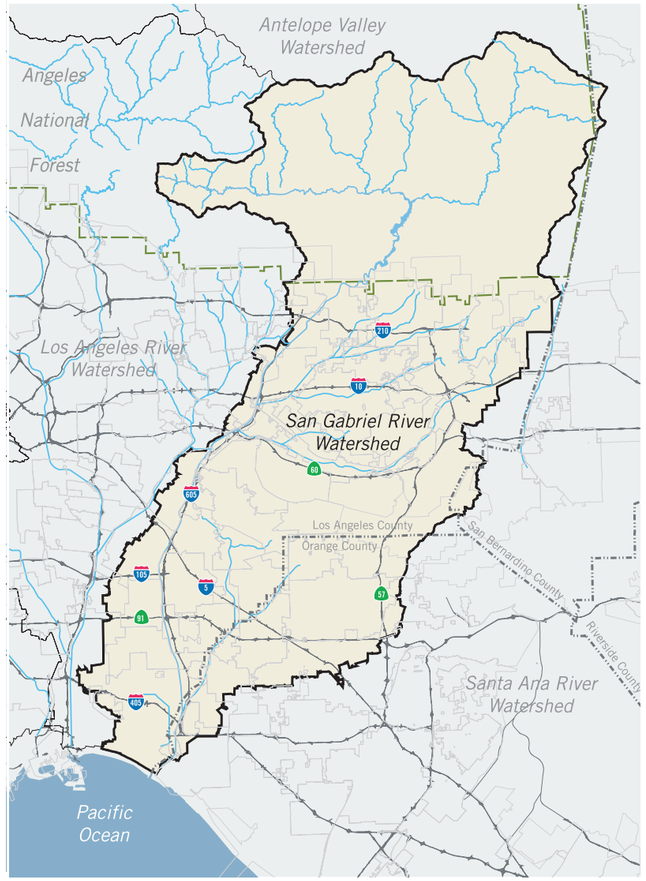


Figure 1-7. The 640 square miles of the San Gabriel River Watershed connect the San Gabriel Mountains and 37 communities with the Pacific Ocean.

PHOTO COURTESY OF ELIZABETH KARMAN

Figure 1-8. In La Habra Heights, houses coexist side by side with native habitat of the Puente Hills. This area drains to Coyote Creek.

as well as the major urban populations of the San Gabriel and Pomona Valleys and the coastal plain of the Los Angeles Basin.

About 26% of the watershed's total area is developed with urban and related land uses. The San Gabriel River consists of 22 creeks, washes and streams, including four major tributaries or sub-watersheds, which join to form the overall watershed:

- Upper San Gabriel River including the East, West and North Forks
- Walnut Creek
- San Jose Creek
- Coyote-Carbon Creek

The length of the main stem of the San Gabriel River, which begins where the West Fork and East Fork meet, is about 48 miles. The total length of this part of the river, including both the main stem of the river and its tributaries, is about 73 miles. The lower San Gabriel River also includes the Los Cerritos wetlands system, just upstream of its mouth at the Pacific Ocean.

Overview of Watersheds

Everyone, at all times, in any location, lives within a watershed. Wherever rainfall hits the ground, it travels as surface runoff over the ground until it enters a small stream or storm drain. These streams and storm drains collect into a larger stream, which eventually meets a major river, perhaps through a wetland, and then on to its final destination, a lake or ocean. In some cases, where there is no surface outlet, stormwater can pool and naturally percolate through the ground to reach the groundwater aquifer. These rivers and streams form the trunk and branches of a watershed.

Watersheds share similar characteristics, but every watershed is unique because of differences in local conditions. Land form and climate determine the size and form of a watershed, as well as the speed, direction and quantity of the flow of its rivers. Land forms such as mountain ranges, local hills and ridgelines and other high grounds, direct water one way or another and form the watershed boundary. Watersheds can be tiny or immense and are often composed of smaller sub-watersheds.

Each watershed begins at a headwaters and flows downstream to an outflow. As streams and rivers flow, they collect and deposit sediment, nutrients and velocity, or energy, which influence local ecosystem characteristics. Whether flowing through remote areas or through populous urban landscapes, rivers reflect the rocks and soils, the plants and wildlife, and the human communities through which they flow.

Landscape change is also part of a natural system. These changes are often climate-related, including drought, flood, storm and fire. Living plants and animals also induce change, for example, an insect infestation or the changing character of a maturing tree.

In the past, rivers and streams followed their own courses. Today, the natural water cycle and flow are often significantly altered in urban environments, primarily to protect urban communities from flood damage and to better use local water resources for urban and agricultural water supplies. Dams provide flood protection and water conservation benefits. Urban development increasingly covers land areas with impermeable surfaces, which eliminate opportunities for natural percolation. This increases stormwater runoff amounts and velocities, and creates river systems that can be unpredictably damaging to the urban, built community. So, beginning in the 1930s, urban area rivers and creeks were often placed in concrete channels to increase their ability to carry high velocity stormwater flows out to the ocean.

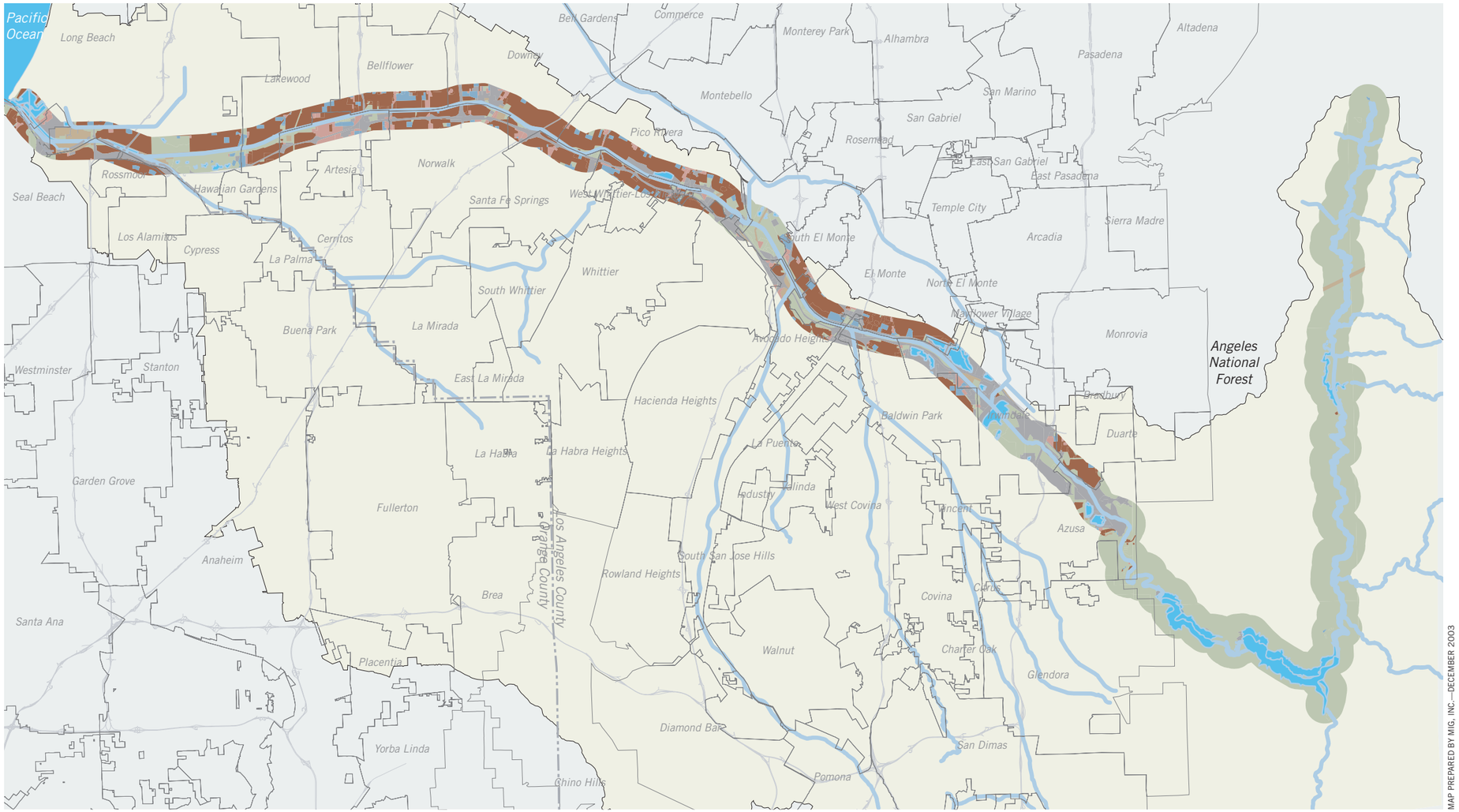
River Corridor Boundary

The project area lies along 58 miles of the San Gabriel River in Southern California from the Cogswell Dam in the Angeles National Forest to its terminus at the Pacific Ocean. This project area encompasses the portions of the river within the jurisdiction of the County of Los Angeles Department of Public Works (LADPW).

The uppermost section of the project area begins with the Cogswell Dam Reservoir and flows east 10 miles along the West Fork of the San Gabriel River until it reaches the main stem of the river, continuing south for another 48 miles towards the ocean. The project area is almost entirely in Los Angeles County, with a portion in Orange County where it borders the east side of the river for approximately three miles at its southern end.

The Master Plan envisions the river corridor as a regional, linear network of community green spaces adjacent to the river, including parks and open space areas. The "park" component of the Master Plan vision provides a useful standard for defining the parameters of the river corridor. The general rule for planning community parks is that the park should serve areas within a one half-mile walking distance of the park. That translates into a one-mile wide circle, with the park at its center. When applied to the San Gabriel River, this park-planning standard translates into a half-mile distance from the centerline of the river on either side, forming a one-mile wide corridor along the 58-mile length. Based on this one-mile corridor width, the project area for the Master Plan encompasses about 58

Figure 1-9. Cogswell Dam and Reservoir on the West Fork is the start of the project area.



Source: County of Los Angeles Department of Public Works and Rivers and Mountains Conservancy

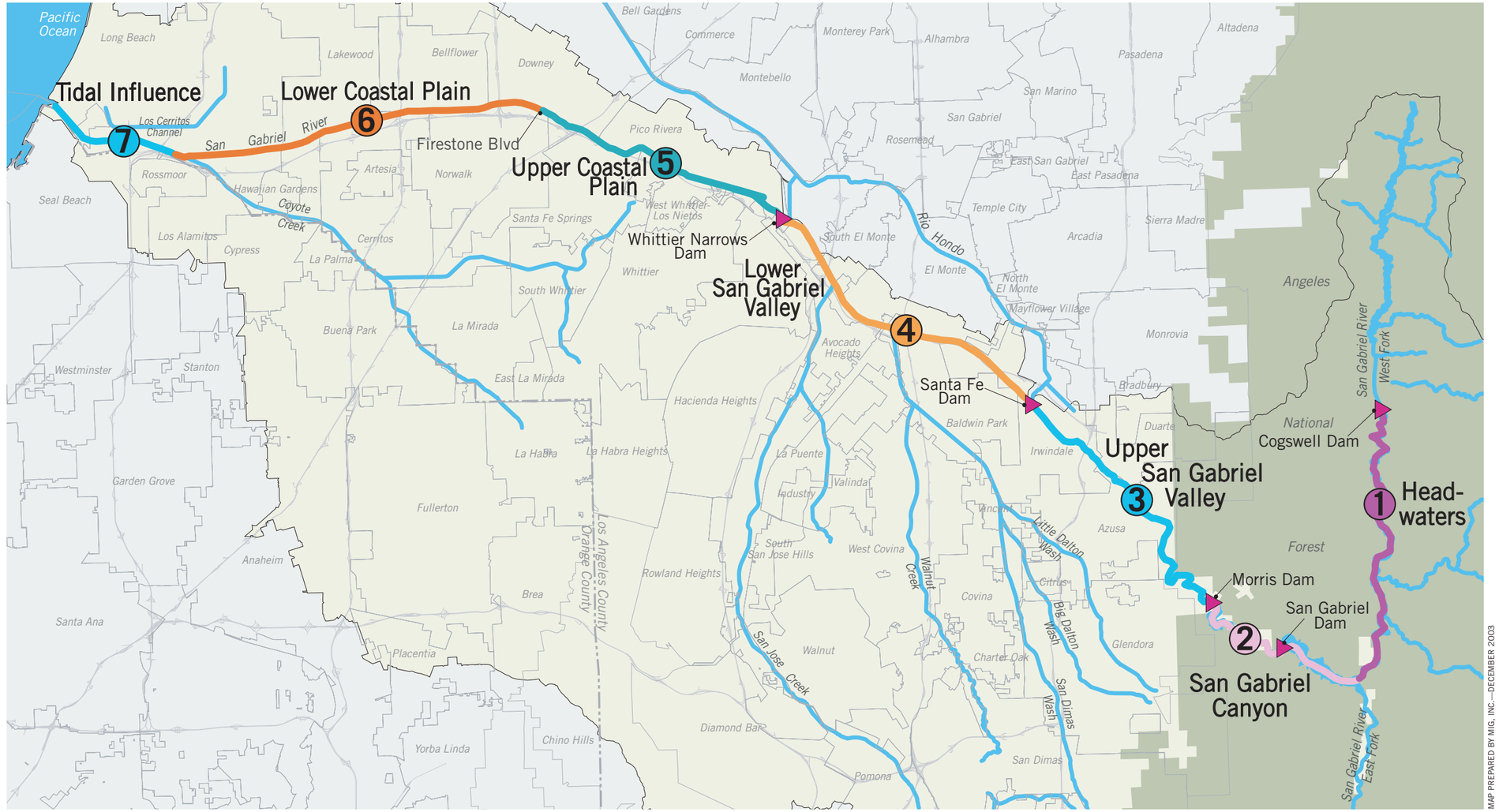
Note: Project Boundary is 1 mile wide.

River Corridor Boundary

County of Los Angeles Department of Public Works

San Gabriel River Corridor Master Plan

Map 1-1. River Corridor boundary.



San Gabriel River Reaches

County of Los Angeles Department of Public Works

San Gabriel River Corridor Master Plan

Source: County of Los Angeles Department of Public Works and Rivers and Mountains Conservancy

Map 1-2. San Gabriel River Reaches.

square miles. This one-mile corridor provides a necessary focus for the Master Plan study area but is not meant to be a totally exclusive boundary. Some projects and programs located nearby but outside the one-mile study are included in the Master Plan as they contribute to the vision and goals of the Plan. This one-mile wide corridor provides a necessary focus for the Master Plan study area but is not meant to be a totally exclusive boundary. Some projects and programs located nearby but outside the one-mile wide study are included if they are designed to contribute to the vision and goals of the Master Plan.

The Seven Reaches

The river environment changes dramatically during the 58-mile course. For this reason, the Plan divides the river into seven different reaches. Each reach is defined by distinct landscape, cultural, geological and hydrological features, which naturally change as the river flows from the mountains, through the valley, into the coastal plain, and eventually out to sea. The reach segments' individual characteristics and functions should guide future project designs:

1. **HEADWATERS.** The Angeles National Forest at the base of Cogswell Dam east to the confluence with the East Fork of the River.
2. **SAN GABRIEL CANYON.** Where the main stem of the river joins the East Fork south to the mouth of San Gabriel Canyon, just above the last developed land in Azusa.

Figure 1-10. The mouth of the river is at Seal Beach, near the River's End Café.

USE AND PHOTO COURTESY OF THE SAN GABRIEL MOUNTAINS REGIONAL CONSERVANCY

Figure 1-11. A bobcat viewing the San Gabriel River from the Puente Hills; original painting by Fariad.

3. **UPPER SAN GABRIEL VALLEY.** From the mouth of the San Gabriel Canyon above Azusa to the base of Santa Fe Dam in Irwindale.
4. **LOWER SAN GABRIEL VALLEY.** The base of the Santa Fe Dam to the base of the Whittier Narrows Dam.
5. **UPPER COASTAL PLAIN.** Whittier Narrows to where the river crosses Firestone Boulevard in Downey and Norwalk.
6. **LOWER COASTAL PLAIN.** Firestone Boulevard south to 500 yards below the Coyote Creek confluence.
7. **ZONE OF TIDAL INFLUENCE.** The final stretch of river, below the Coyote Creek confluence to the Pacific coast.

The river itself played a significant role in shaping this landscape; recognizing the distinctive characteristics of each reach will help us understand the river as it is today and how projects along it might be designed in the future. (See Section 3.6 for more detailed descriptions of the reaches.)

1.3 PAST AND PRESENT THINKING ABOUT RIVERS

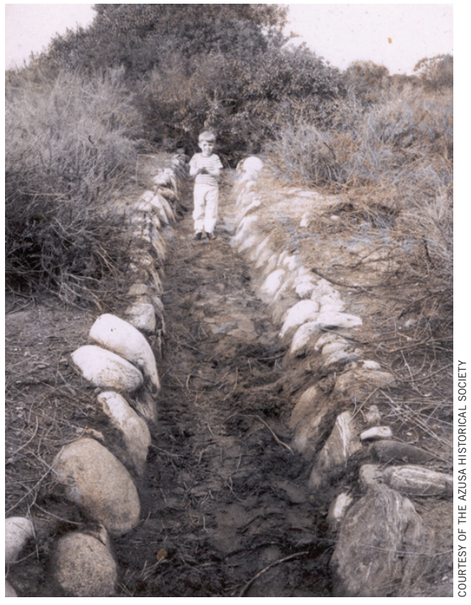
During the past one hundred years, attitudes about rivers and watershed management have evolved greatly in the Los Angeles region. Before modern flood control structures were installed, the San Gabriel River emerged from the mountains onto the plain of the valley, often percolating through the alluvium that eroded from the growing San Gabriel Mountains. The river shifted frequently, resulting in dynamic, braided patterns of stream channels and terraces, which often intermingled with the Los Angeles River system. The vast groundwater basin and seasonal flows of water from the mountains provided all the water needed for human settlement.

With the development of agriculture and our increasing population, the landscape began to change rapidly. Irrigation systems, including tunnels, canals and ditches, were developed to convey the water to where it was needed to support these endeavors. Recognizing the value of the water resources from the river system, the rights to these waters were carefully

defined. Wetlands were often drained because of public health concerns associated with mosquito-born diseases. The rich supply of rock, sand and gravel that flowed down from the San Gabriel Mountains provided raw materials to build structures such as homes, roads and public infrastructure. Aggregate mining to harvest these resources was established in the San Gabriel Valley in the early 1900s, soon becoming a major economic activity.

As settlement intensified through the early twentieth century, the risks associated with development in the river floodplains in the region became apparent, particularly following devastating floods in the 1910s and the 1930s. The Los Angeles County Flood Control District was created in 1915 to address this issue.

The disruption caused by these floods led to a widespread desire to control floodwaters. The result was a highly engineered series of flood management structures, primarily to move storm flows to the ocean as quickly as possible. Because of the complex surface and groundwater rights along the river, which over time have become completely allocated, the County also developed a role in managing the river system to conserve water. But there were trade-offs associated with managing the river for single purpose objectives. The most widespread impacts have been on habitat, particularly to aquatic and riparian species.



COURTESY OF THE AZUSA HISTORICAL SOCIETY

Figure 1-12. Irrigation ditches built with local river rocks brought river water to Los Angeles County citrus groves.

COURTESY OF THE AZUSA HISTORICAL SOCIETY

Figure 1-13. The 1938 flood reinforced the need for flood control systems.

In the last few decades, technical knowledge has evolved and the limits of the single-purpose approaches are now better understood. It is clear that it is both possible and necessary to address multiple objectives in managing rivers, which involves consideration of environmental resources, community recreation and open space, as well as flood protection and water supply allocation.

The first major effort in Los Angeles County to incorporate multi-objective planning was the Los Angeles River Master Plan (1996), which considered factors such as habitat and recreation, and included a stakeholder-based, participatory planning process. Community-based groups concerned about improving and even restoring the Los Angeles River worked collaboratively with the County and other stakeholders to develop a plan that continues to serve as a foundation for current efforts on that river.

Building on the momentum of the Los Angeles River Master Plan and recognizing the potential for collaborative, stakeholder-based approaches to rivers and watersheds, The Los Angeles and San Gabriel Rivers Watershed Council was created in the mid-1990s as a forum for public and private stakeholders to explore issues and solutions related to the Los Angeles and San Gabiel River Watersheds. The Watershed Council's mission is to facilitate a comprehensive, multi-objective, stakeholder-driven consensus process to preserve, restore, and enhance the many beneficial uses—economic, social, environmental and biological—of the Los Angeles and San Gabriel Rivers Watersheds ecosystem through education, research, planning and mediation. The spirit embodied by this forum has set a collaborative tone for addressing all of the region's watersheds.

In the year 2000, LADPW reorganized to create a Watershed Management Division, bringing together services such as flood protection, water conservation, preservation and creation of open space for recreation and habitat, and reduction of pollution of water resources. This new division adopted its own mission statement:

> "The Department of Public Works will lead the planning and implementation of watershed management in Los Angeles County. Working with those who have a stake in our watersheds' future, we will integrate flood protection, conscientious management of natural resources, water conservation and efforts to improve the quality of

Figure 1-14. The County of Los Angeles Department of Public Works Watershed Management Division was created in the year 2000.

stormwater runoff and groundwater. Our goal is to protect our communities and the environment, and provide a higher quality of life for the citizens of our County."

Over the years, river and floodplain management evolved to address the most pressing issues of the day—and were largely consistent with the prevailing cultural values and technical knowledge of the time. As science sheds light on the complexities of these systems and as social values change with respect to the need for environmental resources protection and community recreation, management of these systems is also evolving. This requires building on the experience and knowledge of solutions implemented in the past, while continuing to grapple with new issues and challenges.

1.4 HISTORY OF THE PLANNING PROCESS

Given the complex political and social landscapes through which the river flows, the success of the planning process was dependent upon the active participation of all stakeholders. For this reason, the County of Los Angeles Board of Supervisors passed a motion to prepare a San Gabriel River Corridor Master Plan (Master Plan) and directed that LADPW establish a Steering Committee composed of cities along the river; water and regulatory agencies; interested community, business, and environmental groups; and other stakeholders to assist with plan preparation. The Steering Committee conducted a two-year information exchange and consensus-building process, leading to a common vision for the river's future. This consensus vision provided the foundation for the 18-month Master Planning process.

Master Plan Development Process

The process officially began on September 7, 1999, with an action of the County of Los Angeles Board of Supervisors that directed LADPW, in conjunction with the Department of Parks and Recreation and the Department of Regional Planning, to prepare a San Gabriel River Master Plan. The Board motion also included a request for assistance from the National Park Service Rivers, Trails and Conservation Assistance Program (NPS), and an instruction to the LADPW to invite the newly formed San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy (RMC) and other stakeholders to participate. The Board specified that the Master Plan would address the issues of recreation, habitat and open space for the river corridor. On July 17, 2001, the Board provided additional direction that the Master Plan should also include the dams and reservoirs under the County's jurisdiction above Morris Dam. It should be noted, however, that the *river* reaches between these facilities are under the jurisdiction of the USDA Forest Service and thus are not part of the Master Plan scope.

The core planning team included the three county departments specified in the Board motion and a representative from NPS. To support the development of a stakeholder-driven planning effort, the San Gabriel River Master Plan Steering Committee was formed. The membership of the Steering Committee was open to anyone who was interested, but most of the participants represented organizations. The Steering Committee members met approximately 35 times during three years, spending over 10,000 hours of combined efforts developing elements of the Master Plan. Throughout the process, about 300 groups were represented, with an average of 40-60 individuals participating in each meeting. The roles and functions of the Steering Committee included: guiding the preparation of the San Gabriel River Corridor Master Plan, providing staff and consultants regarding project development, reviewing and commenting on all work products, and encouraging broad community participation in the planning process.

Figure 1-15. During the July 2003 Steering Committee Meeting/Concept Design Charrette, participants discuss river enhancement opportunities for a series of projects along the San Gabriel River.

The Steering Committee followed a consensus-based process in developing the planning framework:

- **INTRODUCTION.** The project and planning process including the roles and responsibilities of participating committee members and a set of ground rules for the committee's activities.
- **EDUCATION.** To ensure that committee members were empowered with a common base of information through several means. The County provided background information about the agency's mission and mandates, as well as technical information on the river and its management. Committee members were invited to present information about their organization. A series of field trips brought the committee members together to explore the river corridor from the Angeles National Forest to its ocean outlet.
- **ISSUE IDENTIFICATION.** Stakeholders were asked to identify the key issues and concerns related to the river and the development of a Master Plan. Through group dialog and discussion, these issues and concerns were articulated and used to develop plan goals, objectives and project design criteria.
- **GOAL IDENTIFICATION.** Based on the issues identified by the stakeholders, the Steering Committee developed broad goals.
- **VISION DEVELOPMENT.** Based on the issues, concerns and goals developed by the group, the Steering Committee developed a broad vision statement that synthesized the diverse perspectives of the stakeholders. The vision set the overall tone and spirit of the development of the Master Plan.

Once the overall direction and planning framework was established, the County retained the services of Moore Iacofano Goltsman (MIG), Inc., and its subconsultants to facilitate the process and to develop the Master Plan. For nearly a four year period between July 2002 and June 2006, the Steering Committee and Planning Team continued to meet on a periodic basis, providing essential input and guidance to the MIG consultant team through each of the five phases of plan development:

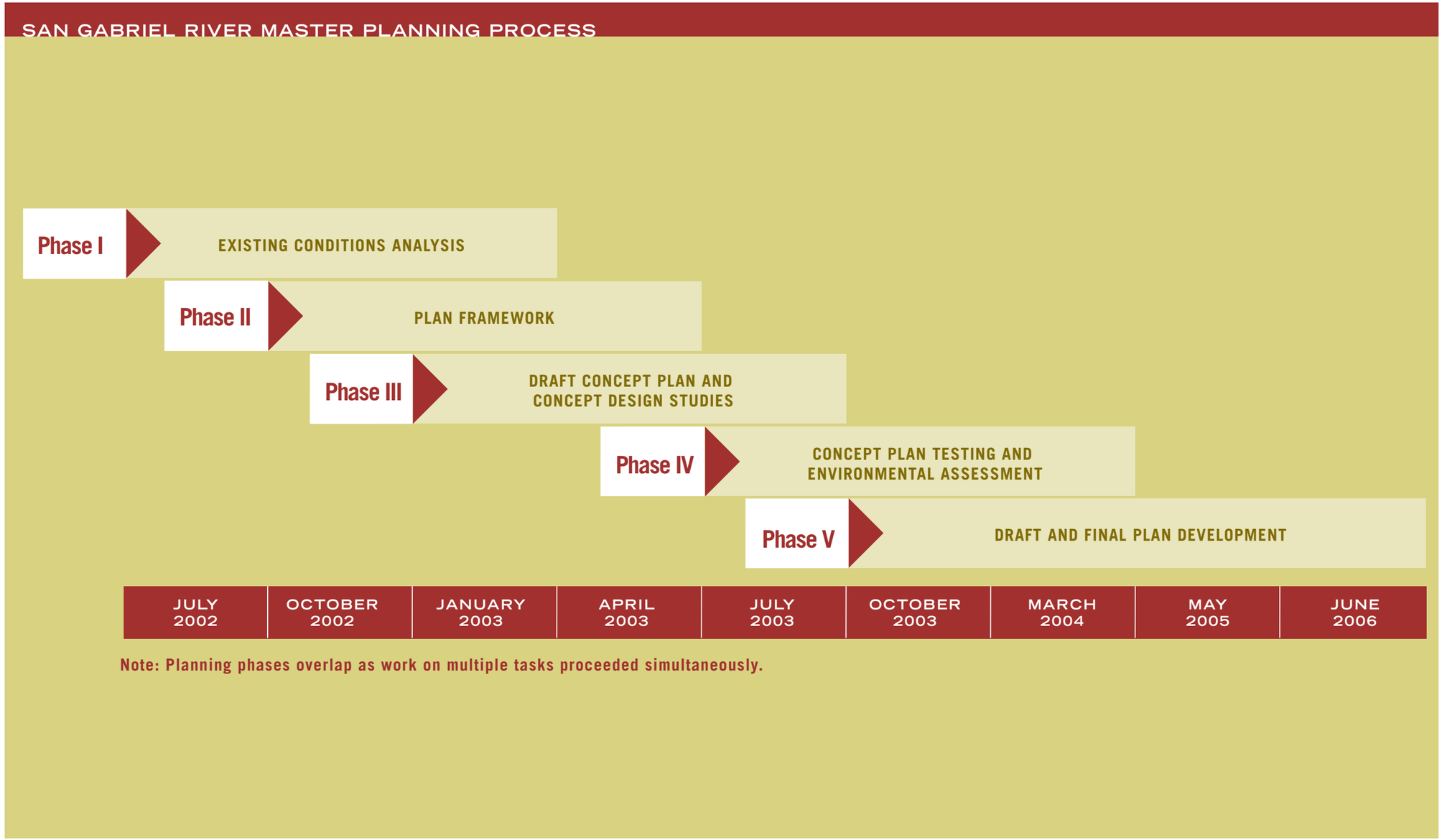


Figure 1-16. The Master Plan development process consisted of five major phases.

I. Existing Conditions Analysis
II. Plan Framework
III. Draft Concept Plan and Concept Design Studies
IV. Concept Plan Testing and Environmental Assessment
V. Draft and Final Plan Development

Phase I: Existing Conditions Analysis

The existing conditions analysis used all available data along with new field assessments to identify current opportunities and constraints to project development along the river corridor. The process also involved stakeholder interviews with representatives from all 19 cities along the corridor, and other state and federal public agencies such as the RMC, the U.S. Forest Service, and the U.S. Army Corps of Engineers (COE). Interviews were also conducted with Southern California Edison (SCE), water agencies such as the Main San Gabriel Basin Watermaster and the Upper San Gabriel Valley Municipal Water District, and non-profit groups, including the Sierra Club, North East Trees, the San Gabriel Mountains Regional Conservancy (SGMRC) and others representing a wide spectrum of environmental and recreational interests. These interviews provided information on current and proposed projects being pursued, as well as issues and concerns to be addressed by the Master Plan.

This data was combined with GIS spatial analysis to develop a series of environmental assessment maps identifying potential opportunities in addition to those already being pursued by the stakeholders. These maps identify constraints to be considered for both current and future projects. This analysis provides an in-depth, multi-faceted picture of the river, and the many current and proposed activities along its banks, as well as a framework for the realization of future project development opportunities.

Phase II: Plan Framework

The plan framework was created by translating the stakeholder vision and goals into specific, actionable objectives and performance criteria. The goals and performance criteria are used to help select projects for development and to evaluate the extent to which projects are achieving the overall vision and goals of the Master Plan. A master project grid grouped all 134 stakeholder projects by the seven geographic reaches of the river and according to the six major goals, or Plan Elements. This classification system strengthens the portrayal of the San Gabriel River as a unified, comprehensive and integrated system of projects which taken together advances the shared vision for the river.

Phase III: Draft Concept Plan and Concept Design Studies

The Draft Concept Plan established the overall direction for the Master Plan, integrating stakeholder perspectives with the physical opportunities and constraints identified along the river corridor. Analysis led to eight project enhancement categories—prototype enhancements that could be duplicated along the river. The Steering Committee used that information to select five concept design studies from among the projects and to conduct a design charrette focused on those five projects. The design studies demonstrate how to apply the multi-objective approach to the design of actual projects intended to to achieve the goals of habitat, recreation and open space, while also maintaining existing flood protection, water quality and water supply functions. This planning approach is fundamental to the vision and goals of the Master Plan.

Phase IV: Concept Plan Testing and Environmental Assessment

During this phase, the Master Plan was refined and additional river enhancement opportunities were identified. At the same time, a Program Environmental Impact Report (EIR) was prepared. The EIR discloses any significant or potentially significant environmental effects of implementing the San Gabriel River Corridor Master Plan; identifies possible ways to avoid or reduce those impacts; and describes reasonable alternatives to the proposed project. This analysis is compliant with the California Environmental Quality Act (CEQA). A funding opportunities analysis was also conducted.

Phase V: Draft and Final Plan Development

The final Master Plan and EIR were completed and approved during this phase of the project. Following completion of County Counsel's initial review of the EIR, and a subsequent 60-day public review period, comments received from the County of Los Angeles Department of Public Works, other members of the Planning Team, the Steering Committee, and the public were incorporated into the Master Plan. After a second County Counsel review, additional changes to the Master Plan reflecting progress made on specific projects as well as other stakeholder input were included. The final Master Plan and EIR were then subsequently presented to the Los Angeles County Board of Supervisors for adoption in June 2006.

1.5 RELATIONSHIP TO OTHER PLANNING PROCESSES

A number of other planning efforts have recently been completed or are currently being developed throughout the San Gabriel River Watershed. "Recent Planning Studies" focus on all or parts of the San Gabriel River Watershed, and were completed three to fifteen years ago. "Current Planning Studies" focus on ongoing planning efforts. The majority of these plans are watershed-based, that is, they provide recommendations focused on regions defined by the natural functioning of watersheds, rather than by the traditional boundaries that define political jurisdictions. The Master Plan was developed in coordination with these plans to ensure consistency and minimize duplication. Ongoing coordination with these plans will be needed as the San Gabriel River Corridor Master Plan moves forward to implementation.

Recent Planning Studies

Long-Term Management Plan West Fork San Gabriel River

West Fork Working Group (May 1989)

The West Fork Working Group (WFWG) consists of the Angeles National Forest, the California Department of Fish and Game, LADPW, and California Trout. It was formed through a cooperative agreement on April 4, 1986, to create a mechanism for these entities to work together to improve water resources management in the West Fork of the San Gabriel River. The group developed a plan to integrate flood management, water conservation, fisheries management, stream habitat improvement, and recreational enhancement. The plan was also signed by various local water interests, the San Gabriel River Water Committee, the San Gabriel Valley Protective Association, and the San Gabriel Basin Water Master. The plan's primary goal is to manage Cogswell Reservoir and the West Fork of the San Gabriel River drainage to provide a balance of resource uses while minimizing conflict between users through cooperation, commitment and agreement.

Puente Hills Corridor: Greenspace Connectivity for Wildlife and People

California State Polytechnic University Pomona, Graduate Department of Landscape Architecture-606 Studio, College of Environmental Design (June 1997)

This study explores the issues facing the Puente Hills as a wildlife corridor within the context of a greater regional greenspace system that can simultaneously provide for the biological needs of wildlife and the recreational needs of people.

Reconnecting the San Gabriel Valley: A Planning Approach for the Creation of Interconnected Urban Wildlife Corridor Networks

California State Polytechnic University Pomona, Graduate Department of Landscape Architecture-606 Studio, College of Environmental Design (June 2000)

This study, prepared for the SGMRC, presents a regional network planning process for prioritizing different areas within the San Gabriel Valley region for conservation efforts. The study includes recommendations for creating networks that support wildlife connectivity. This study, which received awards from the County and the American Planning Association, was the first to examine the main stem of the Upper San Gabriel River as a whole for multiple objectives. More information on this project can be found at www.sgmrc.org.

Los Angeles and San Gabriel Rivers Watershed Feasibility Study

US Army Corps of Engineers (July 2001)

COE and LADPW undertook this study as a partnership "to gather and evaluate available information, to look for opportunities for watershed improvement, and to initiate thinking on a future integrated Watershed Management Plan." A task force was established, which included cities, local governments, water agencies, and state and federal organizations. The primary goals were to provide adequate flood protection, conserve stormwater for groundwater recharge, improve water quality, increase recreation and open space, increase and restore wildlife habitat, and revitalize areas within the watersheds, by locating multi-objective opportunities, identifying partnering resources, and increasing knowledge of watershed issues. As a result of this study, six pilot projects were identified and taken to the next level of detailed assessment, including the Arroyo Seco Watershed, the Headworks project in Glendale and San Creek at Cal Poly Pomona.

Common Ground: From the Mountains to the Sea

San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy (RMC) and Santa Monica Mountains Conservancy (October 2001)

This joint plan, undertaken by two California state conservancies, articulates a vision for the future of the San Gabriel and Los Angeles Rivers Watersheds and provides a framework for future watershed and open space planning. The overall vision is to "restore balance between natural and human systems in the watershed." The key component of the plan is a set of guiding principles, which provide over-arching goals to guide future open space planning in the dual watershed.

San Gabriel Confluence Park: A River Based Urban Nature Network

California State Polytechnic University Pomona, Graduate Department of Landscape Architecture-606 Studio, College of Environmental Design (June 2000)

This planning study was prepared for the Sierra Club, which has taken an active interest in the San Gabriel River. The study examines the potential for a network of open space around the San Jose Creek/San Gabriel River Confluence area.

Current Planning Studies

Forest Master Plan Update

USDA Forest Service-Angeles National Forest

The US Forest Service is updating its Forest Plans for Southern California, including, from north to south, the Los Padres, Angeles, San Bernardino and Cleveland National Forests. The Forest Plans set policies for the types of activities and special designations that can occur within each forest. The headwaters of the San Gabriel River fall within the boundaries of the Angeles National Forest. This process is scheduled to be completed in 2004.

San Gabriel River Watershed Special Resource Study

US Department of the Interior

Legislation enacted in July 2003 directed the Secretary of the Interior to conduct a special resource study of the San Gabriel River and sections of the San Gabriel Mountains, including the City of Santa Fe Springs. NPS will lead this effort and will begin the study process in 2004. The study will evaluate the significance of the natural and cultural resources of the area and consider whether any portion of the area should be added to the national park system. The study may also assess opportunities for additional education and interpretation, low-impact recreation, trails and other access to urban open space, habitat protection and restoration, and watershed improvements. Based on the complex land ownership and jurisdictional boundaries in the area, NPS anticipates that recommendations would emphasize public-private partnerships. The legislation provides direction to coordinate with RMC and other federal, state and local agencies, such as the Angeles National Forest, and to take into consideration flood control, drainage and public infrastructure needs. Public involvement and participation will be included at key steps in the study process. The Department of the Interior has three years to complete the study and report its findings to Congress.

Rivers/Tributaries Parkway Plan

San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy

Building from the Common Ground planning report, RMC is developing a rivers and tributaries parkway plan. This effort will largely draw upon the relevant portions of the San Gabriel River Corridor Master Plan to avoid duplicative efforts and expense.

Watershed Management Plan for the San Gabriel River Above Whittier Narrows

San Gabriel Mountains Regional Conservancy

This planning effort focuses on the upper half of the San Gabriel River Watershed, including three important sub-watersheds: Upper San Gabriel River, Walnut Creek, and San Jose Creek. It will address opportunities and challenges in a comprehensive watershed management plan. The plan is intended to provide a foundation and framework to facilitate planning and implementation efforts beyond the scope of this plan. Future programs already identified include: implementation of identified pilot projects; citizen-based land stewardship programs; local land conservation and resource management plans; citizen-based water quality monitoring coordinated with watershed-wide monitoring efforts anticipated by the Los Angeles Regional Water Quality Control Board and the LA and San Gabriel Rivers Watershed Council; and formation of the "San Gabriel River Tributaries Land Trust."

Rio Hondo Watershed Management Plan

San Gabriel Valley Council of Governments

The San Gabriel Valley Council of Governments, in partnership with RMC, has been awarded Proposition 13 grant funds from the State Water Resources Control Board to prepare the Rio Hondo Watershed Management Plan. This multi-objective project will integrate issues of land use, water supply, water quality, recreation and habitat.

Coyote and Carbon Creeks Watershed Management Plan

County of Orange, Public Facilities and Resources Department

The Coyote Creek Watershed covers 41.3 square miles in the northwest corner of Orange County. It includes portions of the cities of Brea, Buena

Park, Fullerton, La Habra and La Palma. Coyote Creek, its main tributary, flows from Riverside County and empties into the San Gabriel River. In 2001, COE initiated a comprehensive watershed study. The first step involved the Reconnaissance Phase, which was completed in June 2001. The "Westminster Watershed Reconnaissance Study" covers three Orange County watersheds: Coyote Creek, Carbon Creek, and Westminster. In fall 2002, COE began the Feasibility Phase, which will cover both the Coyote Creek and Carbon Creek Watersheds.

San Gabriel River Watershed Non-Point Source Pollution Reduction Program

Upper San Gabriel Municipal Water District

This program will address non-point source pollution issues such as trash, nutrients and coliform. It will focus on two locations in the Angeles National Forest: San Gabriel Canyon and Chantry Flats. Measures will include trash reduction, retrofit of lavatories, stream clearance to remove blockages caused by sedimentation and debris build-up, clearance/rehabilitation of designated trails, stream bank stabilization and public outreach.

Water Quality Assessment, Source Identification and Management Action Evaluation of the San Gabriel River

Southern California Coastal Water Research Project

This study is one component of the 2003 Regional Monitoring Survey that will assess the overall environmental health of the Southern California Bight, the coastal region that extends from Point Conception to Cabo Colnet in Baja California. A part of this survey, conducted on a recurring five-year basis, will address the impact of stormwater plumes on coastal ocean water quality. SCCWRP received an $800,000 grant for the San Gabriel River component of the study.

Southern California Wetlands Recovery Project

California Coastal Conservancy

This project is a partnership of public agencies working cooperatively to acquire, restore and enhance coastal wetlands between Point Conception and the border with Mexico. The goal is to develop and implement a regional prioritization plan that will accelerate acquisition and restoration.

Sediment Management Plan

County of Los Angeles Department of Public Works and California State Polytechnic University Pomona

Sedimentation deposits at the three dams in the upper San Gabriel River have drastically reduced the capacity of these reservoirs. This study will evaluate the potential adverse effects resulting from the current sluicing method for removing sediments and assess the feasibility of alternate sediment management plans.

chapter 2 The San Gabriel River: Past and Present

CHAPTER 2

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Notes: Figure 2-7 courtesy of California State Archives, William Hammond Hall Papers, Irrigation Map/Southern California-Los Angeles and Monrovia, ca. 1880s, 91-07-04, 91-06-10.

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Figure 2-16 courtesy of National Oceanic and Atmospheric Administration/Department of Commerce, "The Fishes of Alaska," Bulletin of the Bureau of Fisheries, Vol. XXVI, 1906, Plate XXXVII.

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chapter 2 The San Gabriel River: Past and Present

2.1 OVERVIEW

A realistic appraisal of how biological, physical and social forces worked together to create the river as it is today helps clarify the gap between its current state and the vision of what the river corridor might be in the future.

"The San Gabriel River Watershed Through Time" (section 2.2) describes the natural processes that created and shaped the river over millions of years and how human habitation has affected these natural conditions and processes in recent times.

"The San Gabriel River Today" (section 2.3) presents the existing conditions of the river corridor with maps and accompanying text. Each map looks at the river through a different lens, highlighting the issues and challenges that will be addressed in the San Gabriel River Corridor Master Plan. This section is organized in two parts:

BIOLOGICAL AND PHYSICAL RESOURCES. The *natural ecology* of the river corridor, such as flora and fauna, and the human-built elements including parks and trails, and infrastructure (roads, utilities, drains, etc.).

CULTURAL AND SOCIAL RESOURCES. The *human ecology* of the river corridor, such as political boundaries, social demographics and land use.

COURTESY OF GABI MCLEAN ©2003

Figure 2-1. Dramatic mountains and gently sloping alluvial plains characterize the upper part of the watershed.

2.2 THE SAN GABRIEL RIVER THROUGH TIME

Today's San Gabriel River Watershed is the result of thousands of years of natural processes: geology, climate, hydrology and ecology. An understanding of these processes will help determine the habitat, recreation and open space enhancements that are possible now and in the future.

2.2.1 Pre-Human Habitation

The river and its watershed provide a diverse landscape and a spectacular array of abundant resources. During the past few centuries, these natural riches have provided the foundation for equally spectacular human achievements.

Geology and Topography

The geologic structure of the San Gabriel River Watershed creates a relatively unusual drainage pattern. It directs the main corridor of the San Gabriel River to the western boundary of the watershed for most of its length.

The watershed can be divided into four distinct sections or physiographic areas, each with very different hydrological characteristics:

1. The rugged upper watershed of the San Gabriel Mountains
2. The San Gabriel Basin area, including the urban communities of the east San Gabriel and Pomona Valleys
3. Whittier Narrows
4. The Central Basin and Los Angeles Coastal Plain, including the communities of southeastern Los Angeles and northern Orange Counties

SAN GABRIEL MOUNTAINS

The Upper San Gabriel River Watershed falls largely within the San Gabriel Mountains. It is framed by surrounding ridgelines, and a small portion of the mid-San Gabriel Valley. The mountains contain the headwaters of the San Gabriel River Watershed and the West, North, and East Forks, as well as the main stem of the San Gabriel River.

The San Gabriels are one of several mountain ranges in Southern California that make up the Transverse Ranges. The Transverse Ranges run east-

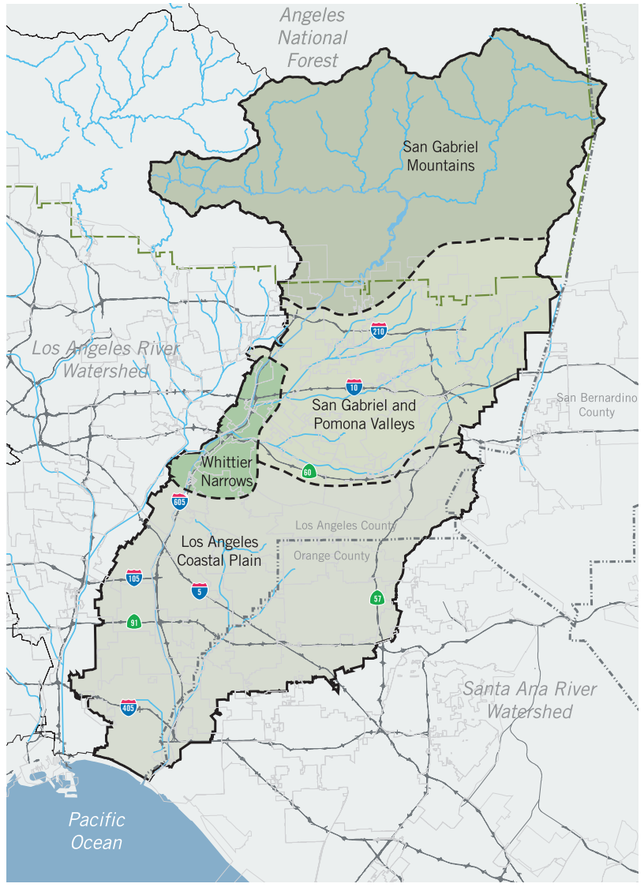


Figure 2-2. Physiographic areas of the San Gabriel River Watershed.

west—crosswise to nearly all other mountain ranges and valleys in California. The Pacific and North American plates converge in this area along an eastward-trending bend in the San Andreas Fault. The geologic compression caused by the merging of these two plates is expressed primarily in a north-south direction—it is squeezing the region together. The result is uplift in some areas, which forms the San Gabriel Mountains, and push down in other areas, which forms basins. The transverse nature of the San Gabriel Mountains and their extreme elevation change create diverse climatic conditions and habitat.

These geologic processes have affected the rugged San Gabriel Mountains for more than 100 million years. Even so, the San Gabriel Mountain range is still one of the fastest growing in the world. Over 60 percent of the landscape slopes at grades over 60 percent, with great expanses of steep, inaccessible terrain. Elevation in the upper watershed ranges from just 700 feet above sea level in Azusa to the peak of Mt. Baldy at over 10,000 feet high. The San Gabriels stand on a massive block of the earth's crust that is separated from the surrounding landscape by a network of major faults, including the San Andreas Fault on the north and the San Gabriel and Sierra Madre faults on the south. The San Gabriels are also fractured by many subsidiary faults. Most of the parent bedrock is igneous, but the rocks are highly fractured and weathered, decomposing rapidly when exposed to the elements.

In the transverse province of Southern California, this bedrock erosion forms natural aggregate deposits that are transported and deposited as sediment and rock fragments by the creeks, streams and rivers that flow from the mountains to the valleys. As a result, the valleys below the south face of the San Gabriel Mountains have exceptionally rich and deep alluvial deposits within and around the natural rivers and streams, and in the alluvial fans of these rivers and streams that form at the base of mountains and hills. The sand and gravel deposits in the area adjacent to the San Gabriel River form one of the most significant aggregate mining districts in the world and have become one of the region's major economic ventures.

SAN GABRIEL BASIN

The San Gabriel Basin lies to the south of the San Gabriel Mountains. The eastern portions of the basin fall within the San Gabriel River Watershed and the western portions fall within the Rio Hondo Watershed. Historically, these drainages shifted and braided, periodically interweaving. The two primary tributaries within the San Gabriel Basin portion of the San Gabriel River Watershed—San Jose Creek and Walnut Creek—flow from east to west. Each has its own sub-watershed.

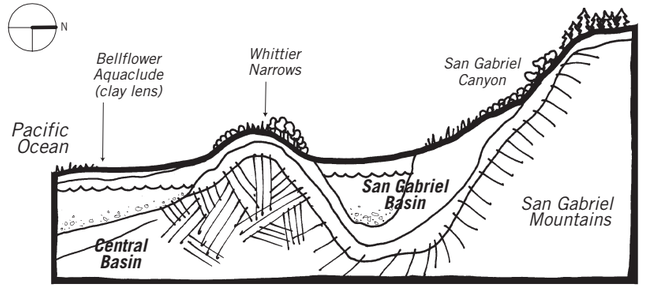


Figure 2-3. Physiographic cross-section of the basins below the San Gabriel River.

The Puente Sub-Basin is an offshoot of the San Gabriel Basin, mainly underneath the San Jose Creek Sub-Watershed. Vast portions of the San Gabriel Basin and Puente Sub-Basin are characterized by mildly sloping to nearly flat terrain. These areas consist mostly of alluvium, terrace and shale soil. The Merced and San Jose Hills and the Puente-Chino Hills complexes, which define the basin to the east and south, largely consist of shale and sandstone.

The Walnut Creek Sub-Watershed is formed by the foothills of the San Gabriel Mountains on the north and the Merced and San Jose Hills to the south. This sub-watershed contains the upper east San Gabriel Valley, characterized by mildly sloping alluvial conditions. The Merced and San Jose Hills form the northern edge of the San Jose Creek Sub-Watershed with the Puente-Chino Hills to the south. This sub-watershed contains the majority of the lower, east San Gabriel Valley, characterized by mildly sloping to nearly flat terrain.

WHITTIER NARROWS

Shaping the bottom of the San Gabriel Basin, the Whittier Narrows forms a division between the San Gabriel Basin to the north and the Central Basin and the Los Angeles Coastal Plain to the south. It is an area of geologic uplift between the Puente-Chino Hills complex on the east and the Montebello Hills on the west. This formation provides a barrier to groundwater movement. It is a natural collection and convergence point for both surface water and groundwater.

CENTRAL BASIN–LOS ANGELES COASTAL PLAIN

The southern portion of the Central Basin is located within the San Gabriel River Watershed and the northern portion is within the Los Angeles River-Rio Hondo Watersheds. Most of the San Gabriel River Watershed downstream of Whittier Narrows is formed by the Coyote-Carbon Creeks Sub-Watershed, which is formed by the Puente-Chino Hills on the north and the Coyote Hills and Santa Ana River Watershed on the south. It is characterized by a mildly sloping to nearly flat coastal plain, with the exception of the Coyote Hills. The western boundary of the watershed is divided from the Los Angeles River Watershed by a slightly elevated area of the plain. The Central Basin aquifer underlies this portion of the San Gabriel River Watershed. It is formed by the Whittier Fault Zone and an uplift along the Newport-Inglewood Fault. The West Coast Basin underlies the lower end of the San Gabriel River Watershed. The lower end of the watershed includes the Los Cerritos Wetlands system and other lands that were once associated with a complex coastal estuary at the mouth of the San Gabriel River.

Climate

The climate and precipitation patterns of the region are key to understanding the hydrologic patterns of the watershed. In general, the climate is Mediterranean-type. This rare climate type covers only 3 percent of the earth's land surface, including regions adjacent to the Mediterranean Sea and portions of Australia, Chile and South Africa. Long, hot, dry summers and cool, wet winters are typical. This pattern is an important factor in the

COURTESY OF GABI MCLEAN ©2003

Figure 2-4. Many coastal sage scrub plants drop their leaves during periods of drought and resprout after the first winter rains.

hydrology and habitat structure of the watershed. About 75 percent of precipitation falls between December and March, with the remainder mostly falling in November and April. Precipitation levels increase with altitude, and at the highest elevations, some of it falls as snow. The average annual precipitation in the San Gabriel Mountains is 36 inches a year, while the San Gabriel Valley averages 20 inches and the coastal plain averages 13 inches. Most years vary substantially with many seasons of drought and floods. In addition, geologic records reveal dramatic cyclic variations in climate with little predictability.

Erosion and Fire

Four main factors cause erosion in this region: steep slopes, soil characteristics, vegetative cover and rainfall patterns. Fire is also an indirect cause of erosion. It is a significant ecological process in the watershed, particularly in the mountainous hillside areas. Adaptations to fire are evident in the physiological and physical characteristic of the many chaparral and coastal sage scrub species that dominate the lower elevations of the San Gabriel Mountains and the hills of the San Gabriel Valley. These biomes naturally depend on fire for healthy and sustainable nutrition, soil renewal and disease reduction. The natural ignition source for fire in the watershed is lightning strikes. Lightning fires occur during summer storms that form at high elevations in the San Gabriel Mountains where there is little rain to suppress the fire. In fall, Santa Ana winds often blow from the north and northeast, creating the extremely dry, hot conditions that spread wildfires. After a fire, depletion of vegetative cover creates greater erosion potential. During heavy storms after the fire season, streams often transport large quantities of sediment, increasing the potential for floods.

COURTESY OF TIM BAAL, U.S.D.A. FOREST SERVICE

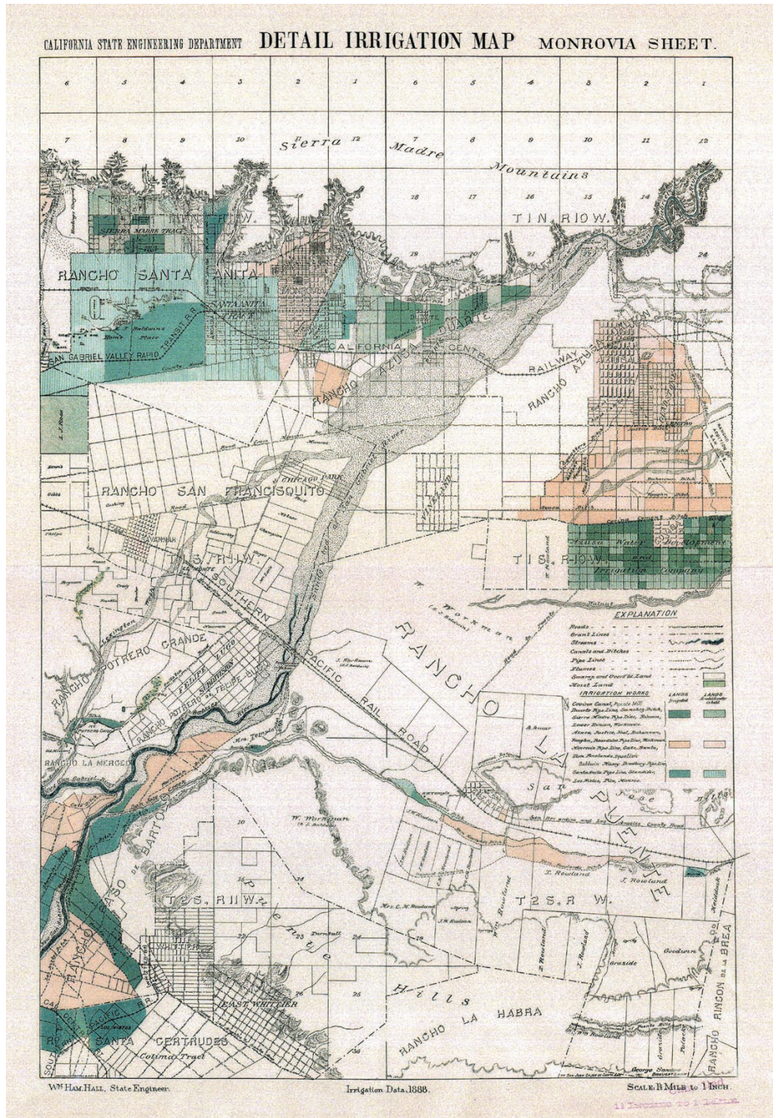
Figure 2-5. The Williams Fire of 2002 is seen burning in the mountains, as viewed from Santa Fe Dam.

COURTESY OF GABI MCLEAN ©2003

Figure 2-6. The ceanothus crassifolious or hoaryleaf ceanothus has regenerated five years after a fire in the San Gabriel Mountains.

Hydrology

The San Gabriel River was originally wide and shallow, surrounded by native vegetation. It was a braided series of slow-velocity channels that used a large flood plain to disperse sediment. It was an unpredictable river, not unlike other river systems in the American Southwest. During large storms, the river often created new channels, sometimes even intermingling with the Los Angeles River. Over time, the San Gabriel River system returned to equilibrium where the amount of sediment deposition and level of erosion were balanced.



COURTESY OF CALIFORNIA STATE ARCHIVES

Figure 2-7. This 1887 irrigation map shows the broad floodplains and stream braiding that was characteristic of the San Gabriel River before dams and channelization.

The San Gabriel River Watershed consists of three primary basins:

1. The San Gabriel Basin including Puente Sub-Basin in the San Gabriel Valley (see Figure 2-8)
2. The Central Basin along the Coastal Plain (see Figure 2-9)
3. The West Coast Basin at the lower end of the watershed (see Figure 2-9)

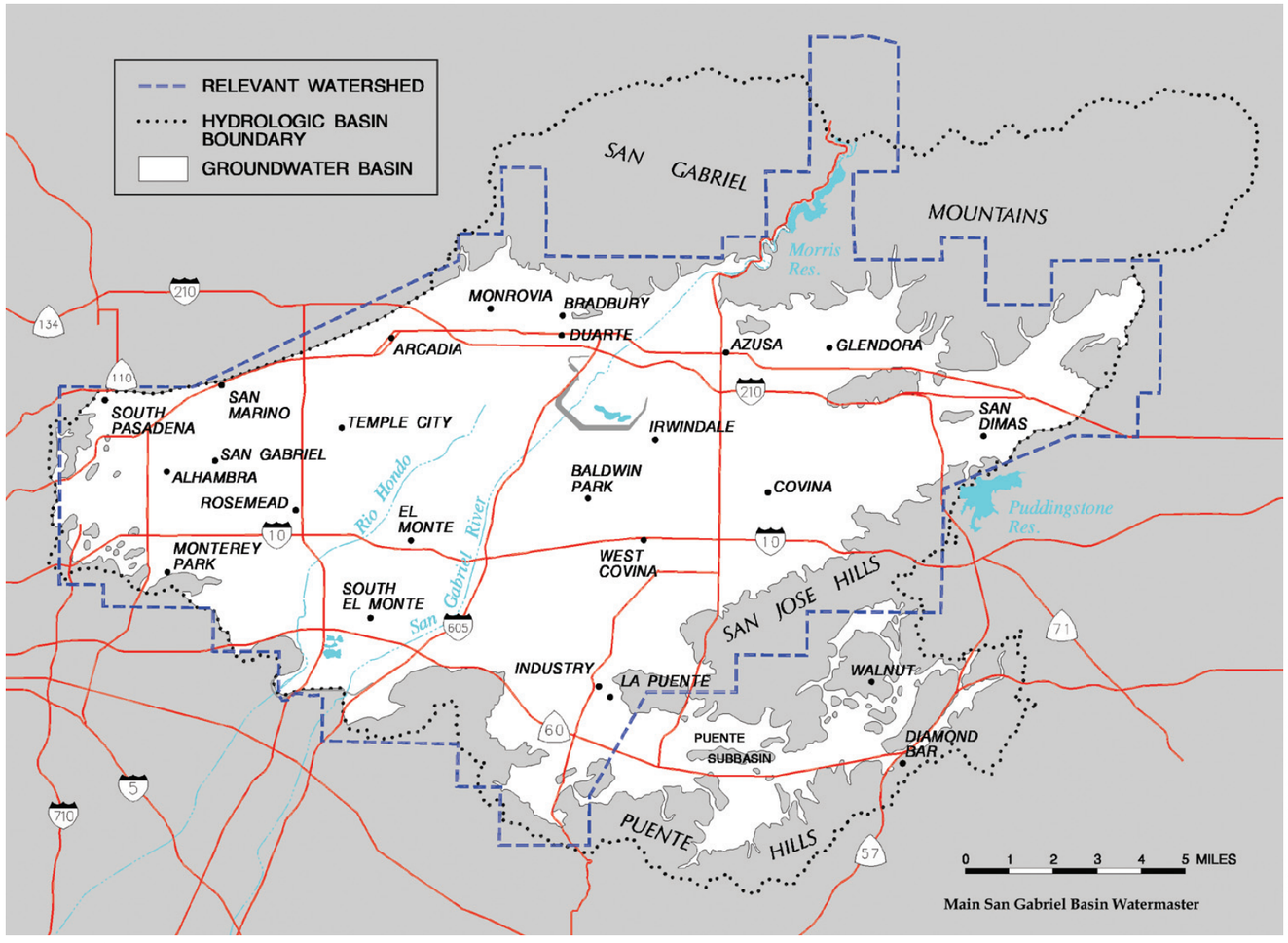
The San Gabriel Basin is an unconfined aquifer; the soil allows water to easily percolate from the surface through the basin. Historically, water entered this basin through natural percolation and from subsurface flows from the San Gabriel Mountains, Chino Basin to the east and the Raymond Basin to the northwest. Water flow within the basin has been toward the Whittier Narrows, where water migrates from the San Gabriel Basin into the Central Basin.

The Central Basin, north of the City of Downey, is also an unconfined aquifer. However, from Downey south to the estuary, it is a confined aquifer; a basin with a clay lens or aquaclude that only allows water to naturally percolate in a few specific locations. The Central Basin is formed by the Whittier Fault Zone on the northeast and the Newport-Inglewood Fault on the southwest. Historically, the Central Basin fed numerous artesian flows throughout the lower watershed.

The West Coast Basin underlies a small portion of the watershed near the outfall of the San Gabriel River. The basin also underlies portions of the Los Angeles River and the Santa Monica Bay Watersheds to the north. Historically, freshwater in the West Coast Basin has acted as a barrier preventing saline seawater from migrating into the West Coast and Central Basins.

Habitat and Vegetation

The San Gabriel River Watershed contains a rich variety of plant communities. In this area, as in the greater Southern California region, many plant communities merge to form very complex habitat relationships and ecosystems. The San Gabriel River Watershed contains eight geographical plant regions, placing it among the top regions worldwide in regards to biodiversity.

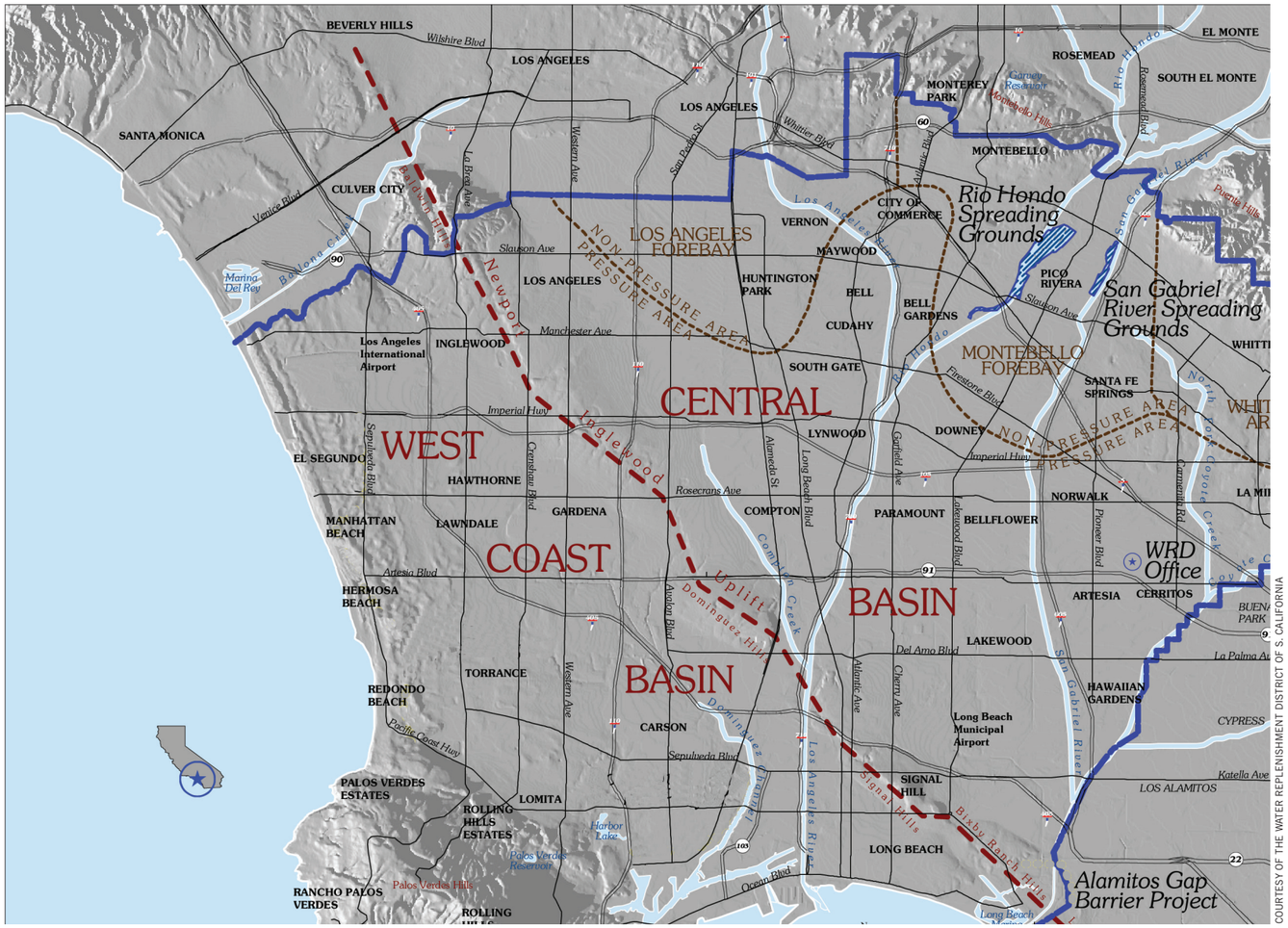


COURTESY OF THE MAIN SAN GABRIEL BASIN WATERMASTER

Figure 2-8. The Main San Gabriel Basin is an important natural water storage area for the Los Angeles region.

SAN GABRIEL MOUNTAINS

In the steep, upper mountainous reaches of the watershed, the majority of land, particularly south-facing slopes, is covered by shrub-dominated chaparral and coastal sage scrub. There are substantial patches of oak woodland and oak riparian woodlands in the more protected canyons and north-facing slopes. Higher elevations include significant patches of mixed conifer woodlands. The many riparian corridors throughout the San Gabriel Mountains contain sycamore and alder riparian woodlands.



COURTESY OF THE WATER REPLENISHMENT DISTRICT OF S. CALIFORNIA

Figure 2-9. The Central and West Coast Basins are also important natural water storage areas.

FOOTHILLS OF THE SAN GABRIEL MOUNTAINS

Foothill areas are characterized by masses of chaparral on slopes and coastal sage scrub in the flatter areas. These areas have intermittent oak, oak woodland, and grassland communities. Sycamore and alder riparian corridors occur sporadically throughout the foothill areas at all elevations.

The San Gabriel River and other tributaries in the watershed (including Big Dalton Wash, San Dimas Creek, Live Oak Creek, and Thompson Creek) emerge from the San Gabriel Mountains in this area. Large stands of alluvial fan sage scrub often indicate alluvial fan areas below.

PUENTE-CHINO HILLS, MERCED HILLS, AND SAN JOSE HILLS

These hills are characterized by large stands of coastal sage scrub, chaparral, walnut woodland and oak woodland, as well as intermittent corridors of oak riparian forest.

FLOOR OF THE SAN GABRIEL VALLEY

The Valley floor is dominated by coastal sage scrub, including alluvial fan sage scrub associations along the river corridor above Whittier Narrows. Upper portions of this area were once graced with periodic stands of open Engelmann Oak forest. In the past, the valley floor was braided with ribbons of oak and sycamore riparian forest that followed the river and tributaries such as Walnut Creek and San Jose Creek.

COURTESY OF GABI MCLEAN ©2003

Figure 2-10. Below 5,000 feet, oak woodlands flourish on north-facing slopes and in protected canyons.

COURTESY GABI MCLEAN ©2003

Figure 2-11. Riparian plants such as this arroyo willow thrive in areas where the river has a soft bottom.

WHITTIER NARROWS

The Whittier Narrows is a natural surface and groundwater collection point. Its moist conditions result in significant expanses of oak, sycamore and willow riparian woodlands and associated wetlands.

COYOTE-CARBON CREEK

The upper portion of the Coyote-Carbon Creek Sub-Watershed falls within the Puente-Chino Hills. It is characterized by stands of coastal sage scrub, chaparral, walnut woodland and oak woodland. The lower portion merges with the San Gabriel River coastal plain, where expanses of coastal sage scrub and grasslands, intermittent sycamore and oak riparian woodlands can be found.

SAN GABRIEL RIVER COASTAL PLAIN

The lower San Gabriel River corridor and surrounding watershed below the Whittier Narrows contains large expanses of coastal sage scrub and grasslands, as well as riparian woodlands and associated freshwater wetlands.

SAN GABRIEL RIVER ESTUARY

The river terminates at the Pacific Ocean with a large and fluctuating estuary. As is typical of the rivers of the western United States, the river often changed course in its past during large storms, so its outfall and the associated estuary changed considerably. Sometimes the estuary and outfall connected with Los Angeles River estuaries to the north. Sometimes they connected with estuaries to the south, associated with the Santa Ana River.

COURTESY U.S. NAVY, NAVAL WEAPONS STATION SEAL BEACH

Figure 2-12. Coastal wetlands, such as this one at the Seal Beach National Wildlife Refuge, once dominated the landscape at the mouth of the San Gabriel River.

Wildlife

Many large, predatory species of wildlife once inhabited the watershed, including grizzly bear, mountain lion, bobcat, gray fox and coyote. While the grizzly bear has disappeared from the region, the mountain lion, bobcat, and coyote still live in the Angeles National Forest and in some portions of the Puente-Chino Hills, San Jose Hills and foothills of the San Gabriel Mountains. The black bear, introduced into the region, inhabits secluded portions of the Angeles National Forest. Occasionally, this species also visits the urban portions of the foothills of the San Gabriel Mountains, drawn by readily available food sources such as trashcans.

The diverse environments of the watershed supported many other species, both terrestrial and aquatic. Hundreds of bird species frequented the watershed; more than 350 bird species used the rich habitat found within the Whittier Narrows. Steelhead trout, Pacific lamprey, unarmored threespine stickleback, arroyo chub, Santa Ana sucker, and Santa Ana speckled dace are among the fish species that lived in the San Gabriel River and some of its tributaries. Without today's impediments to wildlife movement, populations of wildlife were able to disperse from this watershed into other habitats, including the Pacific Ocean. This maintained a healthy gene flow between populations. The ability to disperse also provided opportunities for seasonal migration and for escape during episodic disturbance such as fire and floods.

COURTESY GARY M. STOLZ, USFWS

Figure 2-13. Bobcats prefer rocky, shrub hillsides and eat small mammals such as rabbits and rodents.

COURTESY USFWS

Figure 2-14. Coyotes have adapted to the wildland-urban interface areas.

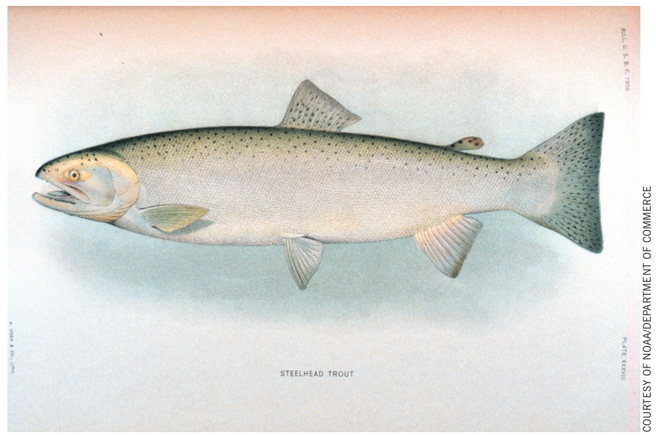
The San Gabriel River also functioned as a terrestrial and aquatic wildlife corridor, linking the Puente-Chino Hills and Montebello Hills with the San Gabriel Mountains. Prior to the dams being built, thousands of steelhead trout traveled up the river in the winter/spring season, returning to their birthplaces to spawn.

Today, Southern California's South Coast Ecoregion is host to many endangered species of plants and animals found nowhere else on earth.

COURTESY BONTERRA CONSULTING ©2003

Figure 2-15. The endangered brown pelican is usually found on the coast, but occasionally ventures inland to lakes and rivers.

Because of urban development and natural resource use, the river and watershed have experienced significant loss of plant and animal species. However, large patches of open space, including the San Gabriel Mountains and the Puente-Chino Hills, are still viable habitat for some species. Relatively large species, including predators like the mountain lion, cannot sustain healthy populations over the long term without access to relatively large habitat areas nearby.



COURTESY OF NOAA/DEPARTMENT OF COMMERCE

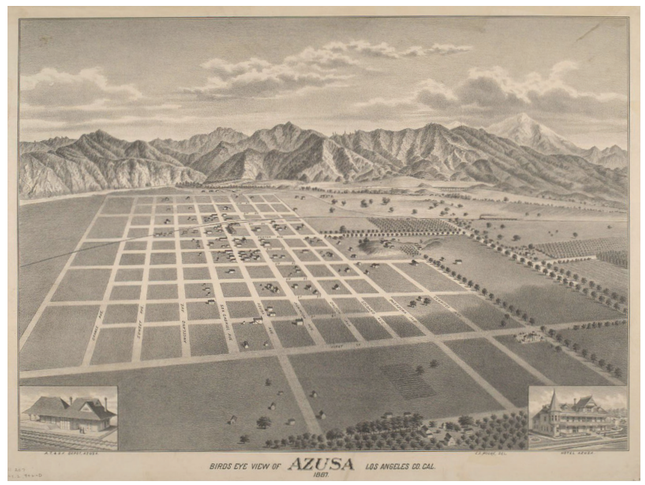
Figure 2-16. Steelhead trout were once abundant in the San Gabriel River.

2.2.2 Human Habitation

The San Gabriel River Watershed has a long, rich history of human habitation. From the early Native Americans to European arrival and periods of rule by Spain, Mexico and the United States, each successive wave of inhabitants left its indelible mark on this region. The cultural and economic diversity of the many communities found today in the watershed is a direct result of this historic legacy.

Land Use and Urban Development

Native Americans may have arrived in this area 40,000 years ago. The first recorded inhabitants arrived about 500 B.C. About 5,000-10,000 indigenous people were estimated to be in the region when the Spanish arrived. The Spaniards established the San Gabriel Mission in 1771 in the San Gabriel Valley near present day El Monte. In 1775, after significant flooding along the San Gabriel River and the Rio Hondo River, the mission was moved to its current location in the City of San Gabriel. Watershed lands were used as part of the mission's system of ranching and agriculture. This period ended in 1834 when control of California was transferred to Mexico and Mission lands were secularized.



COURTESY THE BANCROFT LIBRARY, U.C. BERKELEY

Figure 2-17. A bird's-eye view of Azusa in 1887 illustrates early town planning concepts.

COURTESY OF THE AZUSA HISTORICAL SOCIETY

Figure 2-18. Tongva Indian pictographs can be found near Azusa, as shown in this 1928 photograph.

Figure 2-19. The Pio Pico Adobe in Pico Rivera is an example of the ranchos of the 1800s.

Private ranchos became a defining landscape pattern during the Rancho Period, when former mission lands were dispersed to private individuals. Although the period was short, the massive ranches provided the foundation for the development of Southern California. The end of the Rancho Period began in 1846, when the U.S. occupied California, which became a state in 1850. Soon after, a series of devastating floods and droughts resulted in the economic collapse of the rancho lifestyle.

After California statehood, the ideal climate and landscape conditions found in Southern California, particularly in the coastal watersheds such as the San Gabriel River, led to the discovery of agriculture as an economic activity. Agricultural production, including citrus, wine grapes, walnuts, dairy products and field crops, became the basis of the Valley's agricultural economy. The watershed was a haven for farming and ranching for almost 100 years.

During and following World War II, the area shifted away from its agricultural roots toward an industrial economy with growing suburban communities—which is still the basis of the area's economy today. The watershed is now largely built out. Residential, commercial, and industrial development is present in most of the lower elevations, including the former flood plain of the San Gabriel River. Land use development continues through infill projects, redevelopment of more dense urban communities, and development of open space in foothill areas of the watershed.

Figure 2-20. Communities of the San Gabriel Valley relied on the citrus industry from the 1800s to mid-1900s.

Flood Protection and Water Supply

From the moment agricultural and urban development began appearing in the watershed, communities along the San Gabriel River have had to deal with periodic major flooding. In the upper San Gabriel Valley, debris flows out of the canyons of the San Gabriel Mountains often accompanied these floods. In response, the U.S. Army Corps of Engineers (COE) and the County of Los Angeles made a commitment to protect the communities along the river from flood damage to the extent possible. Los Angeles County officials discussed flood control as early as 1893 to address the unpredictable and often rampaging storm flow from the San Gabriel Mountains. Major storms in 1914 and 1916 led to the creation of the Los Angeles County Flood Control District and, ultimately, implementation of flood control measures on the San Gabriel River and its tributaries. Over time, a series of dams, debris basins and formal river channels to protect against flood flows and sediment transport have been constructed. The result is a weakening of the physical connections between upper portions of the watershed and the Pacific Ocean, resulting in barriers for sand, sediment, people and wildlife. Sediment that once was carried across the watershed (replenishing soils) and out to sea (replenishing beach sands) is now captured behind debris basins and dams resulting in significant maintenance requirements at each dam and debris facility, and in beach erosion.

Flooding is not the only environmental factor driving the change in natural conditions. The tremendous mosquito populations in California's early history caused major public health and economic problems, leading to removal of many of California's wetlands, illustrating the significant impact mosquito reproduction has had on the lives of California residents.

Because the region has a semi-arid Mediterranean climate, water resource development was necessary to support population growth, agriculture and industry. The first recorded diversion of water from the San Gabriel River was made in 1812 for agricultural purposes. In 1871, the County of Los Angeles Board of Supervisors created the San Jose Water District, the first official water district in the watershed. Today, many water agencies are charged with managing and protecting local surface water and groundwater supplies. The water in the San Gabriel River and the watershed's groundwater basins has been adjudicated and has been fully appropriated according to the State Water Resources Control Board. Specific water rights' holders own precise amounts of surface flow in the river and/or water stored in groundwater basins.

Urban development has converted open space to land uses that include hard, impervious surfaces. These surfaces cause stormwater to run off, rather than percolate into the ground. To compensate for this reduction of

COURTESY CITY OF LAKEWOOD

Figure 2-21. A housing boom started when the City of Lakewood incorporated in 1954.

COURTESY CITY OF LAKEWOOD

Figure 2-22. The streets of Lakewood flooded after a large storm in 1950.

groundwater recharge, percolation and settling basins have been introduced, concentrating recharge in smaller areas. Although a large amount of water is captured and infiltrated in percolation basins, the region's natural ability to provide enough water has long since been exceeded. So watershed agencies import significant quantities of water from the State Water Project and the Colorado River, through the Metropolitan Water District of Southern California.

The amount of water flowing through the watershed has been increased over time because of this imported water. It contributes to surface runoff as a result of uses such as irrigation and from discharge of treated wastewater. These sources of runoff now occur year-round in a watershed that was traditionally ephemeral.

Fire Protection, Erosion and Fire

Over time, urban development in the San Gabriel River Watershed continued to encroach onto historically fire-prone areas. To protect property, agencies and local communities adopted strict fire suppression policies. Over time, that suppression has led to increased vegetation build-up. The result was hotter-burning and often larger, more devastating fires than what once occurred historically. These altered disturbance patterns can have an adverse effect on native plant communities by changing the conditions in which these species had evolved. Increasingly, human-induced fires became the common cause of wildfires in the watershed, producing massive fires that are costly to fight and damaging to human property, plant communities and wildlife. They leave behind burned areas, which, during rainstorms, can cause massive sediment flows that must be managed in order to maintain flood protection levels.

Habitat Health and Connectivity

During the last 150 years, urban development has largely eliminated or degraded habitat along the river corridor. The majority of the valley and coastal plain areas and the lower elevation foothill areas have long been developed for urban uses. Changes in the hydrological functioning in the watershed, such as channelization, dams and importation of water, has altered the historic vegetation patterns and increased barriers to wildlife movement.

The San Gabriel River itself once functioned as a major habitat corridor, but urban development has fragmented remaining habitat along the river corridor and throughout the watershed. Only small patches of habitat remain along the river, such as the Santa Fe Dam Recreation Area, the Whittier Narrows Recreation Area, Bonelli Regional Park and Schabarum Regional Park. Some large intact habitat patches within the San Gabriel Mountains and the Puente-Chino Hills can still be found. However, these habitat patches are not well connected, which isolates plant and wildlife communities and limits the species' gene pools. This will affect the long-term viability of regional habitat communities and remaining wildlife.

Figure 2-23. Residents at the edge of the wildland-urban interface area face critical habitat management issues.

COURTESY GABI MCLEAN ©2003

Figure 2-24. Although horseweed is native to California, it mainly grows in disturbed areas.

Another variable is the introduction and spread of invasive, non-native plant species. While the distribution of plant species shifts during an evolutionary timescale, human activities have accelerated this process. Invasive plants have been brought to Southern California via livestock, agricultural practices, movement of goods and landscaping practices. Many of the tenacious species that have become problematic have adapted to already disturbed areas. Invasive plants can displace native vegetation, alter hydrologic patterns and reduce habitat quality.

2.3 THE SAN GABRIEL RIVER TODAY

Today, the San Gabriel River is as multi-faceted as are its many different stakeholders. An engineer at County of Los Angeles Department of Public Works (LADPW) may perceive the river as a flood control channel that efficiently protects nearby residents from swift waters. To San Gabriel Valley water purveyors, the river is a critical source of precious local drinking water. Fly-fishermen see the river as a local destination. Environmentalists see the river as a significant biological resource. For community groups and conservancies, the river is a potential greenbelt of open space,

Figure 2-25. The river flows through a concrete channel for ten miles in the lower coastal plain.

providing a respite from urban sprawl. This complexity and richness have increased the river's function and value to all residents of Southern California.

2.3.1 Biological and Physical Resources

The river ties our natural and urban environments together, providing a sense of place for all the communities along its banks. The physical environment encompasses biological and material conditions, both natural and human-made, that are tangible features of the present-day river:

GEOLOGY—the rock, sand, and gravel (aggregate) resources that Southern California relies upon for roads, schools, homes, and commercial and industrial buildings.

HABITAT—the present state of plant and animal communities along the San Gabriel River as defined by Significant Ecological Areas (SEAs) and sightings of rare plant and animal species.

TRAILS AND BRIDGES—the many physical structures designed to provide people access to or through the river corridor.

PARKS, SCHOOLS AND OPEN SPACE—the "empty" spaces in the built-environment along the river corridor that offer people an escape from buildings and streets that otherwise define their world.

FLOOD PROTECTION—the many dams, levees and other physical infrastructure built to help control and manage the river.

WATER SUPPLY—the water sources, the major agencies responsible for the water supply, the groundwater basins, and the water supply infrastructure, including water reclamation plants and spreading grounds.

WATER QUALITY—the current baseline conditions of ground and surface waters along the river and its tributaries.

Where applicable, current biological and physical resources are described within the context of each of the seven reaches as defined by the San Gabriel River Corridor Master Plan.

Figure 2-26. Aggregate is carried on a conveyor belt to a processing plant.

Geology

The San Gabriel River and the rocks and soils that lie along its channel are a creation of the continuing uplift and ongoing erosion of the San Gabriel Mountains. As the mountains have eroded, rocky pieces of boulders, rocks, gravel and sand have flowed out of the mountains and have been deposited by the river on top of the deep bedrock of the valley. The valleys below the south face of the San Gabriel Mountains still have particularly rich alluvial deposits (sediment deposited by flowing water). The alluvium fan deposit is estimated to be thousands of feet deep (up to 3.4 miles) and forms the 167-square mile aquifer, or groundwater basin, that is the

Figure 2-27. Exposed weathered rock outcrops are visible along Highway 39 in San Gabriel Canyon.

San Gabriel Valley's primary water source. In places the deposits are so deep geologists are unable to determine the make-up of the bedrock underneath.

Geologic maps tell the story, showing the range of rock and soil types existing along the path of the river.

HEADWATERS (REACH 1)

The West Fork consists predominately of two rock types: granitic and quartz diorite rocks from the Mesozoic era (55- to 245-million years ago). There are occasional alluvial sand and gravel deposits interspersed in a band along and near the channel of the West Fork.

SAN GABRIEL CANYON (REACH 2)

The San Gabriel Canyon is also dominated by quartz diorite rocks from the Mesozoic, and has significant deposits of Precambian era (544- to 4,600-million years ago) gneissic rocks, a type of igneous and metamorphic rock. There are alluvium deposits along the river channel between these solid rock formations.

UPPER SAN GABRIEL VALLEY (REACH 3)

The alluvial fan deposit begins at this point, where the river flows out of the San Gabriel Canyon and spreads alluvium out and into the Valley. These alluvium deposits consist of gravel and sand from the Pleistocene and Holocene era (10,000 years ago to the present).

LOWER SAN GABRIEL VALLEY (REACH 4)

The alluvial fan deposit continues south into the San Gabriel Valley. The alluvium directly deposited by the outflow of the river from the mountains narrows as it approaches Whittier Narrows, surrounded to the east and west by the alluvial gravel, sand and silt of the valleys and floodplains. The Puente-Chino and Montebello Hills consist of sandstone and claystone deposits from the Pliocene era (1.8- to 5.3-million years ago).

UPPER COASTAL PLAIN (REACH 5), LOWER COASTAL PLAIN (REACH 6), AND ZONE OF TIDAL INFLUENCE (REACH 7)

The Los Angeles Coastal Plain includes Pleistocene- to Holocene-age alluvium deposited from the river and marine sediments deposited during periodic encroachments of the sea. These sediments are grouped in four different formations: recent alluvium, the Lakewood Formation, the San Pedro Formation and the Pico Formation.

AGGREGATE MINING

Because of its the abundant aggregate resources, the San Gabriel Valley is called the "mother lode" of Southern California. Aggregate from the Holocene and Pleistocene eras are very durable and suitable for making concrete and asphalt. Rock, sand and gravel from the alluvial fans of the San Gabriel River have been used to build roads, schools, shopping centers, industrial plants and homes in Southern California.

Since the early 1900s, over a billion tons of aggregate have been produced for the construction industry in the Los Angeles region. Rock, sand, gravel, cement, water and other "ad mixtures" are the primary components of Portland Cement Concrete or PCC. PCC is specified in many construction projects for buildings, streets, sidewalks and landscapes. Asphaltic Concrete or AC is the basic material for building and maintaining roads and parking lots. AC contains crushed rock, manufactured natural sands and hot, liquid asphaltic oil. Many famous landmarks, including the Los Angeles Memorial Coliseum, the Los Angeles Harbor and the Los Angeles freeways were built with San Gabriel Valley aggregates.

COURTESY OF VULCAN MATERIALS COMPANY

Figure 2-28. Aggregate—sand, stone and gravel—is mined at the Reliance facility and used for construction.

COURTESY OF VULCAN MATERIALS COMPANY

Figure 2-29. Once mined, aggregates are sorted by size.

Aggregates come in a natural smooth rounded form or in an angular form, also called "crushed stone." Rounded rocks result from years of wearing down by the sediment transport process as mountains erode and are carried by water downstream. They tend to be found in or near current or historic riverbeds. The smooth larger rocks or cobbles, also known as "river rock," are the primary building material for Craftsman bungalows and landscapes of the Arts and Crafts era. Crushed stone is created by either blasting or crushing large rocks. Because it compacts more tightly than rounded pebbles or gravel, crushed stone is used as a base layer for building roads and sidewalks to ensure an even surface.

Rock, sand and gravel are obtained through "surface mining" or "open pit mining." Once mined, materials are washed and sorted at a local production plant and sold to market.

There are 11 mines located within one-half mile of the San Gabriel River. These mines are currently operated by three companies: Hanson Aggregate West, United Rock Products and Vulcan Materials Company. There are additional mines in the area, but beyond the project area of the Master Plan. Mines in the San Gabriel Valley are privately owned and are currently operated under various entitlements such as conditional use permits, vested rights and reclamation plans. All but the Rodefer Quarry are now producing rock, gravel and sand for the construction industry. Rodefer Quarry is in the early reclamation stages. The mines are concentrated in Reaches 3 and 4, in the Cities of Azusa, Duarte, Irwindale and Baldwin Park:

- Azusa Rock Quarry
- Azusa-Largo Quarry
- Reliance #2 Quarry
- United Rock Products Quarry #1
- United Rock Products Quarry #2
- United Rock Products Quarry #3
- United Rock Products Quarry #4
- Bubalo Quarry
- Hanson Quarry
- Durbin Quarry
- Rodefer Quarry

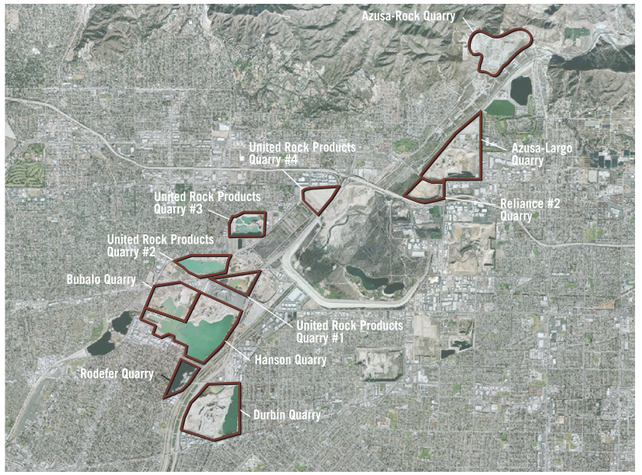


Figure 2-30. This diagram shows mine locations.

The California State Department of Conservation's Division of Mines and Geology (DMG) tracks supply and demand of aggregate resources within the State. According to the DMG, each person in Los Angeles "requires approximately 3.7 tons of new aggregate resources each year for the construction of streets, schools, shopping centers, homes and other basic structures. That means California uses over 180 million tons of aggregate each year, making the San Gabriel River one of the State's most important resources.

The State of California Department of Mines and Geology has incorporated land use designations with proven mineral deposits for the development of aggregate resources. The Surface Mining and Reclamation Act provides for mineral land classification in Sections 2711, 2712, 2761, 2762, 2763 and 2764 of the Public Resources Code. Land is either designated as urban or as a mineral resource, which differs from the land use designations as developed by the Southern California Association of Governments (see Section 2.3.2.3-Land Use and Economic Development). Existing mines are generally within Mineral Resource Zone-2 (MRZ-2), with the exception of Azusa Rock Quarry (Fish Canyon Quarry Property), which has recently been reclassified from MRZ-3 to MRZ-2 for Portland Cement Concrete Aggregate.

The land use zones from the Mineral Land Classification Map—Aggregate Resources Only, June 1, 1982, are:

OUTER BOUNDARIES SUBJECT TO URBANIZATION shows areas undergoing urbanization

EXISTING URBAN BOUNDARIES shows present conditions of urban areas

PRODUCTION-CONSUMPTION REGION BOUNDARY shows areas under classification for minerals

MINERAL RESOURCE ZONE BOUNDARIES include the following sub-areas:

- MRZ-1 areas have little to no significant mineral deposits
- MRZ-2 areas contain significant mineral deposits, based on adequate information
- MRZ-3 areas contain mineral deposits but the significance cannot be established
- MRZ-4 areas have inadequate information to assign to any other MRZ zone

These privately owned mines are a current and future resource for local and regional communities, providing materials for building the urban infrastructure. At this time, mining is projected to occur for another 30 to 40 years. In the future, reclaimed mines will provide land for a variety of uses. Each mine has a closure plan detailing the reclamation procedures of the mine and a re-use plan for future commercial, industrial, residential or open space and habitat land uses once its resources are exhausted. Mining companies are partnering with local communities to develop closure plans (for more details on closure plans, see Section 3.5, Master Plan Projects).

Habitat

Due to its Mediterranean climate and other factors, Southern California has one of the rarest ecosystems in the world. The biodiversity that characterizes a Mediterranean ecosystem exists only on three percent of the surface of the earth. Locally, the San Gabriel Mountains, Whittier Narrows and the estuarine area of the San Gabriel River Watershed contain good quality habitat as shown by the following two maps:

SIGNIFICANT ECOLOGICAL AREA (SEA). These are "ecologically important fragile land and water areas that are valuable as plant or animal communities and to the preservation of threatened or endangered species" according to the 1988 Los Angeles County General Plan (see Map 2-1).

SENSITIVE SPECIES OCCURRENCES. These are sensitive species as compiled and presented in the California Natural Diversity Database-CNDDB (see Map 2-2).

SIGNIFICANT ECOLOGICAL AREA

The County of Los Angeles Department of Regional Planning has designated areas within some unincorporated portions of the county as SEAs, adding a layer of protection for biotic resources. SEAs do not take away a property owner's right to build, but outline land use management practices that require development projects to be designed around existing habitat.

There are 10 SEAs in the San Gabriel River Watershed. Two SEAs lie directly on the river, including the Santa Fe Dam Floodplain and Whittier Narrows Dam County Recreation Area. Within a mile of the river are the Rio Hondo College Wildlife Sanctuary, the Sycamore-Turnbull Canyons and Alamitos Bay. Other SEAs are dispersed throughout the Puente-Chino Hills and San Jose Hills to the east of the river, as well as in the San Gabriel Mountains. Two proposed SEAs are in development, San Gabriel Canyon and Puente Hills. Once adopted, both SEAs will significantly increase the area of protection within the San Gabriel Mountains and Puente Hills areas. Existing SEAs within these regions will be included into the new designations.

COURTESY GABI MCLEAN ©2003

Figure 2-31. The valley cholla, an alluvial fan sage scrub plant, only occurs in the Santa Fe Dam Recreation area.

The following existing and proposed SEAs are located along or near the San Gabriel River.

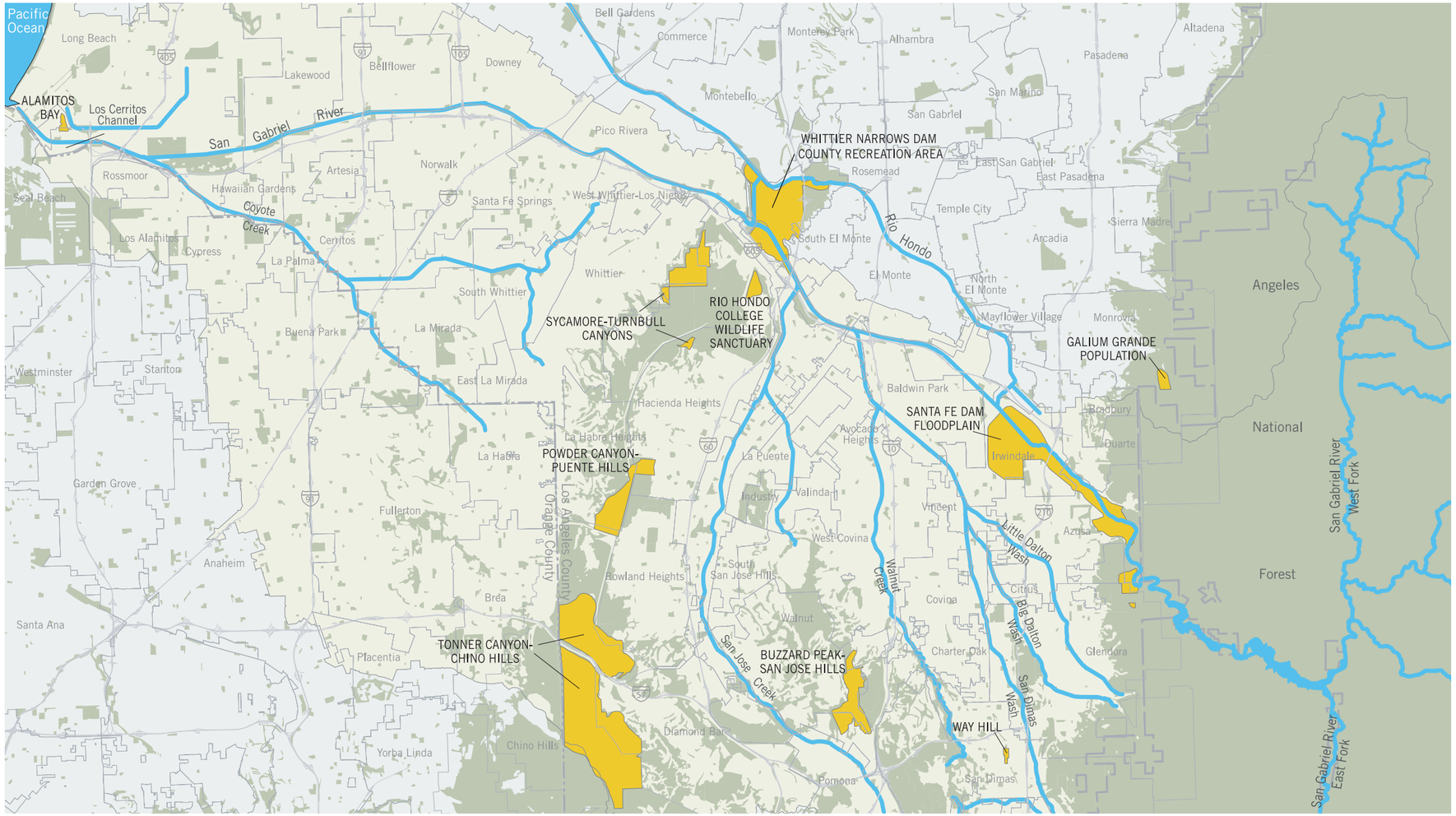
Headwaters and San Gabriel Canyon (Reaches 1 and 2)

There are currently no SEAs in these reaches, but there is a proposed SEA expansion.

SAN GABRIEL CANYON (PROPOSED). The new San Gabriel Canyon SEA will incorporate the existing SEA, "Santa Fe Dam Floodplain." Once approved, it will include the San Gabriel, Sawpit and Santa Anita Canyons and lands associated with those canyons, for a total area of 22,966 acres. Within this proposed SEA are steep slopes, elevation changes and a wide variety of plant communities including grasslands, riparian, shrublands, woodlands and forests. The majority of this SEA is in the Angeles National Forest, with portions in unincorporated Los Angeles County and the foothill Cities of Arcadia, Azusa, Duarte, Glendora and Monrovia.

Upper San Gabriel Valley (Reach 3)

SANTA FE DAM FLOODPLAIN. This SEA stretches almost five miles along the San Gabriel River, from Azusa down to Santa Fe Dam in Irwindale. It straddles both sides of the river, and includes the entire open space area



Source: County of Los Angeles Departments of Public Works & Regional Planning and Rivers and Mountains Conservancy

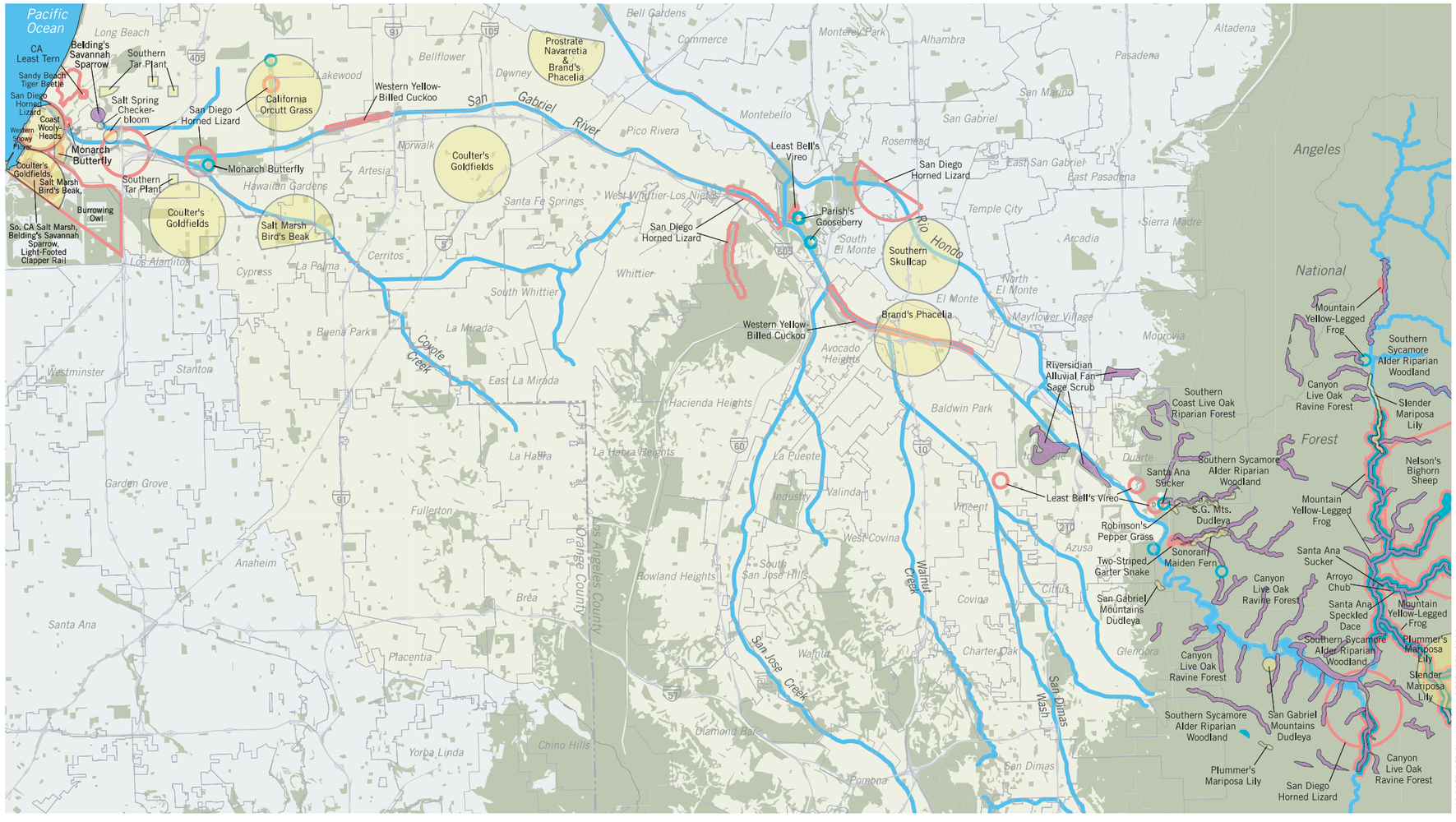
Note: Does not include Orange County data. From 1976 study by County of Los Angeles Department of Regional Planning and as amended through the adoption of the 1980 Revised General Plan.

Significant Ecological Areas (SEA)

County of Los Angeles Department of Public Works

San Gabriel River Corridor Master Plan

Map 2-1. Significant Ecological Areas.



Source: County of Los Angeles Department of Public Works and Rivers and Mountains Conservancy

Note: Data derived from the California Natural Diversity Database. Habitat data included within five mile buffer from San Gabriel River only.

Habitat and Species Occurrences

County of Los Angeles Department of Public Works

San Gabriel River Corridor Master Plan

Map 2-2. Habitat and species occurrences.

behind the dam. It encompasses 2,125 acres in floodplain conditions, including significant stands of alluvial fan sage scrub habitat, a rare plant community that today only exists in isolated patches. This SEA also includes some stretches of riparian woodland and coastal sage scrub plant communities. The area supports many regional biological values, including protection of existing core populations of rare species, presence of plant communities with restricted distribution, essential habitat for resident species and migratory birds, and habitat linkages along the upper San Gabriel River.

Lower San Gabriel Valley (Reach 4)

WHITTIER NARROWS DAM COUNTY RECREATION AREA. This large area straddles the San Gabriel River above the Whittier Narrows Dam and stretches over to the Rio Hondo. This SEA encompasses 4,145 acres in an area that is a collection point for surface and groundwaters from the San Gabriel River and Rio Hondo Watersheds. It presents a mix of oak, sycamore and willow riparian woodland, freshwater marsh, grasslands and coastal sage scrub. Whittier Narrows is a large and intact patch of rich habitat that is relatively isolated from other intact habitat patches in the watershed. Even so, it supports about 300 species of resident and migratory bird species. It also supports many regional biological values, including protection of existing core populations of rare species, presence of plant communities with restricted distribution, essential habitat for resident species and migratory birds, and potential habitat linkages along and between the San Gabriel River and the Puente Hills corridor. This SEA lies within land owned by the United States Army Corps of Engineers and the County of Los Angeles Department of Parks and Recreation.

PUENTE HILLS (PROPOSED). The proposed SEA will encompass remaining habitat areas within the Puente Hills, including Whittier Narrows, Sycamore Canyon and Turnbull Canyon, Powder Canyon, Brea and Tonner Canyons. The total area proposed is 13,421 acres. These areas contain relatively undisturbed patches of woodland, shrubland, grassland and wetland communities. As part of an important wildlife corridor, the Puente Hills are virtually a habitat island, surrounded by urban development. This proposed SEA will include the existing Whittier Narrows Dam County Recreation Area. A majority of this proposed SEA occurs within unincorporated Los Angeles County, with the rest in the city limits of Industry, La Habra Heights, Montebello, Pico Rivera, South El Monte and Whittier.

COURTESY OF MARGO BORS, CAL PHOTOS/CAL FLORA

Figure 2-32. Purple needlegrass, a once abundant native California bunchgrass, is now only found in small patches—it has been replaced by exotic annual grasses.

COURTESY OF GABI MCLEAN ©2003

Figure 2-33. Riparian woodland habitat can be found within the river corridor.

RIO HONDO COLLEGE WILDLIFE SANCTUARY. Located in the far northwest portion of the Puente Hills, adjacent to the Rio Hondo Community College (RHCC) campus and the Puente Hills Landfill, this SEA is approximately 109 acres and is used primarily by faculty and students at RHCC as a natural classroom and laboratory. The area includes examples of riparian woodland, chaparral, oak woodland, and coastal sage scrub communities. Students and professors at RHCC have recorded a wide variety of plant life and over 100 species of vertebrates here.

Upper Coastal Plain (Reach 5)

SYCAMORE-TURNBULL CANYONS. Located in the far southwestern portion of the Puente Hills, this SEA is about 607 acres and supports a number of plant communities including oak woodland, oak riparian forest, walnut woodland, southern willow scrub, chaparral, coastal sage scrub, freshwater marsh and non-native grassland. The SEA supports several habitat types that are considered sensitive biological resources because of the scarcity of vegetation and habitat for a number of the state and federally listed endangered, threatened and rare vascular plants, and several sensitive bird and reptile species.

Lower Coastal Plain (Reach 6)

There are no SEAs in this reach.

Zone of Tidal Influence (Reach 7)

ALAMITOS BAY. This SEA is located at the lower end of the San Gabriel River Watershed at the outfall of the Los Cerritos Channel. It is a 43-acre remnant of salt marsh, one of the last remaining patches in Los Alamitos Bay not yet lost to urbanization. The mingling of salt water and fresh water provides a rich ecological mix of brackish conditions. Salt marshes are an important breeding ground for terrestrial and marine species, including commercial fish. Wintering migrating birds also benefit from this salt marsh system.

SENSITIVE SPECIES OCCURRENCES

An ecosystem is composed of all organisms in a given place, interacting with their physical surroundings. It is a complex, interdependent web. Every plant species requires certain conditions for survival, while plant communities consist of groups of plant species that have similar needs for survival. Wildlife species have adapted to specific conditions as well, and rely on both plant communities and other wildlife associations. Often, areas where different plant communities come together, also known as ecotones, present richer, more diverse conditions and a richer variety of wildlife. This is also called the "edge effect," where two landscapes meet. And some species are specific to an ecotone, creating unique habitat zones.

The California Department of Fish and Game developed The California Natural Diversity Database (CNDDB) to catalog rare and endangered plants, animals and vegetation types. CNDDB is a database of actual sightings of rare plant and animal species, including rare species sightings along and near the San Gabriel River. It does not provide a complete picture of *all* existing habitat or open space areas containing commonly found species. However, it provides an inventory of areas of viable habitat. CNDDB is continually being updated by experts in the field. Therefore a habitat area with no previous sighting may eventually be included in the database, once an official sighting is recorded. Large tracts of land statewide that have never been surveyed still have the potential to retain rare species.

CNDDB contains over 40,000 records on rare plants, animals and natural communities. Its users include conservation groups such as local land trusts, The Nature Conservancy, the Wildlife Conservation Board, environmental planners, and federal, state and local governmental agencies. If a site contains a rare plant species according to the CNDDB, a local lead agency can use that information to generate funding to protect the site or implement a restoration project. CNDDB entries use several designations of plants and animals:

- State-listed rare, threatened or endangered
- State candidate for listing
- Federally listed threatened or endangered
- Federally proposed threatened or endangered

COURTESY PETER J. CARBONI, USFWS

Figure 2-34. Nelson's bighorn sheep is a subspecies of the desert bighorn shown here.

A plant species is "endangered" when "the prospects of its survival and reproduction are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, over-exploitation, predation, competition, or disease," according to the State Department of Fish and Game (see Resources).

A plant species is "threatened" when it is "likely to become endangered in the foreseeable future in the absence of protection measures."

A plant species is "rare" when the species is "found in such small numbers throughout its range that it may be endangered if its environment worsens."

The following section lists known sensitive plant species and community and animal species that occur within a 2.5-mile distance on either side of the San Gabriel River. In more urbanized reaches, there may not be any occurrences of sensitive plant communities, indicating the fragmented nature of habitat there. Individual plants, although an important find, may not have a long-term chance at survival without its associated plants and wildlife species, as well as the natural disturbances such as flooding or fire that make up a healthy ecosystem. Planting these species is not necessarily recommended; see Appendix B for a sample list of plant species appropriate for planting in each reach.

Headwaters (Reach 1)

This reach contains a rich array of sensitive plant and animal species. That's not surprising because it is the reach with the least amount of disturbance and the greatest quantity of contiguous open space, creating an area with high biodiversity value. The West Fork of the river corridor and associated canyons are rich in multiple species occurrences. Of particular significance, are the 700 Nelson's bighorn sheep. This rare mammal, once numbering in the thousands, is the San Gabriel Mountains' second largest mammal (after the mountain lion).

PLANT COMMUNITIES. Canyon Live Oak Ravine Forest, Southern Sycamore Alder Riparian Woodland

PLANT SPECIES. *Calochortus plummerae* (Plummer's mariposa lily), *calochortus clavatus gracilis* (slender mariposa lily)

WILDLIFE SPECIES. *Gila orcutti* (arroyo chub), *rana muscosa* (mountain yellow-legged frog), *ovis canadensis nelsoni* (Nelson's bighorn sheep), *rhinichthys osculus* (Santa Ana speckled dace), *catostomus santaanae* (Santa Ana sucker)

San Gabriel Canyon (Reach 2)

This reach is also rich in biodiversity, despite the two major dams that have altered the original structure and function of the river system. Although there has been a lack of sensitive species occurrences in this reach along the main stem of the river, there have been occurrences of rare species in the protected canyons leading down to the river, as well as up the East Fork.

PLANT COMMUNITIES. Canyon Live Oak Ravine Forest, Southern Sycamore Alder Riparian Woodland

COURTESY GABI MCLEAN ©2003

Figure 2-35. Canyon oaks provide habitat for small and large mammals and a variety of birds.

PLANT SPECIES. *Calochortus plummerae* (Plummer's mariposa lily), *dudleya densiflora* (San Gabriel Mountains dudleya)

WILDLIFE SPECIES. *Phrynosoma coronatum blainvillei* (San Diego horned lizard)

Upper San Gabriel Valley (Reach 3)

Despite the vegetated soft-bottom of the San Gabriel River in this reach, species occurrences tend to occur mainly in the protected canyon, away from human activity. Most species sightings have occurred in the mountains and in the undeveloped floodplain area behind Santa Fe Dam; there are few sightings in the developed stretches of Azusa.

PLANT COMMUNITIES. Riversidian Alluvial Fan Sage Scrub, Southern Sycamore Alder Riparian Woodland, Southern Coast Live Oak Riparian Forest

COURTESY OF BONTERRA CONSULTING ©2003

Figure 2-36. The Santa Ana sucker is found in the river above the San Gabriel Dam.

PLANT SPECIES. *Lepidium virginicum robinsonii* (Robinson's pepper-grass), *dudleya densiflora* (San Gabriel Mountains dudleya), *thelypteris puberula sonorensis* (Sonoran maiden fern)

WILDLIFE SPECIES. *Vireo bellii pusillus* (least Bell's vireo), *catostomus santaanae* (Santa Ana sucker), *thamnophis hammondii* (two-striped garter snake)

Lower San Gabriel Valley (Reach 4)

Residential and industrial land uses line this area of the river, which results in the complete absence of sensitive species occurrences in the upper section of the reach and only minimal occurrences in the middle of the reach. The Whittier Narrows, a large open space area in the lowest section of the reach, does have many rare plant and animal species, including about 300 species of birds. It is a native habitat that is now interlaced with exotic and invasive plants like arundo, and large expanses of turf and lined lakes for recreational uses.

COURTESY OF GARY R. ZAHM, USFWS

Figure 2-37. The coloring of the coast horned lizard helps it blend into chaparral and coastal sage scrub backgrounds.

PLANT COMMUNITIES. None

PLANT SPECIES. *Phacelia stellaris* (Brand's phacelia), *ribes divaricatum parishii* (Parish's gooseberry), *scutellaria bolanderi austromontana* (southern skullcap)

WILDLIFE SPECIES. *Vireo bellii pusillus* (least Bell's vireo), *phrynosoma coronatum blainvillei* (San Diego horned lizard), *coccyzus americanus occidentalis* (western yellow-billed cuckoo)

Upper Coastal Plain (Reach 5)

The few sensitive species occurrences in this reach are all in the river bottom and in the Puente Hills south of Whittier Narrows. A few rare plant types occur west of the river in this reach. This reach is heavily developed right up to the river, with some of the densest human populations found in Southern California. The only open spaces are the utility right-of-way corridors on both sides of the river. A few urban parks are strung along the river, but these are largely turf and non-native landscapes.

PLANT COMMUNITIES. None

COURTESY OF CAROLYN MARTUS, CAL PHOTOS/CAL FLORA

Figure 2-38. The Brand's phacelia.

PLANT SPECIES. *Phacelia stellaris* (Brand's phacelia), *navarretia prostrata* (prostrate naverretia)

WILDLIFE SPECIES. *Phrynosoma coronatum blainvillei* (San Diego horned lizard)

Reach 6: Lower Coastal Plain (Reach 6)

This is the concrete-lined stretch of the river and is heavily developed up to the river's edge. Toward the lower portion of the reach, as more and more open space becomes available, some sensitive species have been found. These sensitive species occurrences may be related to Coyote Creek, which joins the San Gabriel River below El Dorado Park in Long

COURTESY DR. DEAN WM. TAYLOR, JEPSON HERBARIUM, UC BERKELEY

Figure 2-39. Coulter's goldfields occur naturally in the outer edges of tidal marshes.

Beach. However, there are no sensitive plant communities here, only isolated plant and animal species.

PLANT COMMUNITIES. none

PLANT SPECIES. *Orcuttia californica* (California Orcutt grass), *lasthenia glabrata coulteri* (Coulter's goldfields), *cordylanthus maritimus maritimus* (salt marsh bird's beak), *hemizonia parryis australis* (southern tarplant)

WILDLIFE SPECIES. *Danaus plexippus* (monarch butterfly), *phrynosoma coronatum blainvillei* (San Diego horned lizard), *coccyzus americanus occidentalis* (western yellow-billed cuckoo)

Zone of Tidal Influence (Reach 7)

The Pacific Ocean, coastal wetlands and large expanses of open space combine to make this the second richest area of biodiversity along the river. The southern coastal salt marsh plant community can be found here, a rare habitat within Southern California, and the only major plant community found below the Santa Fe Dam.

PLANT COMMUNITIES. Southern Coastal Salt Marsh

PLANT SPECIES. *Nemacaulis denudata var. denudata* (coast woolly-heads), *lasthenia glabrata coulteri* (Coulter's goldfields), *cordylanthus maritimus maritimus* (salt marsh bird's beak), *sidalcea neomexicana* (salt spring checkerbloom), *hemizonia parryi australis* (southern tarplant)

WILDLIFE SPECIES. *Passerculus sandwichensis beldingi* (Belding's savannah sparrow), *athene cunicularia hypogaeae* (burrowing owl), *rallus longirostris levipes* (light-footed clapper rail), *danaus plexippus* (monarch butterfly), *phrynosoma coronatum blainvillei* (San Diego horned lizard), *charadrius alexandrinus nivosus* (western snowy plover)

Existing Trails and Bridges

One of the more notable non-flood control, non-water conservation structures along the San Gabriel River is the 39-mile bike trail beginning in Azusa and extending all the way to the Pacific coast. There are access points from most major streets and direct access to 15 parks. This north-south trail is intersected by other east-west trails. The entire trail network may be expanded in the future.

This overview of the trail system focuses on trails within one-half mile of the river, including trails that bisect the river from the east and west. It does not include more localized trails developed and maintained by the cities along the course of the river.

Most of these trails are multi-use for bicyclists, hikers and equestrians. The trail map is based on the "Riding and Hiking Trails" map provided by County of Los Angeles Department of Parks and Recreation (see Map 2-3).

The San Gabriel River Bike Trail also threads its way under a variety of bridges, including freeway, major street, railway and pedestrian bridges. The bridge names are noted below within each reach.

Headwaters and San Gabriel Canyon (Reaches 1 and 2)

Trails

- West Fork North Trail—8 miles from Highway 39 to Cogswell Dam (rated difficult); trail may still be closed because of security considerations

Bridges

- San Gabriel Canyon Road/California Highway 39
- East Fork Road

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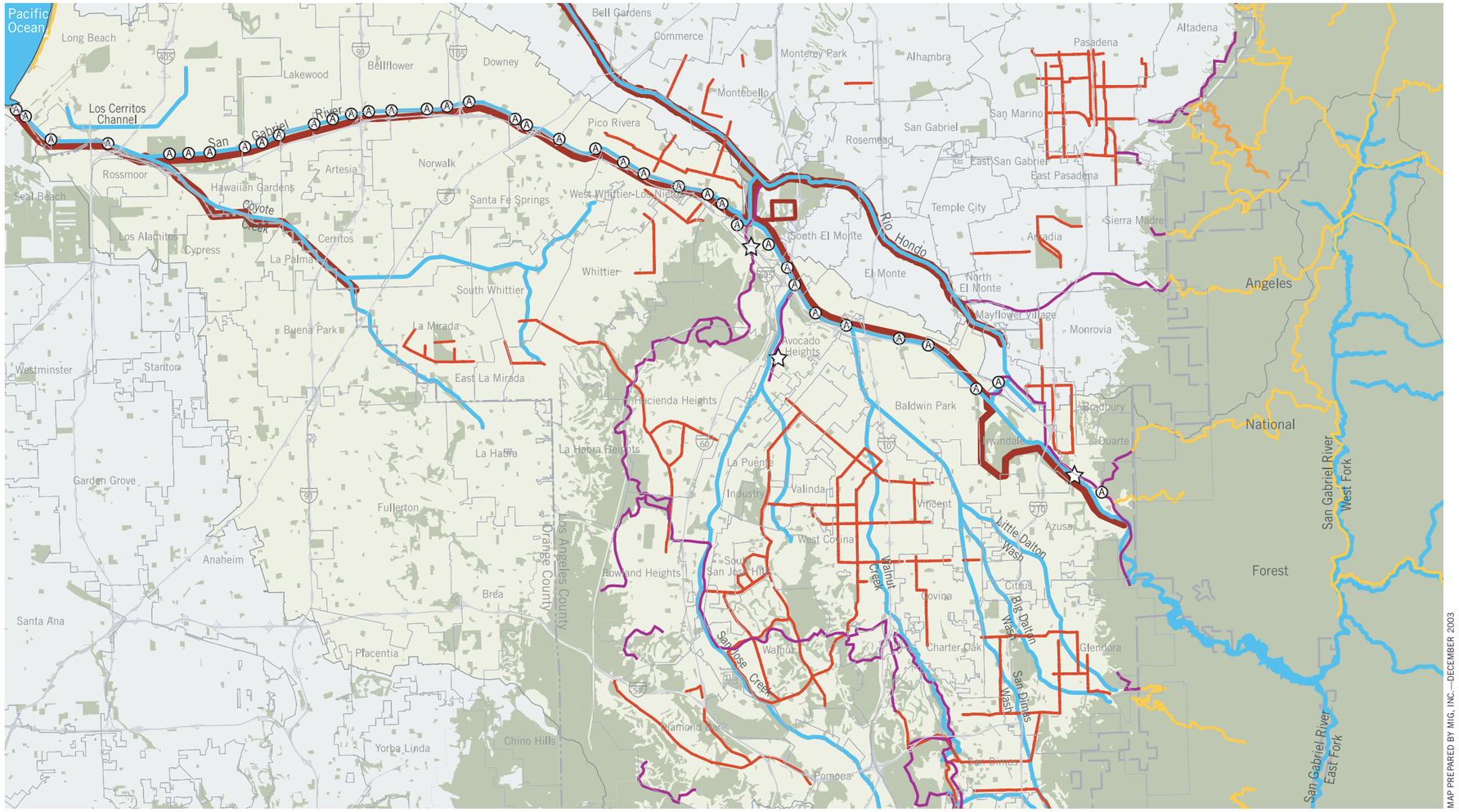
Figure 2-40. Urbanization has greatly decreased the burrowing owl habitat and reduced the total number of owls.

Figure 2-41. Equestrian trails line the riverbanks in many communities.

Figure 2-42. The East Fork Road bridge spans the river in the San Gabriel Canyon.



Source: County of Los Angeles Department of Public Works and Rivers and Mountains Conservancy

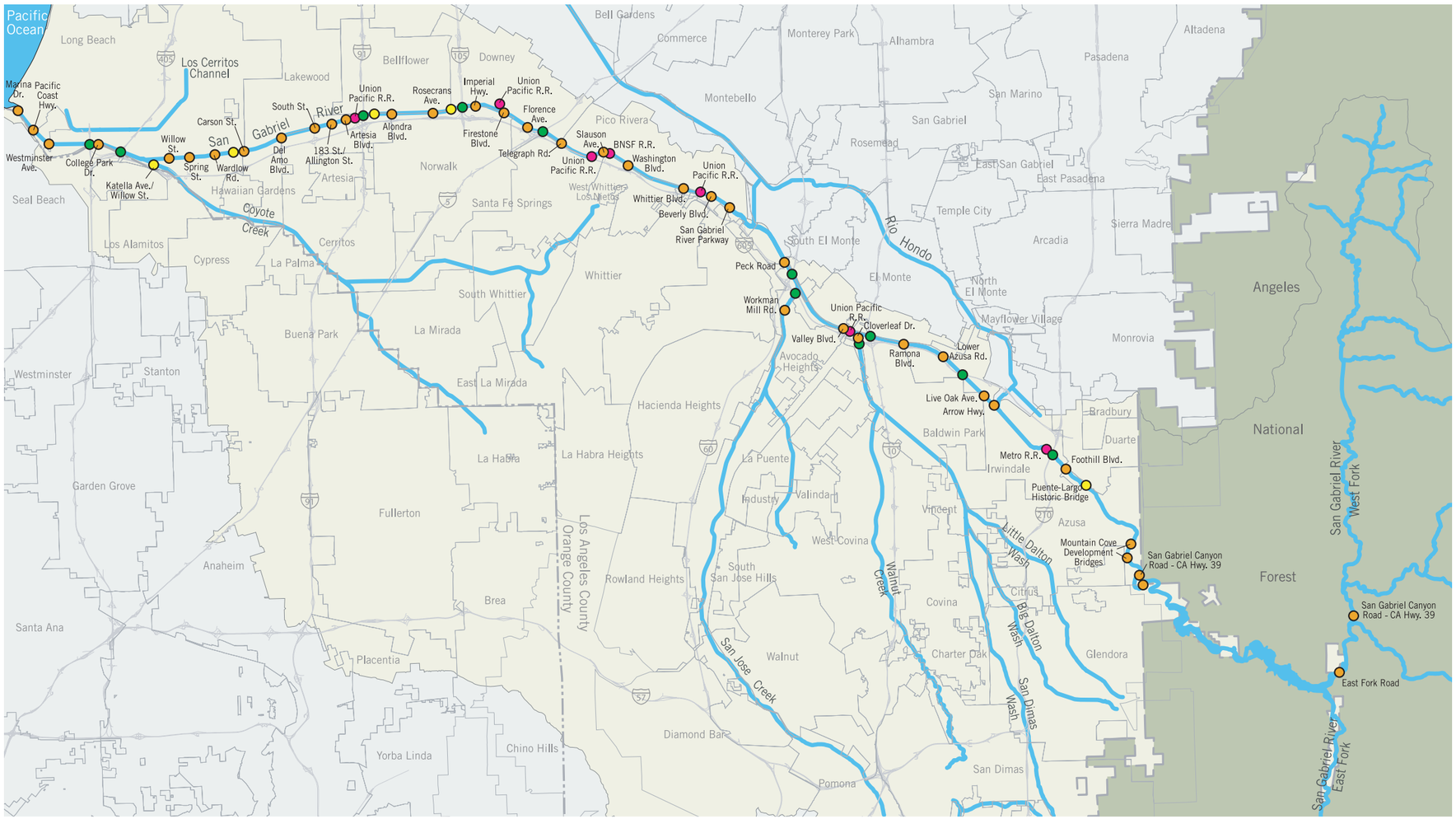
Note: Trails in Los Angeles County only. Data derived from RMC database and County of Los Angeles Department of Parks and Recreation, "Los Angeles County Riding and Hiking Trails" map, 2001.

Existing Los Angeles County Trails

County of Los Angeles Department of Public Works

San Gabriel River Corridor Master Plan

Map 2-3. Existing Los Angeles County trails.



Source: County of Los Angeles Department of Public Works, Thomas Bros. Maps, and Rivers and Mountains Conservancy

Existing Bridges

County of Los Angeles Department of Public Works

San Gabriel River Corridor Master Plan

Map 2-4. Existing bridges.

Upper San Gabriel Valley (Reach 3)

Trails

- Van Tassel Trail—3.5 miles from start of San Gabriel River Bike Trail to Fish Canyon (rated moderately difficult)
- San Gabriel River Bike Trail (first leg)—Trailhead for 38-mile trail begins on east side; located near Angeles National Forest Entrance Station in Azusa; includes staging area; one-mile extension is currently being built past Mountain Cove development to future River Park (rated not difficult)

  —8.5 miles along the east bank of the river from trailhead to bottom of Santa Fe Dam
  —Two designated access points along this reach: Trailhead and Santa Fe Dam Recreation Area

Bridges

- San Gabriel Canyon Road/Highway 39 (two bridges)
- Mountain Cove (two bridges)
- Puente-Largo Historic Railroad
- Foothill Boulevard
- Foothill Freeway
- Metro Railroad

Lower San Gabriel Valley (Reach 4)

Trails

- San Gabriel River Bike Trail (second leg)

  —8.5 miles on the west bank of the river from Santa Fe Dam to Whittier Narrows Dam
  —11 designated access points along the reach
- San Jose Creek Bike Trail—2.0-mile east-west trail that ends where it intersects the San Gabriel River Bike Trail at the San Jose Creek confluence; this trail is proposed to extend to Cal Poly Pomona and beyond to Claremont (rated not difficult)
- Schabarum Trail—28-mile trail that begins at the San Gabriel River in Whittier Narrows; extends eastward through the Puente Chino Hills toward La Habra Heights

Figure 2-43. Trail access from the community of Avocado Heights leads to the equestrian trail on the north bank of San Jose Creek.

- Link to Lario (Rio Hondo) Trail—A significant east-west trail that connects the San Gabriel River Bike Trail to the Rio Hondo Trail, which travels north to Monrovia and south to the LA River Bike Trail, which continues south to Long Beach and the Pacific Ocean

Bridges

- Arrow Highway
- Live Oak Avenue
- San Gabriel River Freeway (605 Freeway)
- Lower Azusa Road
- Ramona Boulevard
- San Bernardino Freeway (10 Freeway)
- Cloverleaf Drive
- Union Pacific (MetroLink)
- San Gabriel River Freeway (605 Freeway)
- Valley Boulevard
- Workman Mill Road
- San Gabriel River Freeway (605 Freeway)
- Pomona Freeway (60 Freeway)
- Peck Road

Upper Coastal Plain (Reach 5)

Trails

- San Gabriel River Bike Trail (third leg)

  —7.5 miles on the east bank of the river from Whittier Narrows to Firestone Boulevard in Downey
  —9 designated access points
  —Currently no major east-west trail connections except the recently completed Whittier Greenway Trail rails-to-trails project

Bridges

- San Gabriel River Parkway
- Beverly Boulevard
- Union Pacific Rail
- Whittier Boulevard
- Washington Boulevard
- Burlington Northern Santa Fe Railroad (MetroLink)
- Slauson Avenue
- Union Pacific Railroad
- Telegraph Road
- Santa Ana Freeway
- Florence Avenue
- Firestone Boulevard

Figure 2-44. The Union Pacific Railroad Bridge is being converted to the new West Branch Greenway, a rails-to-trails project by the City of Bellflower.

Lower Coastal Plain (Reach 6)

Trails

- San Gabriel River Bike Trail (fourth leg)
  - —10 miles on the east bank of the river from Firestone Boulevard in Downey to the San Diego Freeway, I-405
  - —13 designated access points
- Coyote Creek Bike Trail
  - —Begins at the San Gabriel River Bike Trail and heads northeast toward La Mirada in Orange County

Bridges

- Imperial Highway
- Glenn Anderson Freeway (I-105 Freeway)
- Rosecrans Avenue
- Alondra Boulevard
- Artesia Freeway
- Union Pacific Railroad
- Artesia Boulevard
- 183rd Street/Allington Street
- South Street
- Del Amo Boulevard
- Carson Street
- Wardlow Road
- Spring Street
- Willow Street
- Pedestrian bridge (4 bridges)

Figure 2-45. The bridge at Foster Road on the Downey-Bellflower-Norwalk border is one of the four pedestrian bridges in Reach 6.

Zone of Tidal Influence (Reach 7)

Trails

- San Gabriel River Bike Trail (fifth leg)
  - —3.5 miles on the east bank through Orange County to the Pacific coast in Seal Beach
  - —4 designated access points

Bridges

- San Diego Freeway (I-605 Freeway)
- College Park Drive
- 22 Freeway Bridge
- Westminster Avenue
- Pacific Coast Highway
- Marina Drive

EQUESTRIAN TRAILS

The river has many areas of significant equestrian activity, especially from Reaches 3 through 6. Specific areas include Azusa, Santa Fe Dam Recreation Area, Whittier Narrows Dam Recreation Area, Pico Rivera, Bellflower and Lakewood.

An equestrian trail parallels the Bike Trail along many portions of the river, but many other trails frequently used by equestrians have not yet been mapped. The Trail Documentation Project of the San Gabriel River Equestrian Coalition will inventory equestrian trails in the river corridor.

Figure 2-46. Marina Drive Bridge is the southern-most bridge that crosses the river, on the Long Beach-Seal Beach border.

Figure 2-47. Picnic shelters in the Santa Fe Dam Recreation area are well-used.

Parks, Schools, and Open Space

This set of maps (Maps 2-5 and Map 2-6) details information about existing parks and open space along the San Gabriel River. In addition to specific parks and natural areas designated as open space, this section also identifies schools, another potential source of recreational and open space, and utility rights-of-way, a functional element of infrastructure which provides some open space value.

REGIONAL PARKS

About 52 public parks and recreation areas of all sizes lie within or near the river corridor. The largest of these, the Angeles National Forest, is in the San Gabriel Mountains. Three other large regional parks are fairly evenly dispersed along the urbanized portion of the San Gabriel River corridor linked by the bike trail. This includes: the Santa Fe Dam

Figure 2-48. This lake, one of the six lakes in El Dorado Regional Park, provides visual relief and a sense of serenity.

Recreation Area in the northern section; the Whittier Narrows Recreation Area in the middle section, and El Dorado Regional Park along the southern portion.

ANGELES NATIONAL FOREST. 701 N. Santa Anita Ave., Arcadia (Forest Supervisor's Office, located outside the forest)

Managed by the U.S.D.A. Forest Service, this national forest covers over 650,000 acres, including the headwaters of the San Gabriel River. A diverse wild land area lying above the metropolitan area of Los Angeles, the park provides a wide range of recreational activities including hiking, backpacking, camping, picnicking, fishing, off-highway vehicle use, gold-panning, swimming and other water sports.

SANTA FE DAM RECREATION AREA. 15501 E. Arrow Highway, Irwindale

Operated by County of Los Angeles Department of Parks and Recreation, this 836-acre park includes a 70-acre lake for sailing, swimming, and fishing; trails for biking and hiking; the Peter Schabarum Nature Center; picnic areas; and campsites for youth groups. A popular children's water area is a distinctive feature. North of the lake is a 400-acre natural area. The San Gabriel River Bike Trail runs through the park from the San Gabriel Mountains to the coast.

WHITTIER NARROWS DAM RECREATION AREA. 823 Lexington-Gallatin Road, South El Monte

Operated by County of Los Angeles Department of Parks and Recreation and the City of Pico Rivera, this 1,400-acre park provides fishing lakes, picnic areas, playgrounds, an equestrian facility, trails, multi-purpose athletic complex, a military museum, soccer fields, volleyball courts, and archery, skeet, pistol and trap ranges. The park also features the Whittier Narrows Nature Center, which includes over 200 acres of natural woodland and four lakes for migrating waterfowl.

EL DORADO REGIONAL PARK. 7550 E. Spring Street, Long Beach

Operated by the City of Long Beach, this 470-acre park is bordered on the west by the San Gabriel River and on the east by the I-605 Freeway. The park includes the El Dorado Nature Center, community gardens, Olympic archery range, six lakes and several streams, picnic areas, play equipment, a children's train, a group campground, over 4 miles of bike trails, a glider flying area, and model sailboat area.

Although the regional parks are strategically spaced along the river corridor, the remaining parks and open spaces, as illustrated by the map, are not as evenly distributed. While most of the river-adjacent communities have parks within walking distance of the river (66 percent along the west bank and 80 percent along the east bank), some communities lack this open space resource. Gaps in the distribution of parks along the river include densely populated communities such as Baldwin Park and El Monte in Reach 4, Pico Rivera and West Whittier-Los Nietos in Reach 5, and portions of Bellflower in Reach 6.

Figure 2-49. The river itself is open space—and a highly used recreation area in the Angeles National Forest for millions of visitors every year.

LOCAL PARKS AND RECREATION AREAS

The map identifies specific parks by name and illustrates them by size (see Map 2-5). It includes the regional parks described above and the many local parks usually managed by cities. Parks are categorized by size:

- Large: greater than 50 acres
- Medium: 15 to 50 acres
- Small: less than 15 acres

The parks illustrated on the map are listed below by Reach. All these parks lie within one-half mile of the river. An asterisk (*) indicates all parks that are directly adjacent to the river.

Headwaters (Reach 1)

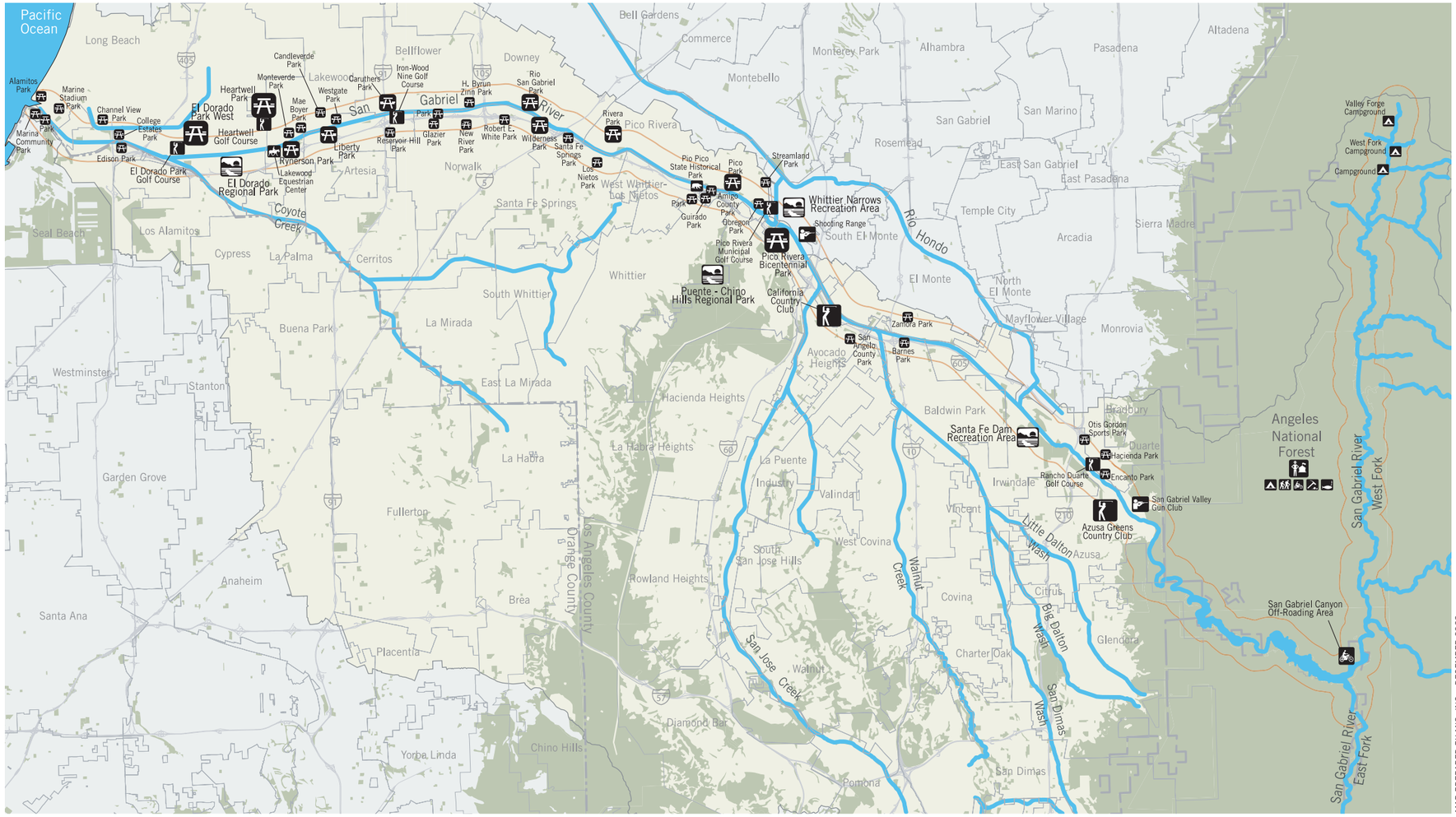
The following three "parks" are campgrounds that lie within the Angeles National Forest just below the headwaters of the San Gabriel River and to the west of the Cogswell Dam Reservoir.

- Valley Forge Campground
- West Fork Campground
- Campground

San Gabriel Canyon (Reach 2)

- San Gabriel Canyon Off-Highway Vehicle Area

Figure 2-50. Off-road vehicles drivers obtain day-use permits from the US Forest Service for designated areas in San Gabriel Canyon.



Map 2-5. Existing parks and recreational facilities.

Upper San Gabriel Valley (Reach 3)

Except for the Santa Fe Dam Recreation Area, none of these parks is oriented toward the nearby river.

- Azusa Greens Country Club, Azusa
- Encanto Park, Duarte
- Hacienda Park, Duarte
- Rancho Duarte Golf Course, Duarte
- Otis Gordon Sport Park, Duarte
- Santa Fe Dam Recreation Area*, Irwindale (regional park—see description above)

Lower San Gabriel Valley (Reach 4)

This reach lacks parks, most notably in the central and northern portion. The parks that do exist are usually not adjacent to river or are separated from it by the I-605 Freeway.

- Barnes Park, Baldwin Park
- Zamora Park, El Monte
- San Angelo County Park, Bassett
- California Country Club, City of Industry
- Pico Rivera Bicentennial Park*, Pico Rivera
- Whittier Narrows Recreation Area*, Pico Rivera (regional park—see description above)

Figure 2-51. Legg Lake at Whittier Narrows Recreation Area is a popular weekend destination for families.

Figure 2-52. Santa Fe Springs Park includes a playground and active recreation, and will expand to include a nature sanctuary.

Upper Coastal Plain (Reach 5)

Compared with Reaches 3 and 4, Reach 5 has significantly more parks. All of these parks are 15 acres or less, but many are notable for lying directly adjacent to the river. They are linked by the San Gabriel River Bike Trail, which runs down the east bank of the river. This trend begins at the southern end of Reach 4 with the Bicentennial Park in Pico Rivera. Although generally well covered with small parks, there is one notable gap in the central portion of Reach 5, between Pio Pico State Historic Park and Los Nietos Park.

- Pico Rivera Municipal Golf Course*
- Obregon Park*, Pico Rivera
- Streamland Park, Pico Rivera
- Pico Park, Pico Rivera
- Amigo County Park*, Pico Rivera
- Guirado Park, LA County
- Pio Pico State Historic Park, Pico Rivera
- Rivera Park, Pico Rivera
- Los Nietos Park, Santa Fe Springs
- Santa Fe Springs Park*, Santa Fe Springs
- Wilderness Park*, Downey
- Rio San Gabriel Park*, Downey

Lower Coastal Plain (Reach 6)

Reach 6 has the largest number of parks and the most diverse sizes. Although most are less than 15 acres, there are also medium-size parks, as well as one large regional park.

- Robert E. White Park, Norwalk
- New River Park, Norwalk
- H. Byrun Zinn Park*, Bellflower
- Glazier Park, Norwalk
- Iron-Wood Nine Hole Golf Course, Cerritos
- Caruthers Park*, Bellflower
- Westgate Park*, Cerritos
- Liberty Park*, Cerritos
- Candleverde Park, Lakewood
- Mae Boyer Park*, Lakewood
- Rynerson Park*, Lakewood
- Monteverde Park, Lakewood
- Lakewood Equestrian Center, Lakewood
- Heartwell Golf Course, Long Beach
- Heartwell Park, Long Beach
- El Dorado Regional Park*, Long Beach (regional park—see description above)
- El Dorado Park West, Long Beach
- El Dorado Park Golf Course*, Long Beach

Figure 2-53. The Lakewood Equestrian Center serves an active equestrian community.

Zone of Tidal Influence (Reach 7)

This relatively short reach has only a few public parks.

- Edison Park*, Seal Beach
- College Estates Park*, Long Beach
- Channel View Park, Long Beach
- Gum Grove Park, Seal Beach
- Marina Community Park, Seal Beach
- Alamitos Park, Long Beach

Figure 2-54. A kite surfer heads toward the mouth of the river at Seal Beach.

OPEN SPACE

Open space along the river is relatively sparse, compared with the parks that provide more active recreational opportunities. The map shows parks in bright green and open spaces in soft green, illustrating locations with active versus passive recreational opportunities (see Map 2-6). Open space includes undeveloped natural areas, as well as vacant lands, and is usually in public ownership. The largest open space groupings lie in the mountains and hills. The most notable open space includes:

- Angeles National Forest
- Foothills of the San Gabriel Mountains
- Natural areas adjacent to the Santa Fe Dam Recreation Area
- Woodland Duck Farm property
- Whittier Narrows
- Puente-Chino Hills
- Wetland areas in Seal Beach and Long Beach

However, not all of the open spaces illustrated on the map are necessarily protected from future development. This is especially true for the open space areas in or near the foothills of the San Gabriel Mountains, some of which is privately held. A portion of the open space data set used to generate this map includes land designated as vacant, which provides an opportunity for future parks or protected open space.

SCHOOLS

In addition to existing parks and open space, schools and utility rights-of-way offer additional significant forms of open space along the river. Public schools can be a key element in the creation of additional open space opportunities for some communities. When school properties are added to the map of parks and open space, the network of open space is tightened, with less distance remaining between open spaces.

The communities that lack parks and open space do have local schools. Dual use of these properties may provide more available parks and open space. Public schools in or near the river corridor are present in all the reaches south of the Santa Fe Dam, beginning with Reach 4. An asterisk (*) indicates public schools that are located directly adjacent to the river.

Headwaters, San Gabriel Canyon and Upper San Gabriel Valley (Reaches 1, 2 and 3)

There are no schools located along the San Gabriel River in these upper reaches.

Lower San Gabriel Valley (Reach 4)

- Continuation High School, El Monte
- Elementary School 1, El Monte
- Elementary School 2, El Monte
- Madrid Middle School*, City of Industry (significant river frontage)
- Mountain View High School*, El Monte (lies opposite from Woodland Duck Farm, with significant river frontage)
- Charles T. Kranz Intermediate, El Monte
- South El Monte High School, South El Monte (lies adjacent to Whittier Narrows Nature Center)

Upper Coastal Plain (Reach 5)

- Pico Rivera Middle School, Beverly Boulevard, Pico Rivera (adjacent to Pico Park)
- Middle School, Norwalk Boulevard, LA County
- Continuation High School, Passons Boulevard, Pico Rivera
- Middle School, Passons Boulevard, Pico Rivera
- Elementary School, Passons Boulevard, Pico Rivera
- Pioneer High School, LA County
- Middle School 2, Pico Rivera

Lower Coastal Plain (Reach 6)

- Ernie Pyle Elementary, Rosecrans Avenue, Bellflower
- Bellflower High School, Bellflower
- Elementary School 2, Del Amo Boulevard, Lakewood
- Demille Middle School*, Long Beach (river adjacent near El Dorado Regional Park)

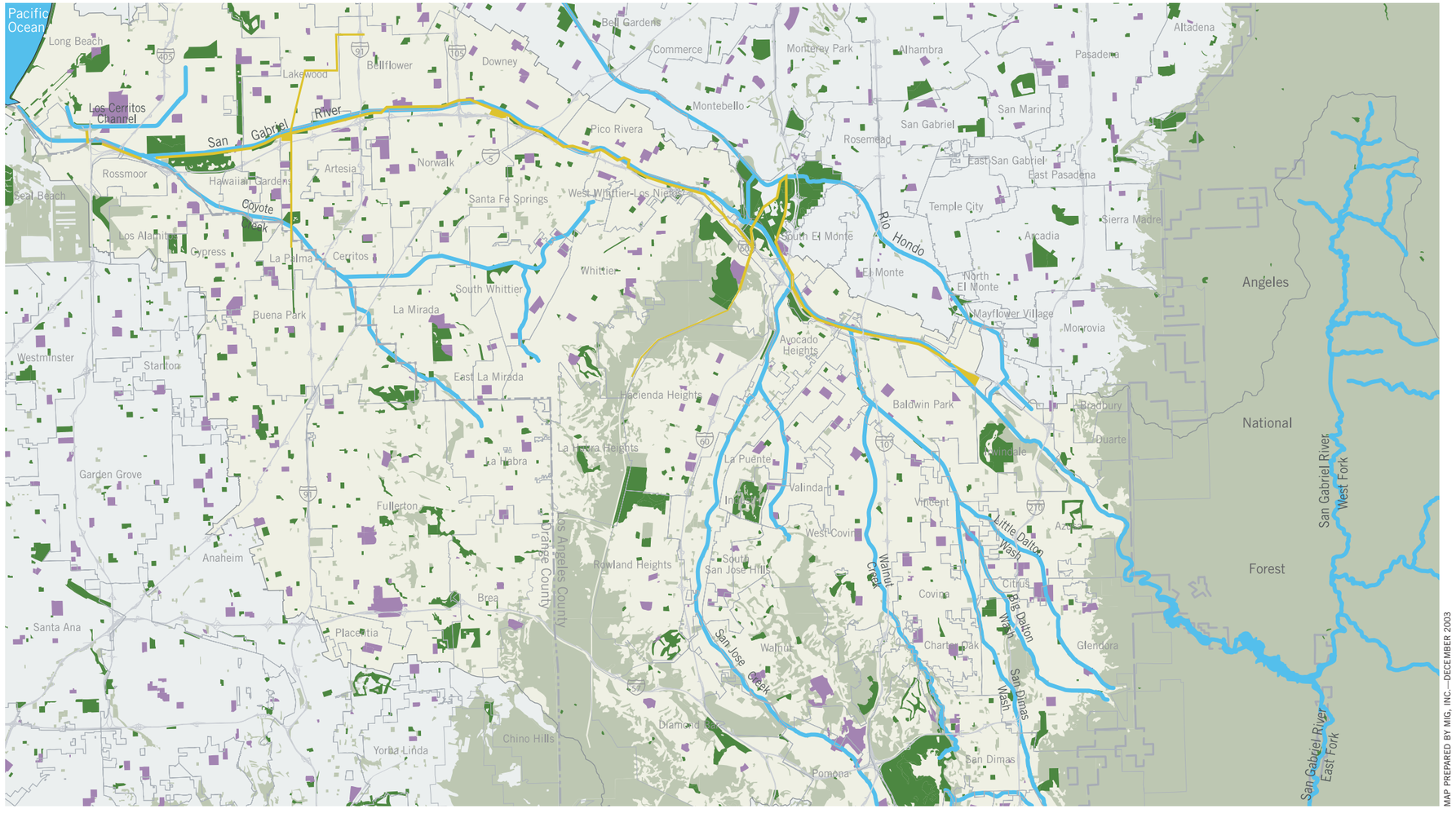
Zone of Tidal Influence (Reach 7)

- Middle School, Iroquois Avenue, Long Beach (adjacent to Los Cerritos Channel)

UTILITY RIGHTS-OF-WAY

Utility rights-of-way and easements provide a long corridor of relatively open land running parallel to and within the river corridor.

Southern California Edison (SCE) owns or leases 85 percent of a continuous strip of land that runs primarily along the east side of the river. Beginning just below the Santa Fe Dam in Irwindale and continuing to the electrical power facilities in Seal Beach (below the confluence with Coyote Creek), most of the SCE property is not built upon. The SCE corridor deviates only once from this linear pattern, when it jags sharply to the west



Source: County of Los Angeles Department of Public Works and Rivers and Mountains Conservancy

Map 2-6. Existing open space.

Figure 2-55. The West San Gabriel Open Space Park in Lakewood makes good use of a utility right-of-way.

of the river in the Whittier Narrows area and then back again across the river to the eastern bank. Along several stretches of the river, cities have established agreements enabling them to build parks within the SCE right-of-way. The LA Department of Water and Power also owns and leases land along the San Gabriel River.

Flood Protection

Beginning in the 1930s, the San Gabriel River was engineered through a series of dams and levees to provide water and flood protection. To manage flooding and water storage, the river channel was made deeper and narrower. This flood protection allowed safe urban development almost to the river's edge. For years, the river has done its job so well that it has allowed many people simply to forget about it as it silently runs through the entire valley. The map shows the location of all flood control facilities on the San Gabriel River, including flood control channels and dams (see Map 2-7).

DAMS

Three major dams in the upper watershed provide flood protection and store water for use in the Los Angeles metropolitan region.

COGSWELL DAM AND RESERVOIR. Owned by the Flood Control District and operated by LADPW, it was completed in April 1934 at a cost of $3.1 million. It is a rock-filled structure with a concrete cutoff wall and rises 255 feet above the original stream bottom. Used both for flood control and water conservation, Cogswell Dam is located 22 miles north of Azusa in San Gabriel Canyon.

SAN GABRIEL DAM AND RESERVOIR. Owned by the Flood Control District and operated by LADPW, construction began in 1932 and finished in 1939 at a cost of $17 million. It is a compacted, earth-filled and rock-filled dam with a concrete cutoff wall, standing 310 feet above the original streambed 7 miles north of Azusa. It is 1,500 feet long at its crest. It is used for flood control and water conservation.

Figure 2-56. The cuts in the slopes show the source material used to construct the San Gabriel Dam.

MORRIS DAM AND RESERVOIR. Built by the City of Pasadena, Morris Dam was completed in May 1934 at a cost of $7.6 million. It was later relinquished to the Metropolitan Water District (MWD) of Southern California, and, in 1995, it was transferred to LADPW. It is a concrete, partially arched gravity structure, 800-feet long, rising 245 feet above the original streambed, a few miles below the San Gabriel Dam. Its primary purpose is water conservation.

SANTA FE DAM. This is a compacted earth-fill dam owned by the U.S. Army Corps of Engineers. It rises 92 feet in height and spans 23,800 feet in length at the crest. In the upper portion of the reservoir is the Santa Fe Spreading Grounds.

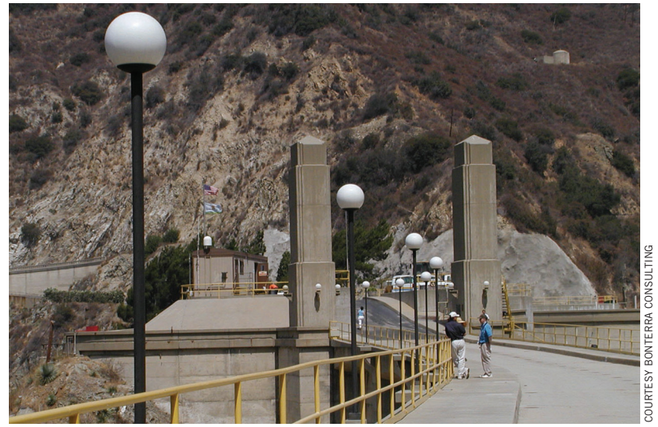


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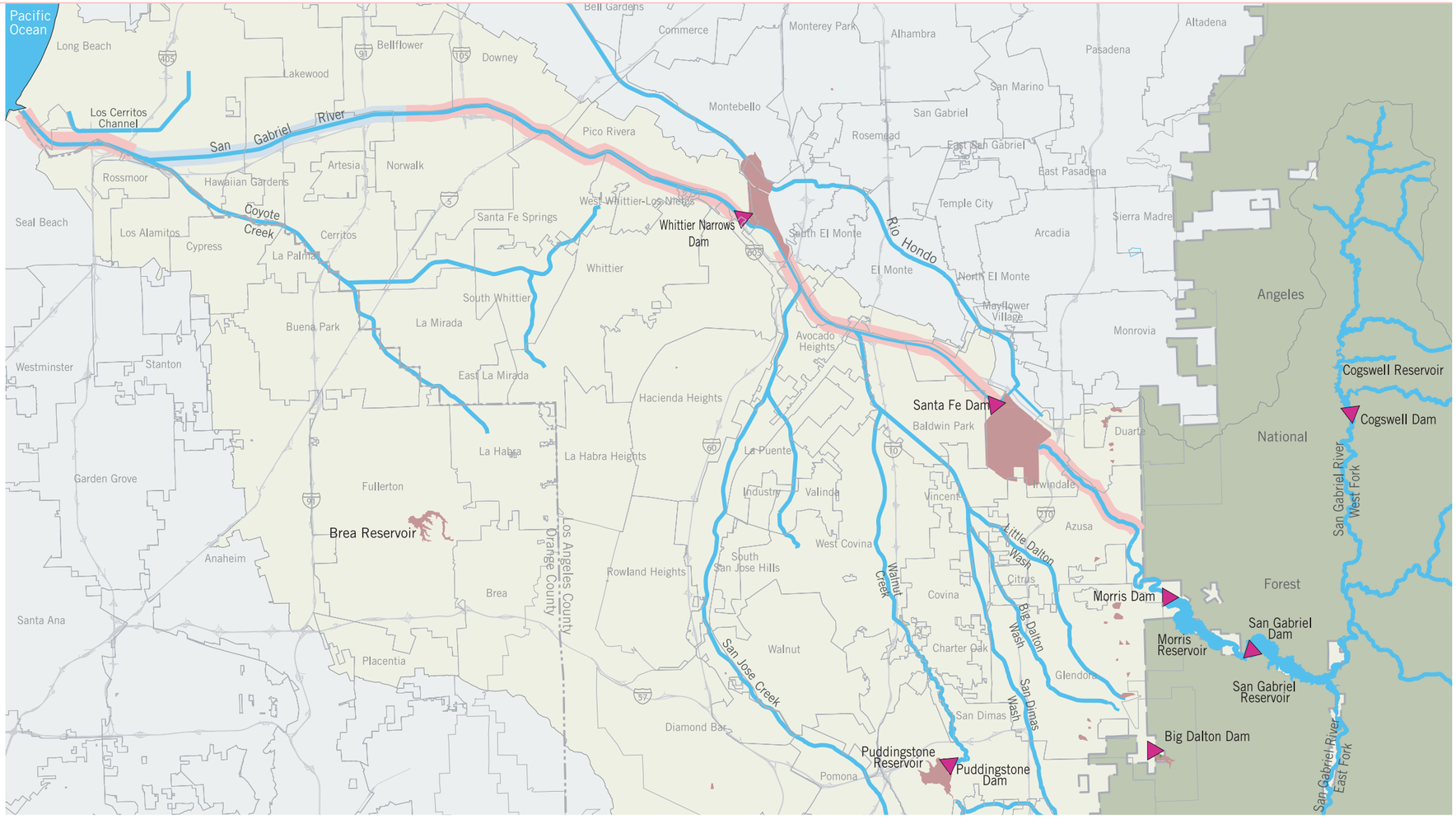
Figure 2-57. Most of the drainage above Morris Dam is steeply sloped.

COURTESY COE, LOS ANGELES DISTRICT, RESERVOIR REGULATION SECTION

Figure 2-58. The upstream side of the Santa Fe Dam dominates the area.



Map 2-7. Flood control structures.

Figure 2-59. The counterweights on the spillway at Whittier Narrows Dam are significant part of this intricate structure.

WHITTIER NARROWS DAM. Owned by the U.S. Army Corps of Engineers, Whittier Narrows Dam captures water flowing in the San Gabriel River and the Rio Hondo. Construction began on the earth-fill dam in 1949 and was completed in 1957 at a cost of $32.2 million.

Flood Channel

In most of the urban areas of the San Gabriel Valley, the river flows in a soft-bottomed channel between raised levees. The soft-bottom channel promotes infiltration of water released from the dams during large storms or for spreading. Beginning seven miles below the Whittier Narrows Dam, the soft bottom of the river is replaced by a concrete channel for about 10 miles (Reach 6). Just downstream from the confluence with Coyote Creek, the river returns to a soft-bottom, and flows another 3.5 miles through a natural estuary to the Pacific Ocean.

LADPW is responsible for operation and maintenance of most of the flood channel. The two exceptions, maintained by the COE, are:

- From the mouth of the San Gabriel Canyon to Santa Fe Dam; and the
- Whittier Narrows Flood Control Basin.

Most of the flood control channel is designed to meet capacity requirements of a 100-year flood. However, the channel capacity varies along different segments of the river. The map presents an analysis of channel capacity for various segments of the river, starting at the Santa Fe Dam, down to the mouth in Seal Beach (see Map 2-8). Specifically, it shows the amount of excess capacity for different reaches in cubic feet per second.

The area of greatest channel capacity (*deep purple segment*) runs from the Santa Fe Dam to just below the Whittier Narrows Dam. This segment includes all of Reach 4, and the beginning of Reach 5. Excess capacity on this long segment varies from 5,000 to 30,000 cubic feet per second.

Overall channel capacity below Whittier Narrows Dam is less than that above Whittier Narrows. However, with the minor exception of two short segments, the southern portion of the river still exceeds capacity requirements of a 100-year flood. The two segments that do not meet this requirement (*orange segments*) are in Reach 5 and Reach 7:

- Pico Rivera (Reach 5)—from Whittier Boulevard down to Washington Boulevard, alongside the San Gabriel Coastal Basin Spreading Grounds.
- Long Beach (Reach 7)—below the confluence with Coyote Creek, from the 405 Freeway south to 7th Street/22 Freeway.

The storm drain system captures and conveys stormwater through a network of gutters, drainage structures, and underground pipes. These systems move water as quickly as possible by transporting it downstream to outfalls, where it reaches the main channel of the river. As the water is conveyed downstream, additional tributary conveyance systems feed into it, requiring that capacity enlarges as the network approaches its outfall. Although a portion of this storm water will be directed into spreading grounds for percolation into underlying groundwater basins, during large storm events water in excess of the system's capacity will go out to sea.

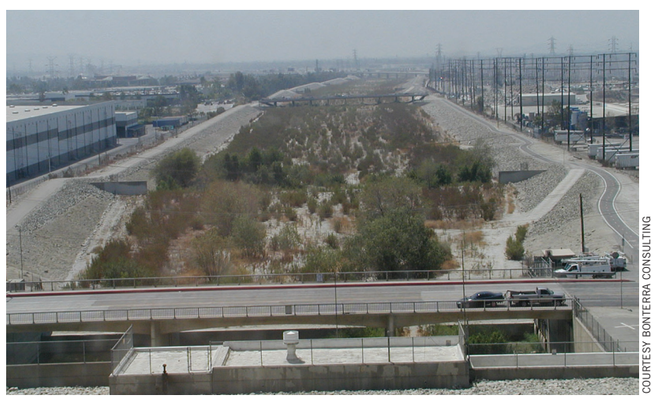


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Figure 2-60. The stretch of the river below Santa Fe Dam is encased in an earthen levee.

Figure 2-61. The concrete channel begins seven miles below Whittier Narrows Dam.

Figure 2-62. Dozens of city and county stormdrains flow to the river, such as this one in Azusa.

Modifications to traditional stormwater systems have included detention and retention basins designed to detain a portion of the water for controlled release after the peak runoff has occurred. Since the storm drain system is constructed of concrete and other impervious materials, water cannot infiltrate into the soil unless it is diverted to spreading grounds or other soft-bottom portions of the river system.

The "storm drain" map (see Map 2-9) shows existing storm drains and channels in Los Angeles County, maintained by LADPW. The storm drain system generally mimics the historic locations of rivers and tributaries. Topography dictates flow patterns, whether they are natural rivers or human-

Source: County of Los Angeles Department of Public Works, Montgomery Watson Harza, and Rivers and Mountains Conservancy

Map 2-8. Existing channel capacity.

built channels. The storm drain system operates within the boundaries of the watershed. Since the natural boundary of the San Gabriel River is only a short distance west of the river, storm drains leading to the river from this direction are much shorter than those coming from the east. Storm drains to the west of the San Gabriel River Watershed feed instead into the Rio Hondo.

The map of the County storm drain systems indicates gaps, where presumably local City storm drains connect into the County system. There are no storm drains or channels in the Puente-Chino Hills or in the San Gabriel Mountains.

Water Supply

Drinking water for residents of Southern California—including Ventura, Los Angeles, San Bernardino, Riverside, Orange and San Diego Counties—comes from a variety of sources. This region is home to about 18 million people. Because of the overuse of local supplies, communities need imported water to meet current demands, which can cost as much as 10 times that of local water. Given Southern California's growing population, identifying future supplies is a key issue for the future of the region.

Water supplies for the San Gabriel River region come from three main sources: local surface and groundwater supplies, reclaimed water and distant or "imported" sources. The local water suppy begins as rainfall that percolates naturally into the underlying groundwater basins or results in surface runoff. Reclaimed water is treated wastewater from local Water Reclamation Plants (WRP). Imported water is water transported to the region from distant sources, hundreds of miles away. The San Gabriel Valley water supply, based on these three sources, is derived through an intertwined network, which involves the transport, percolation, storage and conveyance of imported sources, surface flows, and groundwater. Groundwater basins are the primary means for water storage in the region and are recharged through natural soil percolation, as well as through engineered spreading grounds. Spreading grounds allow water to percolate into groundwater basins for later pumping.

Spreading grounds allow water to percolate into groundwater basins for later pumping.

WATER SUPPLY INFRASTRUCTURE

This section provides an overview of the water supply infrastructure for the San Gabriel Valley and Coastal Plain cities below Whittier Narrows. The water supply infrastructure is composed of five principal components: surface water, groundwater (and the groundwater basins), spreading grounds, reclaimed water and imported water.

COURTESY NORTH EAST TREES

Figure 2-63. Reclaimed water from the San Jose Creek Reclamation Plant is a source of locally derived water supply.

Surface Water

The San Gabriel River and its major tributaries (the West Fork, North Fork, East Fork, Walnut Creek, San Jose Creek and Coyote Creek) is the predominant surface water feature within the San Gabriel River Watershed. Surface runoff from the San Gabriel River and its tributaries provides a portion of the recharge of local groundwater basins through both natural infiltration and via spreading grounds. The major dam and reservoir facilities, previously described, were developed to impound water not only for flood control purposes but also water supply purposes in the San Gabriel River. Between 90 and 95 percent of precipitation above Whittier Narrows Dam is retained in the watershed for local water supply. The precipitation is conveyed via the river and storm drain system to area spreading grounds to be stored for future use by various water agencies. Natural percolation occurs in all areas except roads, buildings, parking lots and other impermeable surfaces. Precipitation varies along the route of the river: the average annual rainfall is 35 inches in the San Gabriel Mountains; the San Gabriel Valley averages 17 inches; and the coast averages 12 inches.

Groundwater

Groundwater basins, or aquifers, are natural underground formations filled with sediment, including sand and gravel. They serve as underground water reservoirs; wells drilled into the basins pump water to the surface for human use. Three groundwater basins lie underneath the river: the Main San Gabriel, the Central Basin and the West Coast Basin (see Map 2-10). These basins are part of the geologic occurrence known as the Los Angeles Basin, which is over three miles deep in some locations.

In addition to daily water supply, groundwater aquifers hold emergency reserves of water for periods of drought and natural disasters that might disrupt normal water deliveries. Groundwater basins store local rainfall for use, but demand would far exceed capacity if water supplies were derived entirely from rainfall. Groundwater supplies must be supplemented with reclaimed water from Water Reclamation Plants, as well as costly imported water.

The Main San Gabriel Basin contains contaminated plumes that are also shown on the groundwater map. Contaminated water is being treated to remove the contaminants and to prevent the polluted water from migrating south into the Central Basin, which is separated by Whittier Narrows.

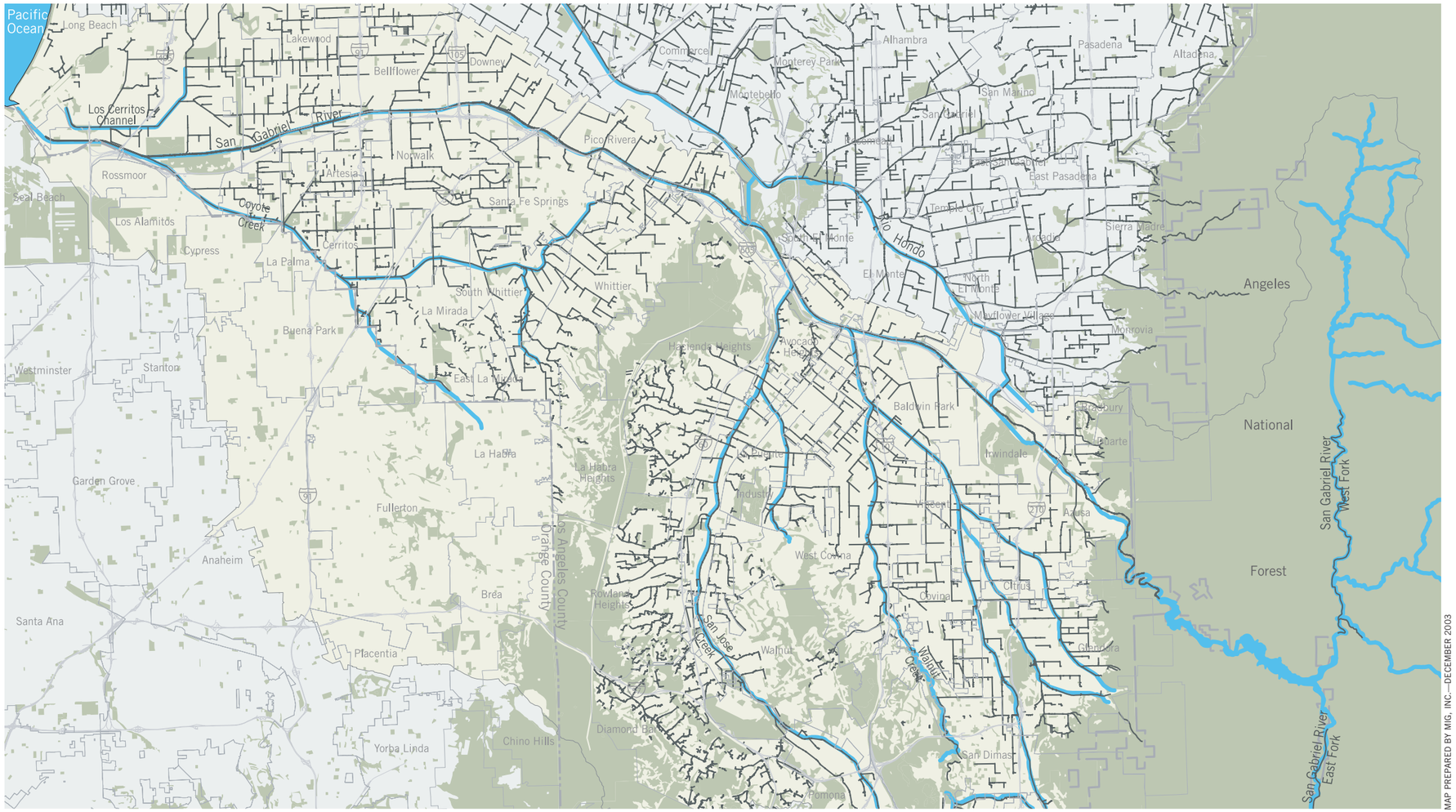
Main San Gabriel Basin

This basin underlies the San Gabriel Valley. It is bounded on the north side by the base of the San Gabriel Mountains, on its east side by the San Jose Hills, on the south by Whittier Narrows and Puente Hills, and on the west by a series of hills and the Raymond Fault. This groundwater aquifer has a different hydrologic basin or "watershed" than surface watersheds. In fact, it sits underneath two surface watersheds, the upper portion of the San Gabriel River and the eastern portion of the Los Angeles River Watersheds. The surface area of the groundwater basin is about 167 square miles. This basin provides approximately 80 percent of local groundwater supplies. The fresh water storage capacity of the basin is about 8.6 million acre-feet. An acre-foot is one foot of water covering one acre of land; enough water to supply two typical households for one year.

Within the vicinity of the San Gabriel River, there are five contaminated plumes that are being cleaned-up by a consortium of agencies under the coordination of the San Gabriel Basin Water Quality Authority (WQA). The five plumes are called "Operable Units (OU)" and include:

BALDWIN PARK OU. This is the largest OU. Perchlorate is a significant problem here because traditional treatment methods are ineffective in removing it from groundwater. Nitrosodimethylamine (NDMA) is also a problem.

EL MONTE OU. Characterized by shallow groundwater contamination in the upper 100 feet of the aquifer, and limited to Volatile Organic Compounds (VOCs), requiring a simple clean-up approach. Some water supply wells, in El Monte for example, have had to close because of contamination, decreasing supplies of locally available water. Deep groundwater contamination has been found in the northwest and eastern areas of this OU.



Map 2-9. Existing storm drains.

PUENTE VALLEY OU. This OU includes portions of the City of Industry and the City of La Puente and overlies both the Puente Groundwater Basin and the Main San Gabriel Groundwater Basin. The EPA sent notices to 50 Potential Responsible Parties (PRPs) regarding clean up in the area. Of those, 34 companies have formed the Puente Valley Steering Committee (PVSC) to fund and implement work required by the EPA in the Remedial Investigation/Feasibility Study (RI/FS) phase of the Superfund cleanup. The PRPs are now in the final stages of the RI/FS.

SOUTH EL MONTE OU. This plume continues to migrate and threatens to enter the Central Basin. The mix of contaminates is more serious than the El Monte OU, making treatment more difficult and costly. The loss of well productivity is of great concern to entities that rely on this local source of water.

WHITTIER NARROWS OU. This OU is contaminated with VOCs, with the presence of perchlorates and low concentrations of dioxins. Action has taken place to prevent migration of these contaminants into the Central Basin. A containment barrier has been established by the EPA, and includes three to four extraction sites that will remove and treat polluted groundwater.

Central and West Coast Basins

The Central Basin is located below Whittier Narrows and goes down to the coast at Long Beach. The West Coast Basin lies at the mouth of the San Gabriel River and extends to the northwest away from the river. The Water Replenishment District (WRD) is responsible for recharging water to the basins. An impermeable clay layer called an aquaclude sits underneath the river from Downey down to the confluence of Coyote Creek in Long Beach.

These two basins rely on several sources of water delivered via spreading grounds and injection wells:

- Imported water purchased from the Metropolitan Water District of Southern California
- Reclaimed water from local Water Reclamation Plants
- Local runoff and rainfall
- "Make-up" water from the Main San Gabriel Basin
- Subsurface flows from adjacent basins

Some significant threats to the quality of the groundwater supply in these two basins include VOC contamination from migrating plumes originating in the Main San Gabriel Basin through the Whittier Narrows, isolated areas of existing local contamination and saltwater intrusion from the ocean into the groundwater aquifer.

Spreading Grounds

Spreading grounds are a very important part of the local water supply infrastructure. They are essentially large ponds that temporarily hold water, which allows sufficient time for the water to percolate through the bottoms and sides of the ponds and replenish the groundwater basin. With the exception of Fish Canyon Spreading Grounds in Duarte, the spreading grounds along the San Gabriel River are owed by the Los Angeles County Flood Control District and operated by LADPW.

The basins are fed by carefully controlled allocated water from the San Gabriel River. Water from the river is derived from different sources, depending on the time of year. During the rainy season, water is derived from storm runoff, both from the mountains and the urban areas that drain to the river. This is mixed with water from the Water Reclamation Plants. Between storms and during the dry season, water for groundwater recharge is provided by releasing water held at upstream reservoirs, adding water from the plants, and by imported water bought from the Metropolitan Water District of Southern California (with some nuisance runoff from urban areas). The amount of water being recharged to the basins is carefully controlled. During the last 10 years, an average of 63,000 acre-feet of imported water and 47,000 acre-feet of reclaimed water has been recharged annually. The quantity of reclaimed water used for recharge each year is governed by water reclamation requirements and the imported water by groundwater basin recharge needs.

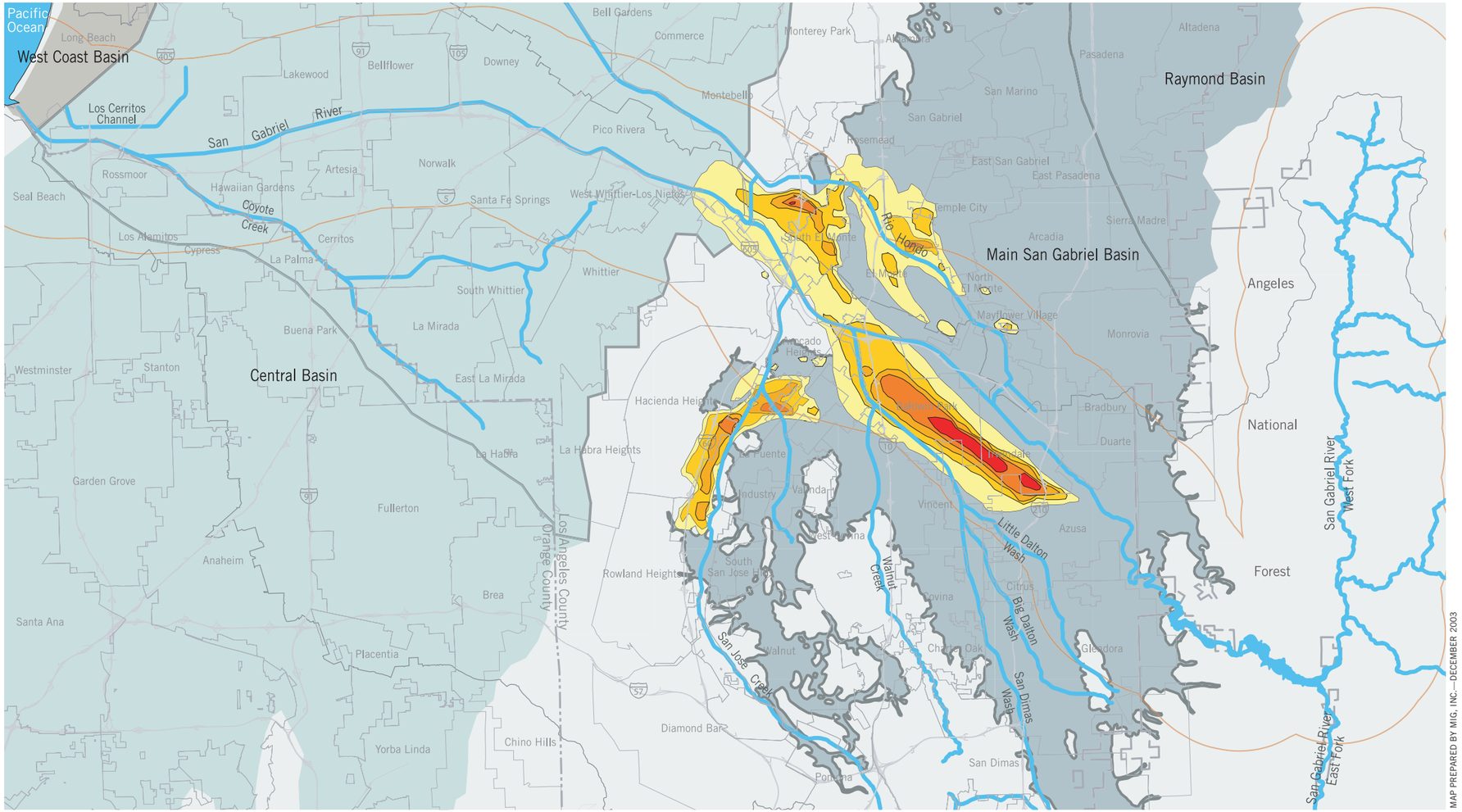
Figure 2-64. The San Gabriel Canyon Spreading Grounds are former gravel mining pits.

Figure 2-65. The Rio Hondo brings water from the San Gabriel River to productive spreading grounds in Pico Rivera.

According to the Sanitation Districts of Los Angeles County: "The amount of water being recharged within the Montebello Forebay, which includes the Rio Hondo and San Gabriel Coastal Basin Spreading Grounds as well as the unlined reaches of the San Gabriel River, is established in Order 91-100. This order, issued by the Los Angeles Regional Water Quality Control Board, establishes the water reclamation requirements for the recharge project. According to the permit, the average quantity of reclaimed water spread, based on a running three-year average, shall not exceed 50,000 acre-feet per year. In addition, the maximum quantity of reclaimed water spread in any one year shall not exceed 60,000 acre-feet or 50 percent of the total inflow into the Montebello Forebay for that year, whichever is less. And, the maximum quantity of reclaimed water spread in any three-year period shall not exceed 150,000 acre-feet and 35 percent of the total inflow from all sources into the Montebello Forebay during that period."

Spreading basins are significant unbuilt areas, often surrounded by residential communities. But the spreading ground basins are deep and the sides are quite steep. Because the water in these ponds directly recharges our groundwater supply, direct human contact is not permitted and they are generally closed to the public, with the exception of the newly opened public trails within the Rio Hondo and San Gabriel Coastal Basin Spreading Grounds.

As shown on the map, there are three spreading grounds in operation along the San Gabriel River and a fourth spreading ground along the Rio Hondo (see



Source: County of Los Angeles Department of Public Works and Rivers and Mountains Conservancy

Note: Plume data from San Gabriel Basin Water Quality Authority.

Groundwater Basins and Contaminated Plumes

County of Los Angeles Department of Public Works

San Gabriel River Corridor Master Plan

Map 2-10. Groundwater basins and contaminated plumes.

COURTESY BONTERRA CONSULTING

Figure 2-66. Rubber dams help the recharging process along soft-bottom stretches of the river.

Map 2-11). The soft-bottom San Gabriel River itself is also being used as a "spreading ground." A series of 13 rubber dams help hold back floodwaters along the river to allow water to percolate down after storms and dam releases.

The Rio Hondo is an integral part of the San Gabriel River water supply conveyance system. This is because the most productive groundwater recharge spreading grounds, the Rio Hondo Coastal Basin Spreading Grounds in Pico Rivera, are fed by the Rio Hondo. Although the Rio Hondo is a tributary of the Los Angeles River, it now also functions as a distributary of the San Gabriel River. In other words, water is conveyed to the Rio Hondo from the San Gabriel River for water supply purposes. This water, a combination of stormwater runoff, imported water and reclaimed water, travels through one of three channels, either the Buena Vista Channel by the Santa Fe Dam or the Lario Creek/Zone 1 Ditch or the Crossover Channel just above Whittier Dam.

SAN GABRIEL CANYON SPREADING GROUNDS. These spreading grounds lie on the west side of San Gabriel River, below the mouth of San Gabriel Canyon and north of the City of Azusa. These two basins are classified as "deep" basins due to their former use as gravel quarries. They recharge the uppermost areas of the Main San Gabriel Basin, cover 140 wetted acres and store up to 8,170 acre-feet of water. Sources of water include San Gabriel River controlled releases from Cogswell Dam, San Gabriel Dam and Morris Dam and Committee of Nine surplus flows and imported water.

SANTA FE SPREADING GROUNDS. These spreading grounds are located within Santa Fe Dam reservoir and spillway areas of the Santa Fe Dam, near the City of Irwindale, just below the 210 Freeway. There are 16 shallow basins in this area that replenish the Main San Gabriel Basin. They cover 168 wetted acres, storing up to 540 acre-feet of water. Sources of water include controlled flows from San Gabriel Canyon Reservoirs, uncontrolled flows from San Gabriel River below Morris Reservoirs and imported water.

SAN GABRIEL RIVER (SAN GABRIEL VALLEY). Within the soft-bottom stretch from the Santa Fe Dam to Whittier Narrows Dam, the San Gabriel River itself has in-river spreading capabilities. The storage occurs behind four rubber dams installed on drop structures. The area of percolation is 196 wetted acres. Sources of water include controlled flows from the San Gabriel and Morris Dams, and uncontrolled runoff from the San Gabriel Valley below Santa Fe Dam, as well as imported water.

SAN GABRIEL RIVER (MONTEBELLO FOREBAY). Within this soft-bottom stretch from the headworks below Whittier Narrows Dam down to Firestone Boulevard, the San Gabriel River has spreading capabilities. The storage occurs behind seven rubber dams installed on drop structures. The area of percolation is 308 wetted acres that can store 913 acre-feet of water. Sources of water include controlled releases from San Gabriel Canyon Dams, Santa Fe and Whittier Narrows Dams, and imported and reclaimed water.

SAN GABRIEL COASTAL BASIN SPREADING GROUNDS. These spreading grounds lie on the west side of San Gabriel River, south of Whittier Boulevard, to Washington Boulevard in Pico Rivera. There are three shallow basins in the productive Montebello Forebay, below Whittier Narrows, that replenish the Central Basin. There are 96 wetted acres of basins with storage capacity of 550 acre-feet of water. Sources of water include controlled releases from San Gabriel Canyon, Santa Fe and Whittier Narrows Dams and imported and reclaimed water.

RIO HONDO COASTAL BASIN SPREADING GROUNDS. These spreading grounds lie on the east side of the Rio Hondo, south of the Southern Pacific Railroad bridge (south of Whittier Boulevard) to Slauson Avenue and on the west side of side of Rio Hondo from 0.2 mile above Whittier Boulevard and south to Foster Bridge Boulevard. There are 20 shallow basins in the productive Montebello Forebay, below Whittier Narrows, that replenish the Central Basin. There are 430 wetted acres of basins with storage capacity of 3,694 acre-feet of water. Sources of water include controlled releases from San Gabriel Canyon, Santa Fe and Whittier Narrows Dams, uncontrolled runoff via the San Gabriel River, the Rio Hondo and their tributaries, and imported and reclaimed water.

Reclaimed Water

Treated wastewater at five Water Reclamation Plants (WRP) is discharged into the river or its tributaries. Water Reclamation Plants are managed by the County Sanitation Districts of Los Angeles County. These plants reclaim almost 80 million gallons per day from residential, industrial and commercial wastewater, making it available for reuse, which includes groundwater recharge, industrial and landscape uses. The Sanitation Districts own and operate five Water Reclamation Plants in the San Gabriel River Watershed.

Figure 2-67. The Rio Hondo Spreading Grounds are some of the most productive facilities in Los Angeles County.

POMONA WATER RECLAMATION PLANT. The Pomona Water Reclamation Plant is located at 295 Humane Way, Pomona. The plant occupies 14 acres northeast of the intersection of the Pomona (I-60) and Orange (I-57) Freeways. It discharges to the South Fork San Jose Creek, a tributary to the San Jose Creek, which is about 16 miles upstream from the San Gabriel River. It provides primary, secondary and tertiary treatment for 15

Source: County of Los Angeles Department of Public Works, Montgomery Watson Harza, and Rivers and Mountains Conservancy

Existing Water Supply Infrastructure

County of Los Angeles Department of Public Works

San Gabriel River Corridor Master Plan

Map 2-11. Existing water supply infrastructure.

million gallons of wastewater per day (15 MGD), enough for about 130,000 people. About 9 MGD of the purified water is reused at over 140 different reuse sites. These include irrigation of parks, schools, golf courses, landscaping and greenbelts, irrigation and dust control at the Spadra Landfill, industrial use by local paper manufacturers and use by commercial facilities. The remainder of the purified water is put back into the San Jose Creek channel, where it makes its way to the unlined portion of the San Gabriel River. Therefore, nearly 100 percent of the treated water is reused since the river water percolates into the groundwater.

SAN JOSE CREEK WATER RECLAMATION PLANT. The San Jose Water Reclamation Plant is located at 1965 Workman Mill Road, in unincorporated Los Angeles County, next to the City of Whittier. This is the largest Water Reclamation Plant operated by the Sanitation Districts, occupying 39 acres north of the I-60 Freeway on both sides of the I-605. The Water Reclamation Plant has three outfall locations. Treated effluent can be discharged to the San Jose Creek near the San Gabriel River confluence, to the San Gabriel River downstream of the San Jose Creek confluence, and to the San Gabriel River at Firestone Boulevard. The San Jose Creek Water Reclamation Plant provides primary, secondary and tertiary treatment for 100 MGD. The plant serves a largely residential population of about 1 million people. About 50 MGD of the purified water is reused at 25 different reuse sites. These include groundwater recharge and irrigation of parks, schools and greenbelts.

WHITTIER NARROWS WATER RECLAMATION PLANT. The Whittier Narrows Water Reclamation Plant is located at 301 N. Rosemead Boulevard in El Monte. This was the first reclamation plant built by the Sanitation Districts in 1962. It occupies 27 acres south of the Pomona (I-60) Freeway. This Water Reclamation Plant can discharge treated effluent at four different locations or outfalls located in the vicinity of the Whittier Narrows Dam, either separately or in combination. Treated effluent can be discharged to the San Gabriel River upgradient of the Whittier Narrows Dam, to the Zone 1 Ditch (Lario Creek) downstream of Whittier Wells Road, to the Rio Hondo, and to a site near the Zone 1 Ditch formerly used as a research basin for groundwater recharge studies but no longer in use. It provides primary, secondary and tertiary treatment for 15 MGD and serves a population of about 150,000 people. About 9 MGD of treated effluent is used for groundwater recharge, with a small amount being used for irrigation at a commercial nursery.

LOS COYOTES WATER RECLAMATION PLANT. The Los Coyotes Water Reclamation Plant is located at 16515 Piuma Avenue, Cerritos. The plant occupies 34 acres at the northwest junction of the I-605 and the I-91 Freeways. Twenty of the 34 acres is occupied by the Iron Wood Nine Golf Course, which is built on adjoining Sanitation Districts' property. The Water Reclamation Plant discharges exclusively to the San Gabriel River near the I-91 Freeway crossing. It provides primary, secondary and tertiary treatment for 37.5 MGD, serving about 370,000 people. Over 5 MGD of the purified water is reused at over 230 reuse sites. These include irrigation of schools, golf courses, parks, nurseries and greenbelts and industrial use at local companies for carpet dying and concrete mixing.

LONG BEACH WATER RECLAMATION PLANT. The Long Beach Water Reclamation Plant is located at 7400 E. Willow Street, Long Beach. The plant occupies 17 acres west of the I-605 Freeway. The Water Reclamation Plant discharges exclusively to Coyote Creek near the confluence with the San Gabriel River. It provides primary, secondary and tertiary treatment for 25 MGD for about 250,000 people. Over 5 MGD of the purified water is reused at over 48 reuse sites. These include irrigation of schools, golf courses, parks and greenbelts and for repressurization of oil-bearing strata.

Imported Water

Imported water, water derived from distant sources, is a major source of water supply for Southern California. The three primary sources of imported water are the Colorado River, the Owens Valley in eastern California, and the Sacramento-San Joaquin River Delta in Northern California. Imported water is costly because it is transported hundreds of miles from its origins, requiring extensive infrastructure and monitoring. Scarce rainfall in source regions can directly influence the amount of imported water supplies available to Southern California residents. The San Gabriel Valley requires less imported water than other regions of Los Angeles because it has so much local water supply. Water demands are currently met with available water supplies derived from both local and imported water stored in local reservoirs and aquifers. Growth in other regions such as Arizona and San Diego County is adding competitive pressure on the sources of water for Southern California. Consequently, local conservation measures are increasing in importance. Current practices include more stormwater capture, increased water conservation programs and increased reclaimed water resource utilization.

Three aqueducts supply water to Southern California:

COLORADO RIVER AQUEDUCT. Completed in 1941, this 242-mile aqueduct carries water from the Colorado River that is diverted from Lake Havasu in Arizona, traveling across the High Desert to Lake Matthews and the

Figure 2-68. The Long Beach Water Reclamation Plant discharges to Coyote Creek, just above the confluence with the San Gabriel River.

COURTESY CALIFORNIA DEPARTMENT OF WATER RESOURCES

Figure 2-69. The California Aqueduct brings State Water Project water to urban and agricultural users in Central and Southern California.

recently completed Diamond Valley Lake. Built and managed by the Metropolitan Water District of Southern California, the aqueduct serves Southern California residents in the Los Angeles and San Diego regions, delivering over one billion gallons of water a day (or 3.161 acre-feet) to Los Angeles.

LOS ANGELES AQUEDUCT. The Owens Valley lies between the Eastern Sierra Nevada and White Mountains in eastern California. Runoff from the mountains into this valley supplies City of Los Angeles residents with 480,000 acre-feet of water each year. In 1908, William Mulholland began to build this 233-mile aqueduct for the City of Los Angeles Department of Water and Power. To meet increasing demands for water, an extension from Mono Lake added 105-miles in 1940. A second aqueduct within the valley was completed in 1970. Restrictions on water use to protect the Sierra Nevada ecosystem will reduce future deliveries to 321,000 acre-feet a year during the next 20 years.

CALIFORNIA AQUEDUCT. The 444-mile California Aqueduct is part of the overall water storage and conveyance system called the State Water Project operated and maintained by the State of California Department of Water Resources. Starting southeast of San Francisco, the aqueduct conveys water from the Sacramento-San Joaquin River Delta to Southern California. The CALFED Bay-Delta Program is working to improve water supply reliability and ecosystem restoration, making future increases in water supplies for Southern California uncertain.

WATER SUPPLY INSTITUTIONAL ARRANGEMENTS

Various institutional arrangements and the water agencies defined by them are responsible for making water available to end-users.

Water Rights

Water rights determine who can draw upon water from the river and the groundwater bains, and how many acre-feet can be allocated to each user each year.

Surface water rights are administered by the State Water Resources Control Board (SWRCB). It has declared the San Gabriel River fully appropriated, which means the full water capacity of the river has been allocated and no new rights may be appropriated. Local rights to direct diversion of surface water in the San Gabriel River are held among local agencies, including primarily the San Gabriel River Water Committee, and the San Gabriel Valley Protective Association (see below).

Groundwater rights and plans to protect those rights in most basins in Southern California have been established through court adjudication and are administered by local court-appointed agencies, such as the Main San Gabriel Basin Watermaster (see below). Six local agencies and organizations are involved in administering water rights in the Master Plan area.

SAN GABRIEL RIVER WATER COMMITTEE. Formerly known as the "Committee of Nine," this nonprofit organization consists of five members that have rights to divert water from the San Gabriel River. Members, primarily in the upper San Gabriel Valley, are entitled to the first 135 cubic feet per second (cfs) of flows in the river, beginning up in San Gabriel Canyon. River water is first treated at the Canyon Filtration Plant in Azusa and the Covina Filtration Plant for potable uses. Excess water is sent to the San Gabriel Canyon Spreading Grounds to recharge the Main San Gabriel Basin, under an agreement with LADPW. The five members and their entitlement amounts in acre-feet per year are listed below.

- City of Azusa (3,252)
- Covina Irrigating Company (2,514)
- California-American Water Company (1,672)
- Monrovia Nursery Company (958)
- Azusa Agricultural Water Company (170)

MAIN SAN GABRIEL BASIN WATERMASTER. This agency is charged with administering adjudicated water rights and managing groundwater resources for the Main San Gabriel Basin. Parties that pumped 5,000 acre-feet or more from the Main San Gabriel Basin in fiscal year 2001-2002 are listed below. There are many other parties with smaller water rights.

- Azusa Valley Water Company
- California Domestic Water Company
- California-American Water Company
- City of Arcadia
- City of Glendora
- City of Monrovia
- City of Whittier
- Covina Irrigating Company
- Pellissier Irrevocable QTIP Trust, et. al.
- San Gabriel County Water District
- San Gabriel Valley Water Company
- Southern California Water Company
- Suburban Water Systems
- Valley County Water District

SAN GABRIEL VALLEY PROTECTIVE ASSOCIATION. The Association protects the water rights for 22 entities in the San Gabriel Valley. These members are entitled to the water from the San Gabriel River that is in excess of 135 cfs, beyond the allocation given for members of the San Gabriel River Water Committee. The water is used primarily for groundwater recharge. Members are listed below.

- California Domestic Water Company
- California-American Water Company
- Central Basin Municipal Water District
- City of Alhambra
- City of Arcadia
- City of Azusa
- City of Glendora
- City of Lakewood

- City of Monrovia
- City of Whittier
- Covina Irrigating Company
- La Habra Heights County Water District
- Montebello Land and Water Company
- Pico County Water District
- San Gabriel County Water District
- San Gabriel Valley Municipal Water District
- San Gabriel Valley Water Company
- Suburban Water Systems
- Upper San Gabriel Valley Municipal Water District
- Valencia Heights Water Company
- Water Replenishment District of Southern California

SAN GABRIEL RIVER WATERMASTER. The Watermaster is responsible for tracking the amount of surface water and groundwater that passes through the Whittier Narrows from the San Gabriel Basin to the Central Basin.

CENTRAL BASIN WATERMASTER. The Watermaster manages water rights for 146 parties, who are allocated a total of 217,367 acre-feet per year. Parties with an allocation of 3,000 acre-feet or more from the Central Basin are listed below.

- City of Huntington Park
- City of Lakewood
- City of Long Beach
- City of Lynwood
- City of Paramount
- City of Pico Rivera
- City of Santa Fe Springs
- City of South Gate
- City of Vernon
- City of Los Angeles Department of Water and Power
- Pico Water District
- Southern California Water Company
- Suburban Water Systems

WEST COAST BASIN WATERMASTER. The Watermaster tracks water rights for 68 parties who are allocated 64,468.25 acre-feet per year. Very little of the West Coast Basin lies in the vicinity of the San Gabriel River. However, this basin still affects water rights within the San Gabriel River corridor. Parties with an allocation of 1,000 acre-feet or more from the West Coast Basin are listed below.

- Atlantic Richfield Company
- California Water Service Company
- Chevron USA, Inc.
- City of Hawthorne
- City of Inglewood
- City of Lomita Water System
- City of Los Angeles
- City of Manhattan Beach
- City of Torrance
- Equilon Enterprises, LLLc
- Foothill Freeway
- Mobil Oil Corporation
- Shell Oil Company
- Southern California Water Company
- Tosco Corporation

Water Supply Agencies

A complex web of 15 water supply agencies in the San Gabriel River project area buys, sells, pumps, cleans-up and manages these precious water resources. Some agencies have direct water rights, while others are wholesalers or retailers of water. Others are responsible for either groundwater or surface water, or simply the clean-up of contaminated water. Several entities listed are also member agencies of the Metropolitan Water District of Southern California (MWD). This means that those member agencies buy imported water from MWD wholesale for local distribution.

METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA (MWD). A consortium of 26 cities and water districts provides drinking water to nearly 18 million people in parts of Los Angeles, Orange, San Diego, Riverside, San Bernardino and Ventura counties. MWD currently delivers an average of 1.7 billion gallons of water per day to a 5,200-square-mile service area.

CENTRAL BASIN MUNICIPAL WATER DISTRICT. This public agency purchases imported water from the MWD and wholesales the water to cities, mutual water companies, investor-owned utilities, and private companies in southeast Los Angeles County. It also supplies water used by the Water Replenishment District for groundwater replenishment in spreading grounds, and provides the region with recycled water for municipal, commercial and industrial use.

CITY OF AZUSA, AZUSA LIGHT AND WATER. This municipally-owned utility in the San Gabriel Valley, serves over 125,000 residents and businesses that consume about 10 billion gallons of water per year.

CITY OF LONG BEACH WATER DEPARTMENT. The department serves a population of 461,000, the fifth largest city in the State of California. Its mission is to "deliver an uninterrupted supply of quality water to our customers; to effectively dispose of, or reclaim, sewage and runoff waters; and to operate in a manner that is economically efficient and environmentally responsible."

SAN GABRIEL RIVER WATER COMMITTEE (FORMERLY COMMITTEE OF NINE). This nonprofit organization has rights to surface flows from the San Gabriel River above Morris Dam, conveying that water to the San Gabriel Canyon Spreading Grounds in Azusa. Four local entities and cities have rights to the water including City of Azusa, California-American Water Company, Monrovia Nursery and Covina Irrigating Company.

COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS. This agency controls the flow of local runoff, reclaimed and imported waters for recharge in the San Gabriel River and associated spreading grounds for both groundwater basins.

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY. This public planning and resource management agency provides imported water to more than 2 million Orange County residents, 70 percent of the County's population, through 27 cities and water districts and two private water companies. Half of Orange County's water supply comes from local sources; the other half is imported.

SAN GABRIEL BASIN WATER QUALITY AUTHORITY. The Authority coordinates the plans and activities of state and federal agencies and others involved in the cleanup of the Main San Gabriel Basin. It has been responsible for removing nearly 10 tons of contaminants. It is actively intercepting contaminated groundwater flowing toward the Whittier Narrows.

SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT. This Water District is responsible for maximizing water quality and quantity of the Main San Gabriel Basin for four cities in the valley: Alhambra, Azusa, Monterey Park and Sierra Madre. It contracts with the State of California Department of Water Resources for water supplies via the State Water Project. A pipe from the California Aqueduct in San Bernardino brings water to the San Gabriel Canyon Spreading Grounds in Azusa.

COUNTY SANITATION DISTRICTS OF LOS ANGELES COUNTY. The Districts treat wastewater at five Water Reclamation Plants (WRP) near the San Gabriel River, adding reclaimed water to the local supply.

THREE VALLEYS MUNICIPAL WATER DISTRICT. This Water District provides water to 475,000 residents of the eastern Los Angeles County areas of the

San Gabriel, Walnut and Pomona Valleys. The District operates the Miramar Water and Hydroelectric facility in Claremont.

UPPER SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT. This Water District provides wholesale water service to local water suppliers. About 60,000 acre-feet of imported water is served each year, with the majority of the water being used for groundwater recharge.

WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA (WRD). This Water District manages groundwater in the West and Central Basins for 3.5 million residents in 43 cities of southern Los Angeles County, including the cities in the lower San Gabriel River Watershed.

Water Quality

Decades of polluted urban runoff into the San Gabriel River and Pacific Ocean have degraded the quality of surface waters to levels that are unsafe for human contact.

The Los Angeles Regional Water Quality Control Board (Regional Board) regulates ground and surface water quality in the Los Angeles Region, including the coastal watersheds of Los Angeles and Ventura Counties, along with very small portions of Kern and Santa Barbara Counties. The LA Regional Board is one of nine Regional Boards overseen by the State Water Resources Board. The Regional Board oversees water quality for 4,447 square miles of land, including offshore islands; 1,115 miles of streams; 2,107 acres of lakes; and 120 miles of coastline.

Water quality associated with the San Gabriel River is defined by the Regional Board using the concepts of "beneficial uses" and "impaired reaches."

BENEFICIAL USES

Beneficial uses are water quality milestones for water that need to be attained and maintained over time. Water may be a reservoir, lake, stream, river segment or estuary. The State Water Resources Control Board has designated 21 "Beneficial Uses" for surface waters such as contact recreation or groundwater recharge.

The San Gabriel River is divided into multiple river segments, tributaries and reservoirs according to their beneficial use designations. Eleven water body segments or lakes fall within the San Gabriel River Corridor Master Plan project area. Each location has specific beneficial uses as outlined below. They are designated as "existing," "proposed," or "intermittent" (streams that only run during the rainy season). All are existing unless indicated with a "P" for proposed, or "I" for intermittent. The nature of each beneficial use is implied by its title. For a more precise definition of each beneficial use, refer to the Los Angeles Regional Water Quality Control Board Basin Plan. The uses are not listed in preferential order.

Reach 1

West Fork San Gabriel River

- Municipal and Domestic Supply (P)
- Groundwater Recharge
- Water Contact Recreation
- Non-contact Water Recreation
- Warm Freshwater Habitat
- Cold Freshwater Habitat
- Wildlife Habitat
- Rare, Threatened, or Endangered Species
- Spawning, Reproduction, and/or Early Development
- Wetland Habitat

Reach 2

Morris and San Gabriel Reservoirs

- Municipal and Domestic Supply
- Industrial Service Supply
- Industrial Process Supply
- Agricultural Supply
- Groundwater Recharge
- Hydropower Generation
- Water Contact Recreation (P in Morris)
- Non-contact Water Recreation
- Warm Freshwater Habitat
- Cold Freshwater Habitat
- Wildlife Habitat
- Spawning, Reproduction, and/or Early Development (Morris only)

Figure 2-70. The San Gabriel Dam is a source of local water supply.

Figure 2-71. On occasion, the river is used for baptisms by local area churches.

San Gabriel River: Main Stem

- Municipal and Domestic Supply
- Industrial Service Supply
- Industrial Process Supply
- Agricultural Supply
- Groundwater Recharge

COURTESY DAN SLATER

Figure 2-72. Water contact recreation includes river crossings on horseback.

- Water Contact Recreation
- Non-contact Water Recreation
- Warm Freshwater Habitat
- Cold Freshwater Habitat
- Wildlife Habitat
- Spawning, Reproduction, and/or Early Development

Reach 3

San Gabriel River

- Municipal and Domestic Supply
- Industrial Service Supply
- Industrial Process Supply
- Agricultural Supply
- Groundwater Recharge
- Water Contact Recreation
- Non-contact Water Recreation
- Warm Freshwater Habitat
- Cold Freshwater Habitat
- Wildlife Habitat
- Rare, Threatened, or Endangered Species

Santa Fe Flood Control Basin

- Municipal and Domestic Supply (P)
- Groundwater Recharge (I)
- Water Contact Recreation (P)
- Non-contact Water Recreation (I)
- Warm Freshwater Habitat (I)
- Wildlife Habitat
- Wetland Habitat

Reach 4

San Gabriel River

- Municipal and Domestic Supply (P)
- Groundwater Recharge (I)
- Water Contact Recreation (I)
- Non-contact Water Recreation (I)
- Warm Freshwater Habitat (I)
- Wildlife Habitat

Whittier Narrows Flood Control Basin

- Municipal and Domestic Supply (P)
- Groundwater Recharge

Figure 2-73. Trails are a good example of non-contact river uses.

- Water Contact Recreation
- Non-contact Water Recreation
- Warm Freshwater Habitat
- Wildlife Habitat
- Rare, Threatened, or Endangered Species (P)

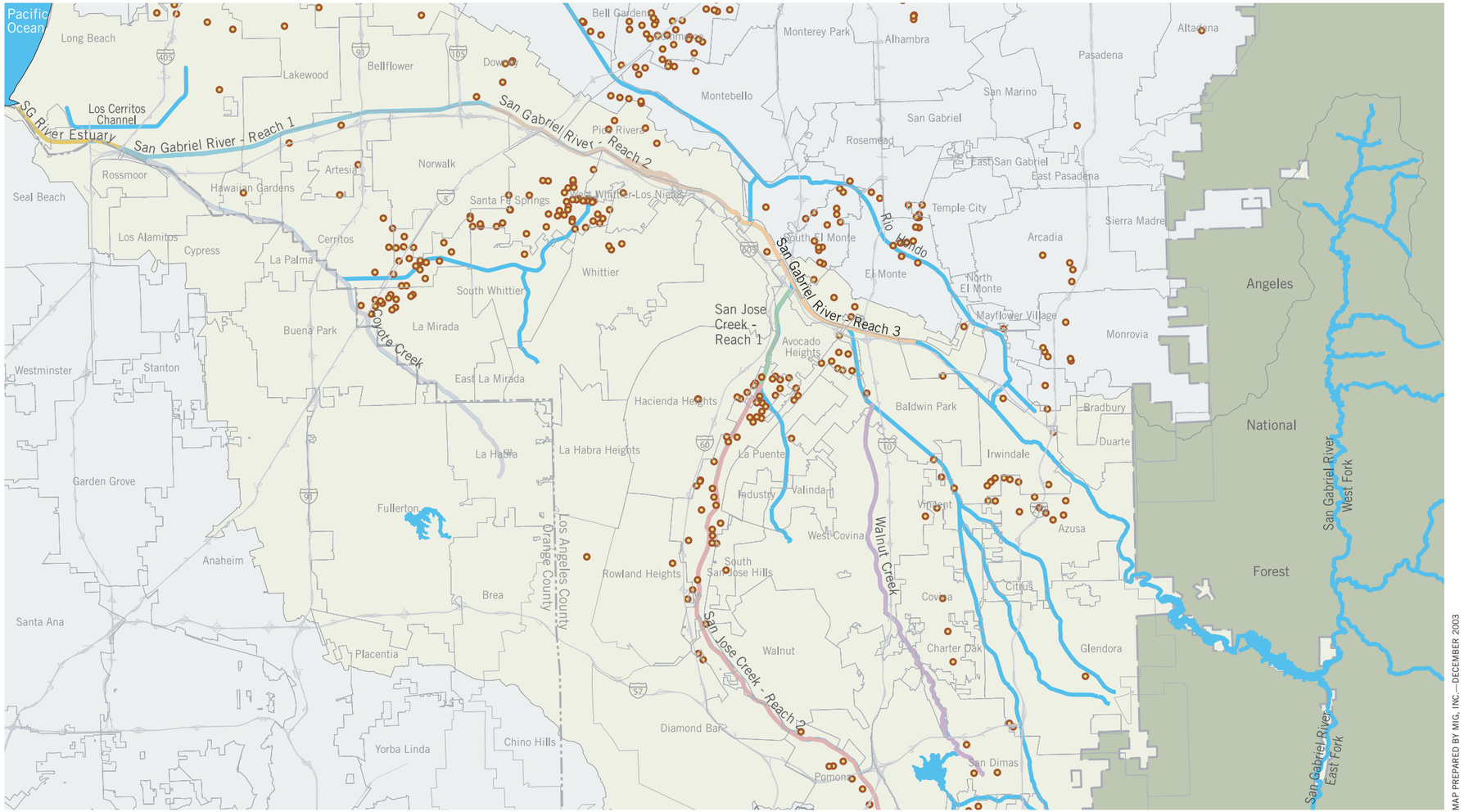
COURTESY BONTERRA CONSULTING

Figure 2-74. Wildlife sightings such as this Great Blue Heron occur along many stretches of the river.

Reach 5

San Gabriel River: Whittier Narrows to Firestone Boulevard

- Municipal and Domestic Supply (P)
- Industrial Service Supply (P)
- Industrial Process Supply (P)
- Groundwater Recharge (I)
- Water Contact Recreation
- Non-contact Water Recreation
- Warm Freshwater Habitat (I)
- Wildlife Habitat



Map 2-12. Impaired reaches.

- Rare, Threatened, or Endangered Species

Reach 6

San Gabriel River: Firestone Boulevard to Estuary

- Municipal and Domestic Supply (P)
- Water Contact Recreation
- Non-contact Water Recreation
- Warm Freshwater Habitat (P)
- Wildlife Habitat (P)

Reach 7

San Gabriel River Estuary

- Industrial Service Supply
- Navigation
- Water Contact Recreation
- Non-contact Water Recreation
- Commercial and Sport Fishing
- Estuarine Habitat
- Marine Habitat
- Wildlife Habitat
- Rare, Threatened, or Endangered Species
- Migration of Aquatic Organisms
- Spawning, Reproduction, and/or Early Development
- Shellfish Harvesting (P)

IMPAIRED REACHES

The designation of "impaired reaches" identifies reaches that are officially recognized by the State of California as affected by specific pollutants, derived from unknown or nonpoint sources.

The Impaired Reaches map is based on the latest version of the 303(d) List (see map 2-12). The State Water Resources Control Board developed the 2002 Clean Water Act, Section 303(d) List of Water Quality Limited Segments, approving it on February 4, 2003. On July 25, 2003, USEPA gave final approval to California's 2002 Section 303(d) List of Water Quality Limited Segments. The list (see below for San Gabriel River list) includes all bodies of water statewide that do not meet water quality standards, even after known point sources of pollution have implemented pollution control technology. This list represents concentrations of nonpoint source pollutants that occur within major rivers, creeks and waterbodies within the state.

Together with local stakeholders, the Regional Board helps set Total Maximum Daily Loads or TMDLs, which describe maximum levels for specific water quality parameters for specific water bodies. TMDLs provide water quality improvement targets and priorities that local jurisdictions must use in addressing 303(d) listed pollutants. TMDLs outline pollutant removal or reduction objectives over a period of time.

The map of Impaired Reaches shows which waterbodies are impaired or polluted. The associated constituents or pollutants are listed below for each waterbody. Walnut, San Jose and Coyote Creeks are included here because they are major tributaries of the river even though they do not fall within the Master Plan project area.

- 303 (d) San Jose Creek (from confluence with Puente Creek to confluence with San Gabriel River): algae, coliform
- 303 (d) San Jose Creek (from top of main stem to confluence with Puente Creek): algae, coliform
- 303 (d) Walnut Creek (from Puddingstone Reservoir to confluence with Big Dalton Wash, excludes last stretch of Walnut Creek to the San Gabriel River confluence): pH, toxicity
- 303 (d) San Gabriel River (from Ramona Boulevard to Whittier Narrows Dam): toxicity
- 303 (d) San Gabriel River (from Whittier Narrows Dam down to Firestone Boulevard): coliform, copper, lead, zinc
- 303 (d) San Gabriel River (from Firestone Boulevard to the Estuary): abnormal fish histology, algae, coliform, toxicity
- 303 (d) San Gabriel River Estuary: abnormal fish histology
- 303 (d) Coyote Creek (entire stretch of main stem): abnormal fish histology, algae, coliform, toxicity, copper, lead, selenium, zinc

The San Gabriel River has four impaired reaches listed, as well as impaired tributaries that flow into the river *(Note: the reach designations used by the Regional Board differ from those used in this Master Plan document).* The impaired tributaries obviously bring in the listed impairments into the San Gabriel River system. The water reclamation plants that send recycled water into the river may dilute the quantities of certain pollutants to levels below 303(d) listing standards. The presence of "abnormal fish histology" in the lowest reach of the San Gabriel River may indicate the accumulation of toxins in fish found in these reaches, whether they are listed or not.

2.3.2 Cultural and Social Resources

Cultural and social resources are the intangible features of the river environment that define how people have lived and worked along and near the river through time. This includes the people, political jurisdictions and social and cultural institutions that exist in and around the Master Plan project area. This section includes:

POLITICAL JURISDICTIONS: the levels of government that overlay and intersect the natural boundaries of the river.

DEMOGRAPHICS: the composition and characteristics of the people who reside in and around the river corridor.

LAND USE AND ECONOMIC DEVELOPMENT: how people use the land adjacent to and near the river.

CULTURAL AND HISTORIC RESOURCES: the artifacts and imprints of past and present generations of inhabitants.

PUBLIC SAFETY INSTITUTIONS: the network of facilities in and near the river, such as fire stations, hospitals and police stations.

PUBLIC HEALTH AGENCIES: the jurisdictional and regulatory domains of public health agencies.

Political Jurisdictions

The San Gabriel River Corridor Master Plan project area is a complex mosaic of political jurisdictions and agency boundaries, making on-going coordination and joint planning an essential recommendation of this Master Plan. Jurisdictions include: the Angeles National Forest; two US Army Corps of Engineers-managed dam and recreation areas; ten Congressional districts; five California State Senate districts; nine State assembly districts; a State conservancy; several joint powers authorities including the new Watershed Conservation Authority; three Los Angeles County Supervisorial Districts; one Orange County Supervisorial District; 14 water supply agencies; three councils of governments (San Gabriel Valley COG, Gateway COG, Orange County COG); two counties (Los Angeles and Orange); 19 cities and a number of regulatory and other agency stakeholders. There are also a number of other stakeholder groups, including non-governmental organizations and a variety of recreational user groups.

In some cases, the San Gabriel River itself defines the jurisdictional boundaries of many public agencies.

CITIES

The river flows through or alongside 19 cities. This list is organized by reach although reach boundaries do not correspond exactly with those of the cities.

REACHES 1 AND 2: HEADWATERS AND SAN GABRIEL CANYON. These two reaches occur entirely within the boundaries of the Angeles National Forest and do not flow through a city.

REACH 3: UPPER SAN GABRIEL VALLEY. Azusa, Duarte, Arcadia, Irwindale.

REACH 4: LOWER SAN GABRIEL VALLEY. Baldwin Park, El Monte, South El Monte, City of Industry. This reach also includes the Los Angeles County unincorporated community of Bassett.

REACH 5: UPPER COASTAL PLAIN. Pico Rivera, Whittier, Santa Fe Springs, Norwalk.

REACH 6: LOWER COASTAL PLAIN. Downey, Bellflower, Cerritos, Lakewood.

REACH 7: ZONE OF TIDAL INFLUENCE. Long Beach, Seal Beach, Los Alamitos. This reach also includes the Orange County unincorporated community of Rossmoor.

LOS ANGELES COUNTY SUPERVISORIAL DISTRICTS

First Supervisorial District Supervisor Gloria Molina
Includes the northern half of the urbanized river corridor from Reach 3 to Reach 5 (Upper and Lower San Gabriel Valley, as well as portions of Upper Coastal Plain)

Fourth Supervisorial District Supervisor Don Knabe
Includes the southern half of the urbanized river corridor from Reach 5 through Reach 7. (portions of Upper Coastal Plain, Lower Coastal Plain, and Zone of Tidal Influence)

Fifth Supervisorial District Supervisor Michael D. Antonovich
Includes all of the reaches in the Angeles National Forest, Reach 1 and Reach 2 (Headwaters and San Gabriel Canyon)

ORANGE COUNTY SUPERVISORIAL DISTRICTS

Second Supervisorial District Supervisor James Silva
Includes the communities of Los Alamitos, Rossmoor and Seal Beach in the north coastal area of Orange County, located in the lower portions of Reach 6 and all of Reach 7.

CALIFORNIA STATE ASSEMBLY DISTRICTS

Assembly District 44 Assemblymember Carol Liu
Includes the western edge of Reach 3 to the north and west of Santa Fe Dam, primarily those portions of Reach 3 falling within the City of Duarte.

Assembly District 49 Assemblymember Judy Chu
Primarily the western half of Reach 4, from just below Santa Fe Dam to Whittier Narrows. The San Gabriel River defines the eastern boundary of this district.

Assembly District 50 Assemblymember Hector De La Torre
Includes the western half of Reach 6 (Lower Coastal Plain) as the river flows by the City of Bellflower.

Assembly District 54 Assemblymember Betty Karnette
Includes the lower half of Reach 6 as the river flows between Long Beach and Hawaiian Gardens, and the western half of Reach 7 as it flows by Long Beach to the coast.

Assembly District 55 Assemblymember Jenny Oropeza
Includes the western half of Reach 6 as the river flows by Lakewood. The San Gabriel River defines the eastern boundary of the district.

Assembly District 56 Assemblymember Rudy Bermudez
Includes the eastern half of Reach 5 as the river flows by unincorporated West Whittier and Santa Fe Springs, and bisects Lakewood. The river defines the western boundary of the district.

Assembly District 57 Assemblymember Ed Chavez
Includes Reach 3 (the Upper San Gabriel Valley cities of Azusa and Irwindale) and the eastern half of Reach 4, from just below Santa Fe Dam to Whittier Narrows. This includes Baldwin Park and unincorporated areas of Los Angeles County on the eastern bank. The river defines the western boundary of this district along the Reach 4 portion.

Assembly District 58 Assemblymember Ronald S. Calderon
Includes Whittier Narrows and Puente-Chino Hills (lower portion of Reach 4) and the western half of Reach 5 as the river flows by Pico Rivera and Downey. The river defines the eastern boundary of the district along the Reach 5 portion.

Assembly District 59 Assemblymember Dennis Mountjoy
Includes all of the river within Angeles National Forest, Reach 1 and Reach 2.

Assembly District 67 Assemblymember Tom Harman
Includes the eastern half of Reach 7, as the river flows by Los Alamitos, Rossmoor and Seal Beach.

CALIFORNIA STATE SENATE DISTRICTS

Senate District 24 Senator Gloria Romero
Includes Reach 3 (Upper San Gabriel Valley) and most of Reach 4 (Lower San Gabriel Valley), but stops short of Whittier Narrows.

Senate District 27 Senator Alan Lowenthal
Includes the western half of Reach 6, as the river flows by Downey and Bellflower, all of the lower portions of Reach 6 as the river flows between Lakewood and Cerritos, and primarily the western portion of Reach 7 as it flows by Long Beach to the coast.

Senate District 29 Senator Bob Margett
Includes the river as it flows through the Angeles National Forest, Reach 1 and Reach 2.

Senate District 30 Senator Martha M. Escutia
Includes the lowest portion of Reach 4 (South El Monte and Whittier Narrows); all of Reach 5 (Upper Coastal Plain) including Pico Rivera, Whittier, Santa Fe Springs and part of Downey, and the eastern half of Reach 6 as it flows by Norwalk.

Senate District 35 Senator John Campbell
Includes the eastern half of Reach 7 as the river flows by Rossmoor and Seal Beach.

U.S. CONGRESSIONAL DISTRICTS

Congressional District 26 Congressman David Dreier
Includes all of the San Gabriel River within the Angeles National Forest, Reach 1 and Reach 2.

Congressional District 32 Congresswoman Hilda Solis
Includes most of Reach 3 and Reach 4, as defined by the Cities of Azusa, Duarte, Irwindale, Baldwin Park, El Monte and South El Monte, and the Whittier Narrows. The river defines the southeastern boundary of this district, from north of the 10 Freeway to the mouth of the San Gabriel Canyon, the river flows through the center of this congressional district.

Congressional District 34 Congresswoman Lucille Roybal-Allard
Includes portions of Reach 5 and 6, as defined by the Cities of Downey and Bellflower. The river forms the eastern boundary of the district.

Congressional District 38 Congresswoman Grace Napolitano
Includes portions of Reach 4 (the eastern bank of the river/Avocado Heights, Puente Chino Hills), the western bank of Reach 5 (Pico Rivera), and the eastern bank of Reach 6 (Santa Fe Springs, and Norwalk).

Congressional District 39 Congresswoman Linda Sanchez
Includes much of Reach 6, as defined by the Cities of Lakewood, Cerritos and Hawaiian Gardens. In addition, a northern spur of the district includes the eastern bank of the river as defined by the community of West Whittier and the City of Whittier.

Congressional District 40 Congressman Edward Royce
Includes a small portion of Reach 7, as defined by Rossmoor and Los Alamitos in Orange County.

Congressional District 46 Congressman Dana Rohrabacher
Includes most of Reach 7, as defined by the cities of Long Beach and Seal Beach. It straddles both Los Angeles County and Orange County.

Demographics

Plans for parks and other projects along the river must take into account the diverse characteristics of the people and communities adjacent to the river, especially in regards to size and age distribution, race, culture and ethnicity, and other factors.

POPULATION SIZE AND AGE DISTRIBUTION

About 1.5 million people live near the river, including the populations of the cities and unincorporated areas. Population distribution varies: only a handful of people live fulltime in Reaches 1 and 2, within the boundaries of the Angeles National Forest. The majority lives within the San Gabriel Valley and the river's coastal plain as described below.

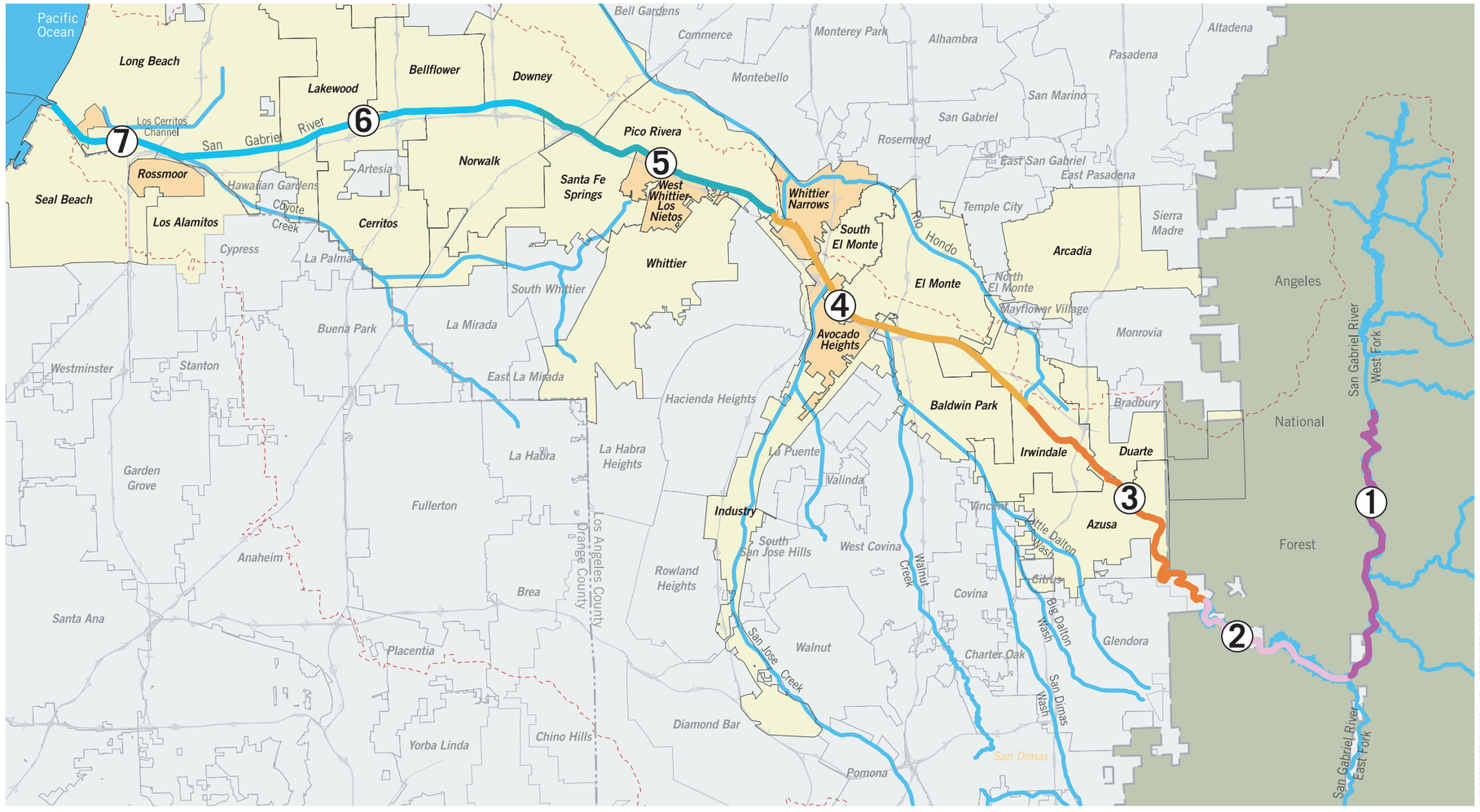
- Reach 3: 120,698 (Azusa, Duarte, Arcadia, Irwindale)
- Reach 4: 228,871 (Baldwin Park, El Monte, South El Monte, Industry, Avocado Heights CDP)
- Reach 5: 292,973 (Pico Rivera, Whittier, West Whitter-Los Nietos CDP, Santa Fe Springs, Norwalk)
- Reach 6: 311,034 (Downey, Bellflower, Cerritos, Lakewood)
- Reach 7: 495,977 (Long Beach, Seal Beach, Rossmoor CDP)

(Population figures are based on 2000 US Census data for the cities that adjoin the San Gabriel River. For unincorporated areas, the corresponding "census designated place [CDP]" is used.)

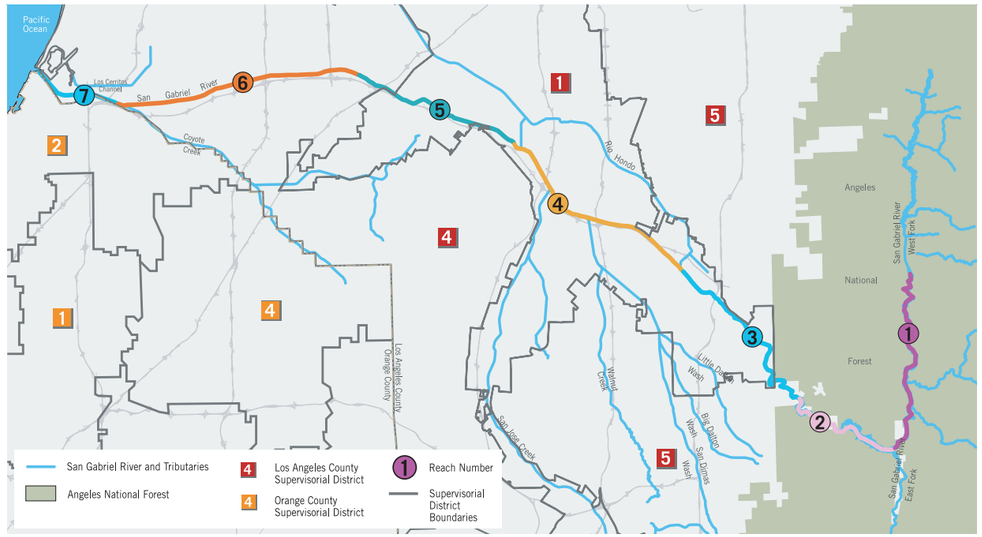
Reach 4 has the highest percentage of young people, with 37.5 percent of the population 19 years old or younger (see Table 2-1). The population in this reach is generally younger than the others, which all have similar age distributions.

Parks and recreation planners will need to take into account the age structure of the local communities that are to be served. Regardless of the specific age distributions of a river reach, engaging local community members in the planning process is the best way to gather information on the specific needs of each community.

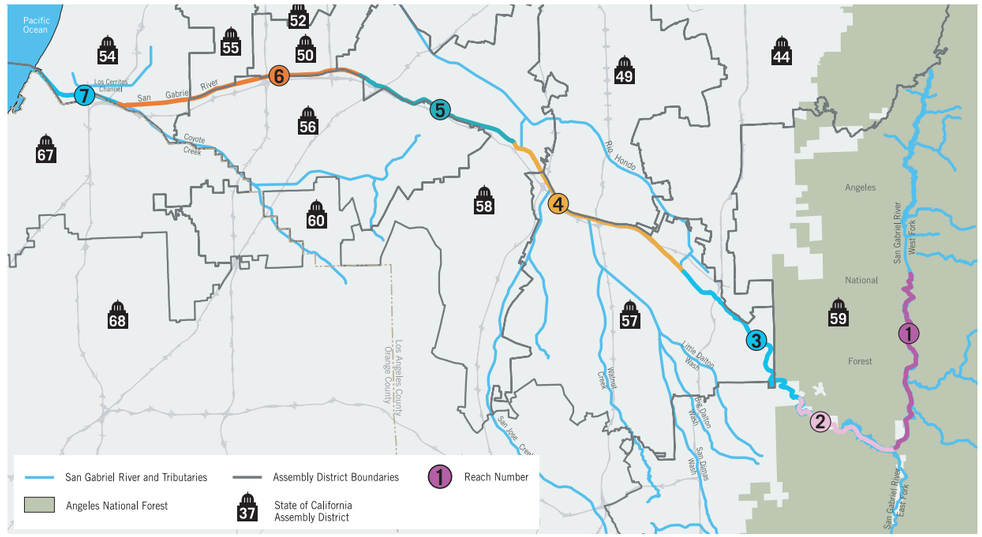
Figure 2-75. Students visit the El Dorado Nature Center to learn firsthand about local creatures.



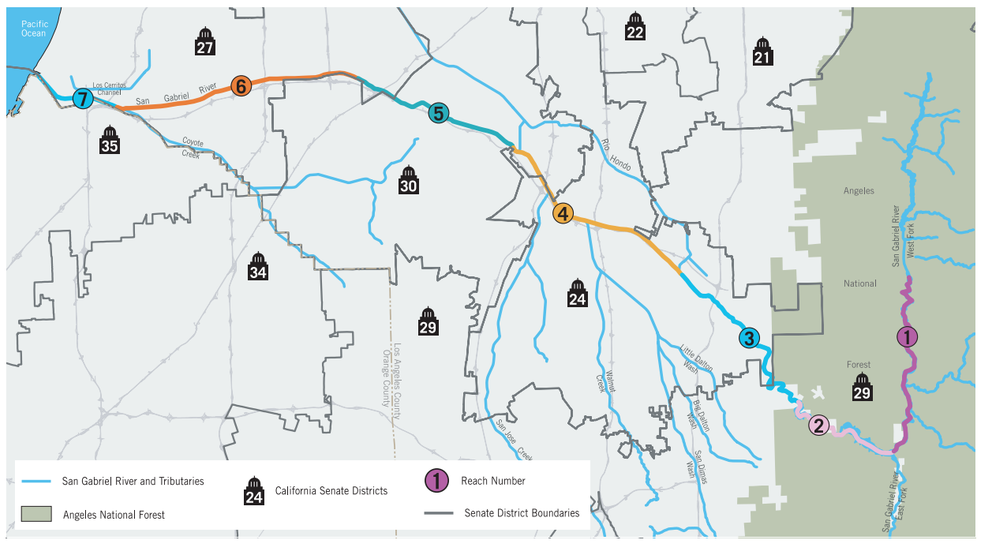
Map 2-13. Cities and unincorporated county areas in the San Gabriel River Corridor Master Plan project area.



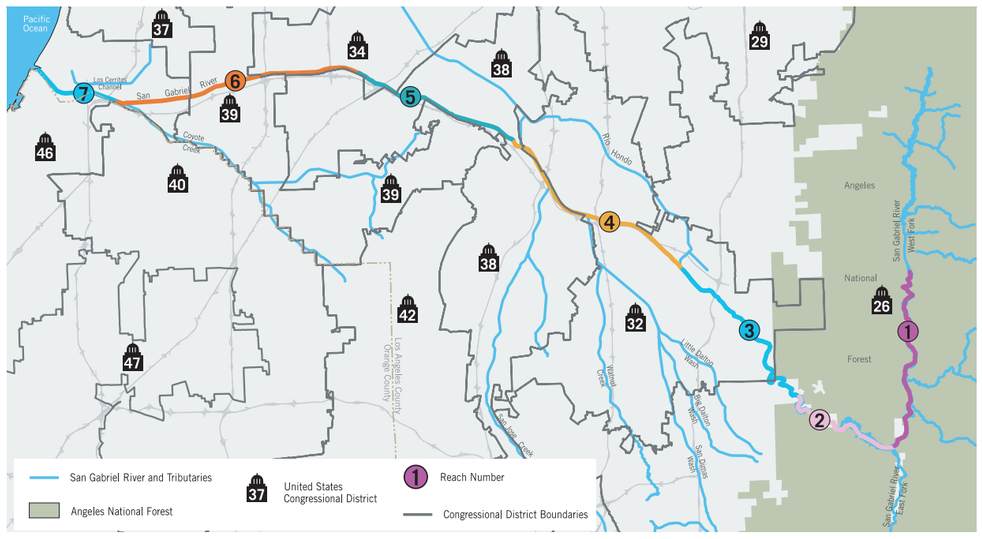
Los Angeles and Orange Counties Supervisorial Districts



State of California Assembly Districts



State of California Senate Districts



United States Congressional Districts

County of Los Angeles Department of Public Works
San Gabriel River Master Plan

MAPS PREPARED BY MIG, INC.—DECEMBER 2003

Map 2-14. Political jurisdictions.

RACE AND ETHNICITY

Like most of Southern California, the area around the San Gabriel River is racially and ethnically diverse. However, these patterns vary along the river corridor (see Table 2-2). In every reach, except for the zone of tidal influence (Reach 7), those who identified themselves as Hispanic or Latino represent the largest component of the population. In the lower San Gabriel Valley and upper coastal plain, the Hispanic or Latino population is 75.9 percent and 68.7 percent respectively. Those identifying themselves as Asian in the 2000 Census also represent a large percentage of the river corridor's population. In the lower San Gabriel Valley, the Asian population is the second largest group. The largest percentage of Asian population occurs in the upper San Gabriel Valley.

COURTESY NORTH EAST TREES

Figure 2-76. A habitat restoration planting event at San Jose Creek attracted a diverse group of volunteers.

TABLE 2-1. POPULATION BY AGE GROUP AND RIVER REACH (%), 2000

	Reach 3 Upper San Gabriel Valley	Reach 4 Lower San Gabriel Valley	Reach 5 Upper Coastal Plain	Reach 6 Lower Coastal Plain	Reach 7 Zone of Tidal Influence
Under 5 years	6.9%	9.7%	8.2%	7.6%	8.0%
5 to 9 years	7.8%	10.3%	9.1%	8.4%	8.7%
10 to 14 years	7.7%	9.0%	8.4%	8.0%	7.6%
15 to 19 years	8.1%	8.5%	8.0%	7.5%	7.1%
20 to 29 years	14.0%	17.3%	14.7%	13.8%	15.9%
30 to 39 years	14.7%	15.8%	15.6%	15.5%	16.7%
40 to 49 years	15.0%	12.1%	13.3%	14.5%	13.7%
50 to 59 years	10.5%	7.8%	8.8%	10.9%	9.2%
60 to 69 years	6.7%	4.8%	6.0%	6.3%	5.3%
70 to 79 years	5.3%	3.2%	5.4%	5.0%	4.0%
80 to 89 years	2.7%	1.3%	2.2%	2.3%	2.7%
90 years and over	0.6%	0.2%	0.4%	0.3%	0.5%

SOURCE: US CENSUS BUREAU, 2000

TABLE 2-2. RACE AND ETHNICITY (%) BY RIVER REACH, 2000

	Reach 3 Upper San Gabriel Valley	Reach 4 Lower San Gabriel Valley	Reach 5 Upper Coastal Plain	Reach 6 Lower Coastal Plain	Reach 7 Zone of Tidal Influence
Hispanic or Latino	37.0%	76.1%	68.7%	37.6%	33.7%
White	32.4%	7.4%	21.4%	34.0%	36.7%
Black or African America	3.3%	0.8%	2.2%	7.1%	13.6%
American Indian and Alaska Native	0.3%	0.3%	0.4%	0.3%	0.4%
Asian	24.3%	14.5%	5.7%	17.9%	11.5%
Native Hawaiian and Other Pacific Islander	0.1%	0.1%	0.2%	0.4%	1.1%
Some Other Race	0.2%	0.1%	0.1%	0.2%	0.2%
Two or More Races	2.3%	0.8%	1.3%	2.5%	2.9%

SOURCE: US CENSUS BUREAU, 2000

Note: Individuals who reported themselves as Hispanic or Latino have been grouped regardless of race. All other groups listed include only those who identified themselves as non-Hispanic/Latino. All categories listed above reflect those used in the 2000 Census (US Census Bureau, 2000).

TABLE 2-3. LANGUAGES SPOKEN AT HOME BY RIVER REACH (%), 2000

	Reach 3 Upper San Gabriel Valley	Reach 4 Lower San Gabriel Valley	Reach 5 Upper Coastal Plain	Reach 6 Lower Coastal Plain	Reach 7 Zone of Tidal Influence
Speak only English	45.55%	20.43%	42.60%	50.98%	58.17%
Spanish or Spanish Creole	27.99%	64.89%	50.65%	29.94%	28.44%
Chinese	15.30%	7.06%	0.83%	2.97%	0.74%
Korean	1.79%	0.31%	0.96%	4.62%	0.31%
Mon-Khmer, Cambodian	0.07%	0.22%	0.23%	0.51%	3.75%
Vietnamese	0.43%	3.68%	0.42%	0.77%	1.00%
Tagalog	2.36%	1.98%	1.72%	4.05%	2.97%

Note: Includes people over 5 years of age and languages with more than one percent of population per reach reporting using that language at home. This information is derived from the 2000 Census question asking whether a person speaks a language other than English at home and if so, what is the language. It is important to note that many who indicated that languages other than English are spoken at home also speak English (US Census Bureau, 2000).

TABLE 2-4. HOUSEHOLD LANGUAGE BY LINGUISTIC ISOLATION AND RIVER REACH (%), 2000

	Reach 3 Upper San Gabriel Valley	Reach 4 Lower San Gabriel Valley	Reach 5 Upper Coastal Plain	Reach 6 Lower Coastal Plain	Reach 7 Zone of Tidal Influence
English	46.2%	16.9%	39.9%	51.0%	63.2%
Spanish	26.5%	66.2%	51.9%	29.3%	23.6%
Linguistically isolated	6.1%	19.8%	9.3%	5.7%	7.9%
Not linguistically isolated	20.4%	46.4%	42.6%	23.6%	15.7%
Other Indo-European	4.6%	1.0%	2.6%	4.4%	3.7%
Linguistically isolated	0.5%	0.2%	0.3%	0.6%	0.5%
Not linguistically isolated	4.1%	0.8%	2.2%	3.8%	3.1%
Asian and Pacific Island	21.8%	15.6%	5.3%	13.9%	9.0%
Linguistically isolated	7.9%	7.1%	1.3%	3.6%	2.3%
Not linguistically isolated	13.8%	8.5%	4.0%	10.3%	6.6%
Other languages	0.9%	0.2%	0.3%	1.4%	0.6%
Linguistically isolated	0.1%	0.1%	0.0%	0.2%	0.1%
Not linguistically isolated	0.8%	0.2%	0.3%	1.2%	0.5%
Total Households Linguistically Isolated:	14.7%	27.2%	11.0%	10.1%	10.8%

Note: Linguistic isolation is defined as a household in which no person 14 years old or over speaks English or speaks English "very well." In other words, a household in which all members 14 years old and over speak a non-English language and also speak English less than "very well" (have difficulty with English) is "linguistically isolated." All the members of a linguistically isolated household are tabulated as linguistically isolated, including members under 14 years old who may speak only English (US Census Bureau, 2000).

SOURCE: US CENSUS BUREAU, 2000

LANGUAGES

The communities of the San Gabriel River corridor are also linguistically diverse (see Table 2-3). Of the 39 language categories in the 2000 Census, only one category, Navajo, is not found within the river corridor. In Reaches 3, 4 and 5, the majority of respondents indicated that they speak a language other than English at home. The languages most widely spoken at home include English, Spanish and Chinese. The other prevalently used languages at home include Asian and Pacific Island languages such as Korean, Mon-Khmer or Cambodian, Vietnamese and Tagalong, the primary language of the Philippines.

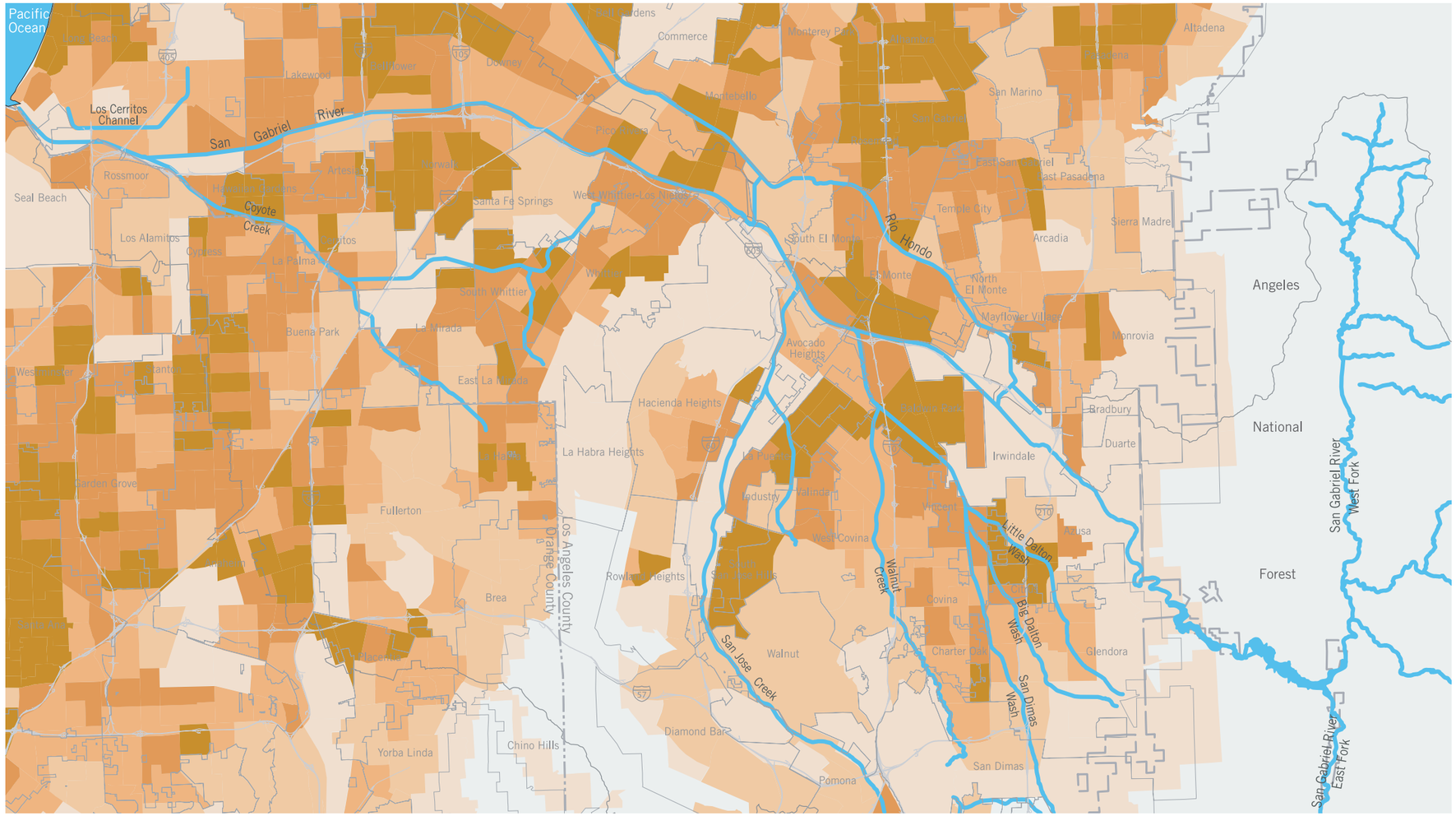
While many living in communities along the river corridor speak languages other than English at home, a subset of this population are also defined as "linguistically isolated" (see Table 2-4). This term, used by the US Census Bureau, describes households in which no one over 14 years of age speaks English or speaks English "very well." More than 10 percent of the population for each river reach is defined as being linguistically isolated, with Reaches 3 and 4 having the greatest occurrences at 14.7 percent and 27.2 percent respectively.

POPULATION DENSITY

Population density is the number of people living within a particular area, measured by the number of people per square mile of area. In 2000, the densest communities included Baldwin Park, El Monte, Norwalk and Bellflower, each of which had an average of over 11,000 people per square mile (see Table 2-5).

The Population Density Map (Map 2-18) is based on data from the 1990 Census (2000 Census data was not available when the map was created). The patterns show areas of very low to very high density along the river. Five categories of population density were developed to create this snapshot, showing the distribution of where people live along the San Gabriel River:

- Very Low: 0–2,400 people per square mile
- Low: 2,401–4,800 people per square mile
- Medium: 4,801–7,200 people per square mile
- High: 7,201–9,600 people per square mile
- Very High: > 9,600 people per square mile



Map 2-18. Population density.

TABLE 2-5. POPULATION DENSITY, 2000

	Total population	Land Area (sq. mi.)	Density (people/sq. mi.)
REACH 3: UPPER SAN GABRIEL VALLEY			
Azusa	44,712	8.9	5,023.8
Duarte	21,486	6.68	3,216.5
Arcadia	53,054	11.11	4,775.3
Irwindale	1,446	9.46	1,52.9
Baldwin Park	75,837	6.8	11,152.5
REACH 4: LOWER SAN GABRIEL VALLEY			
El Monte	115,965	9.69	11,967.5
South El Monte	21,144	2.89	7,316.3
Industry	777	11.89	65.3
Avocado Heights CDP	15,148	2.82	5,371.6
REACH 5: UPPER COASTAL PLAIN			
Whittier	83,680	14.63	5,719.8
Pico Rivera	63,428	8.3	7641.9
West Whittier-Los Nietos CDP	25,129	2.51	10,011.6
Santa Fe Springs	17,438	8.86	1,968.2
Norwalk	103,298	8.74	11,819.0
REACH 6: LOWER COASTAL PLAIN			
Downey	107,323	12.59	8,524.5
Bellflower	72,878	6.15	11,850.1
Cerritos	51,488	8.89	5,791.7
REACH 7: ZONE OF TIDAL INFLUENCE			
Lakewood	79,345	9.5	8,352.1
Long Beach	461,522	65.87	7,006.6
Los Alamitos	11,536	4.0	2884.0
Rossmoor	10,298	1.45	7,102.1
Seal Beach	24,157	11.51	2,098.8

SOURCE: US CENSUS BUREAU, 2000

Altogether, 13 high-density areas are linked with the river: Duarte, two areas in Baldwin Park, El Monte-South El Monte, West Whittier-Los Nietos, Pico Rivera, Norwalk, Bellflower, Lakewood, Lakewood-Cerritos, Long Beach, and Seal Beach (Leisure World).

The most heavily populated areas are in the northern and central areas, Reaches 4 and 5, including the communities of Baldwin Park, El Monte, and Pico Rivera, which lie adjacent to or within a half-mile of the river.

There are other very heavily populated areas in the lower third of the river, within one mile of the river but not adjacent to it: Norwalk-northwest Cerritos, Lakewood-Hawaiian Gardens, and the coast of Long Beach, west of the river mouth.

Reaches 1 and 2

There is very low population density in these two reaches which encompass the wilderness areas of the Angeles National Forest.

Reach 3

This reach also has very low population density, especially in areas adjacent to the river. The area is on the edge of the Angeles National Forest, encompassing both publicly managed and privately owned open space areas. A substantial portion of the area is devoted to industrial land use activities, especially gravel quarries. There are pockets of high population density in the nearby communities of Azusa and Duarte.

Reach 4

The very highest population densities along the river are located in this reach. This includes both Baldwin Park and El Monte, which have population densities greater than 9,600 people per square mile. The very high-density communities of El Monte are directly adjacent to the river, on its west bank. The residential portions of Irwindale and parts of South El Monte directly adjacent to the river have high population densities.

Figure 2-77. This aerial photo shows dense housing along the river in Reach 5.

As the river proceeds further south toward Whittier Narrows, the population densities begin to decrease.

This reach also includes significant areas of very low density, mostly in Irwindale, because of industrial land uses, such as gravel quarry operations that lie adjacent to the river. Portions of these very low-density areas act as a barrier, as they lie between the river and the very high-density communities of Baldwin Park. The Puente-Chino Hills, east of the river at Whittier Narrows, is mostly open space and as a result falls into the very low density category.

Reach 5—Upper Coastal Plain

The reach also has river-adjacent communities with very high-densities, particularly in the City of Pico Rivera. Across the river from Pico Rivera, are the relatively high-density communities of West Whittier-Los Nietos.

Reach 6—Lower Coastal Plain

Reach 6 has many low- to medium-density communities adjacent to the river, most notably Cerritos and parts of Bellflower and Lakewood. Other high-density communities include parts of Norwalk, Lakewood, and Long Beach. There are no very high-density communities adjacent to the river, but densities do increase farther away from the river, for example, in Bellflower, large areas of Norwalk, and Hawaiian Gardens.

A large triangular patch of very low population density at the confluence with Coyote Creek is due to the El Dorado Regional Park.

Reach 7—Zone of Tidal Influence

Communities in this reach are mostly low- to medium-density, with one significant area of very low density, just before densities increase again at the coast.

TABLE 2-6. HOUSEHOLD INCOME BY RIVER REACH (%), 1999

	Reach 3 Upper San Gabriel Valley	Reach 4 Lower San Gabriel Valley	Reach 5 Upper Coastal Plain	Reach 6 Lower Coastal Plain	Reach 7 Zone of Tidal Influence
Less than $10,000	7.9%	9.3%	7.1%	6.4%	12.0%
$10,000 to $24,999	15.6%	22.9%	17.1%	16.1%	21.4%
$25,000 to $34,999	12.0%	15.3%	12.2%	10.8%	12.8%
$35,000 to $44,999	11.1%	12.8%	12.3%	10.9%	10.4%
$45,000 to $59,999	13.5%	14.4%	16.2%	14.1%	11.7%
$60,000 to $74,999	11.1%	9.3%	12.0%	12.4%	9.2%
$75,000 to $99,999	11.7%	8.6%	11.9%	14.0%	9.4%
$100,000 to $124,999	6.9%	3.8%	5.7%	7.4%	5.5%
$125,000 to $149,999	3.7%	1.8%	2.3%	3.5%	2.8%
$150,000 to $199,999	3.4%	0.9%	1.9%	2.8%	2.6%
$200,000 or more	3.2%	0.8%	1.4%	1.6%	2.4%
Median Household Income 1999	$47,759	$41,372	$45,466	$54,068	$55,269
Per Capita Income 1999	$18,651	$11,291	$15,481	$20,381	$30,757

SOURCE: U.S. CENSUS BUREAU, 2000

INCOME

Income levels of households also vary along the river corridor (see Table 2-6). The median household income for 1999 along the corridor varied from $41,372 to $55,269 by river reach. When calculated on a per capita basis, the breadth of annual income for the surveyed year is even broader, ranging from $11,291 to $30,757.

Lower income areas may have less access to open space and recreation resources, relying more on close-to-home resources. This information can be useful in prioritizing areas for investing in open space and recreation.

Land Use and Economic Development

The Land Use Map (see Map 2-19) provides an overview of how people currently use land adjacent to and near the San Gabriel River. This land use map was derived from data developed by the Southern California Association of Governments (SCAG). It divides land uses into five primary land use categories:

- **COMMERCIAL.** This include areas with office buildings, retail stores, restaurants, offices, personal services, hotels and motels, storage and public parking facilities.
- **INDUSTRIAL AND TRANSPORTATION.** This includes light and heavy industrial, mining areas and wholesale and warehousing, and major transportation facilities such as airports, freeways, roads, railways and harbor facilities, as well as all communication and utility facilities.
- **OPEN SPACE.** This includes golf courses, local and regional parks, cemeteries, wildlife preserves, beaches, vacant undeveloped lands, and all agricultural lands.
- **PUBLIC FACILITIES AND INSTITUTIONS.** This includes government offices and other public service facilities, major health care facilities, religious facilities, public and private educational facilities and military installations.
- **RESIDENTIAL.** This includes all single-family as well as multi-family residential, mobile homes and trailer parks and mixed residential areas.

There is a sharp divergence of land use patterns between the Angeles National Forest (Reaches 1 and 2) and in the urbanized areas (Reaches 3 to 7). Reaches 1 and 2 are predominantly open space. There are a variety of land uses in the urbanized areas—residential dominates and open space is relatively sparse. The most significant open space within the urbanized areas are in the Santa Fe Dam Recreation Area, Whittier Narrows, and El Dorado Regional Park in Long Beach.

Industrial areas are concentrated mostly in the northern half of the corridor (Reaches 3 and 4), and toward the southern end of the river as it approaches the ocean (Reach 7). Public facilities and institutions are scattered fairly evenly along the urbanized river corridor. Commercial land uses are largely limited to areas near freeway intersections and along other major east-west corridors intersecting the river.

REACHES 1 AND 2. Exclusively open space (Angeles National Forest).

REACH 3. The most heavily industrialized reach, but with significant amounts of residential (cities of Azusa and Duarte) and open space (Santa Fe Dam Recreation Area).

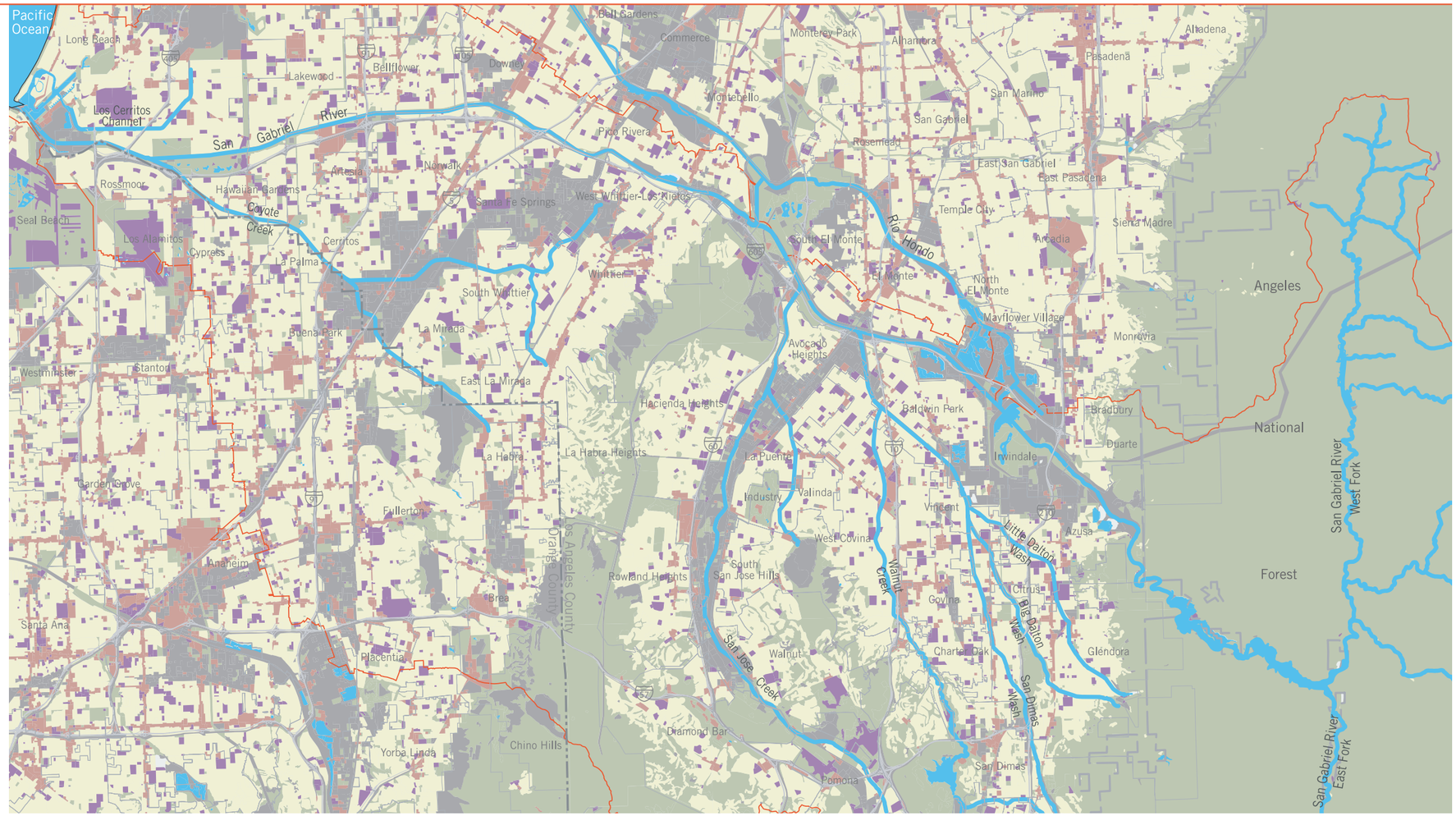
REACH 4. Heavily industrialized, but mostly residential in the middle and lower portions, ending with the most significant open space area outside the national forest (Whittier Narrows).

REACHES 5 AND 6. Primarily residential with some open space.

REACH 7. Primarily residential with some industrial.

Most of the lands adjacent to the San Gabriel River are privately owned residential and industrial land. Southern California Edison (SCE) utility easements and fee-owned properties make up a significant proportion of the privately owned lands.

Public land includes the 605 Freeway, owned and operated by Caltrans, which runs parallel to the river through much of the urbanized area. Other public lands are open spaces and parks, mainly in the upper half of the river (Angeles National Forest, Santa Fe Dam Recreation Area and Whittier Narrows). The lower half of the river has few public lands along the river, except for significant parklands along the Long Beach/Seal Beach segment. Most of the open space is publicly owned, but there are some exceptions, especially in the foothills.



Map 2-19. Existing land use (generalized).

Cultural and Historic Resources

The river region is rich in cultural and historic sites, telling the story of the settlement and development of Southern California.

The RMC created a GIS database of known landmarks within and near the river corridor, based on research documents and its December 2002 survey of local cities. The map created from this database (see Map 2-20) organizes these cultural and historic landmarks into the following four categories:

RMC PROJECTS: cultural and historical projects currently funded by the RMC.

NATIONAL HISTORICAL LANDMARKS: the nation's official list of cultural resources.

COURTESY NORTH EAST TREES

Figure 2-78. The Juan Bautista de Anza National Historic Trail crosses the San Gabriel River in the Whittier Narrows area.

Figure 2-79. The West San Gabriel River Parkway Nature Trail is a new local park in Lakewood.

CALIFORNIA STATE HISTORICAL LANDMARKS: properties of historical importance in California.

CITY LANDMARKS: This map reveals all known landmarks identified by cities that responded to the RMC survey. Although there are many cultural and historic landmarks in the San Gabriel Valley and southeastern Los Angeles County, only a few are within easy walking distance to the river (one-half mile). They are listed below by reach:

REACHES 1 AND 2

No cultural or historic landmarks have currently been identified in these two upper reaches.

REACH 3: UPPER SAN GABRIEL VALLEY

CITY LANDMARKS: Puente Largo Railroad Bridge/Duarte Historical Society (Duarte) and Historic Route 66.

REACH 4

NATIONAL DESIGNATIONS: Juan Bautista de Anza National Historic Trail.

CITY LANDMARKS: Walnut Creek Nature Center (Baldwin Park), Whittier Narrows Nature Center.

REACH 5

CALIFORNIA STATE HISTORICAL LANDMARK AND RMC PROJECT: Casa de Governor Pio Pico and Pio Pico State Park (6003 Pioneer Boulevard, Whittier). A historic adobe home built by Pio Pico, the last Mexican governor of California before the American takeover in 1846.

REACH 6: LOWER COASTAL PLAIN

CITY LANDMARKS: Horse Country (Bellflower), Caruther's Park House (Bellflower), Nye Library (Lakewood), Mae Boyer Park (Lakewood), Monte Verde Park (Lakewood), Rynerson Park (Lakewood), West San Gabriel River Open Space Area (Lakewood) and Lakewood Equestrian Center (Lakewood).

REACH 7: ZONE OF TIDAL INFLUENCE

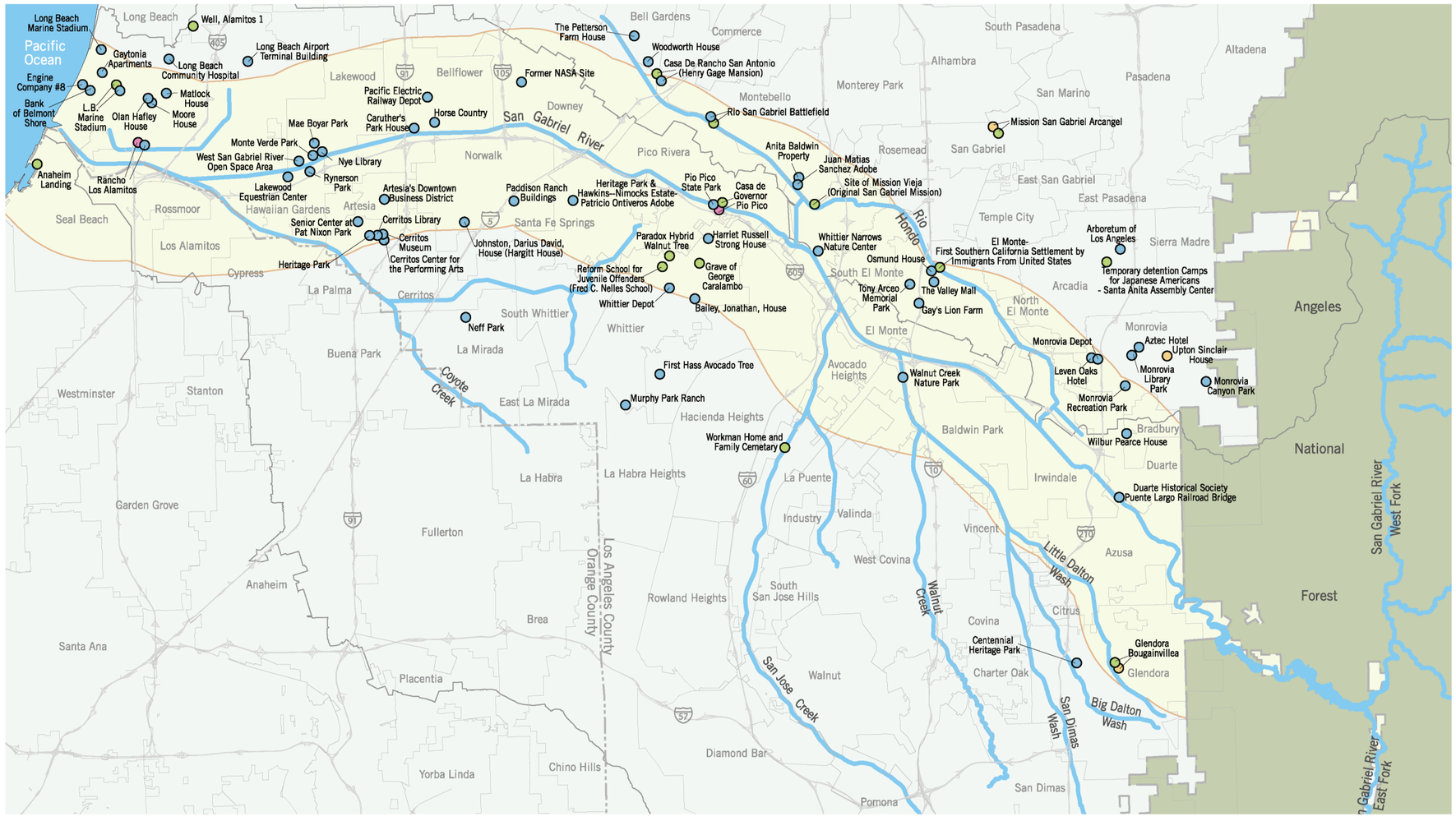
CITY LANDMARK/RMC PROJECT: Rancho Los Alamitos (6400 Bixby Hill Road, Long Beach). A historic18-room adobe ranch house that had its origins in a land grant from the King of Spain, dating from the late 1800s.

ADDITIONAL OBSERVATIONS

There are no National Historical Landmarks within walking distance of the river. However, three sites do appear on the map due to their significance and relative proximity: Mission San Gabriel Arcangel (San Gabriel), Upton Sinclair House (Monrovia) and Glendora Bougainvillaea (Glendora).

The Casa de Governor Pio Pico in Whittier/Pico Rivera is the only California State Historic Landmark on the river. However, two additional sites are located within one mile of the river: Site of Mission Vieja (Whittier Narrows), the original site of San Gabriel Mission on the Rio Hondo, and Anaheim Landing (Seal Beach). There are 10 other state sites within five miles of the river.

Other designated city landmarks within three to five miles of the river are also depicted on the map in the Cities of Bradbury, Glendora, Monrovia, Arcadia, El Monte, Montebello, Bell Gardens, Santa Fe Springs, Whittier and Cerritos.



Map 2-20. Cultural and historic resources.

The RMC will update the database as new data is acquired. It is anticipated that many more city landmarks will appear once surveys are completed.

Public Safety and Hospital Facilities

Public safety is of paramount importance in both current and future uses of the river, and is partially dependent on where public safety facilities are located in relation to the river. Facilities on the map (see Map 2-21) include fire stations, hospitals and police stations. The location of these public safety facilities can be used to assess whether the geographic service areas of fire, police, and other emergency personnel offer sufficient coverage of the river.

The mapping shows that very few public safety facilities are currently located within one-half mile of the river. However, the number of public safety facilities increases significantly at a distance of at least one-mile from the river.

The following is a list by reach of all public safety facilities located within one-half mile of the San Gabriel River:

REACH 1: HEADWATERS

No public safety facilities are located in this reach.

REACH 2: SAN GABRIEL CANYON

Fire Stations

- Rincon Ranger Station (on West Fork)
- County of Los Angeles Fire Dept Camp 19 (on East Fork within one mile of Main San Gabriel River channel)
- East Fork Fire Station

REACH 3: UPPER SAN GABRIEL VALLEY

Fire Stations

- Fire Station (Azusa)

Hospitals

- City of Hope National Medical Center (1500 E. Duarte Road, Duarte; three-quarter mile west of the river)

REACH 4—LOWER SAN GABRIEL VALLEY

No public safety facilities exist within one-half mile of the river.

REACH 5: UPPER COASTAL PLAIN

Fire Stations

- County of Los Angeles Fire Station #40 (4864 S. Durfee, Pico Rivera)
- Fire Station (Florence Avenue, Downey; three-quarter mile from the river)

Police Stations

- County of Los Angeles Sheriffs Station (Passons Boulevard, Pico Rivera)
- California Highway Patrol (Davenrich Street, Santa Fe Springs)
- Police Station (Jersey Avenue/Telegraph Road, Santa Fe Springs)

REACH 6: LOWER COASTAL PLAIN

Fire Stations

- Fire Station (Lakewood)
- Fire Station (Wardlow Road, El Dorado Regional Park, Long Beach)

Hospitals

- Coast Plaza Doctors Hospital (13100 Studebaker Road, Norwalk; three-quarter mile from the river)
- Bellwood General Hospital (10250 E. Artesia Boulevard, Bellflower; just beyond one-half mile of the river)

REACH 7: ZONE OF TIDAL INFLUENCE

Fire Stations

- Fire Station (Long Beach Marina, Long Beach)
- Fire Station (8th Street/Central Avenue, Seal Beach)

Facilities located within one-half mile from the river (a reasonable walking distance from the river) are described below.

FIRE STATIONS

There are nine fire stations close to the river: two in the Angeles National Forest, one each in Azusa, Pico Rivera, Downey, Lakewood, two in Long Beach, and one in Seal Beach. There are six additional fire stations one mile from the river. In general, the fire stations are evenly distributed in the region, approximately 2–3 miles apart.

HOSPITALS

There are three hospitals close to the river, one each in Duarte, Norwalk and Bellflower. There are nine hospitals about one mile from the river on either side, making hospital coverage somewhat evenly distributed.

POLICE STATIONS

There are three police stations, one in Pico Rivera and two near each other in Santa Fe Springs, all in Reach 6. Above Pico Rivera there are no police stations near the river. The nearest ones are approximately two miles from the river, and are located in Azusa, Irwindale and Baldwin Park.

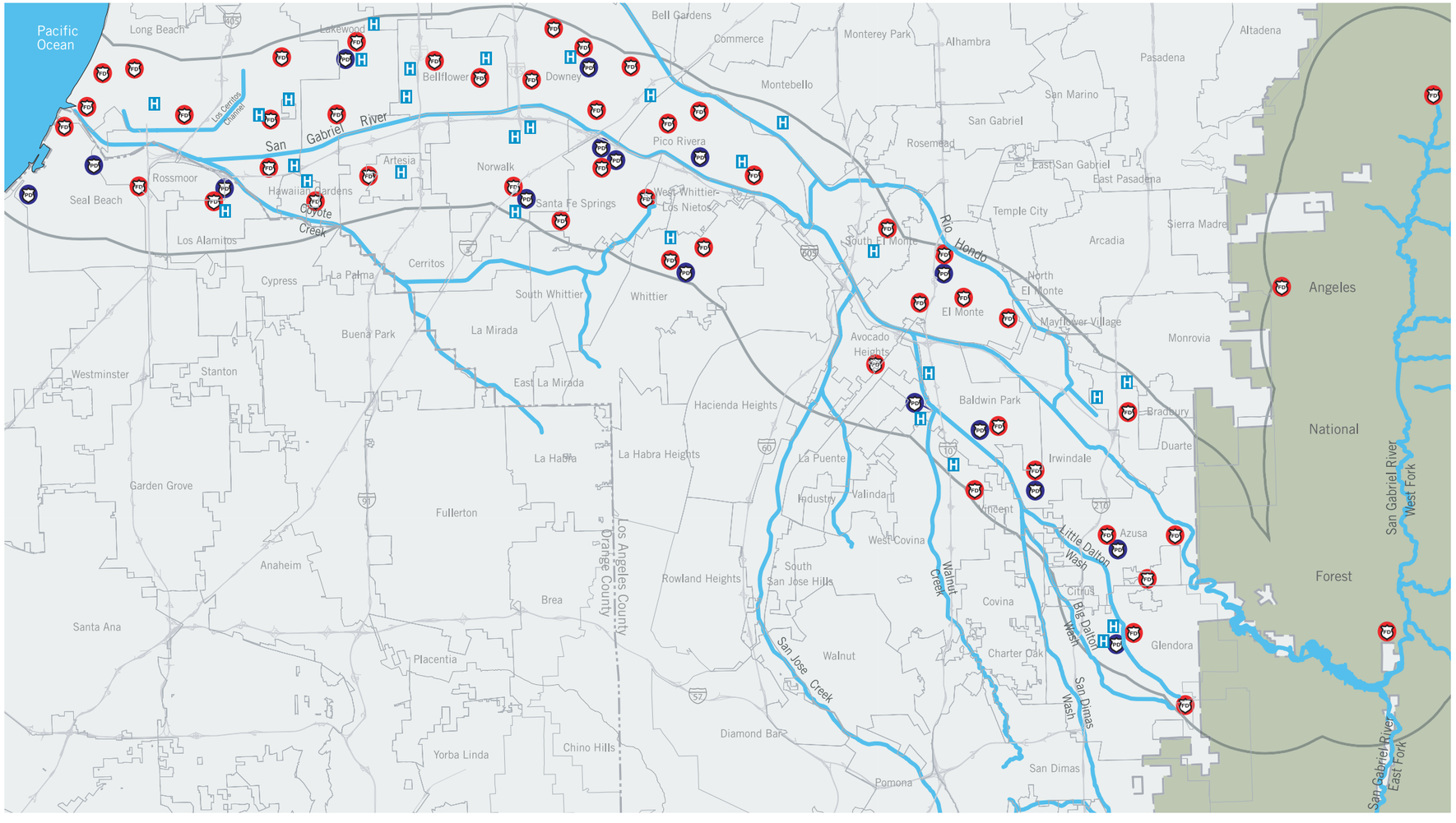
Reach 4 between Santa Fe Dam Recreation Area and Whittier Narrows has no public safety facilities within one-half mile of the river.

The presence of public safety facilities near the river suggests that public safety can be monitored and maintained with increased use of the river. Better signage to these facilities and regular patrols by uniformed officers and trained citizen watch groups can further increase both the real and perceived safety of the river.

Public Health Agencies

Public health issues relating to vector control are part of the river's context and must be considered. A vector is "any animal capable of transmitting the causative agent of human disease or capable of producing human discomfort or injury, including, but not limited to, mosquitoes, flies, other insects, ticks, mites, and rats, but not including any domestic animal," according to California's Health and Safety Code. Wetlands have been breeding grounds for vectors such as mosquitoes in the past. In the early 1900s, public concern about malaria outbreaks led to the implementation of malaria control programs. This led to vector abatement and control legislation in 1915, including the Mosquito Abatement Act. Now, a variety of public agencies are responsible for protecting the residents of Los Angeles County from human disease-causing vectors.

The Infectious Diseases Branch of the California Department of Health Services protects and promotes the health of Californians through the surveillance, investigation, prevention and control of communicable diseases. It also monitors and addresses disease occurrences that have an impact on all local health jurisdictions in the State, and that may affect public health policy on a national and international level. The seven regional offices of the Vector-Borne Disease Section of the branch provide technical consultation and assistance to local vector control agencies to



Source: County of Los Angeles Department of Public Works and Rivers and Mountains Conservancy

Public Safety and Hospital Facilities

County of Los Angeles Department of Public Works

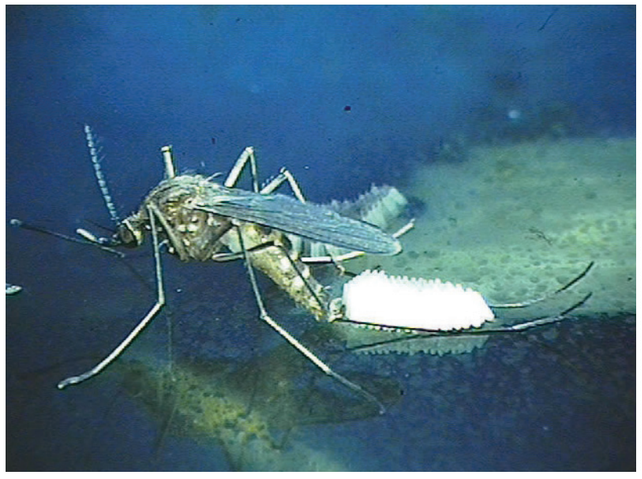
San Gabriel River Corridor Master Plan

Map 2-21. Public safety and hospital facilities.

prevent and control vector-borne diseases such as Hanta virus, plague, malaria, tick-borne diseases and arboviral encephalitis.

Mosquito and vector control districts (MVCDs) also play a significant role in public health. These districts are authorized through the Mosquito Abatement and Vector Control District Law (§2000 of California Health and Safety Code), which created special districts to conduct effective programs for the surveillance, prevention, abatement, and control of mosquitoes and other vectors. MVCDs are encouraged to cooperate with other public agencies to protect the public health, safety and welfare. Their authority includes provisions for recovering costs, including penalties, associated with necessary abatement actions to protect public health. There are five independent MVCDs in Los Angeles County, four of which overlap the San Gabriel River corridor and the cities that line the river. These include:

THE GREATER LOS ANGELES COUNTY VECTOR CONTROL DISTRICT: A special district serving 1,300 square miles of Los Angeles County. The district's mission is to: reduce populations of vectors to below nuisance levels (mosquitoes, midges, black flies and Africanized Honey Bees); prevent human infection associated with mosquito-transmitted disease; guard against human infection associated with other vector-transmitted diseases; and prevent the loss of property values and commercial enterprise as the result of vector occurrence and activity. Jurisdictions in the master plan area that are served by this District include Bellflower, Cerritos, Downey, Lakewood, part of Long Beach, portions of Los Angeles County, Norwalk, Pico Rivera, Santa Fe Springs, South El Monte, and Whittier.



COURTESY CENTER FOR DISEASE CONTROL, US DEPARTMENT OF HEALTH AND HUMAN SERVICES

Figure 2-80. A female mosquito lays her eggs in "rafts."

THE SAN GABRIEL VALLEY MOSQUITO AND VECTOR CONTROL DISTRICT: A special district that serves communities in the San Gabriel Valley. The District was founded in 1989 to protect residents from mosquito-borne disease through public education, surveillance, and control of mosquitoes. As the District evolved, additional programs were added. In 1997, the Board of Trustees approved a full vector surveillance and control program. Communities in the master plan area that are served by this district include Arcadia, Azusa, Duarte, El Monte, Industry, and Irwindale.

THE CITY OF LONG BEACH DEPARTMENT OF HEALTH AND HUMAN SERVICES/ VECTOR CONTROL PROGRAM: Protects public health and safety by providing vector control services and education to the citizens of Long Beach. These services include control and elimination of insects and rodents that can transmit diseases and education on how to control them. Portions of the City of Long Beach are also served by the Greater Los Angeles County Vector Control District and the Compton Creek Mosquito Abatement District.

THE COUNTY OF ORANGE VECTOR CONTROL DISTRICT: Formed in 1947 to serve all of Orange County, including communities adjoining the San Gabriel River such as Seal Beach and the unincorporated community of Rossmoor.

THE COUNTY OF LOS ANGELES DEPARTMENT OF HEALTH: Maintains a Vector Management Program within the Department of Health, consisting of three units: Vector-Borne Disease Surveillance, Entomology and Vector Control. The objectives of the Vector-Borne Disease Surveillance Unit are to reduce the risks of exposure to the pathogens of vector-borne disease through early detection and abatement of the factors that enhance the transmission of disease to humans. Routine surveillance of such diseases as sylvatic plague, murine typhus, Lyme borreliosis, the various Hanta viruses and arena viruses is conducted. Vector Control is responsible for rodent abatement activities and licensed animal keeper premises inspection and enforcement throughout Los Angeles County (except for the Mountain & Rural Program and District Environmental Services-Antelope Valley Districts). The unit continues to survey and manage the rodent populations within the Los Angeles metropolitan area as part of its response to the historic Downtown Project.

It is critical that mosquito and vector control agencies be consulted during planning and design of river corridor projects, particularly if the project might result in new vector breeding and disease transmission. Wetland and open space projects that are well designed for mosquito and vector control can mitigate potential social and financial impacts. Many innovative approaches to designing and managing constructed wetlands for vector abatement are available.

chapter 3 The River Corridor Plan

CHAPTER 3

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chapter 3 The River Corridor Plan

3.1 PLAN OVERVIEW

The Master Plan for the San Gabriel River corridor provides a shared, comprehensive vision of the watershed, from the mountains to the ocean. It integrates the multiple goals of enhancing habitat, recreation and open space, while maintaining and enhancing flood protection, water supply and water quality. The Plan identifies priorities, provides guidance, and helps coordinate the over 130 independently sponsored enhancement projects that were identified by the 19 cities along the river, the County of Los Angeles and the many public agencies and community organizations that participated in developing the Master Plan.

The Master Plan reflects the stakeholders' consensus vision of what is possible. This chapter is the heart of the Master Plan, focusing on the concepts for enhancing the river and specific stakeholder projects. It is organized in the following way:

FUTURE VISION. This narrative statement is a portrayal of what the San Gabriel River might be like in coming decades, if the Master Plan is successfully implemented.

PLAN FRAMEWORK. The Plan framework is the guiding structure for realizing the vision and goals developed by the San Gabriel River Steering Committee.

PLAN ELEMENTS. The six Plan elements are Habitat, Recreation, Open Space, Flood Protection, Water Supply and Water Quality, and Economic Development. Each element includes a goal statement and a set of specific objectives and project performance criteria that support that goal.

RIVER ENHANCEMENT PROJECT CONCEPTS. The eight river enhancement concepts are designed to inspire cities, agencies and other stakeholders to create their own projects. They include: Trail Enhancements; Educational Centers; Bridges, Gateways and Connections; Parks and Open Space; Redevelopment and Reclamation; Habitat Enhancement; Water Quality and Water Supply; and Studies.

STAKEHOLDER PROJECTS. The 134 stakeholder projects—new projects and enhancements to existing projects—are presented in the context of the reach in which they are located:

- Reach 1 Headwaters: 7 projects
- Reach 2 San Gabriel Canyon: 8 projects
- Reach 3 Upper San Gabriel Valley: 30 projects
- Reach 4 Lower San Gabriel Valley: 31 projects
- Reach 5 Upper Coastal Plain: 18 projects
- Reach 6 Lower Coastal Plain: 23 projects
- Reach 7 Zone of Tidal Influence: 17 projects

RIVER CORRIDOR-WIDE PROJECTS, POLICIES, PROGRAMS AND DESIGN GUIDELINES. River corridor-wide initiatives will complement and link individual stakeholder projects and will address key issues such as public safety, vector control, maintenance, pollution control, and design image.

CONCEPT DESIGN STUDIES. The five Concept Design Studies are case studies of specific projects that simultaneously address multiple goals and objectives, providing valuable lessons for a multi-objective approach to river corridor planning and project design. They include:

- San Gabriel Canyon Spreading Grounds
- Woodland Duck Farm
- San Gabriel River Discovery Center at Whittier Narrows
- Lario Creek/Zone 1 Ditch
- El Dorado Regional Park

Figure 3-1. The San Gabriel River's natural character is evident as it flows south through the Angeles National Forest to the valley communities of Azusa and Duarte.

3.2 THE FUTURE SAN GABRIEL RIVER

Rediscovering and enhancing the San Gabriel River will be a long process, inspired by the shared vision of the communities of the San Gabriel River Watershed who are working together to make it a reality. The transformation will take time, but as projects are launched along the river, they will slowly but surely lead to dramatic changes. Twenty years from now, a future visitor to the San Gabriel River may find an entirely different place from what we see today...

Spring 2024

I love to take long, leisurely walks along the banks of the San Gabriel River. And, I'm not surprised to see so many others seeking out this green sanctuary that winds through the densely developed cities of the valley and the coastal plain. This is "the river that LA Rediscovered," as a newspaper headline recently put it. Now, the river and the many parks and open spaces lining its banks play a prominent part in the lives of all of us who live nearby. The river has become a very popular gathering place for people from Azusa to Seal Beach to walk, ride their bikes, take in the sights or simply relax and enjoy a bit of the outdoors. And it serves the region in many other ways: after adding just a little more water, life once again flourishes along the river.

From where I stand, near where San Jose Creek approaches the San Gabriel River, I can see children playing along one of the places where it is safe to touch the river and even get your toes wet. To my left, native Sycamore trees shading the bike path cool off the bicyclists who have just stopped for a drink of water and a well-deserved rest. It seems they've been biking to all the education centers that lie along the river. They've just come from the Discovery Center in Whittier Narrows and are heading north to the Peter Schabarum Nature Center by the Santa Fe Dam, and then on to the Forest Gateway Center in Azusa. They had started their journey near the coast at the Los Cerritos Wetlands Restoration Center, and along the way also paid a visit to Pio Pico State Historic Park.

ILLUSTRATION COURTESY OF SIERRA CLUB, ANGELES CHAPTER

Figure 3-2. Local artist Nancy Romero depicted the future of a restored river for people, wildlife and the environment in her painting, "San Gabriel River Confluence Park: A Vision for the Future," commissioned by the Sierra Club.

Until today, I didn't realize that it has become a tradition to combine a trip along the river with visits to all the interpretive centers. This is just another indication of how our perception of the San Gabriel River has changed. Utility rights-of-way are now shared open spaces filled with parks, habitat and people, thanks to new technologies and design concepts that allow multiple uses to co-exist with utility

facilities. We now see the river and the lands adjacent to it as a single, integrated greenway linking all the communities along its path.

From what the bicyclists have been telling me, they have seen many of our natural friends, including some blue herons in the Whittier Narrows area. That used to be a very rare sight, but now it's commonplace. In fact, native wildlife, vegetation and fish are flourishing up and down the river in ways they've not done in decades, even though urban communities lie nearby. A major factor in this restoration is the habitat corridor running from the Puente Hills along the river up into the mountains. There's even a passageway around the Santa Fe Dam to complete the transit for wildlife that in the past couldn't get around that formidable structure.

Part of the habitat corridor is on the landscaped edges of some of the recently reclaimed gravel quarries that lie just to the north of where I now stand. Although many of the quarries are still a vital part of the local economy and will operate for at least two more decades, the first ones to be reclaimed are now an integral part of the new river greenway. A strong public-private partnership between the quarry operators and local cities led to new multi-use developments near the river. Many high-tech companies and other businesses have been drawn to these sites because they offer nearby housing and shops for employees, and provide unique amenities such as parks and natural landscapes with riverfront views.

And there are even more dramatic plans. In a few decades, when all the gravel quarries have ceased operations, we can restore more of the natural floodplain here. We've done that further up the river in Azusa and south at the El Dorado Regional Park in Long Beach. There were large areas of land adjacent to the river that could accommodate a system of setback levees to provide flood control on the natural flood plains. Flood control is, of course, always our main concern, as the massive dams and flood control channels still in place show. However, we have learned how to manage the flood control system to achieve other important benefits. For instance, all new structures and ongoing maintenance take into account the biological needs of wildlife, fish and native plants. You now see fishermen enjoying the results below Morris Dam and other popular fishing spots along the river, including Fish Canyon, where steelhead trout have returned.

Now that I have been walking along the river here for the past hour, I could use a drink of water myself. Fortunately, water is not a problem. We've greatly increased our ability to use water from the San Gabriel River and its tributaries, although we still rely to some extent on imported water. We're even better at capturing stormwater now, handling even the largest amounts of rainfall. And changes in land use practices, such as permeable pavements and expanded groundwater percolation throughout the entire San Gabriel River Watershed, have made it possible.

One of the most important improvements to the river today is clean water. Today, children play in the water without getting sick, unlike the days when trash, bacteria and other pollutants were at levels harmful enough for regular beach closures. Toxic plumes, which once contaminated parts of the groundwater basin, have been thoroughly cleaned up. And, numerous new treatment wetlands in parks and other open space areas along the river remove contaminants and improve water quality—further adding to the water supply. We have also learned how to monitor and maintain these new wetlands so they don't become mosquito breeding grounds. Through these and other water conservation methods, the greatly expanded local water supply has enabled us to add a modest amount of water back into the river —the key to its current transformation—and maintain all existing water rights.

Today, after 20 years of hard work, we can all enjoy the best of what the river has to offer us, while still protecting our homes from flood-waters and meeting our water supply needs. Although it will always be a work in progress, the San Gabriel River has definitely been rediscovered—it is now the common thread that draws people together for inspiration and renewal. I can't wait to see what happens during the next 20 years!

3.3 THE PLAN FRAMEWORK

The Master Plan framework emerged over a three-year period, based on many discussions among stakeholders on the San Gabriel River Master Plan Steering Committee. Its multilevel hierarchy serves as a structure for selecting and planning additional projects. The Plan Framework includes:

VISION STATEMENT. Describes an ideal future condition for the San Gabriel River that will result from successfully implementing the Master Plan.

GOALS. Describe the desired outcomes that must be achieved in order to progress toward the ideal future vision.

OBJECTIVES. Translate the vision and goals into specific, measurable actions and identify what must be done to accomplish the goals. Many objectives are time-specific but others are ongoing.

PROJECT PERFORMANCE CRITERIA. Provide a yardstick to measure progress. Specific projects and programs must meet one or more of the goals and objectives, as measured by the project performance criteria. The criteria act as a reference to assess whether proposed projects and strategies can achieve desired objectives. Criteria are listed by Plan Element on pages 3-6 through 3-11.

RIVER ENHANCEMENT CONCEPTS. Illustrate the types of multi-objective projects that can be replicated all along the river corridor, creating dramatic improvements and an enhanced identity for the river, and helping achieve the vision and goals of the Master Plan.

This Plan framework aligns the shared, long-term vision for the future of the San Gabriel River with the many independently-sponsored projects and programs that are designed to bring about that vision. The Plan Framework is shown on page 3-4.

3.3.1 Master Plan Vision

The San Gabriel River Master Plan Steering Committee developed the overall vision:

The San Gabriel River will be the corridor of an integrated watershed system while providing protection, benefit and enjoyment to the public.

3.3.2 Goals

Initially, the Master Plan responded to three major goals—habitat, recreation and open space—identified by the County of Los Angeles Board of Supervisors when it instructed the Department of Public Works to

SAN GABRIEL RIVER MASTER PLAN FRAMEWORK

COMMUNITY INPUT

Community Vision:
The San Gabriel River will be the corridor of an integrated watershed system while providing protection, benefit and enjoyment to the public.

PLAN ELEMENTS

GOALS	OBJECTIVES AND PROJECT PERFORMANCE CRITERIA (See Chapter 3 text for details on project performance criteria)				
Habitat (H) Preserve and enhance habitat systems through public education, connectivity and balance with other uses.	**H1:** Protect Existing High Quality Habitat and Ecologically Significant Areas (H1.1 H1.2 H1.3 H1.4 H1.5 H1.6 H1.7)	**H2:** Restore / Enhance Aquatic and Terrestrial Riparian and Upland Habitat (H2.1 H2.2 H2.3 H2.4 H2.5 H2.6 H2.7 H2.8 H2.9)	**H3:** Coordinate Efforts to Remove Invasive Species (H3.1 H3.2 H3.3 H3.4 H3.5)	**H4:** Maintain and Enhance Wildlife Corridors as Continuous Linkages (H4.1 H4.2 H4.3 H4.4 H4.5 H4.6 H4.7)	**H5:** Educate Private and Public Land Owners about the use of Appropriate Plants to Use for Landscaping (H5.1 H5.2)
Recreation (R) Encourage and enhance safe and diverse recreation systems, while providing for expansion, equitable and sufficient access, balance and multi-purpose uses.	**R1:** Improve Access to Recreation for all Communities (R1.1 R1.2 R1.3 R1.4)	**R2:** Connect Open Space and Recreation Areas with a Network of Trails (R2.1 R2.2 R2.3 R2.4 R2.5 R2.6 R2.7 R2.8 R2.9)	**R3:** Clearly Identified Recreation Destinations Adjacent to the Corridor as Part of the Riparian System (R3.1 R3.2)	**R4:** Coordinate Recreational Programming to Reinforce Other Goals and Objectives (R4.1 R4.2 R4.3 R4.4)	**R5:** Plan Facilities to Meet Multiple Objectives (R5.1 R5.2 R5.3 R5.4 R5.5 R5.6)
Open Space (O) Enhance and protect open space systems through conservation, aesthetics, connectivity, stewardship, and multi-purpose activities.	**O1:** Create, Expand and Improve Public Open Space Throughout the Region (O1.1 O1.2 O1.3 O1.4)	**O2:** Improve Access to Open Space and Recreation for all Commnities (O2.1 O2.2 O2.3 O2.4 O2.5 O2.6)	**O3:** Promote Stewardship of the landscape (O3.1 O3.2 O3.3 O3.4 O3.5)	**O4:** Develop a Cross-Jurisdictional Safety and Maintenance Program (O4.1 O4.2 O4.3 O4.4 O4.5)	
Flood Protection (FP) Maintain flood protection and existing water and other rights while enhancing flood management activities through the integration of recreation, open space and habitat systems.	**FP1:** Maintain and Improve Flood Protection (FP1.1 FP1.2 FP1.3 FP1.4 FP1.5 FP1.6)	**FP2:** Improve Flood Protection Using Natural Processes (FP2.1 FP2.2 FP2.3 FP2.4 FP2.5 FP2.6)	**FP3:** Improve the Visual Aesthetics of Flood Control Elements (FP3.1 FP3.2)		
Water Quality Supply (WQ) Maintain existing water and other rights while enhancing water quality, water supply, groundwater recharge and water conservation through integration with recreation, open space and habitat systems.	**WQ1:** Improve Quality of Surface Water and Groundwater (WQ1.1 WQ1.2 WQ1.3 WQ1.4 WQ1.5 WQ1.6)	**WQ2:** Optimize Water Resources to Reduce Dependance on Imported Water (WQ2.1 WQ2.2 WQ2.3 WQ2.4)	**WQ3:** Establish Riverfront Greenways to Cleanse Water, Hold Floodwaters, and Extend Open Space (WQ3.1 WQ3.2)		
Economic Development (ED) Pursue economic development opportunities derived from and compatible with the natural aesthetic and environmental qualities of the San Gabriel River.	**ED1:** Connect Communities to the Waterways by Extended Greenways (LU1.1 LU1.2 LU1.3)	**ED2:** Implement design and development standards consistent with Master Plan goals (LU2.1 LU2.2)			

The Plan Framework helps organize current, proposed and future project development efforts and work scopes.

San Gabriel River Enhancement Projects

- **8 Project Concepts**
- **134 Stakeholder Projects**
- **5 Concept Design Studies**
- **Future Project Development Opportunities**

develop a Master Plan for the San Gabriel River. During the two-year information exchange and consensus-building process, the Steering Committee added two goals to acknowledge the vital role of the river and its management for flood protection and water conservation (the abbreviations in parentheses correspond with the Plan framework diagram):

- *Preserve and enhance habitat systems through public education, connectivity, and balance with other uses (H)*
- *Encourage and enhance safe and diverse recreation systems, while providing for expansion, equitable and sufficient access, balance, and multi-purpose uses (R)*
- *Enhance and protect open space systems through conservation, aesthetics, connectivity, stewardship, and multi-purpose uses (O)*
- *Maintain flood protection and existing water and other rights while enhancing flood management activities through the integration with recreation, open space, and habitat systems (FP)*
- *Maintain existing water and other rights while enhancing water quality, water supply, groundwater recharge, and water conservation through the integration with recreation, open space, and habitat systems (WQ)*

An additional goal was added to fully embrace the long term needs of cities along the river that were identified later in the planning process:

- *Pursue economic development opportunities derived from and compatible with the natural aesthetic and environmental qualities of the river (ED)*

3.4 PLAN ELEMENTS

The Plan has six elements that correspond to the goals listed above. The Steering Committee developed multiple objectives that will help meet each goal, and performance criteria that help assess whether proposed projects will achieve the objectives.

3.4.1 Habitat Element (H)

The San Gabriel River can function as a major habitat corridor, connecting fragmented open space areas in Puente Hills and the San Gabriel Mountains. There are many opportunities to replace some of the estuaries, salt marshes, wetlands and riparian habitats that have been lost. For example, the Whittier Narrows area is a critical stopover point for birds on the Pacific Flyway.

Figure 3-3. The river is a de facto habitat corridor adjacent to existing housing development.

The Plan offers opportunities to preserve and restore habitat and wildlife:

- Greater habitat connectivity, enhancements and restoration are possible especially by re-establishing the Puente Hills to San Gabriel Mountains wildlife corridor, and long-term aquatic habitat. In the short term, projects such as the Habitat Passage around Santa Fe Dam provide a key linkage in habitat connectivity along San Gabriel River.
- New wetlands and riparian corridor restoration projects are possible such as the Hellman Ranch Wetlands Freshwater Marsh and Los Cerritos Wetlands Restoration projects will result in over 300 acres of wetland restoration in Seal Beach and Long Beach.
- Native vegetation and landscaping throughout the corridor can lower water use, increase shade and habitat through projects such as the San Jose Creek Habitat and Trail Enhancement Project. This project will increase available habitat through native plants on slopes above the creek.

(See Table, Habitat Element (H), page 3-6)

3.4.2 Recreation Element (R)

The river is already a tremendous regional resource; the mountain area alone has more than 50 hiking trails and a 37-mile bicycle trail running from the edge of the mountains down to the Pacific Coast. Yet, the river can offer many additional recreational opportunities: Horseback riding, bicycling, hiking, picnicking, fishing, swimming, off-road driving, shooting, field activities like soccer and baseball, and even gold panning can be made more accessible to many more residents. The Plan expands and enhances recreation, critical to the almost 4 million residents of the San Gabriel Valley. It includes:

- New and improved access points to the San Gabriel River Bike Trail, as well as other trails to and near the river. In Azusa, the Robert's and Fish Creek Trails can be made more accessible to hikers. In South El Monte, the Thienes Gateway will provide access to trails and a staging area for equestrians. Local schools such as Bellflower High and Cerritos College can benefit from improved bike trail linkages to the San Gabriel River Bike Trail.
- New and improved pedestrian, bicycle and equestrian trails, and bike connections to the Rio Hondo and Los Angeles River bike trails. Rails to trails projects provide communities such as Whittier and Bellflower with improved access to the river. Signage will enhance the usability of existing trails at spreading grounds in Pico Rivera and in Whittier Narrows.

Figure 3-4. The cool river water draws children to the Angeles National Forest.

HABITAT ELEMENT (H)

GOAL: Preserve and enhance habitat systems through public education, connectivity and balance with other uses.

OBJECTIVES	PROJECT PERFORMANCE CRITERIA
H1 **Protect existing high quality habitat and ecologically significant areas**	H1.1 Supports Habitat conservation H1.2 Protects threatened and endangered species' habitats, significant ecological areas and significant natural areas H1.3 Enhances specific species that have experienced decline H1.4 Protects habitats from incompatible adjacent uses H1.5 Identifies indicator species and develops standards and monitoring systems H1.6 Balances wildlife and human uses/recreation H1.7 Controls litter and dumping
H2 **Restore/enhance aquatic and terrestrial riparian and upland habitat**	H2.1 Ensures sufficient flow conditions to support riparian river habitats, aquatic species and fisheries H2.2 Uses reclaimed water for irrigation H2.3 Incorporates habitat areas into development on private and public lands and requires mitigation efforts for impacts to existing habitats H2.4 Protects native vegetation and encourages native plant restoration H2.5 Restores and enhances habitats without compromising flood protection, groundwater recharge or public health H2.6 Reconciles habitat enhancement with water quality issues (i.e., some enhancement may cause increased coliform levels) H2.7 Increases acreage of coastal wetland habitats H2.8 Incorporates monitoring and maintenance procedures into restoration plans H2.9 Supports planting levees with native riparian vegetation wherever possible without compromising flood control capabilities and without encouraging vector breeding H2.10 Encourages development of new habitats without compromising essential public services including groundwater recharge, flood protection, or electrical power transmission by offering legal and operational safeguards such as memoranda of understanding that allow access for regular maintenance and emergency operations.

OBJECTIVES	PROJECT PERFORMANCE CRITERIA
H3 **Coordinate efforts to remove invasive species**	H3.1 Prohibits planting of listed invasive/exotic plant species in parks, recreation, open space or habitat areas H3.2 Encourages use of native plants in parklands or river corridor and adjacent areas H3.3 Removes invasive species and prevents their spread or migration upstream H3.4 Utilizes Best Management Practices for management of habitat areas H3.5 Mediates issues between stock and native fish
H4 **Maintain and enhance wildlife corridors as continuous linkages**	H4.1 Reduces habitat fragmentation by establishing wildlife corridors and nodes H4.2 Minimizes the effects of barriers and choke points that create impediments to wildlife movement H4.3 Utilizes ecologically responsible methods to maintain or reduce populations of wildlife meso-predators (raccoon, feral cats, opossum, skunk) and rodents that may transmit vector-borne diseases and discourages wildlife encroachment into surrounding urban areas H4.4 Maintains or increases the population of prey species (amphibians, reptiles, small mammals and birds) H4.5 Establishes habitat area design standards to meet the tolerances of the most sensitive species that might possibly use a corridor H4.6 Discourages urban development in floodplain and habitat areas H4.7 Enhances connections between remaining wildlife populations so genetic exchange between populations can resume (between Puente Hills, San Jose Hills, Sante Fe Dam floodplain, Whittier Narrows Recreational Area, Cleveland National Forest)
H5 **Educate private and public land owners about the use of appropriate plants to use for landscaping**	H5.1 Forms business partnerships to encourage residents to use native plants and materials that reflect the river/watershed identity while providing habitat value H5.2 Provides guidelines to coordinate habitat preservation efforts between agencies, jurisdictions, and private lands

RECREATION ELEMENT (R)

GOAL: Encourage and enhance safe and diverse recreation systems, while providing for expansion, equitable and sufficient access, balance and multi-purpose uses.

OBJECTIVES	PROJECT PERFORMANCE CRITERIA
R1 **Improve access to recreation for all communities.**	R1.1 Provides active and passive recreation opportunities R1.2 Serves to improve the aesthetic quality of the corridor, the viewshed, and adjacent communities R1.3 Establishes interpretive centers at key nodes along the river system to provide a link between environmental education, recreation, habitat and open space R1.4 Provides educational and interpretative elements that combine art and science for fun, expressive and meaningful exhibits about habitats and landscape processes
R2 **Connect open space and recreation areas with a network of trails.**	R2.1 Provides continuous bike trail, equestrian and public access along riverfronts R2.2 Establishes design standards for trails to safely accommodate multiple users of all ages and abilities R2.3 Includes shade, river access, rest areas, maps/signs, mile markers, landmarks, lighting, emergency call boxes and other amenities for trail users R2.4 Provides for public safety and security along waterways and trails R2.5 Allows trail users to experience a positive sense of the adjacent community's identity as they travel along the river corridor R2.6 Provides a comprehensive network that connects river trails to mountain trails, urban trails, local dams, and beaches R2.7 Connects recreational areas to transit access points R2.8 Provides trails that are designed for low maintenance R2.9 Provides access for routine maintenance and emergency use R2.10 Maximizes access to the river and its related facilities for people with disabilities

OBJECTIVES	PROJECT PERFORMANCE CRITERIA
R3 **Clearly identify recreation destinations adjacent to the corridor as part of the riparian system**	R3.1 Provides site signage and design details to orient visitors throughout the river corridor R3.2 Provides interpretive opportunities with recreational facilities, including informative signage (explaining topics such as natural history, historic landscapes, fire, habitat, stewardship, pollution, hydrology, water supply, etc.)
R4 **Coordinate recreational programming to reinforce other goals and objectives**	R4.1 Provides diverse recreational opportunities (horseback riding, environmental education, fishing, nature walks, clean-up activities, etc.) and engages individuals, interest groups, school groups and families with the River R4.2 Provides programming, site design and signage to increase public awareness about riparian systems and engender stewardship R4.3 Encourages Parks and Recreation Departments to incorporate community gardens and pocket parks, demonstration and restoration projects R4.4 Educates the public about the benefits of catch and release fishing
R5 **Plan facilities to meet multiple objectives**	R5.1 Provides habitat where possible and minimizes impacts to adjacent sensitive areas; serves as a wildlife corridor where appropriate R5.2 Optimizes water flow and sediment removal activities for fish habitat to support fishing activities R5.3 Optimizes water flow and maintenance activities for wildlife habitat to support environmental education activities R5.4 Provides for groundwater infiltration where possible to meet water quality goals R5.5 Provides site design, planting, lighting and maintenance to support habitat goals/objectives R5.6 Provides a corridor-wide perspective to minimize use conflicts and mitigate negative impacts

- New parks and recreation areas, created through land acquisition and land use conversions in Santa Fe Springs, Downey, Bellflower and Azusa.
- Environmental education centers and interpretive sites in Azusa at the new Forest Gateway Interpretive Center, San Gabriel River Discovery Center at Whittier Narrows, Rio San Gabriel Interpretive Trail in Downey, and the Hellman Ranch Wetlands in Seal Beach.

(See Table, Recreation Element (R), page 3-7)

3.4.3 Open Space Element (O)

The San Gabriel River is a "living" river, with wide-open spaces, greenery, running water, and the sounds of birds and other wildlife. The Plan includes projects that enhance and reserve open space for future generations:

- Enhancements to existing open space areas within Southern California Edison and Los Angeles Department of Water and Power utility easements. Some improvements are already being made by the Cities of Baldwin Park and Lakewood.
- The open space surrounding reservoirs and spreading grounds can be enhanced selectively for use by the community. The San Gabriel and Rio Hondo Coastal Basin Spreading Grounds in Pico Rivera are currently accessible to the public. Proposed studies also reflect an interest in making the San Gabriel and Morris Dam Reservoirs available for recreational purposes. Care must be taken to maintain public safety and avoid liability as public access is improved at these facilities.
- New habitat areas within the San Gabriel River; it is itself a long, contiguous stretch of open space. Habitat will be created in new open space projects that take place in utility easements, land reclamation projects and numerous smaller projects.
- Gravel quarries, rails-to-trails railroad easements, and old commercial and industrial lands. These areas can be converted and reclaimed over time, yielding additional open space.

(See Table, Open Space Element (O), below)

OPEN SPACE ELEMENT (O)

GOAL: Enhance and protect open space systems through conservation, aesthetics, connectivity, stewardship, and multi-purpose uses.

OBJECTIVES	PROJECT PERFORMANCE CRITERIA
O1 **Create, expand and improve public open space throughout the region**	O1.1 Establishes priorities for land acquisition, coordinating targeted land acquisitions with land use planning O1.2 Recycles brownfields with agency collaboration O1.3 Coordinates land management policies and procedures among jurisdictions O1.4 Includes restored native habitats within open space
O2 **Improve access to open space and recreation for all communities**	O2.1 Provides for active and passive recreational uses O2.2 Incorporates passive/low impact recreational uses and stormwater re-capture O2.3 Evaluates access by population density, distance and time for each type of open space. O2.4 Meets site design standards for special user needs O2.5 Improves the aesthetic quality of the corridor, the viewshed, and adjacent communities O2.6 Includes adequate parking, access via public transportation, and facilities for buses
O3 **Promote stewardship of the landscape**	O3.1 Utilizes drought tolerant and native plant materials O3.2 Uses Best Management Practices that support habitat and water quality goals O3.3 Identifies historical sites and cultural landscapes O3.4 Supports community gardens and water-wise and native plant gardens O3.5 Uses conservation easements to provide incentives to expand open space
O4 **Develop a cross-jurisdictional safety and maintenance program**	O4.1 Establishes public safety measures to reduce crime in the river corridor O4.2 Encourages connections with groups that sponsor volunteer clean-up activities O4.3 Promotes fire safety and awareness O4.4 Reduces debris flows O4.5 Reduces habitat and recreational conflicts O4.6 Reduce vector breeding potential and encourages public education of vector-borne diseases and precautions

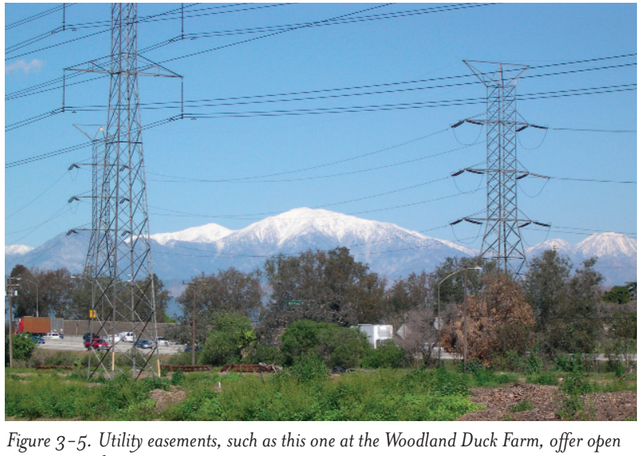


Figure 3-5. Utility easements, such as this one at the Woodland Duck Farm, offer open space area enhancement opportunities.

3.4.4 Flood Protection Element (FP)

The Plan maintains and enhances all existing flood protection elements in two ways. First, all projects, even those that primarily achieve other Plan goals, must maintain existing flood protection at all times. Second, projects should improve flood protection whenever feasible.

Within Reach 4, the river has 5,000 to 30,000 cfs in excess capacity for a 100-year flood event. The vegetation in the reach that is regularly mowed down could be allowed to grow and provide significant habitat. Two short stretches in Pico Rivera and Long Beach are under-capacity for a 100-year storm. These areas present opportunities to develop flood protection measures using natural processes in adjacent open spaces, or further upstream. Feasibility studies may lead to identification of opportunities for pushing out levees for floodplain restoration and increased capacity, thus improving flood protection through natural processes.

(See Table, Flood Protection Element (FP), below)

Figure 3-6. The low-flow channel moves water during the dry season.

FLOOD PROTECTION ELEMENT (FP)

GOAL: Maintain flood protection and existing water and other rights while enhancing flood management activities through the integration of recreation, open space and habitat systems.

OBJECTIVES	PROJECT PERFORMANCE CRITERIA
FP1 **Maintain and improve flood protection**	FP1.1 Maintains existing flood protection at all times FP1.2 Reduces volume and velocity of stormwater runoff where feasible FP1.3 Maintains current or lower Water Surface Elevation (WSE) design standards FP1.4 Maintains or reduces floodwater velocity FP1.5 Develops networks of stormwater detention areas FP1.6 Ensures liability is not increased
FP2 **Improve flood protection using natural processes**	FP2.1 Utilizes non-structural flood control where feasible FP2.2 Identifies opportunities for use of naturalized low-flow streambeds FP2.3 Restores local streams FP2.4 Coordinates maintenance of the flood protection system with habitat needs FP2.5 Recycles sediments from sluicing and maintenance operations FP2.6 Reduces the amount of precipitation that is converted to urban runoff (decreases the acreage of impermeable surfaces)
FP3 **Improve the visual aesthetics of flood control elements**	FP3.1 Fosters multi-purpose flood control infrastructure to accommodate recreation, trails and habitat FP3.2 Establishes visual design standards for flood control devices

Figure 3-7. The Rio Hondo Spreading Grounds is one of the San Gabriel River's most productive recharge facilities.

3.4.5 Water Supply and Water Quality Element (WQ)

Residents of the San Gabriel Valley receive water supplies from local rainfall, reclaimed sources, and imported sources (from Northern and Eastern California and from Colorado). Every drop of water flowing in the San Gabriel River is appropriated to a water rights holder. Surface water rights are owned by two entities: the San Gabriel River Water Committee and the San Gabriel Valley Protective Association. The water is then distributed for direct use, or in the case of the Protective Association, it is used to recharge the underground aquifer on behalf of water producers in the San Gabriel River system. The San Gabriel River Watermaster manages groundwater resources in the Main San Gabriel Basin, including administering all adjudicated water rights. The Central Basin Watermaster and West Coast Basin Watermaster have the same roles for those groundwater basins located to the south. Water rights also establish the relationship between surface and groundwater flow from the upper portion of the river above Whittier Narrows to the lower portion of the river, ensuring that the Central and West Coast Basins receive their entitled share of waters within the supply system of the San Gabriel River Watershed.

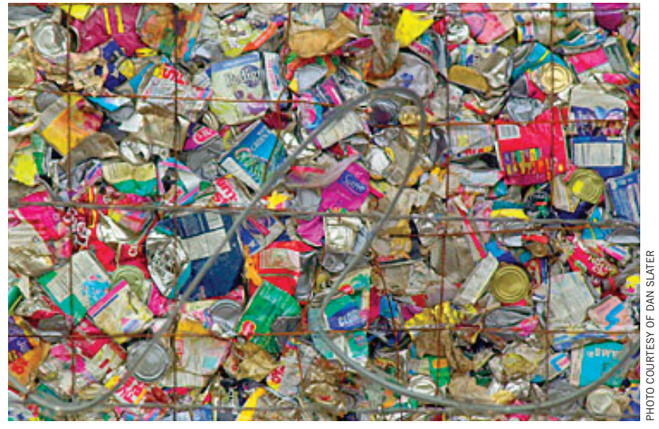


PHOTO COURTESY OF DAN SLATER

Figure 3-8. Trash is a serious problem in the river.

WATER SUPPLY AND WATER QUALITY ELEMENT (WQ)

GOAL: Maintain existing water and other rights while enhancing water quality, water supply, groundwater recharge and water conservation through integration with recreation, open space and habitat systems.

OBJECTIVES	PROJECT PERFORMANCE CRITERIA
WQ1 **Improve quality of surface water and groundwater**	WQ1.1 Reduces dry weather urban runoff discharge into waterways WQ1.2 Expands and enhances groundwater infiltration and recharge WQ1.3 Uses on-site opportunities to reduce impermeable surfaces and increase infiltration WQ1.4 Assists cities in meeting water quality requirements for Total Maximum Daily Load (TMDLs) and National Pollution Discharge Elimination System (NPDES) WQ1.5 Employs phyto-remediation to treat water
WQ2 **Optimize water resources to reduce dependence on imported water**	WQ2.1 Expands groundwater recharge facilities to increase water supplies WQ2.2 Extends the distribution and range of uses of reclaimed water WQ2.3 Encourages onsite collection of stormwater for irrigation and percolation, where consistent with water rights WQ2.4 Maintains conservation of local water
WQ3 **Establish riverfront greenways to cleanse water, hold floodwaters, and extend open space**	WQ3.1 Utilizes open spaces and landscaped areas to filter and cleanse runoff. WQ3.2 Prevents reduction of water conservation facilities

Master Plan projects must be designed to protect and enhance the existing water supply and water rights. Projects at the local spreading grounds in Azusa, Irwindale and Pico Rivera maintain existing water rights and groundwater recharge. Several water supply opportunities are also included, such as additional recharge opportunities.

Meeting water quality objectives is integrated into the Plan. Implementing Total Maximum Daily Loads (TMDLs, a water quality measurement) is a high priority for municipal stakeholders, and the Master Plan proposes projects to directly address this issue, including treatment wetlands in Irwindale, at the Duck Farm (see Section 3.8.2) and in Long Beach. Other measures include sediment management, a trash boom on Coyote Creek and urban runoff diversion in Seal Beach. The Plan describes Beneficial Uses, as well as 303(d) listed constituents or pollutants to the river and its major tributaries. The Plan also encourages projects that address water quality treatment solutions.

(See Table, Water Supply and Water Quality Element (WQ), page 3-10)

3.4.6 Economic Development

Reconnecting communities to the San Gabriel River by making it a more accessible, visually appealing, and environmentally friendly place can be a principal element in the economic development plans of cities located along the river corridor. The Plan supports and complements economic use of the river that meets environmental goals. Reclaiming old industrial lands, gravel quarries and vacant lots can provide land for mixed-use projects that combine housing, business and industry, commercial developments, parks, habitat areas, and urban river frontage. Although gravel quarries are still active, closure plans such as the one for Hanson Quarry include open space and parkland, as well as industrial and commercial developments. The result will be more opportunities for "riverfront" communities to embrace, rather than fence off the river. Revitalizing the river as a living "greenway" will increase its value for recreation, habitat and people and enhance the value of adjacent properties.

(See Table, Economic Development Element (ED), below)

Figure 3-9. New businesses along the river can capitalize on proximity to the river through the application of quality design and development standards.

ECONOMIC DEVELOPMENT ELEMENT (ED)

GOAL: Pursue economic development opportunities derived from and compatible with the natural aesthetic and environmental qualities of the San Gabriel River.

OBJECTIVES	PROJECT PERFORMANCE CRITERIA	OBJECTIVES	PROJECT PERFORMANCE CRITERIA
ED1 **Connect communities to the waterways by extended greenways**	ED1.1 Creates new access points ED1.2 Develops trails to and along the waterways ED1.3 Promotes development of public spaces	ED2 **Implement design and development standards consistent with Master Plan goals.**	ED2.1 Provides incentives to participating adjacent landowners ED2.2 Educates participating landowners about potential liability and protective measures

3.5 RIVER ENHANCEMENT CONCEPTS

The eight river enhancement concepts, defined by type of physical improvement, are designed to inspire cities, agencies and other stakeholders to create their own projects. Projects based on these concepts can be designed to serve multiple plan elements. Replicating these projects all along the river will create dramatic improvements and an enhanced identity for the river as a whole.

3.5.1 Trail Enhancements

Trail enhancements will create a cohesive, identifiable and comfortable regional trail network, using the river as a framework. As individual projects are completed, they will link to the river and create an enhanced "sense of place" for community residents. Elements in this trail design framework include:

- Signage
- Fencing
- Landscaping (Native plants and trees, stones and boulders as appropriate)
- Trail Surfacing
- Lighting
- Site Amenities
- Gateways

(See Figure 3-10.)

Figure 3-10. Trail enhancements help create an identity for the river.

3.5.2 Educational Centers

Educational centers will inform and educate visitors about the river and its environs—ideal for school and youth groups, as well as casual visitors. A network of centers along the river creates a multifaceted chain of living museum experiences. Each will have a unique program and purpose, depending on location and the local environment. Ecologically designed, these centers touch the river as lightly as possible, incorporating environmentally friendly building materials and the native landscape palette. Centers accommodate both large and small groups, indoors and outdoors. Interpretive elements throughout the landscape also enhance the visitor experience. (See Figure 3-11.)

3.5.3 Bridges, Gateways and Connections

Cohesive design of elements such as bridges, trails and other access points, help create "Gateways" that reconnect the river with residential areas and commercial districts. Gateways provide easily recognized points of access, enhance the river's visibility and identity, and symbolically link it to the communities it flows through. (See Figure 3-12.)

3.5.4 Parks and Open Space

Open space in many forms—parks, playgrounds, greenways, and natural areas—provide residents of the densely developed communities along the San Gabriel River with easily accessible opportunities to enjoy the pleasures of a more natural, varied landscape. New and improved recreational and park facilities along the river carefully balance active recreational uses such as sports fields and playgrounds, with more passive uses that are habitat-friendly. Additional recreation is critically needed for many of the communities along the river corridor. Recreational programming ensures that these uses remain compatible with other functions of the river and builds a larger constituency of groups and individuals who are aware of the importance of the river in their community. (See Figure 3-13.)

Figure 3-11. Educational Centers will draw school groups and visitors.

Figure 3-12. Gateways and bridges signal a river entrance.

3.5.5 Redevelopment and Reclamation

Land reclamation transforms landscapes from previous urban and industrial uses to make them available for other economically viable and ecologically sustainable uses. For example, gravel quarries, old parking lots, exhausted mines and other unused land can become parks, residential and commercial development, restored habitat areas, "green" golf courses and river frontage. Reclamation and closure plans will emerge from negotiation and partnership with the current owners and operators of these properties. The cumulative effect of reclamation along the river offers increased open space, important groundwater protection and recharge, and economic development potential. (See Figure 3-14.)

3.5.6 Habitat Enhancement

Previously, local plant species provided habitat for native fish, birds, and other wildlife. In specific settings on and near the river, protecting and re-creating original environmental conditions can help native plant and animal communities flourish in a place that was once their natural home. Where feasible, hydrological and biological functioning of the river and wetlands is being restored to support native plant and animal communities. This includes removing the exotic plants that have now overwhelmed the local plant species. And new connections between existing habitat areas will help wildlife negotiate an otherwise dense urban area. (See Figure 3-15.)

3.5.7 Water Quality and Supply

Spreading basins, bio-engineered wetlands, rubber dams and other water resource enhancement projects expand water supply capabilities such as groundwater recharge, while also helping cities and agencies meet water quality objectives. The cumulative impact of water supply projects will increase the local water supply, increase the use of reclaimed water, and decrease the amount of imported water needed. Water treatment will provide cleaner waters for other beneficial uses such as recreation and habitat.

By mimicking natural water purification processes, bio-engineered wetlands and streams can effectively meet the objectives of multiple plan elements. Wetlands usually occur along riparian corridors or in artesian areas where the groundwater table is high and where water appears on the surface when the ground is saturated. Engineers and planners can design bio-engineered wetlands in large open spaces downstream of areas where industrial, commercial or heavy residential uses generate polluted stormwater runoff. As shown here, new wetlands send urban runoff through a filter of

Figure 3-13. More people will be able to enjoy recreation along the river.

Figure 3-14. Reclamation projects can creatively blend engineering and ecology.

Figure 3-15. New habitat areas can be designed to allow controlled public access and habitat-friendly uses.

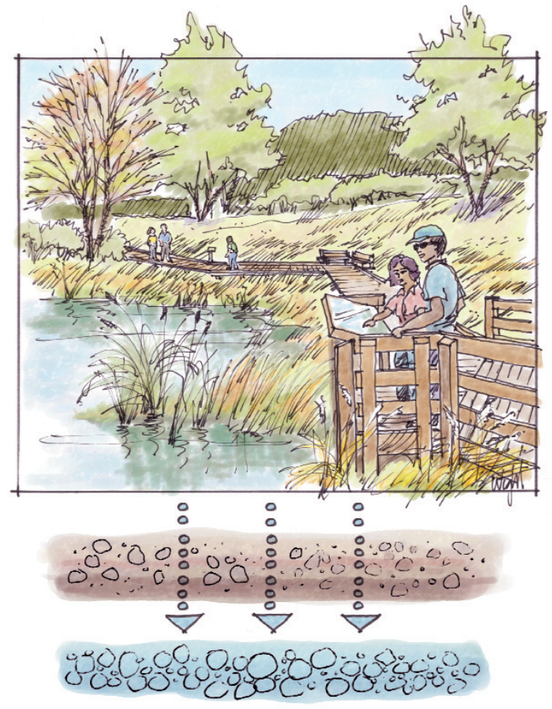


Figure 3-16. Bio-engineered wetlands can increase the local water supply and provide passive recreation opportunities.

vegetation and soil that cleanses the water. Water either percolates down and recharges the groundwater, or continues as a surface stream back to the river. (See Figure 3-16.)

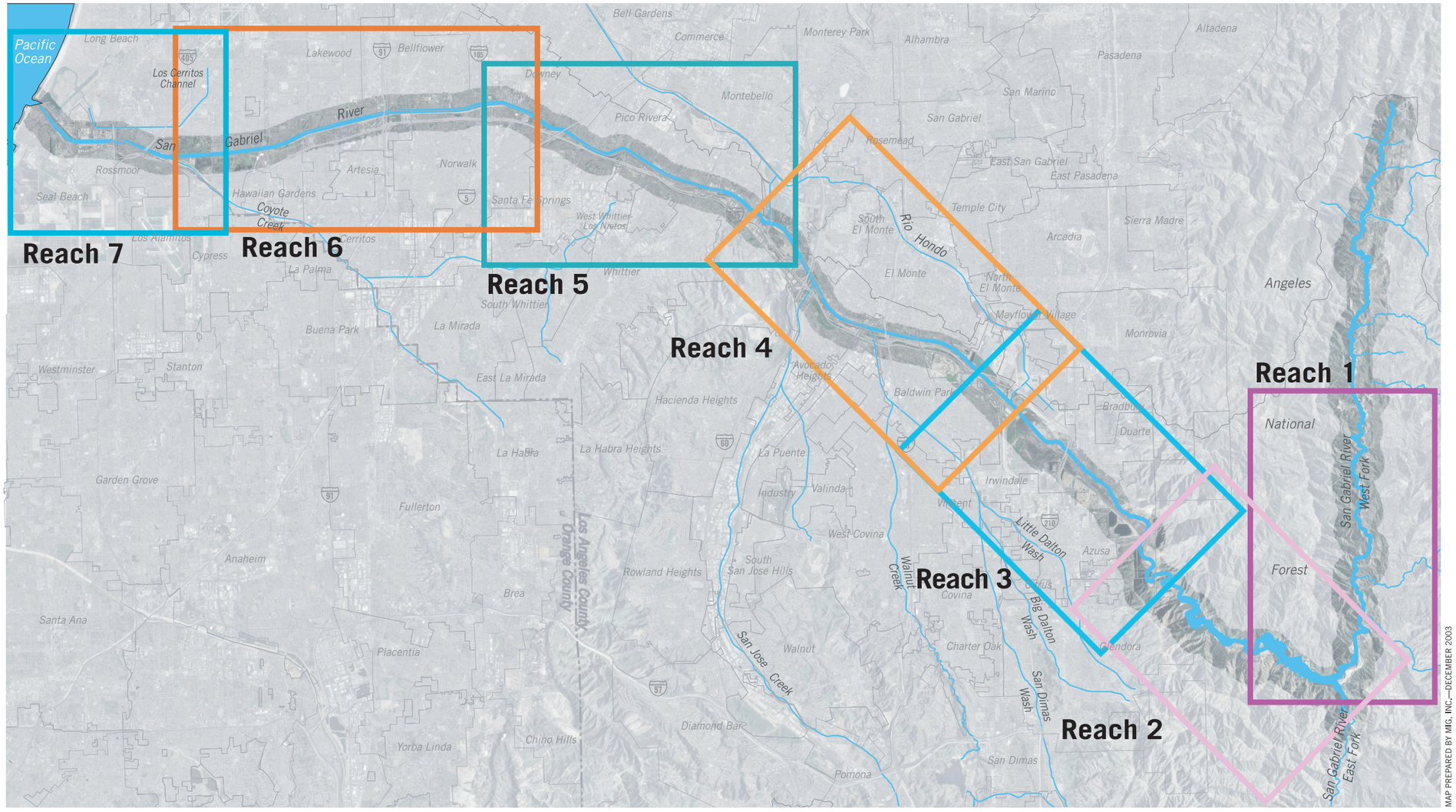
3.5.8 Studies

Technical and social feasibility research is now exploring the potential for river enhancement projects at specific site locations. These studies will determine the viability of a suggested opportunity, evaluate optional project designs, estimate costs and benefits, and identify likely funding sources—and may lead to specific projects at these targeted locations or to policy changes at a local or regional level. Other studies are larger in scale, looking at complex systems such as watersheds on a regional basis. These special studies will determine the best long-term management strategy for ecosystem and economic health, land use and water resource management decisions. Specific project and policy recommendations will be derived as well. (See Section 1.5 for more information.)

3.6 MASTER PLAN PROJECTS

Stakeholders representing cities and government agencies, and representatives of local community-based non-profit organizations, developed 134 river enhancement projects (categorized here by reach). They are either entirely new projects or an enhancement of an existing project to increase its river-friendly functioning. Implementing these projects all along the corridor will help achieve the future vision of the river.

Each project is labeled on reach maps and color-coded by the river enhancement concept that best applies (see Sections 3.5.1–3.5.7). Virtually all projects are multi-objective and fall into several river enhancement concept categories. The accompanying text contains key information about each project. Taken together, the reach maps provide a graphic picture of the spatial distribution of projects and the stakeholders' collective vision. In addition, a summary overview is available in the Master Plan Projects Action Grid (Appendix A).



Source: County of Los Angeles Department of Public Works and Rivers and Mountains Conservancy

Key to Master Plan Reaches

County of Los Angeles Department of Public Works

San Gabriel River Corridor Master Plan

Map 3-1. Key to Master Plan Reaches.

3.6.1 Reach 1: Headwaters

Location

This reach plays a special role in the development of the river as we know it today. The West Fork of the San Gabriel River actually begins about 12 miles above Cogswell Dam at the very top of the watershed, near Red Box. It has a unique west to east flow at that point, through undisturbed riparian and woodland habitats. The project area begins near Cogswell Dam. The West Fork flows east from the dam for about 8 miles, where it meets the North Fork, then for another 2 miles to its confluence with the East Fork of the river. (The North Fork and East Fork are not in the project area.)

Character

Located completely within the Angeles National Forest, the Headwaters Reach is characterized by wide, steep canyons, heavily forested slopes and a natural river bottom providing habitat for native fish and other wildlife. Only here in the headwaters is the river unaltered by human-built structures (with the exception of the Cogswell Dam) and is mainly uninhabited. This reach captures the heaviest rainfalls in the watershed, over 30 inches a year, which results in significant flows during the winter and early spring.

Key Issues

As it passes through the Angeles National Forest, the San Gabriel River's West, North and East Forks offer tremendous recreational opportunities for the heavily urbanized communities of LA County. About 3.5 million people visit the Angeles National Forest each year—with inevitable effects on the forest and river environments. The issue is how to balance vitally needed recreational use while protecting delicate habitat areas and maintaining flood prevention, water quality, and other beneficial river functions.

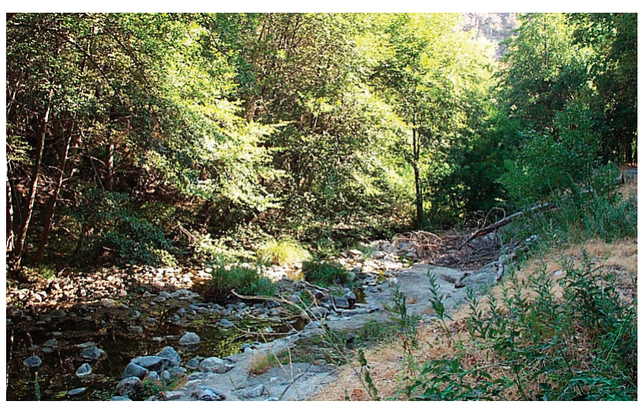


Figure 3-17. The West Fork is a pristine environment.

Projects Overview

Two significant planning efforts are underway for the river and forest: the San Gabriel River Watershed Management Plan and the Forest Plan. These plans will have a significant impact on natural resource management in both the Angeles National Forest and the urbanized areas of the watershed. Among the projects proposed for the Headwaters Reach are two that have been initiated by recreation-interest groups and include about 5 miles of new trails. Those projects can play an important role in protecting the river's natural beauty while providing recreational opportunities for their members and other enthusiasts. Each project presents possible solutions that can be applied to future efforts, especially as continued population growth places more pressure on the Angeles National Forest. (See Map 3-2 for locations of Reach 1 projects.)

R1.01 Fisherman's Trail Above Cogswell Dam

The Fly Fishers Club of Orange County (FFCOC) has proposed establishing a recreational easement (Trail) across or around the LADPW facility at Cogswell Dam allowing access to the upper West Fork of the San Gabriel River. Pedestrian access to the River was blocked by completion of Cogswell Dam in 1934. Project implementation will require close coordination with LADPW and the U.S. Forest Service. Access to the West Fork of the San Gabriel River above Cogswell Dam now requires a very long hike through the mountains from the area near Mt. Wilson. A trail around Cogswell Reservoir would involve access through LADPW and USFS controlled property. An alternative route would require a new trail around either the north or south side of the reservoir. The Project's scope could be expanded to include access across or around Cogswell Dam, which was recently closed by LADPW due to increased security considerations. This recent closure cut off access to the existing Devil's Canyon trail, the San Gabriel Wilderness area and the stream in Devil's Canyon. The Fisherman's Trail project might be able to provide access to both the West Fork and to the existing Forest Service trail into Devil's Canyon.

R1.02 Sediment Management Plan (Cogswell Reservoir)

Under the Sediment Management Plan, Cogswell Dam will be cleaned out about every 10 years, by means of mechanical excavation. NEPA and CEQA reviews for the Sediment Management Plan were concluded in 1997 and 1998, respectively.

R1.03 Long Term Management Plan: West Fork, San Gabriel River

This plan, developed in 1989 by the West Fork Working Group (WFWG), addresses management of the West Fork, including Cogswell Reservoir. The WFWG includes the USDA Forest Service, County of Los Angeles Department of Public Works (LADPW), California Department of Fish and Game, California Trout, Incorporated, Main San Gabriel Basin Watermaster, San Gabriel Valley Protective Association, and the San Gabriel Water Committee. Six objectives of the Plan include flood control, dam safety, water rights, fisheries optimization, recreation and land use management.

R1.04 Forest Master Plan Update

The four southern National Forests including Angeles, San Bernardino, Los Padres and Cleveland, are updating their Master Plans. The Forest Plans address issues of resource management, recreational access issues, habitat and other concerns of forest stakeholders.

R1.05 Off-Highway Vehicle Area Improvements

Near the eastern edge of the Headwaters Reach, just above its confluence with the East Fork, is a large, flat river bottom area that is a favorite spot with off-highway vehicle users. The Azusa Canyon Off-Roaders Association (ACORA) is proposing improvements to existing stream crossings and habitat restoration for the Santa Ana sucker to minimize impacts from off-road vehicle use, while providing selected amenities for the benefit of off-highway enthusiasts and other river visitors.

Figure 3-18. Off-road vehicle enthusiasts often congregate at the East Fork confluence.

Map 3-2. Master Plan Projects: Reach 1.

R1.06 San Gabriel River Watershed Management Plan Above Whittier Narrows

This planning study by the San Gabriel Mountains Regional Conservancy (SGMRC) is funded by Proposition 13. The project will develop land use-based recommendations that address water quality and supply, habitat, recreation and open space, and land and water stewardship opportunities. The "Think River! Youth Watershed Conference" is an outgrowth of this project. Within the Angeles National Forest, the focus will be on the heavily used areas of Highway 39 and the North and East Forks of the San Gabriel River. In the lower urbanized sub-watersheds of San Jose and Walnut Creeks, the focus will be on water quality, education, stewardship, habitat linkages and open space.

R1.07 San Gabriel Watershed Habitat Restoration Assessment Project

This study will augment the San Gabriel River Watershed Management Plan (R1.06) by mapping and assessing current habitat conditions in the San Gabriel River Watershed. It will also evaluate the opportunities and constraints for habitat restoration along urban corridors, undeveloped areas, and protected open spaces in a manner that will also protect other resources such as water quality. Attention will be given to potential wildlife corridor improvement opportunities and protection of regional species biodiversity.

3.6.2 Reach 2: San Gabriel Canyon

Location

The San Gabriel Canyon Reach is about 8 miles long. It begins where the main stem of the river joins the East Fork and turns south, and ends at the mouth of the canyon, 1.5 miles south of Morris Dam, just before entering Azusa. A natural flowing section of the river meanders between the San Gabriel Dam and the Morris Dam Reservoir.

Character

This is a breathtaking reach, still within the Angeles National Forest. Here, the river widens as it turns southward and travels down the dramatically steep San Gabriel Canyon. Two major flood control facilities, the San Gabriel and Morris Dams and Reservoirs, are key features of this stretch. The San Gabriel Dam backs sediments up into the East and West Forks—the original river bottom may be 100 feet or more beneath the decades of sediment build-up behind the reservoir.

Figure 3-19. The steep slopes of San Gabriel Canyon provide a dramatic backdrop to the meandering San Gabriel River.

Key Issues

The San Gabriel Canyon Reach has significant recreational potential, but that must be carefully balanced with fundamental flood protection, water supply and water quality functions that take place here.

Projects Overview

Several of the projects in this reach explore the recreational carrying capacity of the river, particularly as they relate to water. The projects determine whether and where river water might be used for recreational pursuits, how to protect water quality where visitor access is deemed feasible, and whether to add water to create year-round flows adequate for supporting fish habitat. These projects could add 40 acres of park and open space and 2 miles of additional trails. (See Map 3-3 for locations of Reach 2 projects.)

R2.01 Black-Fly Vector Research

On behalf of the FFCOC, a funded research study conducted by consultants of the San Gabriel Mountains Regional Conservancy is evaluating the river's black fly populations, a source of fish food. Fluctuations in black fly populations have implications for stream ecology, interdependent organisms, bio-indicators, as well as human health and vector control methods.

R2.02 San Gabriel Reservoir Recreational Study

This 1992 LADPW study investigated expanding non-water oriented recreational activities at or near the reservoir. Its recommendations need to be updated in light of today's increased security considerations.

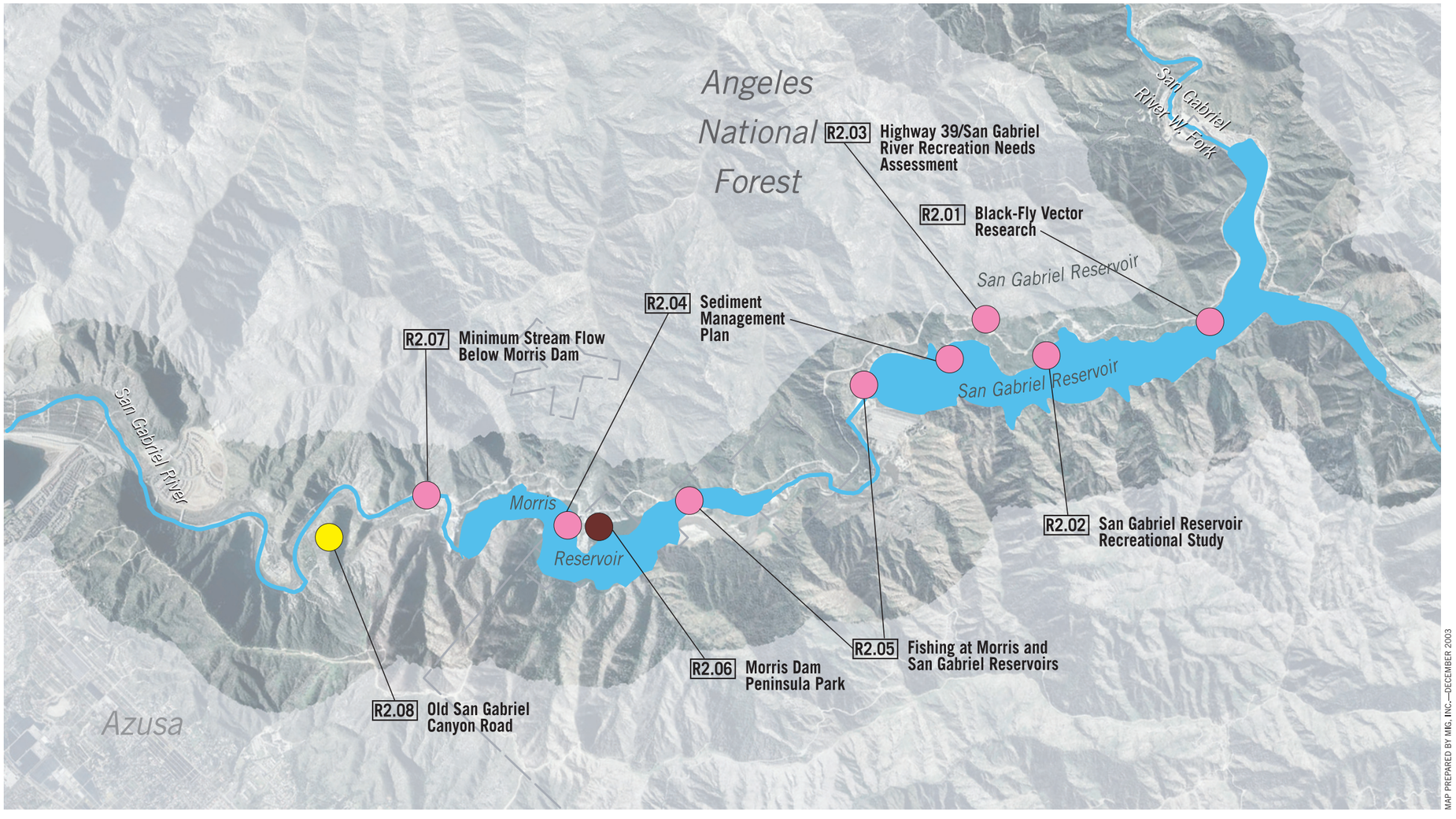
R2.03 Highway 39/San Gabriel River Recreation Needs Assessment

The SGMRC is developing a proposal to address issues relating to high usage along the Highway 39 area of the river, for a Proposition 13 Nonpoint Source Pollution grant. A significant amount of trash has accumulated in the river and along Highway 39. Toilet facilities are insufficient for the thousands of visitors, and more parking, trash and ash receptacles, and information/interpretive kiosks are needed. A needs assessment study will explore current recreational usage and needs, as well as potential impacts on habitat and water quality.

Figure 3-20. Lack of visitor facilities and amenities are serious issues for visitors to the Angeles National Forest.

R2.04 Sediment Management Plan (San Gabriel Canyon)

A current LADPW study explores options for removing sediment that has accumulated behind both the San Gabriel Dam and the Morris Dam. In the wake of the 2002 Curve and Williams Fires, LADPW is planning to undertake a 5-million cubic yard emergency clean out of San Gabriel Reservoir, which is anticipated to start in 2004 and last for several years.



Map 3-3. Master Plan Projects: Reach 2.

R2.05 Fishing at Morris and San Gabriel Reservoirs Study

This FFCOC study will investigate the feasibility of providing limited access to Morris and San Gabriel Reservoirs for non-body contact fishing and related recreational activities, including allowing float tubes and non-motorized boats onto the reservoirs. The feasibility study will use the existing Department of Health Services Guidelines for non-body contact public access onto reservoirs, and access limitations successfully employed at other locations where recreational fishing is permitted at public reservoirs. It will address all concerns related to necessary operations at LADPW facilities. The study recognizes that access may be seasonally limited, with further restrictions required to accommodate maintenance of the reservoirs and associated facilities. As with all projects in the Master Plan, it will be important to ensure that the multi-objective framework of habitat, recreation, open space, flood protection, water quality, and regulatory compliance is maintained. Both LADPW and the Upper San Gabriel Valley Water District will jointly fund the feasibility study.

Figure 3-21. The U.S. Navy tested over 50 types of torpedoes and bombs in the Morris Dam Reservoir during World War II.

R2.06 Morris Dam Peninsula Park

The largest available open space along the national forest section of the river, this 40-acre peninsula juts into the Morris reservoir at the former site of a Navy torpedo testing facility adjacent to Highway 39. It can be reclaimed and developed for recreational day-use, over-night camping, trails and an interpretive center for the national forest, including a historic military interpretive site. The development of this park would provide additional needed park facilities with parking and other site amenities to relieve the serious weekend congestion of Angeles National Forest visitors.

R2.07 Minimum Stream Flows Below Morris Dam Project

Upon further consideration among all interested groups, this proposal is withdrawn for the time being.

R2.08 Old San Gabriel Canyon Road

This two-mile County service road extends south from Morris Dam at a pump station down to Azusa by the El Encanto Restaurant. A City of Azusa project, this road can provide river access for hikers and bikers and could also be linked to the nearby San Gabriel River Bike Trail via the Canyon Inn and El Encanto properties. A safe crossing of Highway 39 is needed.

3.6.3 Reach 3: Upper San Gabriel Valley

Location

The Upper San Gabriel Valley Reach extends seven miles from the mouth of the San Gabriel River Canyon above Azusa, south to the Santa Fe Dam in Irwindale.

Character

This complex, tenuous urban/wildland interface features large remnants of natural wilderness that commingle with residential, gravel mining and industrial land uses. The mouth of the canyon opens up to the broad alluvial plains of the Upper San Gabriel Valley in Azusa as the river leaves the mountains. This reach lies above the San Gabriel Basin, which begins at the base of the impermeable bedrock layers of the mountains. The reach has very deep alluvial deposits, offering some of the most productive recharge opportunities in the river system. The river itself is mainly in a natural state with sandbars and riparian and alluvial fan sage scrub habitat. However, the soft-bottomed channel is confined to engineered

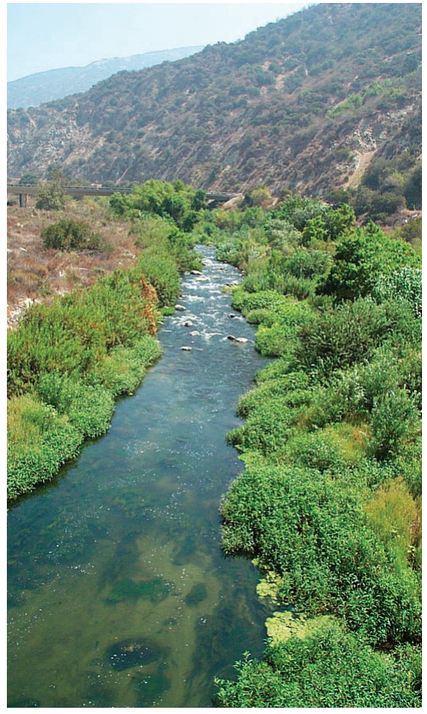


Figure 3-22. The river flows through a natural floodplain in this area.

levees and check dams crossing the river at regular intervals. The Santa Fe Dam Recreation Area is a large open space with stands of alluvial fan sage scrub.

Key Issues

This “edge zone” is in a period of transition. Over the coming decades, quarry sites and other industrial uses will gradually phase out, creating significant restoration opportunities for parks, trails and habitat, as well as economic development opportunities. Land acquisition for open space protection of remaining undeveloped lands is a long-term strategy. In the

short-term, more readily available river access can be provided, while also retaining all-important flood prevention and water conservation functions. Access to in-mountain creek trails is difficult.

Projects Overview

More than half of the 29 projects proposed for this reach are trails or similar projects that can reconnect people to the nearby, but inaccessible, river. Other projects aim to create new parks and open space that restore natural beauty to the area and provide habitat. New and re-opened interpretive centers will help explain the area's natural and cultural significance. (See Map 3-4 for locations of Reach 3 projects.)

R3.01 Azusa Canyon River Park

This City of Azusa project aims to acquire land to develop a river-focused park at the southern end of San Gabriel Canyon. It includes a visitor's center surrounded by a native plant garden, interpretive signage, restored habitat areas, and paths leading down to the river. Landscaping, picnic tables and a small play area will encourage national forest users to visit. Camping in a natural park area will be available. The City of Azusa has already acquired part of the park. This park is adjacent to the Rainbow Canyon Equestrian Center.

R3.02 San Gabriel River Bike Trail Extension

This project will extend the 38-mile regional bike trail from its current terminus near the southern edge of San Gabriel Canyon by the proposed Interpretive Center, to the proposed Azusa Canyon River Park and eventually all the way to Angeles National Forest. A one-mile extension is being built to the Mountain Cove development, near the mouth of the San Gabriel Canyon

R3.03 Robert's Creek Trail Access

Public access to Robert's Creek will be provided through Mountain Cove private residential development, from Azusa Canyon River Park and/or the San Gabriel River Bike Trail Extension.

R3.04 Robert's Creek Restoration

This will be a habitat restoration and park expansion in the canyon area behind Mountain Cove.

R3.05 Westside Trail

A new, multi-purpose trail at the far edge of the flood plain, running parallel to the San Gabriel River on its west side and opposite to the San Gabriel River Bike Trail will be developed. This one-mile trail will run along the San Gabriel Valley Gun Club and provide a connection between the Robert's Creek and Fish Creek Trails.

R3.06 Forest Gateway Interpretive Center

This project will create a new USDA Forest Service Ranger Station and Interpretive Center at the entrance to Azusa Canyon. Diverse educational opportunities will provide information about the canyon, the national forest and native habitat. "Green" building practices and watershed sensitive design principles will be incorporated into the site. North East Trees has already developed the building and site designs for this open space area. The project is currently funded and will be built in 2004.

R3.07 Glendora Ridge Road Trail Access

Public access for pedestrians and bicycles to the existing fire road through the mountains on the south side of the canyon will be provided, either by an access easement through private property, or by creating a new access point. This road leads to Mount Baldy.

R3.08 San Gabriel Canyon Spreading Grounds (Concept Design Study, see Section 3.8.1)

This project will study possibilities for providing landscaping, native habitat restoration, decorative fencing, interpretive signage, trails and other park amenities for public enjoyment and education at two deep spreading basins adjacent to the San Gabriel River. The 165-acre site project will be compatible with the groundwater recharge function of the two basins. Due to the deepness of the two basins, and the fact that it is a major water supply for Azusa, health and safety issues will be key project determinants.

R3.09 Future Pedestrian Bridge

The City of Azusa has indicated to Vulcan Materials Company (Vulcan) that it would like to investigate the use of the existing conveyor belt that traverses across the San Gabriel River as a potential bicycle and pedestrian bridge (about 30 years from now after mining operations cease). Although Vulcan does not have any objections to using this bridge when mining is completed, it has not yet engaged in negotiations with the City to discuss potential liability and cost for converting the conveyor crossing to a bicycle and/or pedestrian bridge.

R3.10 West Riverbank Tree Planting Project at the San Gabriel Valley Gun Club

The San Gabriel Valley Gun Club has proposed planting 200+ trees on the west levee of the San Gabriel River, beside its facilities on land it leases from Vulcan. The Gun Club serves over 100,000 people each year, including recreationists and training organizations such as law enforcement. The trees will provide much needed shade along the river and dampen the sounds that currently echo up the canyon from Gun Club activities. The City of Azusa, representatives of Vulcan and representatives from the San Gabriel Valley Gun Club are in negotiations to mitigate noise emanating from the Club into residential areas. Vulcan has not included these trees as potential mitigation to noise impacts.

R3.11 Azusa Rock Quarry Restoration

Vulcan is currently pursuing a revised reclamation plan for the Azusa Rock Quarry to rehabilitate and restore the area when mining is complete. The existing reclamation plan is subject to negotiations between Vulcan and the City of Azusa. A revised reclamation plan would change the quality of reclamation that currently exists at this quarry site.

R3.12 Fish Creek Restoration and Public Access

Vulcan is currently working with the City of Duarte on (and discussing with the City of Azusa), limited public access through the Azusa Rock Quarry along Fish Creek. For safety and liability reasons, Vulcan will limit access to daylight hours and non-operational hours of the quarry, probably on weekends and holidays. These discussions are ongoing; an agreement has not been reached as of this writing. After mining is complete at the Azusa Rock Quarry site, and with Vulcan's permission, it may be possible to daylight and restore the stream and provide fuller public access through the quarry site.

R3.13 Todd Avenue Bike Trail Connection

This project will connect an existing City of Azusa bike path at the south end of the spreading grounds with the San Gabriel River Bike Trail. The project will provide the local community with a much needed access point to the River Trail.

R3.14 Azusa Bike Trail Network

This project will develop a system of street-side bicycle paths to help bicyclists enter Azusa Canyon from Sierra Madre Avenue or Azusa Canyon Road and connect to the San Gabriel River Bike Trail.

R3.15 Pacific Electric Rails-to-Trails Project

A proposed multi-city project will create an east-west bike trail on an abandoned rail line running parallel to Foothill Boulevard between Monrovia in the west and Claremont in the east. The proposed bike trail design will need to take into account a potential light rail line which is being considered for this route. This trail may integrate with the Duarte Bike Trail, crossing the San Gabriel River at the Puente-Largo Bridge.

R3.16 Azusa-Largo Quarry

This quarry operation, located north of Foothill Boulevard, houses the current aggregate production facility of Vulcan, as well as shop facilities and asphalt plant production facilities. The plant at the Azusa-Largo Quarry produces material from the area in which it exists, as well as material that is transported via a conveyor system from Azusa Rock Quarry. The operation will supply aggregate, construction grade materials as well as asphalt materials for over 40 years. The eventual land use post-mining will be determined later in negotiations between the City of Irwindale and Vulcan.

Figure 3-23. The historic Puente Largo Bridge is part of the proposed Duarte Bike Trail extension.

R3.17 Reliance #2 Quarry

This is an existing landfill operated by Vulcan at a site located south of Foothill Boulevard bordered by the Foothill Freeway (I-210), and bordered on the east by Irwindale Avenue. This operation is currently being used for silt deposition from the existing Reliance Plant and operates as a landfill facility that can ultimately be filled and used for some commercial activity. It is subject to negotiation between the City of Irwindale and Vulcan to determine potential land use and other issues. The time to complete the landfill is not known at this time.

R3.18 Wright-Romvary Properties

The City of Duarte plans to acquire a total of 365 acres of land for open space protection, trails and habitat restoration. The property is adjacent to Van Tassel Creek, a tributary of the San Gabriel River. This project is dependent on funding availability.

R3.19 Duarte Bike Trail Extension

This project will extend and improve an existing 1.5-mile multi-use trail for an additional mile from Royal Oaks Park in the City of Duarte across the historic Puente Largo Rail Bridge to San Gabriel River Bike Trail in Azusa. Improvements will create a safer connection and will include signage, paint lines, lighting, and pavement resurfacing.

R3.20 Route 66/Foothill Boulevard Gateway

This future City of Duarte gateway project, in partnership with the City of Azusa, is located on the historic Route 66 Highway.

R3.21 Santa Fe Dam Recreation Area and Habitat Enhancements

The County of Los Angeles Department of Parks and Recreation (LADPR) plans improvements to habitat areas and trails, including the protection and restoration of remnant alluvial fan sage scrub plant communities by replanting native plants and removing exotics. Other improvements include improving access to the Park's bicycle path by establishing safe crossings and directional signage.

R3.22 Santa Fe Dam Nature Center

A recently re-opened nature center operated by the SGMRC in partnership with County of Los Angeles, provides interpretive trails, habitat restoration, a native plant demonstration garden, outdoor amenities improvements and possible camping, as well as community education and outreach programs. Project sponsors are seeking outreach partners for docent and interpretive programs.

Figure 3-24. The Peter Schabarum Nature Center provides a venue for school groups and interpretive presentations.

R3.23 United Rock Products Quarry #4

This is currently the processing plant for United Rock Products. Material mined in Quarry #2 and Quarry #3 are processed on the site. Additionally, this site has two asphalt plants, two ready mix concrete plants, and equipment shops. United Rock Products and the City of Irwindale are negotiating the mining and reclamation options for this site.

R3.24 Buena Vista Wetlands

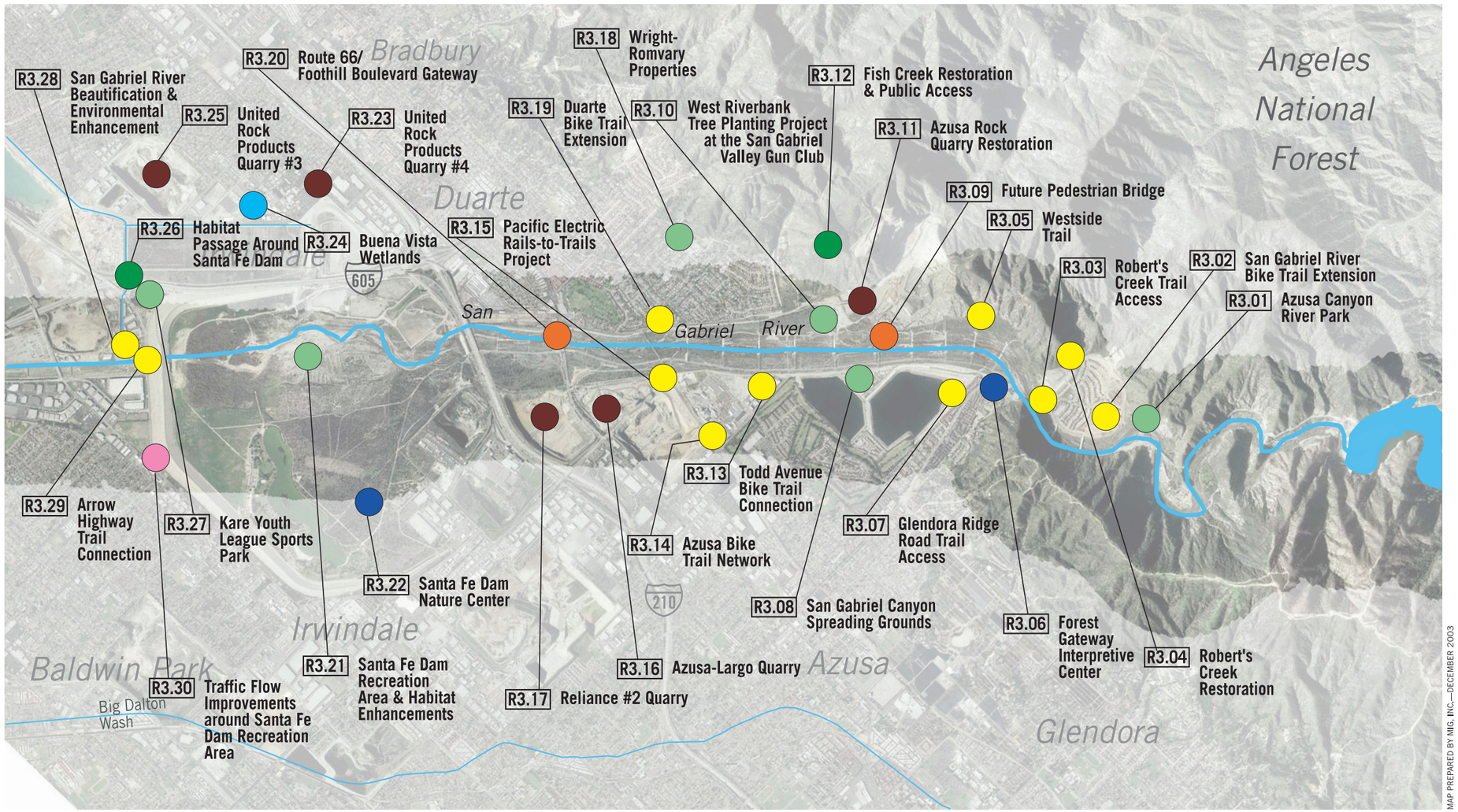
This project will create bio-engineered wetlands for habitat restoration in a LADPW spreading basin west of Santa Fe Dam. A conveyor line, operated by United Rock Products, runs across the westerly part of this property. The line has been in operation since 1983 and is scheduled to be in use until circa 2035. The design and implementation of the wetlands will need to ensure the continued safe operation of this conveyor.

R3.25 United Rock Products Quarry #3

This is an active quarry that will be in operation until 2035. United Rock Products and the City of Irwindale are in negotiations for the reclamation of this site, which is scheduled to be completed in 2061.

R3.26 Habitat Passage around Santa Fe Dam

This project will provide a habitat linkage at this "pinchpoint" to complete the Puente Hills to San Gabriel Mountains habitat corridor. The U.S. Army



Source: County of Los Angeles Department of Public Works and Rivers and Mountains Conservancy

Map 3-4. Master Plan Projects: Reach 3.

Corps of Engineers (COE) owns key parcels in this area. COE is willing to partner with other agencies and private groups to identify opportunities for creating this linkage.

R3.27 Kare Youth League Sports Park

This under-used open space area is at the base of the Santa Fe Dam, north of Arrow Highway. It is owned by COE. Kare Youth League is a potential lessee, that would build a soccer field with some amenities on existing disturbed paved areas. There is an existing habitat on the property that could be restored as part of the habitat corridor. There will be a trail linkage to the San Gabriel River Bike Trail.

R3.28 San Gabriel River Beautification and Environmental Enhancement

An environmental beautification opportunity for the City of Irwindale in partnership with the Hollywood Beautification Team, this 1.4-mile enhancement of the existing bike trail would including a bike staging area and other improvements designed to provide a better interface between the Santa Fe Dam and the San Gabriel River Bike Trail south of Arrow Highway. The project includes landscaping, drought-tolerant trees, irrigation, signage and other amenities.

R3.29 Arrow Highway Trail Connection

Bike trail users need a safer passage across Arrow Highway. An assessment on best connection needs to be made. Alternatives include building a new bridge over Arrow Highway, or going underneath through an existing tunnel, which also needs drainage repairs.

R3.30 Traffic Flow Improvements Around Santa Fe Dam Recreation Area

The LADPW proposed this study of vehicular traffic circulation patterns to identify improvements that will enhance public safety and improve pedestrian and bicycle access near the Santa Fe Dam.

3.6.4 Reach 4: Lower San Gabriel Valley

Location

This 8.5-mile reach extends from the Santa Fe Dam to the Whittier Narrows Dam. The "Whittier Narrows" is a natural gap in the hills that divides the Main San Gabriel Basin from the Central Basin to the south, and forms the southern boundary of the San Gabriel Valley, the Puente Hills to the east and the Montebello Hills to the west. The San Gabriel River passes through this gap as it flows south.

Figure 3-25. Although confined to engineered levees, the river still flows through a habitat-rich environment.

Character

This is a densely developed area within the San Gabriel Valley. Because there are extensive river deposits in the upper portion of the reach, major sand and gravel mining still occurs in this area. Most of the reach lies over the lower Main San Gabriel Basin, the primary source of water for the San Gabriel Valley. This basin contains contaminated plumes traveling southwards toward the Central Basin. These plumes are toxins that have percolated into the groundwater aquifer from decades of industrial waste dumping in the San Gabriel Valley. The river itself is soft-bottom, and runs through a wide channel contained by levees. COE owns and maintains this stretch. Whittier Narrows Recreation Area is a 1,400-acre open space area with flood protection, habitat and recreational land uses.

Key Issues

Many of the densely developed communities along this stretch of the river need more parks and open space, but lack easy access to the river. Often development is right to the river's edge. Some industrial sites are becoming available to be reclaimed for recreation and habitat, as well as for new economic development that can be designed to take advantage of the river's proximity. This gradual "greening" of the river can add water where needed to recreate attractive natural landscapes that also provide important habitat connections.

Projects Overview

If implemented, these 31 projects will significantly transform and enhance the character of the river along this reach. Many projects are designed to provide people with easier access to the river, while other land reclamation and water conservation projects ensure they will find a more aesthetically appealing environment once they enter the area. The new parks and open space areas will complement other projects that are designed to provide habitat enhancement and connectivity from the Puente Hills to the San Gabriel Mountains. (See Map 3-5 for locations of Reach 4 projects.)

R4.01 United Rock Products Quarry #1

United Rock Products Quarry #1 is currently being reclaimed, according to agreements with the City of Irwindale. The property will be returned to a condition suitable for development. The anticipated completion is 2020.

R4.02 United Rock Products Quarry #2

United Rock Products Quarry #2 is currently being mined. United Rock and the City of Irwindale are negotiating the details of the mining and reclamation options. Mining operations are expected to cease by 2061.

R4.03 Bubalo Quarry

A reclamation plan for this quarry is in progress.

R4.04 Quarry Reclamation/Water Storage/Recreational Facilities Development Study

The Upper San Gabriel Valley Municipal Water District, Sierra Club, and the State of California Rivers and Mountains Conservancy (RMC) initiated a study to identify potential reuse of gravel quarries for multiple purposes after mining is completed, including stormwater capture and cleanup, recharge of storm and imported water, flood reduction, recreation and habitat restoration, as well as aesthetic improvements. The study will require several years to conduct and any implementation of this study under the San Gabriel Master Plan will require future environmental review beyond the scope of this Master Plan and EIR. The study will also require substantive conversations with mine operators and other stakeholders such as the City of Irwindale. A separate forum has been proposed to provide study participants with essential mining community input.

R4.05 Hanson Quarry

The City of Irwindale is interested in multiple possible uses for the 400-acre Hanson Quarry site, which offers a significant economic development opportunity. A long-term quarry reclamation plan is being developed to be

Figure 3-26. The Hanson Quarry is one of the largest mining operations along the river.

implemented once mining operations have ceased, including new business and industrial uses, shopping, parks and open space, and possibly groundwater recharge and cleanup.

R4.06 Rodefer Quarry

This privately-owned quarry is an inholding of the City of Arcadia and is currently being filled with inert materials such as dirt and concrete. It is now zoned for industrial land use. Future reclamation plans could include park and open space, and other uses.

R4.07 Durbin Quarry

The City of Irwindale is interested in multiple uses for the Durbin Quarry site, which offers a significant economic development opportunity. It is developing a long-term quarry reclamation plan for reclamation after mining is complete, including new business and industrial uses, shopping, parks and open space, and possibly groundwater recharge and cleanup. However, the Durbin Quarry, owned and operated by Vulcan, will be an ongoing mining operation for the next 30 to 40 years. The City of Irwindale is keenly interested in its potential for economic development and is now negotiating with Vulcan about final reclamation and landform. Development would occur significantly after mining operations cease because of extensive fill requirements.

R4.08 Ramona Boulevard Gateway

The Ramona Boulevard gateway project will provide a key entry point to the San Gabriel River Bike Trail and the City of El Monte.

R4.09 Caltrans Right-of-Way Open Space and Trail

This Baldwin Park project will upgrade an existing 2-acre right-of-way with landscaping and trails to connect Barnes Park, the San Gabriel River Bike Trail, and neighborhood schools.

R4.10 Barnes Park

Baldwin Park plans to improve the existing Barnes Park with habitat enhancements and an interpretive programs center.

R4.11 Walnut Creek Nature Park and Nature Center

Baldwin Park will improve the Walnut Creek Park with a 3,300 square foot community center, walking trails, spray pool, playgrounds, new turf, fencing and irrigation.

R4.12 Durfee School Recreation Area

The City of El Monte wants to develop active recreation and landscaping along the San Gabriel River and provide access to the San Gabriel River Bike Trail.

R4.13 Valley Boulevard Gateway

This City of El Monte project will improve connections from Mountain View High School and surrounding neighborhoods to the San Gabriel River Bike Trail. The project includes entry signage.

R4.14 Inflatable Rubber Dams

LADPW is building two new inflatable rubber dams over existing drop structures in the river. The dams provide temporary water storage and also create rich and attractive natural habitat.

R4.15 Woodland Duck Farm *(Concept Design Study; see Section 3.8.2)*

The 57-acre Duck Farm Project grants a unique opportunity to provide a much needed open space and recreation area in a densely urbanized portion of the San Gabriel Valley. The property is located along the east side of the San Gabriel River just north of the confluence of the San Gabriel River and San Jose Creek. The portion of the property on the west side of the 605 Freeway had been operated as a Duck Farm. In addition to offering increased area for passive recreation such as bike and pedestrian

Figure 3-27. San Jose Creek is a major tributary of the San Gabriel River, offering trail and habitat connections.

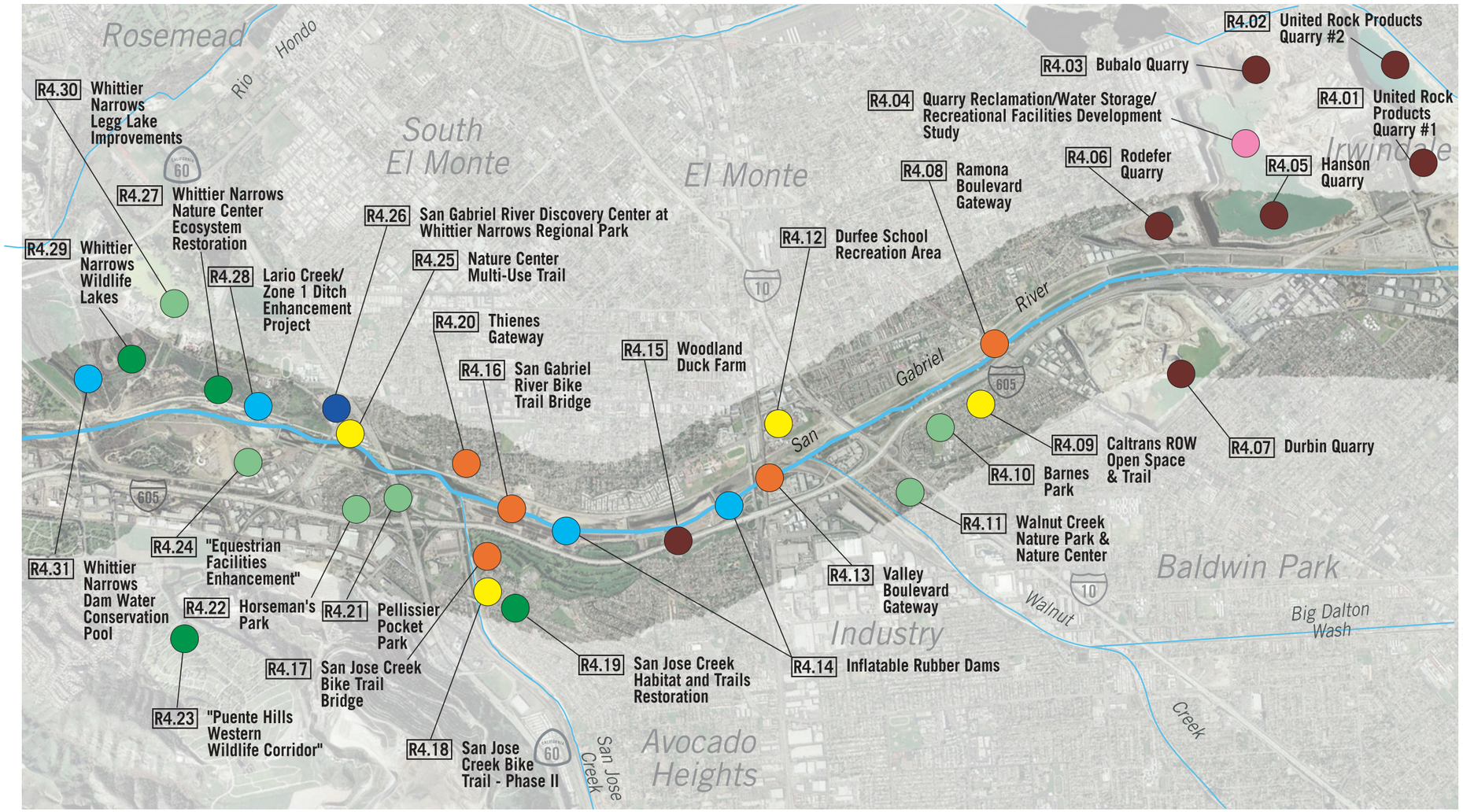
trails, bird watching and rest areas, the project has the potential to incorporate design elements such as groundwater recharge, water quality improvements, flood management, interpretive educational signage, exhibits, displays, as well as the reintroduction of native habitat. The WCA's goal is to create a project that will be a model for sustainable, multi-benefit watershed projects that address the open space recreation and watershed needs of the San Gabriel Valley. By connecting the surrounding communities to the San Gabriel River, the Duck Farm project will establish a local connection to Whittier Narrows Recreation facilities; regional connectivity to the San Gabriel River Trail system and the Emerald Necklace network of recreation facilities.

R4.16 San Gabriel River Bike Trail Bridge

LADPW is studying possibilities for a multi-use bridge to connect El Monte, South El Monte, and unincorporated LA County communities with the San Gabriel River Trail, the San Jose Creek Trail and the Duck Farm.

R4.17 San Jose Creek Bike Trail Bridge

This multi-use bridge would be part of a project to expand the San Jose Creek Bike Trail system. The bridge would connect bicyclists and pedestrians from the south bank of San Jose Creek with the north bank and the San Gabriel River Bike Trail.



N

0 1,500' 3,000' 4,500'

62.5 Acres

15.5 Acres

Source: County of Los Angeles Department of Public Works and Rivers and Mountains Conservancy

River Enhancement Concept Categories

- Habitat enhancement
- Parks and open space
- Water quality and supply
- Trail enhancement
- Bridges and gateways
- Education centers
- Land reclamation
- Studies

Master Plan Projects: Reach 4

County of Los Angeles Department of Public Works

San Gabriel River Corridor Master Plan

Map 3-5. Master Plan Projects: Reach 4.

R4.18 San Jose Creek Bike Trail Phase II

LADPW is studying potential expansion of the existing San Jose Creek Bike Trail, beginning along the southern bank of the creek from the San Gabriel River traveling east to Cal Poly Pomona and to Claremont along Thompson's Creek (a San Jose Creek tributary).

R4.19 San Jose Creek Habitat and Trails Restoration

North East Trees, with funding from Los Angeles County Open Space District, is restoring native plants along the northern slopes of San Jose Creek. The project area includes a 1.5-mile stretch of creek and trails, starting at the San Gabriel River past Workman Mill Road Bridge. The project includes landscaping to enhance the equestrian trail on the north and south bank and removal of exotic arundo in the creek.

R4.20 Thienes Gateway

This gateway is an equestrian staging area and local access point to the equestrian trails along the west bank of the river. Improvements by the Hollywood Beautification Team and Friends of the San Gabriel River, with funding from the Los Angeles County Open Space District, include an artful gate by a local artist, horse tie posts, drinking water, signage, seating and native landscaping including trees.

R4.21 Pellesier Pocket Park

A pocket park was proposed for this location near the San Jose Creek. It has subsequently been determined to no longer be a viable project.

R4.22 Horseman's Park

This project includes landscaping and a gateway to improve connections between surrounding neighborhoods and Horseman's Park.

R4.23 Puente Hills Western Wildlife Corridor

This project will create a habitat movement corridor between the Puente-Chino Hills and Whittier Narrows, either near Rose Hills Cemetery along Sycamore Canyon, or down the north slope towards San Jose Creek. A connection facilitating northbound and southbound movement to and from the San Gabriel Mountains may eventually become possible. A study by a biological research institute will be required before terrestrials can be re-introduced to the river area.

R4.24 Equestrian Facilities Enhancement

Potential upgrades and water quality runoff mitigation measures will be considered for these existing equestrian facilities. Planned improvements will mitigate any potential wildlife habitat conflicts.

R4.25 Nature Center Multi-Use Trail

A trail connection between the San Gabriel River Discovery Center at Whittier Narrows and the San Gabriel River Bike Trail will improve user access, safety and convenience. New signage to and from the River Discovery Center will enhance existing unmarked paths.

R4.26 San Gabriel River Discovery Center at Whittier Narrows Regional Park (Concept Design Study; see Section 3.8.3)

LADPR, RMC, and the Upper San Gabriel Valley Municipal Water District are jointly developing a new regional indoor/outdoor museum and conference center on the site of the existing Whittier Narrows Nature Center. It will focus on watershed and water-related topics, historical information and wildlife education. The project's innovative building design will demonstrate green building technologies and watershed-appropriate site development. A joint powers authority is being set up to build and operate the Discovery Center.

R4.27 Whittier Narrows Nature Center Ecosystem Restoration

This project, supported by LADPR, has been in development for six years, based on a U.S. Army Corps of Engineers project options study. Because the project is located at the northern most boundary of the Montebello Forebay, this area is subject to rising waters, and therefore is not a good site for groundwater recharge. The selected option is to build a .25-acre pond, line two lakes to reduce water loss from percolation, remove invasive plants, and restore native vegetation. The lakes could be interconnected to Lario Creek (see R4.28) and water in the lakes could flow through the system and down to the Rio Hondo Spreading Grounds. The volume of water required to maintain the lakes is minimal compared with the tens of thousands of acre feet that flow through the system annually.

R4.28 Lario Creek/Zone 1 Ditch (Concept Design Study, see Section 3.8.4)

This project is an opportunity to build upon and enhance an already planned LADPW project to expand the flow capacity of an existing canal. North East Trees proposes to temporarily divert high water flows to protect and extend wetlands. This will restore valuable habitat to support wildlife and increase the aesthetic and educational value of the area, which is adjacent to the San Gabriel River Discovery Center.

Figure 3-28. Legg Lake is a popular family picnic destination.

R4.29 Whittier Narrows Wildlife Lakes

LADPR believes it is important to preserve these two large lakes as wetlands. The lakes, located at the Nature Center, could be lined to reduce water consumption.

R4.30 Whittier Narrows Legg Lakes Improvements

These three recreational lakes should be upgraded to improve ADA accessibility and reduce erosion.

R4.31 Whittier Narrows Dam Water Conservation Pool

The COE completed a feasibility study to expand the current water conservation pool behind the Whittier Narrow Dam from 2,500-acre feet at elevation 201.6 feet up to as high as elevation 209 feet. The pool, to be built by the Water Replenishment District (WRD), will increase groundwater percolation for increased water supply; it is expected to save the WRD $1 million annually. The COE regional headquarters in San Francisco is currently reviewing the study. The project will affect other projects proposed within the Whittier Narrows flood control basin. Opportunities to integrate recreational and habitat uses in the design of the ponding area should be explored.

Figure 3-29. The river is soft bottomed in Reach 5.

3.6.5 Reach 5: Upper Coastal Plain

Location

This seven-mile reach begins at the outlet of the Whittier Narrows Dam and ends where the San Gabriel River crosses Firestone Boulevard in Norwalk, near the I-605 Freeway (San Gabriel Freeway).

Character

The San Gabriel River emerges from the Montebello and Puente-Chino Hills and enters a more gently sloping landscape. Confined by engineered levees and rip-rap, the river remains a soft-bottom channel but is narrower along this stretch than above Whittier Narrows. The river flows above the Central Basin, the most productive recharge area. Two of the largest and most productive spreading grounds in Los Angeles County lie just west of the river. Adjacent cities are densely developed with large areas of industrial use.

Key Issues

With the exception of the nearby spreading grounds, there are few large areas of open land available for parks and open space.

Projects Overview

Six of the 18 projects in this reach are new or improved parks. The remaining projects involve three new trails, and seven river gateways. Two of the largest new parks are possible because undeveloped land surrounding the nearby spreading grounds is available. (See Map 3-6 for locations of Reach 5 projects.)

R5.01 Pico Rivera Golf Course

This proposed golf course would replace an old campground south of the Pico Rivera Sports Arena. An environmentally-friendly "green" golf course design will be needed to address water quality issues. The design suggests at least three holes in the riverbed.

R5.02 Pegasus Ranch Park

A river adjacent park was proposed for this site at a former equestrian facility. It has subsequently been determined to no longer be a viable project.

R5.03 Beverly Boulevard Gateway

This gateway provides a key entry point from the City of Pico Rivera to the river and the San Gabriel River Bike Trail.

R5.04 Amigo Park Improvements

LADPR would like to revitalize Amigo Park, adjacent to the east bank of the river. Providing access from the park to the river may provide more opportunities for the community to exercise safely. Planting native trees would improve the area's appearance and contribute to wildlife habitat. Landscaping, directional signage and more amenities will also enhance safety, security and enjoyment of the park.

R5.05 Whittier Greenway Trail and Connection

The City of Whittier recently built a 5-mile bike trail along an abandoned railroad right-of-way, which added 38 acres of linear open space to the City. Another extension is needed to connect it to the San Gabriel River Bike Trail. Whittier is studying four possible routes, including one to Pio Pico State Historic Park. When fully completed, the bike trail will extend from the river to the City of Brea in Orange County. This trail is part of the MTA Regional Bike Plan.

R5.06 Pio Pico State Historic Park

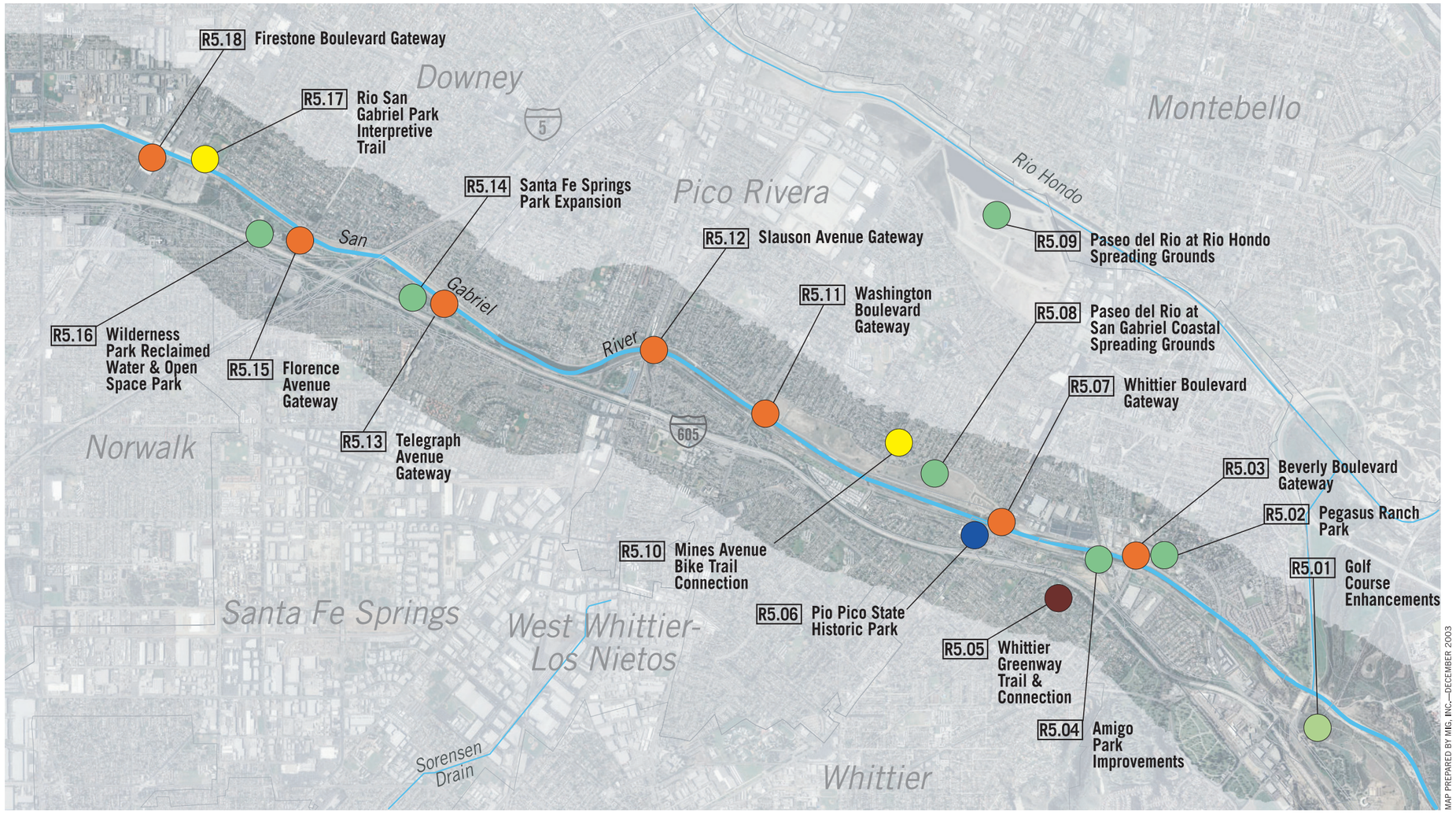
Pio Pico was the last Governor of Mexican California. His historic Pio Pico Mansion was recently renovated and re-opened in September 2003. A new watershed enhancement project at this site will include a watershed interpretive exhibit and native, drought-tolerant landscaping. The project will open a pedestrian and bicycle access way under the existing rail line, between the park and the east side of the river. At present, the levy/rail line completely blocks the view of the river. A viewing platform may be constructed over the river, allowing people to take in the view without standing in the bike path.

Figure 3-30. Visitors to Pio Pico State Historic Park are often not aware how close they are to the San Gabriel River.

Figure 3-31. The newly renovated Pio Pico Adobe at the Historic Park is one of the many cultural and historic facilities in close proximity to the San Gabriel River Bike Trail.

R5.07 Whittier Boulevard Gateway

A new gateway for the Cities of Whittier and Pico Rivera at the San Gabriel River would be designed to help enhance the image of the western portions of the two cities. The current "Gateway District" for Whittier is 2



Source: County of Los Angeles Department of Public Works and Rivers and Mountains Conservancy

Map 3-6. Master Plan Projects: Reach 5.

miles east of the river. Possible partners include the California State Department of Parks and Recreation, LA County, and Caltrans.

R5.08 Paseo del Rio at San Gabriel Coastal Basin Spreading Grounds

This multi-objective 128-acre LADPW project will provide a bike trail, new native and drought-tolerant landscaping, shade structures and other park-like amenities to beautify open space surrounding the existing spreading grounds. The occasional presence of surface water creates the appearance of a lake to be enjoyed by nearby residents and other visitors. The project entails limited public access, with passive recreational and educational opportunities.

R5.09 Paseo del Rio at Rio Hondo Spreading Grounds

This multi-objective 570-acre LADPW project will provide a bike trail, new native and drought-tolerant landscaping, shade structures and other park-like amenities to beautify open space surrounding the existing spreading grounds. The occasional presence of surface water creates the appearance of a lake to be enjoyed by nearby residents and other visitors. The project entails limited public access, with passive recreational and educational opportunities.

R5.10 Mines Avenue Bike Trail Connection

This City of Pico Rivera bike trail will provide a two-mile connection from the Rio Hondo Spreading Grounds east to the San Gabriel Spreading Grounds and from there to the San Gabriel River Bike Trail. This will be a conversion from a Class 2 bike trail to a Class 1, separating the trail from automobile traffic for increased safety.

Figure 3-32. Picnic shelter at Rio Hondo Spreading Grounds provides a compatible recreational use.

R5.11 Washington Boulevard Gateway

This project will provide a key entry point to the river and the San Gabriel River Bike Trail from the City of Pico Rivera.

R5.12 Slauson Avenue Gateway

The Slauson Avenue Gateway will serve as a key entry point to the San Gabriel River Bike Trail from the City of Pico Rivera.

R5.13 Telegraph Road Gateway

This gateway will improve access to the Santa Fe Springs Park Expansion project from the Cities of Pico Rivera and Santa Fe Springs (see project R5.14).

R5.14 Santa Fe Springs Park Expansion

The existing 14-acre park across Telegraph Road will be expanded, with the south side for active recreational users and the north for passive recreation and habitat. The expanded north half is a proposed 13-acre Nature Sanctuary. The project will connect the San Gabriel River Bike Trail with a pedestrian-oriented zone on Telegraph Avenue, and include gateway entry features, native vegetation and potential stormwater management practices.

R5.15 Florence Avenue Gateway

In conjunction with Wilderness Park, this project will connect the San Gabriel River Bike Trail and the City of Downey.

R5.16 Wilderness Park Reclaimed Water and Open Space Park

This 26-acre park in the City of Downey offers varied recreational activities for residents throughout Southeast LA County. The park has a large lake of reclaimed water, which is often used for fishing derbies. A reclaimed water project will connect the lake to the park's irrigation system, reducing the need for chemical treatment of lake water and providing a migrating rest area for birds. Another project will develop six acres of land for passive recreation, using native plants. The City of Downey holds a long-term lease from Southern California Edison (SCE), which currently owns the land.

R5.17 Rio San Gabriel Park Interpretive Trail

This existing 16-acre park adjacent to the river combines high- and low-impact recreational activities with one building for meetings and special

Figure 3-33. Parks along the river often include heavily used playgrounds such as this one at Santa Fe Springs Park.

indoor activities. The City of Downey plans to develop a native plant interpretative trail around the perimeter of the park, beginning at the river's edge. The project will include a trail made of decomposed granite, benches, trash receptacles, signage, restrooms and a picnic shelter.

R5.18 Firestone Boulevard Gateway

The Firestone Boulevard Gateway will provide a key entry point to the river and the San Gabriel River Bike Trail from the Cities of Downey and Norwalk.

3.6.6 Reach 6: Lower Coastal Plain

Location

This ten-mile reach begins at Firestone Boulevard in Downey and extends to the confluence of the San Gabriel River with Coyote Creek, near the Los Angeles County and Orange County border at Rossmoor, just above the San Diego/San Gabriel Freeway intersection. It is the longest urban reach.

Character

The river bottom in this heavily urbanized reach is concrete, the only stretch of the river where that is the case. An impermeable clay lens or aquaclude lies below the surface and prevents groundwater recharge from taking place here.

Figure 3-34. The river flows in a concrete channel for 10 miles in Reach 6.

Key Issues

While this heavily urbanized area has many parks, they are not sufficient to serve the large population. With the exception of the former NASA site in Downey, most available parks and open space land is along the river, making the river a critical recreational resource for these communities. Many of the large parks in the vicinity of the river, such as El Dorado Regional Park, were not originally oriented toward the river.

Projects Overview

Almost all 23 projects in this reach are focused on expanding recreational opportunities by providing new parks, enhancing or expanding existing ones, and by developing new bike trails or other connections to the river. Many of the proposed bike trails and gateways are designed to facilitate east-west connections across the north-south route of the river. (See Map 3-7 for locations of Reach 6 projects.)

R6.01 Downey Landing

The City of Downey plans to develop a new, combination low-impact/high impact recreation area with ballfields and a walking trail at what was once a parking lot for the former NASA site (home to the Apollo and Space Shuttle Orbiter programs). An interpretive trail along the perimeter of the 11.5-acre park will include natural vegetation and a biofiltration swale system to capture and clean 130 acres of urban stormwater runoff and provide flood protection. The project includes trailhead and trailside facilities, restrooms, a shade structure for educational purposes, benches, trashcans, drinking fountains and bike racks. The trail will be enhanced with trees providing a canopy of shade, the creek-like swale system and natural vegetation. Interpretive signage will provide information on the process being used to clean the stormwater. Adjacent to the park site will be the 20,000 square foot Columbia Memorial Space Learning Center.

R6.02 Foster Road Gateway

The Foster Road Gateway will serve as a key entry point and pedestrian bridge to the San Gabriel River Bike Trail for the Cities of Downey, Bellflower and Norwalk.

R6.03 H. Byrun Zinn Park Improvements

The City of Bellflower plans open space enhancements including a pedestrian path, trees and benches to an existing four-acre park where Foster Road comes to a dead end at the river. Landscape improvements will maintain the current passive, low-impact recreational use. The project will be integrated with the Foster Road Gateway (R6.02). It is located in the Southern California Edison right-of-way.

R6.04 Rosecrans Avenue Gateway

This project will provide a key entry point to the San Gabriel River Bike Trail for the Cities of Bellflower and Norwalk.

R6.05 Excelsior Drive Gateway Park

Excelsior Drive Gateway Park will serve as a potential entry point from Norwalk to the San Gabriel River Bike Trail.

R6.06 Bellflower High Bike Trail Connection

This bike trail connection from Bellflower High School east to the San Gabriel River Bike Trail at the MTA right-of-way will improve local community access to the river trail.

R6.07 Riverview Park

Riverview Park will be a new 15-acre recreation area fronting the river. The project will provide a natural, riverfront environment serving the residents of Bellflower and many other communities up and down the river. Proposed improvements include a paved bikeway, landscaping, park benches and informational signage. A direct linkage to the San Gabriel River Bike Trail will be created, as well as linkage to the City of Bellflower West Branch Greenway. There will be an information kiosk for both the River Trail and the West Branch Bikeway (see R6.11). The State of California Resources Agency awarded the City of Bellflower a grant of $2.97 million for Riverview Park, which will be funded by Proposition 12 park bond funds. The funds will be used for land acquisition, trails, botanical gardens with native plants and passive recreation. In addition, the RMC recently awarded the City of Bellflower $100,000 in Proposition 40 planning grants to fund planning activities for the property.

R6.08 Alondra Boulevard Gateway

The Alondra Boulevard Gateway will provide a key entry point to the San Gabriel River Bike Trail for the Cities of Bellflower and Norwalk.

R6.09 Cerritos College Bike Link

A bike trail connection from Cerritos College along Alondra Boulevard west to the San Gabriel River Bike Trail will greatly improve local community access.

R6.10 North Caruther's Channel Improvements

Improvements are needed to address the algae and mosquito problem caused by slow moving water at this tributary to the San Gabriel River. Solutions include creating a soft-bottom and naturalistic channel design to facilitate water flow.

R6.11 West Branch Greenway Rails-to-Trails Project

This new 2.5 mile rails-to-trails project on an abandoned Pacific Electric right-of-way will provide an west-east connection from Lakewood Boulevard to the San Gabriel River Bike Trail. The project will result in a Class I bikeway and pedestrian trail.

Figure 3-35. Slow moving water in Caruthers Channel encourages algae growth.

Figure 3-36. A well-designed skate-park is enjoyed by neighborhood youth.

R6.12 West Branch Greenway Bike Connection Area

This site is proposed for a BMX park. Acquisition of an open space area between the abandoned Pacific Electric railway and the river will be needed to create a full connection between the West Branch Greenway and the river.

R6.13 Artesia Boulevard Gateway

The Artesia Boulevard Gateway will provide a key entry point to the San Gabriel River Bike Trail for the Cities of Bellflower and Cerritos.

R6.14 South Street Gateway

This gateway could improve access to the San Gabriel River west side maintenance road and a future trail to West Gate Park. No plans have been started for this project. Design of such a project might depend on adopted recommended design guidelines that provide for some degree of consistency up and down the river.

R6.15 Liberty Park Improvement Project

Improvements will be made to this existing park to provide accessibility for park users with disabilities and passive natural areas with sensory amenities. The project will upgrade an existing playground to universal access standards and provide additional playground space. Additional accessible parking will be provided along with an artificial surface track and walking trail. Amenities will also be provided for bikers and joggers on the San Gabriel River Bike Trail.

R6.16 Del Amo Boulevard Gateway

The Del Amo Boulevard Gateway could provide a key entry point to the San Gabriel River Bike Trail for the Cities of Lakewood and Cerritos. No plans have been started for this project. Design of such a project might depend on adopted recommended design guidelines that provide for some degree of consistency up and down the river.

R6.17 Mae Boyer Park Renovation

The project includes river parkway enhancements and trail access to an existing 6.8-acre park adjacent to the river. Renovations include picnic shelter replacement and amenity upgrades such as parking lots, restrooms and landscaping. Construction of the first phase of this project is nearing completion. The City of Lakewood has applied for a grant for the next phase of the project.

R6.18 West San Gabriel River Open Space Area

This recently completed City of Lakewood project extends open space adjacent to the west side of the river from Carson Boulevard north to Monte Verde Park. This project provides improved bike path linkage on the west side of the river and the San Gabriel River Bike Trail on the east side, an automatic irrigation system, several species of California indigenous trees, meadow grasses and shrubs. Low growing plants are being used under the utility easements. This new park faces Rynerson Park on the east side of the river, creating landscaped parks on both sides of the river. The City of Lakewood has recently submitted a grant for Phase 2 of the project. This second phase will be an extension of the first phase from Monte Verde Park to Del Amo Boulevard.

R6.19 Carson Avenue Gateway

The Carson Avenue Gateway will provide a key entry point to the San Gabriel River Bike Trail for the Cities of Lakewood and Long Beach. Better signage is needed for the Lakewood Equestrian Center at Rynerson Park. The intersection may require a traffic signal or an undercrossing of the service road to provide a connection from the West San Gabriel River Open Space Area to the Heartwell Golf Course and Park, which lies farther west along Carson Street. No plans have been started for this project. Design of such a project might depend on adopted recommended design guidelines that provide for some degree of consistency up and down the river. Lakewood and Long Beach may need to coordinate with each other on this project.

Figure 3-37. School children enjoy the bridge crossing at the El Dorado Nature Center.

R6.20 East-West Pedestrian Bridge Enhancement

Enhancements to an existing bridge will provide a connection between the San Gabriel River Bike Trail on the east side of the river and the maintenance road used by bicyclists on the west side.

R6.21 El Dorado Regional Park Wetlands (Concept Design Study, See Section 3.8.5)

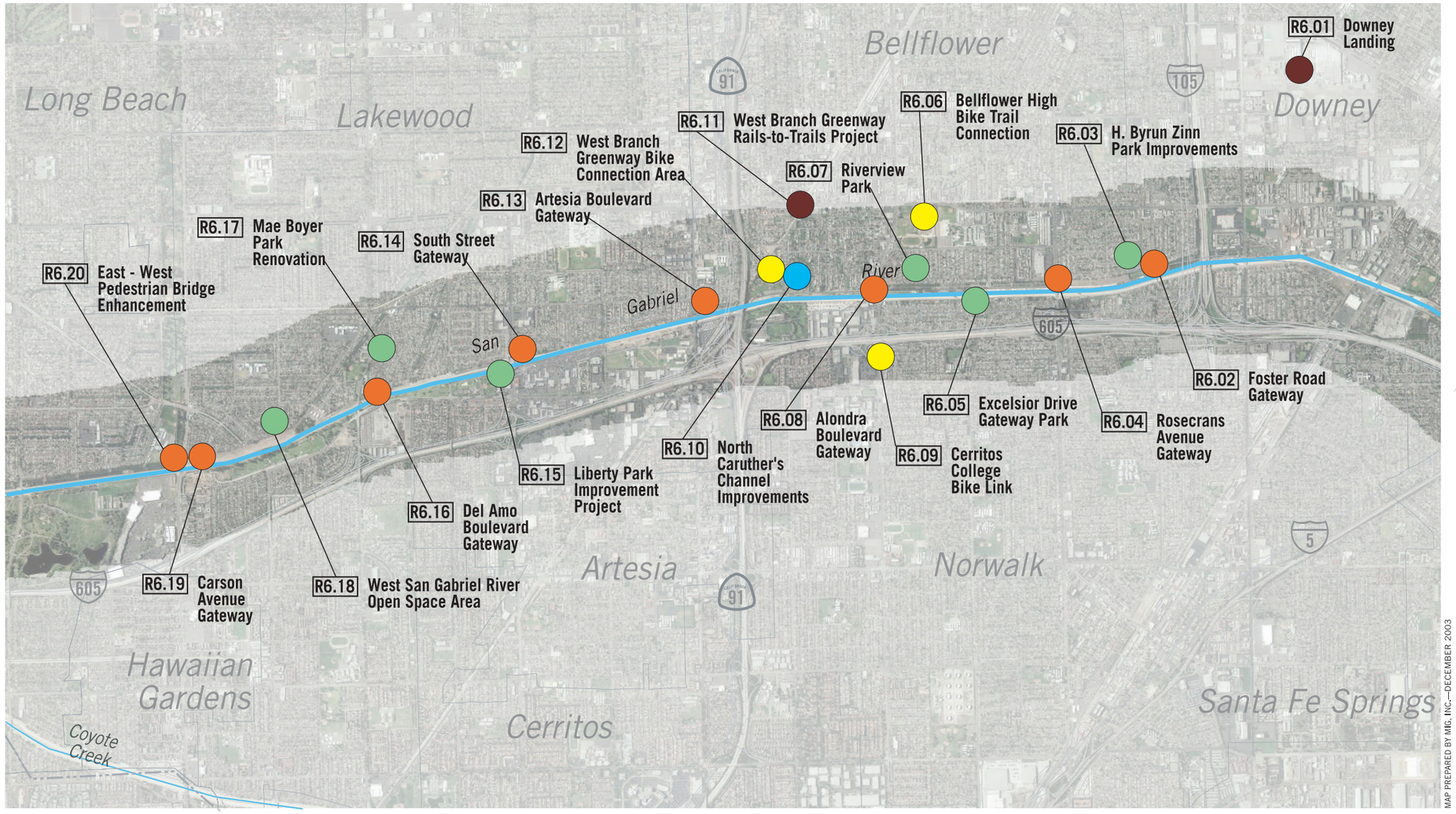
This park borders the river for about two miles, but flood control levees (berms) along the river sever the connection between activities in the park and the river. The City of Long Beach proposed this project to reconnect El Dorado Park with the river. It will create treatment wetlands in the northern section of El Dorado Park and treat San Gabriel River water, stormwater runoff, and/or reclaimed water to replace the potable water supply to the lakes and streams within the regional park.

R6.22 El Dorado Nature Center Master Plan

A recent Master Plan updates the existing Nature Center and surrounding landscape. Improvements will transition the landscape to more low-water and native plants. The ponds and aeration will be improved and the area south of Willow Street will be developed to expand park and open space. That area may also include treatment wetlands.

R6.23 San Gabriel River Walk Phase 1 and 2

The City of Long Beach proposed developing a 1.5-mile pedestrian and bicycle trail through a restored native landscape along the western bank of



Map 3-7. Master Plan Projects: Reach 6.

the river in the City of Los Angeles Department of Water & Power right-of-way. Phase 1 can be built now. The project will begin at Spring Street to the north at the El Dorado Park Golf Course, and run south to Atherton Drive just above the San Diego Freeway. Atherton Drive will provide regional access to California State University Long Beach and El Dorado Regional Park. A bridge will connect the regional trails on the east bank of the river and along Coyote Creek with the Long Beach trail system. Phase 2, another 1.5-mile stretch of new trail and open space, will begin at Spring Street and travel north along the right of way to Carson Avenue. This will connect the West San Gabriel River Open Space Area (see R6.18) in Lakewood above Carson Avenue.

3.6.7 Reach 7: Zone of Tidal Influence

Location

The final 3.5 miles of the river flows from Coyote Creek to the Pacific Ocean, flowing between Long Beach in Los Angeles County and Seal Beach in Orange County.

Character

In this last section of the river before it enters the Pacific Ocean, the channel again has a soft bottom. In this reach, salt water from ocean tides mixes with river water in a natural estuary. The Coyote Creek portion is channelized here. Historically, the area near the mouth of the river was dominated by wetlands. Today, large industrial and utility uses in the northern half of the reach gradually give way to plant nurseries, homes and marinas at the southern end of the reach.

Figure 3-38. Tidal action fills the river with salt water as it nears the Pacific Ocean.

Key Issues

Large oilfields and other industrial fields present future land reclamation opportunities, especially possible wetlands restoration. Debris in the river at this point can be a significant problem, especially following storms that bring trash and other pollutants down from upstream areas.

Projects Overview

Many of the 17 projects along this reach are designed to reconnect people to the river and to the wetlands that previously characterized the area. Wetlands restoration projects will also offer habitat for birds and other native species. Other projects provide enhancements to the regional bike trail along the river or connections to it. A number of key projects will address water quality concerns. (See Map 3-8 for locations of Reach 7 projects.)

R7.01 Coyote and Carbon Creeks Watershed Management Plan

This is a two-phased project. The Phase I Management Plan, headed by the County of Orange, will identify and prioritize potential projects for implementation through stakeholder input and spatial analysis using Geographic Information System (GIS) mapping. The Phase II Coyote Creek-Lower San Gabriel River Watershed Feasibility Study is in its early stages pending increased funding for the U.S. Army Corps of Engineers.

R7.02 Coyote Creek Regional Bikeway Improvements

The County of Orange is currently partnering with a local non-profit organization, Trails4All, to request funding from the San Gabriel and Lower Los Angeles Rivers & Mountains Conservancy to develop this bikeway improvements project. This project will involve a Working Group of all landowners along Coyote Creek, including several cities, the Counties of Los Angeles and Orange, and other key stakeholders to develop a regional bikeway signage program and to develop a long-term Trails Needs Assessment and Master Plan.

R7.03 Coyote Creek Debris Boom

The City of Seal Beach received a grant from the Coastal Conservancy to investigate upgrading a debris restraint system and physical net and boom, similar to that of a fishing net, to catch and hold debris. This project will help reduce the flow of debris into the Pacific Ocean. Design has been completed by the Los Angeles County Department of Public Works.

R7.04 Los Alamitos Channel Treatment Wetland

Orange County proposes urban stormwater treatment wetlands to treat Coyote Creek flows, as part of the COE Coyote Creek Watershed Plan study.

R7.05 Proposed Confluence Bridge

A proposed bike and pedestrian bridge at the Coyote Creek Confluence will connect the San Gabriel River Bike Trail to the Coyote Creek Bike Trail.

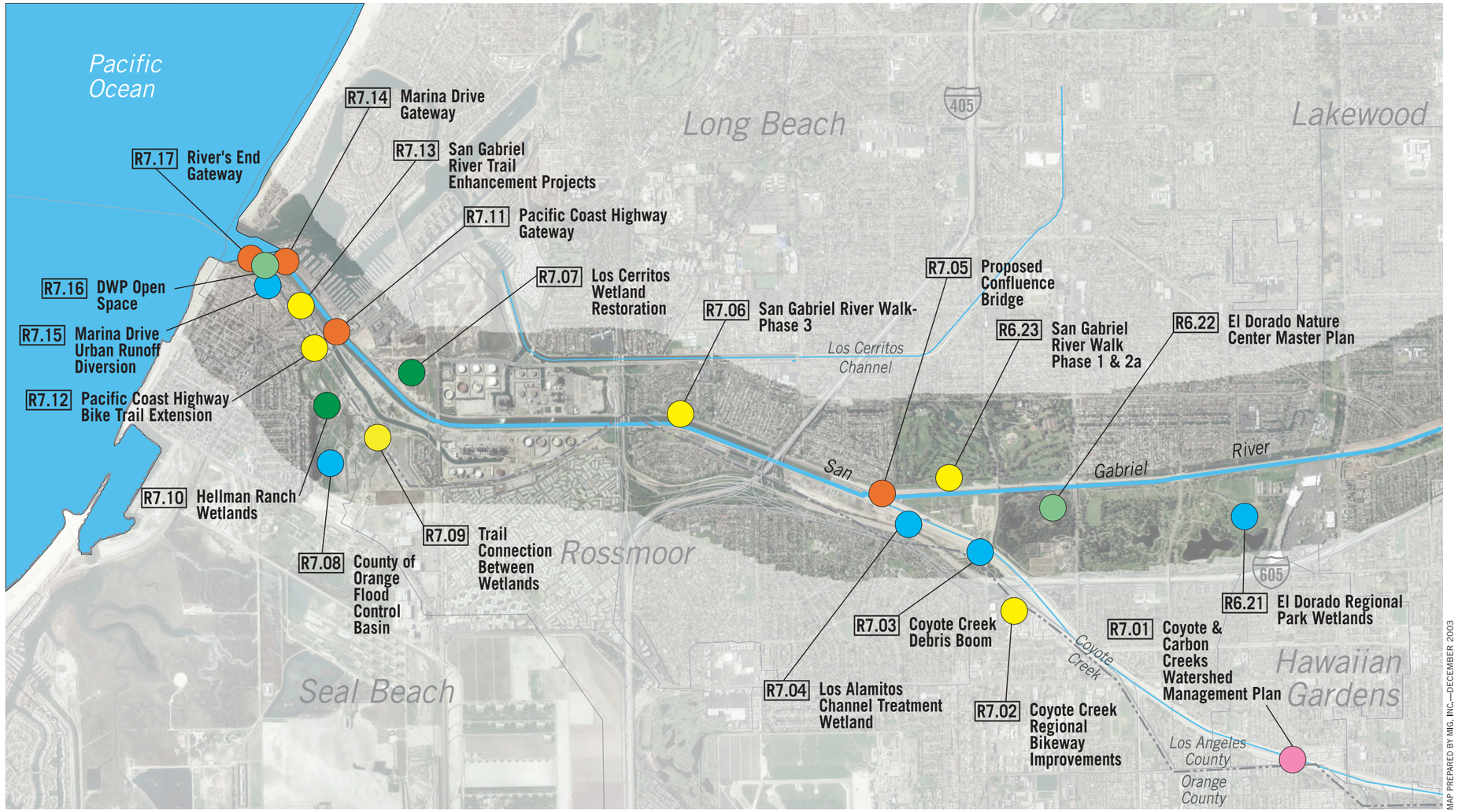
R7.06 San Gabriel River Walk Phase 3

This project is a continuation of the San Gabriel River Walk (see R6.23). This stretch of trail will extend from Atherton Drive, along the west side of the river, potentially down to the Long Beach Marina. It will involve Seal Beach for a small segment where College Estates Park exists, just above the 22 Freeway.

R7.07 Los Cerritos Wetland Restoration (Bryant and Bixby)

This project proposes acquiring about 266 acres of land currently used for oil operations. The Bixby property is 181 acres and the Bryant property approximately 85 acres. The sites, located near the end of the river just north of Alamitos Bay, are surrounded by urban development but still provide valuable habitat for birds and a salt marsh field.

Figure 3-39. Coyote Creek merges with the San Gabriel River just below El Dorado Regional Park.



Source: County of Los Angeles Department of Public Works and Rivers and Mountains Conservancy

Map 3-8. Master Plan Projects: Reaches 6 and 7.

sR7.08 County of Orange Flood Control Basin

This project is a modification of the existing Los Alamitos basin and pump station to expand the flood capacity for runoff flowing from southwest Orange County. Flooding problems will be alleviated in the community of Rossmoor. This project is also being coordinated with the ongoing ACOE Coyote Creek Watershed Study (see R7.01).

R7.09 Trail Connection Between Wetlands

This project will connect bike trails within the City of Seal Beach to provide a complete circuit around the community linking several parks and open space areas.

R7.10 Hellman Ranch Wetlands

Potential acquisition by the City of Seal Beach of 100-acre, deed restricted property and restoration of tidally influenced trail wetland and upland habitat areas, with trail connection to Gum Grove Park and San Gabriel River Bike Trail contemplated.

R7.11 Pacific Coast Highway Gateway

This project will provide a key entry point to the San Gabriel River Bike Trail for the Cities of Seal Beach and Huntington Beach.

R7.12 Pacific Coast Highway Bike Trail Extension

This proposed extension of the Pacific Coast Highway Bike Trail through Seal Beach will connect the San Gabriel River Bike Trail to a major north/south coastal route. The final design stage has been completed but the project has not yet been constructed.

Figure 3-40. The Los Cerritos Wetlands Restoration Project will result in a saltwater wetlands habitat.

Figure 3-41. The River's End café is near the mouth of the river in Seal Beach.

R7.13 San Gabriel River Trail Enhancement

This project by the City of Seal Beach will rehabilitate the existing San Gabriel River Bike Trail. The north section of the project includes Marina Drive to Pacific Coast Highway and the south section includes Marina Drive to First Street. It will introduce new signage, fencing, educational kiosks, new picnic and bicycle storage areas, and native landscaping and vegetation. The restoration will provide public awareness and education, as well as low-impact recreation.

R7.14 Marina Drive Gateway

This project included the construction of a regional trail and landscaping along Marina Drive from 1st Street to 5th Street and provided a key entry point to the San Gabriel River Bike Trail for the Cities of Seal Beach and Long Beach. There was also a street pavement reduction from four lanes to two lanes. This project has already been completed.

R7.15 Marina Drive Urban Runoff Diversion

The City of Seal Beach is seeking to enhance the capacity of the West End Pump Station to provide protection equivalent to the 25-year storm flow and will also construct a low flow diversion to the sewer system. This project will improve water quality to both the San Gabriel River and to Seal Beach. This project is currently 50 percent through its design stage and the City is seeking to obtain permits from the Orange County Sanitation District (OCSD).

R7.16 Los Angeles Department of Water and Power Open Space

This project concerns the future dedication of land for a passive open space area at the mouth of the San Gabriel River. The amount of land dedication is to be negotiated between the City of Seal Beach and property owner during project entitlement consideration. It will have direct connections to four other projects – R7.11, R7.13, R7.14 and R7.17.

R7.17 River's End Gateway

The City of Seal Beach received grants from the Rivers and Mountains Conservancy (RMC) to study open space opportunities throughout the City and to prepare concept plans for a staging area for the San Gabriel River Bike Trail at its terminus in Seal Beach. Enhancements at the staging area, which are part of overall improvements to the San Gabriel River Bikeway (projects R7.06, and R7.17), include landscaping, decorative gates, water fountains, and benches. The project is 50 percent through its design phase.

3.7 RIVER CORRIDOR-WIDE PROJECTS, POLICIES, PROGRAMS, AND DESIGN GUIDELINES

Most of the 134 physical projects identified by stakeholders are specific to particular locations along the San Gabriel River. There are also river corridor-wide projects that link and complement the individual project efforts and create an identity for the river as a whole.

River corridor-wide projects, policies, programs, and design guidelines are needed to respond to key issues such as maintenance, urban stormwater pollution prevention, or homelessness that continue to challenge decision-makers and the communities along the river. These issues need to be addressed comprehensively, bringing all affected communities together to be part of the solution. These river corridor-wide activities will lead to programs designed to bring about desired change.

3.7.1 River Corridor-Wide Projects

These projects are river corridor-wide (CW), rather than for specific sites.

CW1 Wayfinding System

A system of signs, markers and other navigation aids will provide directional information to orient trail users to where they are in relation to the river, connecting trails, points of interest and nearby cities.

CW2 River Identity

A logo and other design elements will be incorporated into the signage used for the wayfinding system, creating an overall identity for the San Gabriel River.

Figure 3-42. A new logo for the San Gabriel River Trail will help create an identity for the entire river.

Figure 3-43. The San Gabriel River Trail would run along both sides of the river in the future.

CW3 Integrated Regional Trail System

An integrated regional trail system will emerge from the completion of individual trail projects, complemented by corridor-wide enhancement efforts and design guidelines. One component of the integrated Regional Trail System is the proposal to expand the current San Gabriel River Bike Trail by developing a bike trail on both sides of the river and ensuring that necessary amenities, such as comfort stations, are provided. Another component is the set of design guidelines for local trail projects that will provide a cohesive, identifiable look for all trails intersecting the San Gabriel River corridor.

CW4 Multi-Objective Use of Corridor Rights-of-Way

Large utility tower rights-of-way create open areas along the river corridor. Utility companies own most of these areas, which offer limited public use due to safety, maintenance and operational requirements. However, utility corridors can be opened to the public along selected portions of the river, by introducing community- and habitat-friendly uses such as gardens, parks and trails. Planting with native vegetation also increases habitat and reduces maintenance costs for utility companies.

Figure 3-44. Southern California Edison and the LA Department of Water and Power own much of the land immediately adjacent to the river.

3.7.2 River Corridor Policies and Programs

The San Gabriel River Master Plan will provide for development and adoption of the following policies and programs (PP) to ensure progress toward the overall vision, goals and objectives, and project performance criteria.

PP1 Design Guidelines

Standards and guidelines provide site and building design information to encourage new development and other land use projects that are compatible with the vision and goals of the Master Plan. The Los Angeles River Design Guidelines are functional standards for trails, lighting, fences, bridges and other landscape elements that will also be applicable to the San Gabriel River. These functional standards will be complemented by the "place-making" reach design palettes specific to the San Gabriel River, drawing upon materials, colors, forms and textures that reflect the river's distinct character. (See Section 3.7.3 Design Guidelines, pages 3-40 through 3-48, for more a comprehensive description of this policy.)

PP2 Access

Guidelines will be developed to establish parameters for public access enabling visitors to safely experience ("touch") the river corridor in ways compatible with flood control, water quality, habitat protection, and other vital functions. These guidelines must take into account the reality that the San Gabriel River is no longer a natural system because channelization has increased the force of rushing water and with it the risk to visitors. For this reason, past and current policy has severely limited public access to the river. However, river access may be appropriate in remaining low flow, natural areas and this new policy can be implemented per the recommendations of a study focused on this specific question.

PP3 Use

Guidelines will be established for determining permitted and prohibited uses within the river corridor by type of activity, location, and other considerations (for example, developing a dog control policy).

PP4 Americans with Disabilities Act (ADA)

All new structures and trails that will be used by the general public will be compliant with ADA standards, wherever applicable.

PP5 Operational Access

Access will be provided for ongoing maintenance and operational requirements of existing infrastructure for flood prevention, water supply and water quality, and utilities. Policy guidelines will be developed to ensure such access is integrated into all designs.

PP6 Maintenance

Planning, design, and construction of new and improved project site facilities and amenities in the San Gabriel River corridor must always take into account the durability and anticipated maintenance requirements of these facilities.

PP7 Exotic Plants Removal

Removal of arundo and other invasive weeds should be achieved where feasible. Plant removal should be carried out in a coordinated, systematic manner.

PP8 Safety and Security

Programs and policies should be developed to ensure the safety and security of all visitors to the river corridor. These policies will address security patrols, lighting, fencing, transient populations, and development of defensible spaces, and other issues impacting safety and security of visitors. Access for all emergency vehicles must be ensured.

Figure 3-45. Policies for visitor access to the river will be guided by safety.

PP9 Vector Control

The planning and design of any new or restored wetland area for habitat or stormwater treatment must be planned in coordination with the local mosquito and vector control agency and designed to avoid vector breeding that might create a risk to public health.

PP10 Water Quality

Best Management Practices (BMPs) should be implemented where feasible to ensure groundwater and surface water quality.

PP11 Stormwater Retention/Recharge

Opportunities for stormwater collection and infiltration will be maximized without adding contamination and in accordance with sound water management techniques and public health requirements.

PP12 Water Rights

All surface water and groundwater associated with the San Gabriel River Watershed are subject to water rights, either through State permit or court adjudication. Projects affecting water supply will recognize existing water rights and the limitations they impose on water use, and will not diminish the amount of water available to water suppliers and other water rights holders.

COURTESY OF NORTH EAST TREES

Figure 3-46. Removing non-native plants is critical for a healthy river environment.

COURTESY OF SAN GABRIEL VALLEY MOSQUITO AND VECTOR CONTROL DISTRICT

Figure 3-47. Mosquitoes can be contained through proper design techniques and maintenance.

COURTESY OF NORTH EAST TREES

Figure 3-48. Reclaimed water is released from the San Jose Creek Water Reclamation Plant.

PP13 Water Conservation Education

Educational programs will encourage water conservation policies, reducing dependence on imported water.

PP14 Reclaimed Water Usage

Projects and programs that increase the use of reclaimed water in commercial and industrial settings will be encouraged.

PP15 Habitat Integration

Any project or maintenance work within the river proper should include, where feasible, a component that improves or enhances the movement of fish and wildlife and the growth of native plants within the corridor. Physical improvements or changes to the river should consider low flow channels, drop structure designs or other features that allow the movement or migration of fish. In addition, channel vegetation maintenance programs should consider sensitive clearing practices that promote a biologically diverse mosaic of new and older growth, and use native vegetation for landscaping. However, habitat enhancement should only be considered where it will not have an adverse impact on flood control, water supply and groundwater recharge functions.

COURTESY OF DAN SLATER

Figure 3-49. The great blue heron will make a nest in even the smallest habitat sites.

PP16 Wildlife

All projects should encourage river visitors and users to learn to value wildlife in its natural state and to avoid harming wildlife by harassing, handling, feeding, littering or encouraging interactions with wildlife—for the health and safety of both animals and the public.

Figure 3-50. The Think River! watershed education youth program, sponsored by the San Gabriel Mountains Regional Conservancy and the City of Azusa, is an example of increasing awareness of the river. Logo courtesy of SGMRC and Ramona Rubio.

PP17 Public Information and Education

Programs to increase public awareness and understanding of all aspects of the river and the role they can play in protecting it will be encouraged. This includes a variety of elements such as river maps and brochures, youth watershed education programs, field trips, and other educational activities to complement and reinforce interpretive programs of the various educational centers along the river corridor.

COURTESY OF CAL POLY POMONA/SIERRA CLUB, ANGELES CHAPTER

Figure 3-51. Open space acquisition will help form a continuous greenway along the river.

PP18 Economic Development

Projects and programs should serve the economic development interests of cities along the river corridor while also helping to achieve the vision and multiple goals of the Master Plan.

PP19 Open Space Acquisition

Land parcels within or near the river corridor should be acquired where feasible to be adapted as public open space and habitat and for water conservation and/or flood control functions.

3.7.3 Design Guidelines

Design guidelines provide direction to project sponsors and designers to ensure that future improvements are compatible with the vision and goals of the Master Plan while strengthening the sense of place and image of the river. Two sets of design guidelines apply to river corridor projects: aesthetic design guidelines and functional design guidelines.

Aesthetic Design Guidelines by Reach

Aesthetic design guidelines create a "sense of place" for the river corridor, ensuring that all structures and landscapes reflect and express the unique identity of the San Gabriel River. Each of the seven reaches in the project area has a unique character, an individual mosaic of materials, colors, forms and landscape textures. Reach design elements are derived from prevalent plant communities, natural features or geologic formations, physical characteristics of the river channel, existing landmark structures and places, cultural elements and character-forming elements or objects. These elements together make the San Gabriel River distinct from any other Southern California river system.

Future physical improvements to the river corridor can draw from these reach design palettes. (See Appendix B for a more complete list of native plants appropriate to each reach.)

Reach 1: Headwaters

Deep in the interior of the San Gabriel Mountains, this reach is mainly defined by the lack of human presence and the overwhelming presence of nature. The San Gabriel River is very inviting here as it meanders over boulders and is joined by other creeks via waterfalls. Tall riparian trees such as oaks, alders and cottonwoods provide a canopy that frames the sky and mountains, making this reach more human-scale than Reach 2. Trees provide elements of wood, leaves and twigs that are not found in abundant quantities in lower reaches. There are very few structures in this reach, with the exception of the service road and the Pasadena Bait Club.

COURTESY OF DAN SLATER

COURTESY OF GABI MCLEAN ©2003

COURTESY OF ANNE DOVE, NPS

COURTESY OF GABI MCLEAN ©2003

Figure 3-52. The Reach 1 palette emphasizes natural materials.

Materials

- Wood (primary building material)
- Large river rocks and boulders (secondary building material)
- Water
- Rock outcrops
- Riparian trees (alders, willows, cottonwoods, oaks)

Forms

- Rocky waterfalls
- Columnar stands of tree trunks
- Moving streams
- Leaves of all sizes and shapes
- Rocky, uneven surfaces
- Thick foliage

Colors

- Greens (leaves)
- Browns (bark)
- Blues (water, sky)

Native Plants

- *Acer macrophyllum* (big-leaf maple)
- *Alnus rhombifolia* (white alder)
- *Amorpha fruticosa* (false indigo)
- *Baccharis salicifolia* (mule fat)

COURTESY OF GABI MCLEAN ©2003

COURTESY OF GABI MCLEAN ©2003

Figure 3-53. The Reach 2 palette is influenced by Art Deco, with intense colors and dramatic forms.

- *Ceanothus sp.* (California lilac)
- *Mimulus aurantiacus* (bush monkeyflower)
- *Quercus chrysolepsis* (canyon live oak)
- *Rosa californica* (California rose)
- *Rubus ursinus* (California blackberry)
- *Salix exigua* (narrow-leaved willow)
- *Salix lasiolepis* (arroyo willow)
- *Salix laviegata* (red willow)
- *Umbellularia californica* (California bay laurel)

Reach 2: San Gabriel Canyon

The most dramatic stretch of the San Gabriel River, this reach is clearly defined by the deeply cut canyon through the steep mountains. The sky is prominently framed by the mountains and the air is much clearer than in lower reaches. Slopes are coated in coastal sage scrub and mixed chaparral plant communities, all low-growing plants within a fire-dependent ecosystem. Mixed with the soft textures of the plants are the rough textures of rock outcroppings. The Morris and San Gabriel Dams and Reservoirs provide dramatic counterpoints to the steep mountain slopes. Built elements like the Art Deco design of Morris Dam and the engineered earthen rock San Gabriel Dam provide inspiration for future projects.

Materials

- Concrete (primary building material)
- Boulders (secondary building material)
- Water
- Sediment/Sand
- Low sage scrub plants (buckwheat, yucca, artemesia)

Forms

- Tall, towering, historic concrete dam (Morris)
- Art deco elements of Morris Dam
- Rough, rocky walls
- Velvety carpeted scrub plants

Colors

- Turquoise blue of sediment-laden reservoir waters
- Dark midnight blue of oxygen-poor reservoir waters
- Deep sky blue
- Rust (fall color of buckwheat on steep slopes)
- Browns
- Greens
- White (yucca, buckwheat flower)

Native Plants

- *Alnus rhombifolia* (white alder)
- *Amorpha fruticosa* (false indigo)
- *Baccharis salicifolia* (mule fat)
- *Ceanothus sp.* (California lilac)
- *Elymus condensatus* (giant wild rye)
- *Heteromeles arbutifolia* (toyon)

- *Mimulus aurantiacus* (bush monkeyflower)
- *Platanus racemosa* (western sycamore)
- *Populus fremontii* (Fremont's cottonwood)
- *Quercus chrysolepsis* (canyon live oak)
- *Rosa californica* (California rose)
- *Rubus ursinus* (California blackberry)
- *Salix exigua* (narrow-leaved willow)
- *Salix lasiolepis* (arroyo willow)
- *Salix laviegata* (red willow)
- *Umbellularia californica* (California bay laurel)

Reach 3: Upper San Gabriel Valley

The San Gabriel Mountains loom above the gentle inclines of the alluvial fans, which spread out from the mouth of the canyon. At the base of the mountains one can still see vast expanses of rare alluvial fan sage scrub plants, unique to this geologic formation. Spikes of yucca flowers contrast with the softer mounds of sage. The hundreds of feet of unconsolidated sand and gravel supply the construction industry with tons of material each year. The San Gabriel River is the source of river rock, a popular building material for Craftsman-style homes and landscapes throughout the San Gabriel Valley. Historic citrus groves once covered this region, an important chapter in the history of the Valley.

Materials

- River rocks, gravel
- Wood
- Alluvial fan sage scrub plants (black sage, white sage, artemesia, encelia, yucca)
- Scent of sages (when brushed or touched)

COURTESY OF GABI MCLEAN ©2003

COURTESY OF GABI MCLEAN ©2003

Figure 3-54. The Reach 3 design palette reflects the arts and crafts influence with river rock walls and broad sweeps of native sage.

Forms

- Craftsman/arts and crafts-style structural elements (river rock walls, pilaster structures)
- Soft, mounded shrubs (sage scrub expanse)
- Prickly yucca filifera and opuntia
- Orange groves

Colors

- Soft greens
- Gray-green
- Bright green accent
- Gray tones (river rock)
- Sand, beige, tans
- Yellow (sunflower)

Native Plants

- *Amorpha fruticosa* (false indigo)
- *Baccharis pilularis* (coyote brush)
- *Baccharis salicifolia* (mule fat)
- *Ceanothus sp.* (California lilac)
- *Elymus condensatus* (giant wild rye)
- *Heteromeles arbutifolia* (toyon)
- *Malosma laurina* (laurel sumac)

COURTESY OF NORTH EAST TREES

COURTESY OF GABI MCLEAN ©2003

COURTESY OF GABI MCLEAN ©2003

Figure 3-55. The Reach 4 design palette features wood construction, tree forms and birds.

- *Mimulus aurantiacus* (bush monkeyflower)
- *Platanus racemosa* (western sycamore)
- *Populus fremontii* (Fremont's cottonwood)
- *Quercus agrifolia* (coast live oak)
- *Quercus chrysolepsis* (canyon live oak)
- *Rhus integrifolia* (lemonade berry)
- *Rosa californica* (California rose)
- *Rubus ursinus* (California blackberry)
- *Sambucus mexicana* (Mexican elderberry)
- *Salix exigua* (narrow-leaved willow)
- *Salix goodingii* (black willow)
- *Salix lasiolepis* (arroyo willow)
- *Salix laviegata* (red willow)
- *Umbellularia californica* (California bay laurel)

Reach 4: Lower San Gabriel Valley

A close relationship to the land guides the design in the lower San Gabriel Valley. Gravel mining, the recent agricultural land uses such as the Duck Farm, and natural open spaces of Whittier Narrows Regional Park all speak to the importance of natural resources in this reach. Previously, this reach was crisscrossed by small streams and wetlands. There were willows, alders, cattails and other wetland and riparian plants. Then it was home to cattle ranchos and small farms. Over 300 species of birds can still be found today at Whittier Narrows; they frequent the soft-bottom habitat areas of the San Gabriel River and San Jose Creek.

Materials

- Wood (nature-center inspired wood fences, pilings, signs)
- Stones, river rock, flagstone
- Trees (sycamore, willow, alder)
- Wetland stream plants (cattail)

Forms

- Wetland birds (heron, egret, ducks)
- Bird-like oil-derricks

Colors

- Brown
- Green

Native Plants

- *Amorpha fruticosa* (false indigo)
- *Baccharis pilularis* (coyote brush)
- *Baccharis salicifolia* (mule fat)
- *Ceanothus sp.* (California lilac)
- *Elymus condensatus* (giant wild rye)
- *Heteromeles arbutifolia* (toyon)
- *Juglans californica* (California walnut)
- *Malosma laurina* (laurel sumac)

- *Mimulus aurantiacus* (bush monkeyflower)
- *Platanus racemosa* (western sycamore)
- *Populus fremontii* (Fremont's cottonwood)
- *Quercus agrifolia* (coast live oak)
- *Rhus integrifolia* (lemonade berry)
- *Rosa californica* (California rose)
- *Rubus ursinus* (California blackberry)
- *Sambucus mexicana* (Mexican elderberry)
- *Salix exigua* (narrow-leaved willow)
- *Salix goodingii* (black willow)
- *Salix lasiolepis* (arroyo willow)
- *Salix laviegata* (red willow)

Reach 5: Upper Coastal Plain

The Pio Pico State Historic Park provides many distinct historic and cultural design references. The historic home of Pio de Jesus Pico, the last Governor of Mexican California, was built in the mid-1800s and recently reopened. His home was called El Ranchito, reflecting the rancho era of California. Wood, stucco and cast-iron gates and fences are primary materials. A "steer" icon is found throughout the park. The landscape is stark. Drought-tolerant plants with strong forms are used in contrast to the pale colors of stucco. Houses located in neighborhoods near the river reflect the rancho-era aesthetic.

COURTESY OF NORTH EAST TREES

Figure 3-56. The Reach 5 design palette shows the Rancho influence with stucco walls, wood fences and iron gates.

Materials

- Heavy wood gates, fences
- Natural twig trellis, arbor, fence
- Stucco walls, pilasters
- Cast iron gates, fences
- Sharp, bold leaves (yucca)

Forms

- "Steer" brand icon at Pio Pico
- Curved walls, signs
- "Alamo" façade form (City of Pico Rivera signage)

Colors

- Brown wood
- Black iron
- Tan, sand, beige, pale peach (stucco)

Native Plants

- *Amorpha fruticosa* (false indigo)
- *Baccharis pilularis* (coyote brush)
- *Baccharis salicifolia* (mule fat)
- *Ceanothus sp.* (California lilac)
- *Elymus condensatus* (giant wild rye)
- *Heteromeles arbutifolia* (toyon)
- *Juglans californica* (California walnut)
- *Malosma laurina* (laurel sumac)
- *Mimulus aurantiacus* (bush monkeyflower)
- *Platanus racemosa* (western sycamore)

COURTESY OF BRETT GOLDSTONE. NORTH EAST TREES

Figure 3-57. The Reach 6 design palette features industrial materials—concrete and metal—contrasting with cool sherbet colors.

- *Populus fremontii* (Fremont's cottonwood)
- *Quercus agrifolia* (coast live oak)
- *Rhus integrifolia* (lemonade berry)
- *Rosa californica* (California rose)
- *Rubus ursinus* (California blackberry)
- *Sambucus mexicana* (Mexican elderberry)
- *Salix exigua* (narrow-leaved willow)
- *Salix goodingii* (black willow)
- *Salix lasiolepis* (arroyo willow)
- *Salix laviegata* (red willow)

Reach 6: Lower Coastal Plain

The overwhelming presence of engineered concrete dominates this section of the river. Human-built forms with cool sherbet colors are painted onto reclaimed water pipes and other utility facilities. The smooth and engineered surfaces of channel walls are repeated in drainage channels and at Bellflower's skateboard park. Concrete and metal edges are prevalent in this reach.

Materials

- Concrete
- Metal

Forms

- Angular, smooth surfaces
- Sleek, smooth surfaces

Colors

- Lavender, lilac, periwinkle
- Pink
- Yellow

Native Plants

- *Amorpha fruticosa* (false indigo)
- *Baccharis pilularis* (coyote brush)
- *Baccharis salicifolia* (mule fat)
- *Ceanothus sp.* (California lilac)
- *Elymus condensatus* (giant wild rye)
- *Heteromeles arbutifolia* (toyon)
- *Malosma laurina* (laurel sumac)

- *Mimulus aurantiacus* (bush monkeyflower)
- *Platanus racemosa* (western sycamore)
- *Populus fremontii* (Fremont's cottonwood)
- *Quercus agrifolia* (coast live oak)
- *Rhus integrifolia* (lemonade berry)
- *Rosa californica* (California rose)
- *Rubus ursinus* (California blackberry)
- *Sambucus mexicana* (Mexican elderberry)
- *Salix exigua* (narrow-leaved willow)
- *Salix goodingii* (black willow)
- *Salix lasiolepis* (arroyo willow)
- *Salix laviegata* (red willow)

Reach 7: Tidal Influence

The overwhelming presence of water is the primary design element for this reach. The river meets the Pacific Ocean here, mixing ocean saltwater with freshwater. Wind is made visible through windsocks, flags and banners, and in more subtle ways such as ripple patterns in the sand and water surfaces. The marina, with its sailboats and bright, primary colors, also offers strong design features.

Materials

- Water!
- Sand
- Weathered wood (driftwood, pilings)
- Riprap, large jagged boulders
- Gas-lamps
- Wetland plants (cattails)

Forms

- Wind, visualization of… (flags, banners, ripples in sand or water)
- Waves and wavy patterns
- Sailboats (triangle)

COURTESY OF DAN SLATER

COURTESY OF DAN SLATER

Figure 3-58. The Reach 7 design palette features a marina influence with basic geometric shapes and primary colors.

- Banners, flags
- Bird-like oil-derricks
- Elements worn smooth by water and wind (driftwood)
- Elements worn down by water and wind (sand, pebbles)
- Sinous wetland forms

Colors

- Blue for water
- Bright primary colors associated with sailing, marinas (yellow, blue, green, red)
- White (sailboats)
- Wetlands mosaic (browns, greens, blues)

Native Plants

- *Amorpha fruticosa* (false indigo)
- *Baccharis pilularis* (coyote brush)
- *Baccharis salicifolia* (mule fat)
- *Ceanothus sp.* (California lilac)
- *Elymus condensatus* (giant wild rye)
- *Heteromeles arbutifolia* (toyon)
- *Malosma laurina* (laurel sumac)

Adapting the Los Angeles River Functional Design Guidelines

Functional design standards provide standard or suggested dimensions and other specifications for river facilities and amenities, taking into account maintenance requirements, durability, safety, accessibility and overall quality control.

The Los Angeles River Master Plan Advisory Committee has developed design guidelines for implementing projects along the Los Angeles River. The Committee has provided three sets of guidelines: landscaping, maintenance and a signage manual. Both the landscaping and signage manuals are currently available, and the maintenance manual is expected later in 2004.

Since most of the functional specifications being developed for the LA River are universal, they are also applicable to the San Gabriel River. Because of the similarities between conditions along the Los Angeles and the San Gabriel Rivers, these LA River functional specifications are being adapted as technical approaches for the San Gabriel River Corridor Master Plan, and will be available in a separate stand-alone volume (see Appendix D, Design Guideline Topic Areas).

The LA River design guidelines, "Landscaping Guidelines and Plant Palettes for the Los Angeles River and Tujunga Wash," provides functional specifications for both existing and new facilities along the river. The guidelines cover a wide range of topics, including land use, safety and maintenance standards for already existing functions and facilities along the river channel, such as the maintenance standards of the Los Angeles County Flood Control District. For instance, there are standards for both maintenance and emergency vehicle ingress and egress to the river, as determined by service road width, vegetation planning zones and access gate setbacks. Auxiliary function and maintenance requirements are also specified for the two utilities that maintain power lines and transmission towers on the service road or adjacent to the channel (i.e., for the City of Los Angeles Department of Water and Power and for Southern California Edison). This includes detailed specifications for such items as vegetation clearance around the base of transmission towers and plant height limitations. Specifications for other already existing facilities (such as requirements for bike paths and equestrian trails and facilities) are also provided.

The design guidelines also establish basic functional standards for a range of new amenities, trails and paths to be developed along the river such as:

- Fences
- Gates
- Lighting
- Benches
- Trash Receptacles
- Bollards
- Bike Racks
- Drinking Fountains
- Equestrian Amenities
- Emergency Call Boxes
- Pedestrian Paths
- Bicycle Paths
- Equestrian Trails

Project sponsors can use the functional standards as specified within the San Gabriel River Corridor Master Plan Design Guidelines Technical Appendix (available later this year) as a reference to assist with design and development of plans for their own specific projects. For a full listing of the topic areas contained in the Los Angeles River design guidelines, see Appendix C.

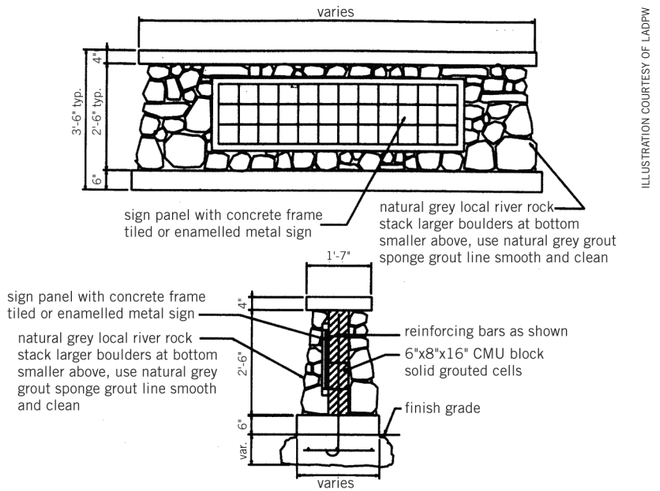


ILLUSTRATION COURTESY OF LADPW

Figure 3-59. Design guidelines, such as this river rock wall detail from the "Los Angeles River Master Plan Landscaping Guidelines and Plant Palettes" by LADPW, specify materials and design elements that blend with the river environment.

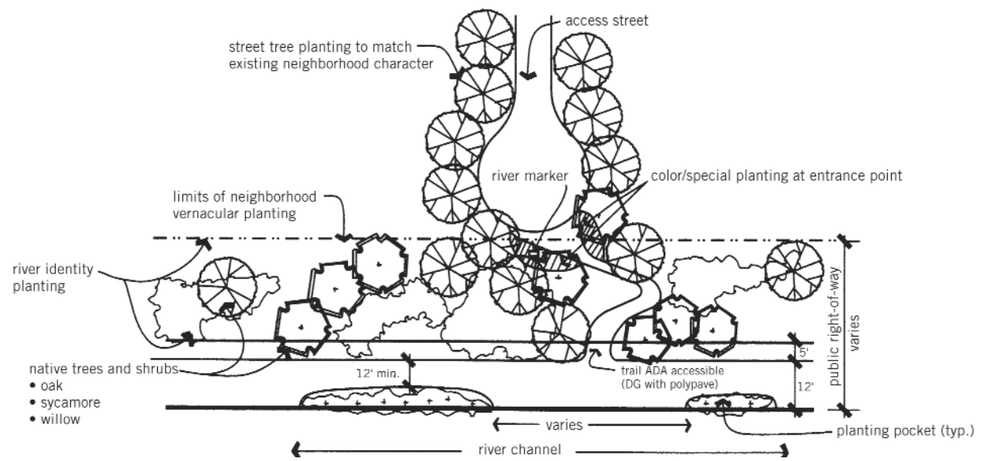


ILLUSTRATION COURTESY OF LADPW

Figure 3-60. Los Angeles River design guidelines such as this street-end landscape concept from the "Los Angeles River Master Plan Landscaping Guidelines and Plant Palettes" provide exact design specifications for river projects.

3.8 CONCEPT DESIGN STUDIES

The Concept Design Studies are exercises that were carried out by members of the Steering Committee to illustrate how the Master Plan multi-objective approach might apply to projects in the San Gabriel River corridor. These studies are intended for illustration purposes only and are not in any way approved or recommended plans. For each of these sites, the actual planning process by project sponsors still needs to be carried out, including appropriate public involvement throughout.

The five Concept Design Studies illustrate how project planning can simultaneously address the multiple goals of the Master Plan. Lessons learned from these projects will help inform and guide the selection, planning, and design of all projects within the Master Plan project area.

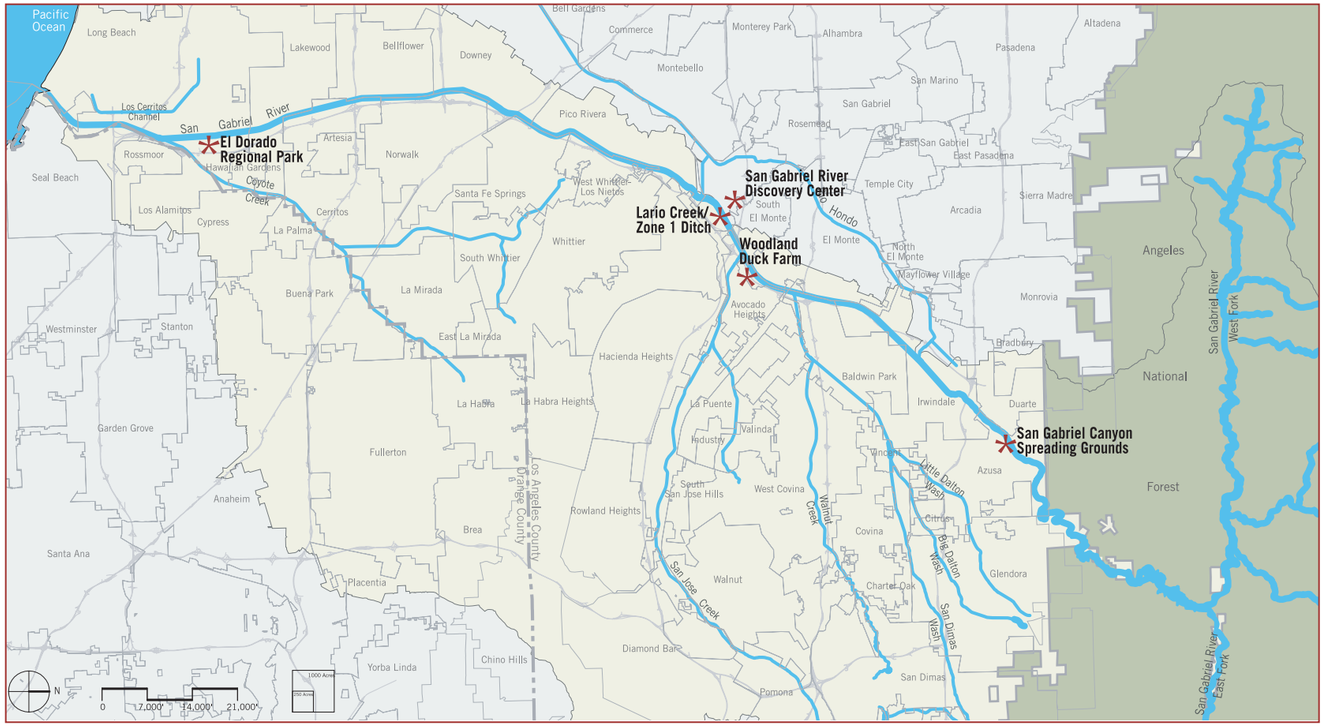
The San Gabriel River Master Plan Steering Committee selected the Concept Design Studies from the list of over 134 stakeholder projects.

Each individual Concept Design Study addresses multiple Master Plan Elements or comprehensively meets all the goals, objectives, and performance criteria of at least one Master Plan Element.

The five projects selected as Concept Design Studies represent all six Plan Elements (see Section 3.3), and the eight river enhancement concept categories (see Section 3.5). Diverse stakeholders—cities, public agencies, and community organizations—are among the many sponsors associated with these projects.

The five Concept Design Studies selected by the Steering Committee are:

- San Gabriel Canyon Spreading Grounds (Reach 3)
- Woodland Duck Farm (Reach 4)
- San Gabriel River Discovery Center at Whittier Narrows (Reach 4)
- Lario Creek/Zone 1 Ditch (Reach 4)
- El Dorado Regional Park Wetlands and Master Plan Update (Reach 6)



Map 3-9. The five Concept Design Studies.

Each study includes a project description, the opportunities offered by the project, specific issues and challenges that must be addressed, the initial design concepts, a site analysis, and a preliminary concept design.

As with all Master Plan projects, the Concept Design Studies can only be implemented if all existing water rights are protected, water supply sources are not diminished, and water quality is not degraded. This requirement stems from more than a century of negotiation and litigation during which water rights to local surface and groundwater have been developed. The State Water Resources Control Board has declared the San Gabriel River fully appropriated, and that reality must be factored into the final design and planning of all projects in the Master Plan.

3.8.1 San Gabriel Canyon Spreading Grounds

Project Description

Once a gravel quarry, this 165-acre site now encompasses two deep spreading basins adjacent to the San Gabriel River. Native landscaping improvements will improve habitat and enhance views by aesthetically improving the appearance of the spreading basins. An interpretive trail and pocket parks at the northern and southern edge of the basins will increase recreational and educational opportunities.

Opportunity

As an adaptive re-use of gravel mining pits, the San Gabriel Canyon Spreading Basins were designed as purely functional, utilitarian facilities. The proposed improvements at this facility provide an excellent example of how existing water conservation infrastructure can be enhanced to serve other multi-purpose objectives, while still effectively carrying out its primary water supply functions.

A vast open space area lies adjacent to the river where the mountains meet the valley floor. The area offers spectacular views of the surrounding natural landscape. With the right landscaping, the pools of water held by the spreading basins can look like lakes reflecting the sky and the mountains. The proposed enhancements will create a more visually appealing place, offering passersby a serene environment for contemplation and passive recreation while also improving habitat.

The basins are currently surrounded by bare soils and concrete drainage structures that were installed to reduce erosion. Random pockets of native and non-native vegetation dot the landscape. Heavy trucks and other equipment move slowly along two parallel access roads encircling the basins. Adding to the stark industrial appearance of the site is a chain link fence surrounding the perimeter. Many residents of nearby Azusa may not even be aware of this barren landscape.

Figure 3-61. A pocket park with interpretive signage will offer spectacular views of the mountains.

Issues and Challenges

The primary mission of the spreading grounds and its accompanying facilities is water conservation; this mission will remain unchanged. The challenge is how to incorporate recreational and habitat enhancements without compromising this primary mission.

Safety, security, and liability concerns will pose a key challenge: would improvements to the site create an "attractive nuisance" (an issue that applies to several other sites along the river). Although a natural lake with steep banks can be a dangerous site, it does not create the same degree of liability as a human-built lake with steep banks. Since enhancements to the spreading grounds will create a more appealing environment, precautions must be taken to ensure public safety. Also, the water itself must be protected from accidental or intentional contamination. Finally,

Figure 3-62. A mountain backdrop against clear blue water is a perfect setting for a pocket park and trailside rest area.

Figure 3-63. Bare landscapes need softening, especially when adjacent to housing.

any improvements must take into consideration new and developing security measures.

For these reasons, while the site design may enable visitors to enjoy the landscaped grounds and scenic views, it must also keep them away from the steep edges of each basin, the open concrete channel, City of Azusa water facilities, and the water itself. In addition, landscaping should achieve the desired aesthetic effects without blocking views for security purposes.

Habitat restoration must be compatible with the primary water supply function of the site. Water surface elevation in the basins fluctuates an impressive 80 feet during the year, with a frequency more erratic than the natural wet/dry cycle. Water is released during the summer months, exposing the nearly vertical sides of the basins, relieved only by terraced earthen slopes for vehicular maintenance access. The bare soils are subject to erosion as the water rises and falls. These drastic water level fluctuations and associated erosive forces must be taken into account in habitat design.

Large trucks moving loads of sediments traverse the narrows strips of land between and around the basins, busily arriving, circulating, and exiting the site. City and County maintenance access roads are in some cases parallel. This suggests an opportunity to consolidate roads parallel to the concrete channel, creating additional space for habitat restoration and trails.

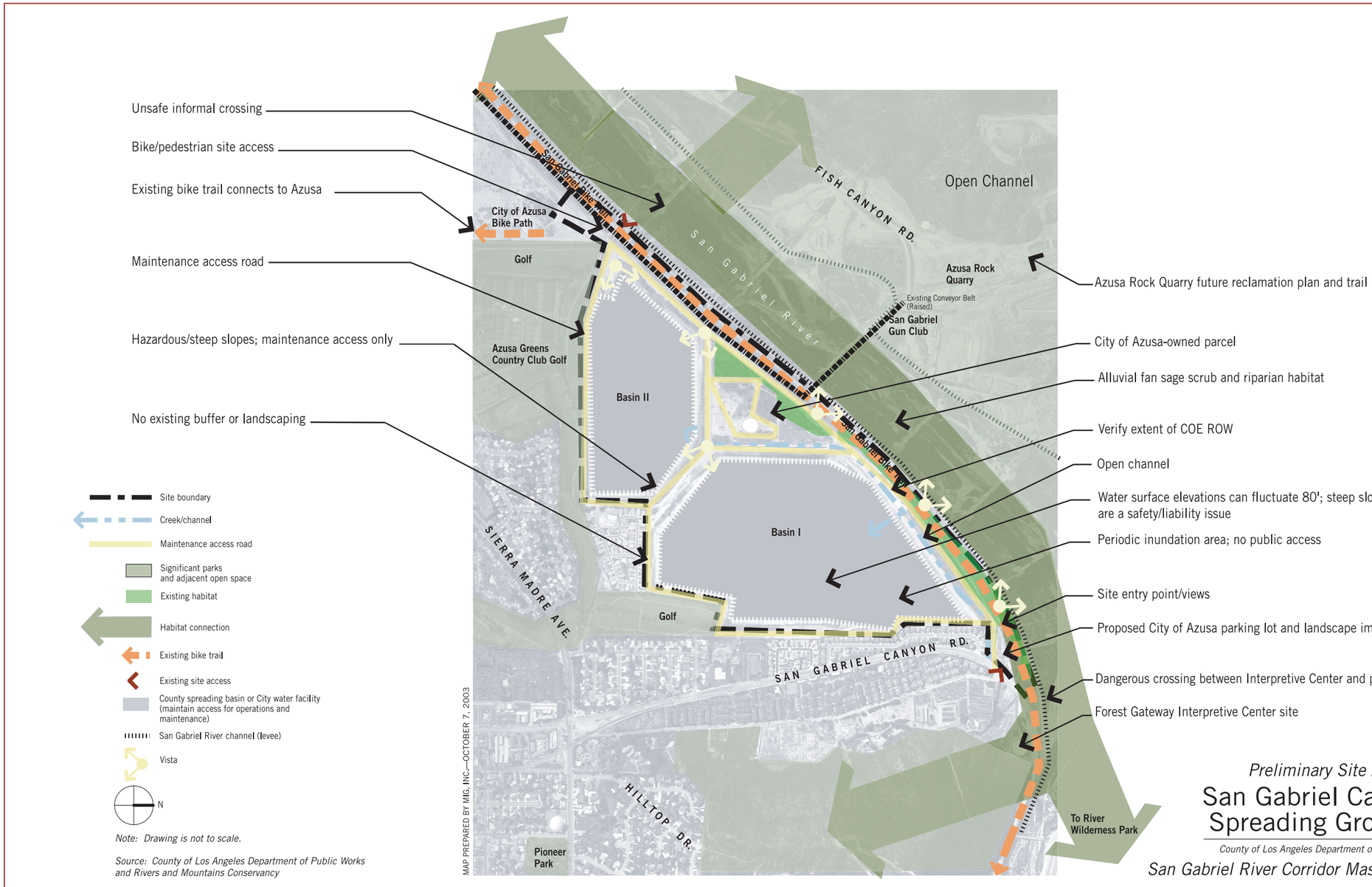
A gravel conveyor belt operated by Vulcan runs along the northwest edge of the basins. Aside from the function it performs, the aesthetic contrast of its pure industrial form slicing through the river floodplain is a powerful image, and could serve as a linear interpretive feature. The San Gabriel River Bike Trail runs along an elevated levee between the conveyor belt and the river, providing views of the spreading grounds and the surrounding landscape. However, there is currently no connection to the site and bike trail.

Design Concepts

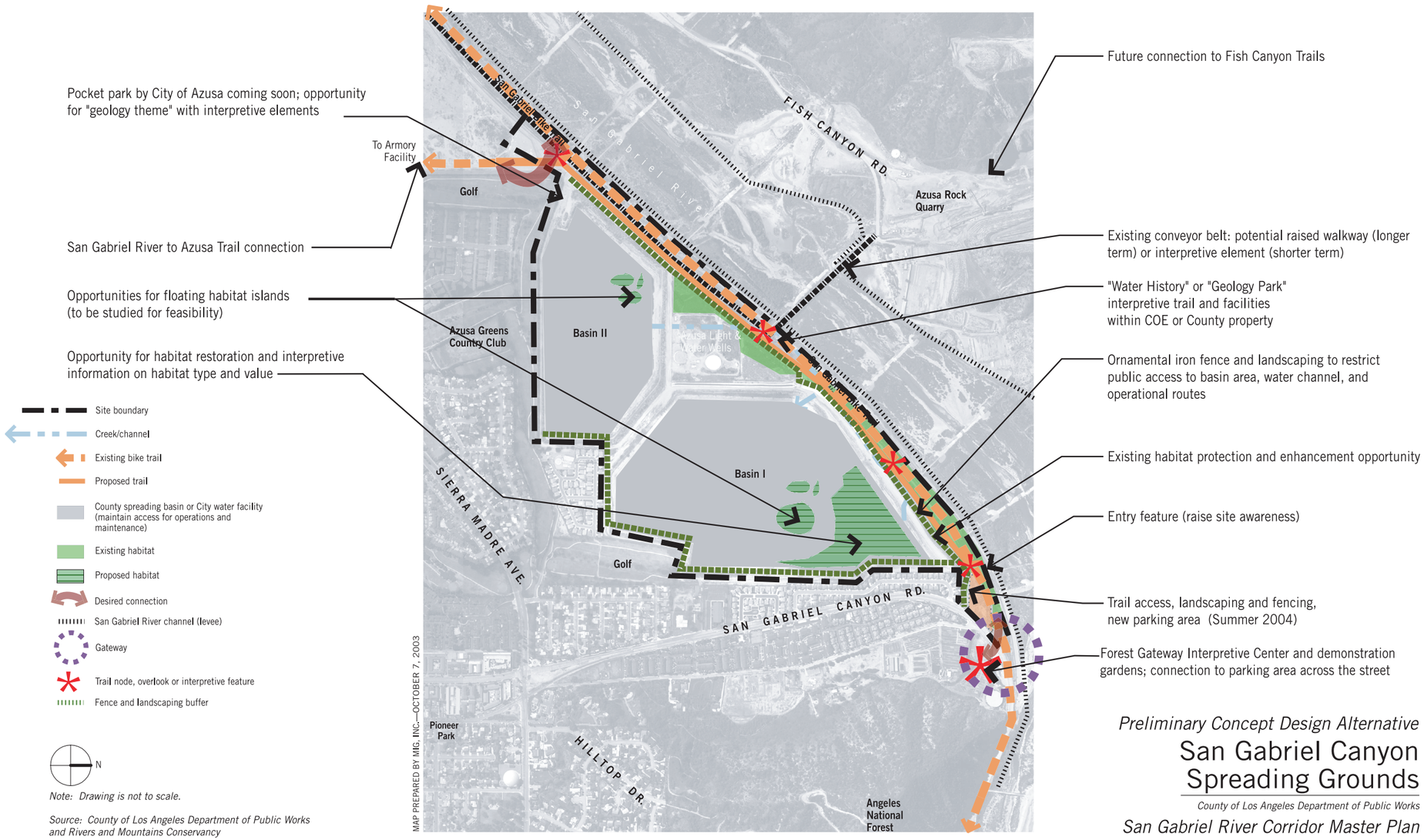
The spine of the proposed improvements is the interpretive trail, with nodes, amenities and destinations anchoring it to the site and its broader landscape context. While the meandering trail offers views and information about the site, fencing and vegetation block public access to both the basins and the concrete channel.

The existing chain link fence surrounding the perimeter of the facility should be replaced with a tubular steel or ornamental iron fence, which can maintain security yet improve aesthetics. This will also enhance public respect for the facility and its critical function of providing drinking water. Artwork on the fence or the fence design itself can follow this theme.

A "pocket park" will anchor each end of the new trail segment, one at the northwest corner and one at the southwest corner. These could be created by moving existing fence lines closer to the basins, creating pockets of land outside of the proposed new fences for the facility. The southwest



Map 3-10. Preliminary Site Analysis—San Gabriel Canyon Spreading Grounds.



Map 3-11. Preliminary Concept Design Alternative—San Gabriel Canyon Spreading Grounds. For illustration purposes only.

corner pocket could be a geology-theme park, in conjunction with the adjacent Vulcan operations. The northwest corner pocket could feature native landscaping, passive recreation, and interpretive signage. The triangular parcel between the two basins is the focal point of the site. This area has views of the spreading basins on three sides, and Fish Canyon and the San Gabriel River to the northwest.

Landscape improvements will provide native landscaping in key areas of the basin edges to improve habitat, enhance views, reduce reflected heat and light and decrease erosion. Habitat values should be maximized through the use of native plants beneficial to birds, small mammals, amphibians, reptiles and insects with access to the basins.

The existing native habitat (alluvial fan sage scrub) can be enhanced and supplemented near the spreading grounds. The beach area on the north side of Basin II and the triangle between the two basins are the largest areas at the site for potential habitat restoration. The shallow corners and edges of the spreading basins may be enhanced with riparian vegetation including willow trees, mule fat scrub, and baccharis scrub, but this may be modified to take into account fluctuating water levels. However, vegetated slopes are nature's way of minimizing erosion, and could be useful here. Vector control to mitigate mosquito breeding must be considered in the design and planning of any new habitat along the edges of the spreading basins.

Floating islands in the spreading basins are possible solutions for fluctuating water levels. These islands would be connected by a cable and weight system attached to the bottom of the basin. The islands would be planted with wetland vegetation providing habitat for breeding and migrating bird species. Kiosks on the trail could provide educational information about wetland habitats and wildlife. The benefits or impacts on water quality relating to attracting birds and other species will require further study because new wildlife could have impacts on water quality. Floating islands may also have a negative impact on maintenance and operations at the site. If habitat is established, LADPW maintenance activities and spreading operations may be affected. New regulations could possibly be imposed when new wildlife and recreation are introduced. If spreading operations are affected, opportunities to spread imported or local water may be missed. If the floating island concept is studied further, long-term assurances will be needed to ensure that the introduction of habitat is compatible with maintaining the facility's water conservation function.

Key Components of the Concept Design Study

- New multi-use trail, amenities, and vista points
- Fencing and native landscaping barriers to restrict public access to spreading basins, concrete channel, light/water facility and sensitive habitat areas
- Interpretive signage: geology, water supply and habitat themes
- Connections to the Gateway Interpretive Center, the San Gabriel River Bike Trail and the City of Azusa
- Existing habitat protection and enhancement
- Perimeter landscape improvements
- New pocket parks in southwest and northwest corners of site
- Floating habitat islands feasibility study

3.8.2 Woodland Duck Farm

Project Description

This project aims to transform an abandoned duck farm into a multi-use riverfront park with passive recreation and native habitat enhancements. Located on a long, narrow strip of land, this 57-acre site, squeezed between the San Gabriel River on the west and the 605 Freeway (San Gabriel) on the east, was the largest privately-owned open space adjacent to the river. Recognizing its unique potential, the Watershed Conservation Authority, a joint powers authority formed by the RMC and the Los Angeles County Flood Control District, purchased the site. Improvements could include interpretive trails, over-look points, habitat restoration, equestrian facilities and treatment wetlands.

Opportunity

When it closed in 2001, the Woodland Duck Farm had been in operation since 1950, the last remaining animal agricultural business in Los Angeles County. It left behind a flat, bleak landscape offering little in the way of shade and only a few scattered remnants of vegetation, mostly non-native. With the exception of a Spanish-style ranch house and remnant duck sheds, the only other remaining structures are tall utility towers marching along the full length of the property. Features of the original floodplain that once characterized this site were long ago obscured by the channelization of the river. Meanwhile, the drone of the freeway is a constant reminder of its proximity.

Yet, despite or even because of this stark setting, the site holds great promise as a possible model for other river-adjacent properties, demonstrating the extent to which it is possible to recreate some of the lost river environment. It also represents a tremendous opportunity to reclaim underused lands to benefit nearby communities long starved for open space and recreational facilities.

Strategically located between Whittier Narrows and the Santa Fe Dam Recreational Area, the Woodland Duck Farm can also provide a critical link in the proposed habitat corridor that will eventually extend from Puente Hills to the San Gabriel Mountains. The Sierra Club was among the first to recognize its strategic importance, not only for habitat but also for recreation and open space. The Sierra Club placed this site at the heart of its proposal for a San Gabriel Confluence Park, a conceptual study of a connected open space network extending from San Jose Creek to the Rio Hondo.

There are other opportunities as well. Current uses on the site include acreage leased for a nursery and an equestrian facility. While these uses are currently subject to short term leases and their continued presence and location would be subject to a site specific master plan, one or both might become a component of the future park. Reflecting the long-standing presence of nearby equestrian communities, acquisition of the Woodland Duck Farm presents an opportunity to preserve this singular recreational resource.

Two creeks on the site, Avocado and San Jose, may also help municipalities meet their mandated Total Maximum Daily Load Requirements (TMDLs). By incorporating best management practices to treat low flows from one or both creeks, the site can serve as an example for other river-adjacent properties with similar water treatment potential.

Figure 3-64. Separate equestrian and bike trails will follow along the treatment wetland.

And, as further testimony to the importance of the Woodland Duck Farm site, RMC has selected the ranch house as the location for its future headquarters.

Issues and Challenges

Many challenges must be overcome to make the vision of a multi-objective riverfront park at the Woodland Duck Farm a reality. This project is a microcosm of the types of problems and opportunities existing elsewhere along the San Gabriel River. Improvements must be made to create a more appealing environment for prospective visitors to the park. There are also physical constraints that must be accommodated in the design. Given its former use as a duck farm, heavy nitrate loading may be a factor and potential contamination must be analyzed.

A contamination plume in the groundwater located north of the Duck Farm property is a recognized EPA superfund site, and may need to be addressed in future park planning. The EPA should be consulted about contaminant migration. There are EPA clean-up programs currently in the area, such as the Baldwin Park Operable Unit.

Another design challenge will be how best to provide convenient access to a 2-mile-long by 500-feet-wide area bounded by the 605 Freeway, the San Gabriel River and San Jose Creek. Presently, only limited access to the site is possible via unmarked entrances under the freeway (including a utility easement, a freeway underpass, and a pedestrian entrance). Ironically, adjacent communities that desperately need parks are built right up to the western edge of the river, yet most have little connection to the waterway or the potential open space promised by the nearby duck farm site. Even

COURTESY OF CAL POLY POMONA/SIERRA CLUB, ANGELES CHAPTER

Figure 3-65. Southern California Edison towers dominate the landscape.

COURTESY OF CAL POLY POMONA/SIERRA CLUB, ANGELES CHAPTER

Figure 3-66. This existing house that once belonged to the Woodland family will become the new RMC headquarters.

the high school directly across the river from the site is strictly separated from the river by a series of chain link fences and hazard signs.

Sound barriers will be needed to buffer noise and other freeway affects. Earth berms or terraces can be planted that will create a green wall to mitigate freeway noise and improve views from both the site and the freeway. These will also create a green landmark that signals a riparian corridor.

Other planning issues to be addressed include the SCE and DWP utility towers that dominate much of the site. Fifteen-foot height restrictions under the power lines and the operating requirements of the utilities, including the need to maintain vehicular access will shape park and habitat restoration plans. A safe harbor agreement may be required if utility companies are to allow native plantings within their right-of-way and easements. The possibility of a safe harbor agreement, as established under the Endangered Species Act, will need to be investigated,

Although it is a large open space adjacent to the river, a combination of factors limits the site's suitability for floodplain restoration. The freeway bounds the site on one side, making it too narrow to accommodate an adequate terraced levee and broader floodplain. In addition, the volume and timing of flows in the river—from Avocado Creek, San Jose Creek, and releases from upstream sources—fluctuate unpredictably according to supply and demand. Vegetative clearing for flood control maintenance further diminishes the possibility of native habitat restoration in the soft-bottom channel.

On the site itself, existing vegetation is dominated by non-native ruderal (weedy) vegetation, although there are some native species present. However, channelization of the river changed the hydrology, soils, and water table to such a degree, that the native riparian vegetation may not be established again without irrigation or some other water supply.

As with many locations along the river, what is now largely deserted vacant land can become a public safety issue. Equestrians traveling alone have been particularly concerned about encampments or undesirable confrontations in the confluence area thickets. So it is essential to create both the appearance and the reality of a safe environment. Fire trucks and other emergency vehicles need access to the property to ensure quick response times for public safety. That access will also facilitate regular patrols by local police and the County Sheriff, which will discourage vandalism and other illegal activities, and further enhance public safety.

Design Concepts

Although the RMC plans to work with the community and other stakeholders to help develop a final specific design for the duck farm site, some general design concepts can be anticipated.

Site entry and access points will have to be safe and clearly defined for park visitors. Primary site access for vehicles and parking may be provided through the freeway underpass linking the equestrian center on the east side of the San Gabriel Freeway to the main portion of the duck farm property on the west side. At the southwest corner of the property, a new bike and pedestrian bridge will connect the San Jose Creek Bike Trail and the San Gabriel River Bike Trail. It will also provide the communities on the far side of the river with direct, convenient access to the duck farm. Emergency access points may need to be located at the utility easement at the north side of the property and the planned bridge at the southern end of the property.

A major programmatic feature of the site includes the possibility of treating stormwater runoff from Avocado Creek. One approach is to use sinuous treatment wetlands braided across the site, parallel to the river.

Surface flows provide an opportunity to simultaneously meet recreational and habitat objectives. Access to the SCE towers for maintenance vehicles can be maintained, with open space near but not under the towers used for the wetland. If half of the available open space were used for the wetlands (from the golf course south to San Jose Creek), about 15 acres would be available, which could effectively treat almost 400 acres of the first three-quarter inches of urban runoff. However, the Avocado Creek channel is 15 feet below grade, so a long swale or wetland would require pumping or a large amount of excavation throughout the site.

Another option may be a 3-acre wet detention basin, essentially an artificial lake with emergent wetland vegetation around the perimeter. The wet detention basin would be an effective means for removing suspended sediments, nutrients and metals, and would also be aesthetically pleasing because of the permanent pool and vegetation. Unlike the treatment wetlands, it would not require as much excavation but it would require inflow on a regular basis to maintain the water level. Soils excavated to create the treatment wetlands or the basins could be used as fill to create berms along the freeway for sound barriers.

To minimize mosquito breeding, vector control would have to be carefully considered for either the treatment wetlands or the wet detention basin.

In addition, for emergency and safety reasons, no ponding of water under power lines is allowed under current SCE policy. This requirement reflects SCE's status as an investor-owned utility regulated by the California Public Utilities Commission. The regulatory condition limits SCE's flexibility much more than municipal utilities, like the DWP. This requirement would have to be addressed in the design and siting of treatment wetlands or a wet detention basin.

Additional water flows might be provided by two rubber dams the LADPW plans to locate in the San Gabriel River adjacent to the Duck Farm. A third rubber dam is already in operation near the northern end of the site. These water conservation structures could provide a modest increase in riparian habitat in the channel or flow diversions from the rubber dams might help support habitat restoration on the duck farm site. Existing water rights would have to be maintained in the design of any water diversion onto the Woodland Duck Farm site.

Much of the duck farm site could be re-vegetated with native species, but the soil type and the depth of the groundwater table are critical factors in determining the type of habitats that could be supported. If the soils and groundwater levels are conducive to riparian habitat, a mosaic of willow, sycamore and cottonwood would be appropriate. If riparian habitat could not be sustained, a mosaic of upland scrub vegetation, including sage scrub, mule fat, and elderberry woodland would be appropriate. Habitat restoration, along with the treatment wetlands or wet detention ponds, will enable the duck farm to function as one important linkage in the Puente Hills to San Gabriel Mountains habitat corridor.

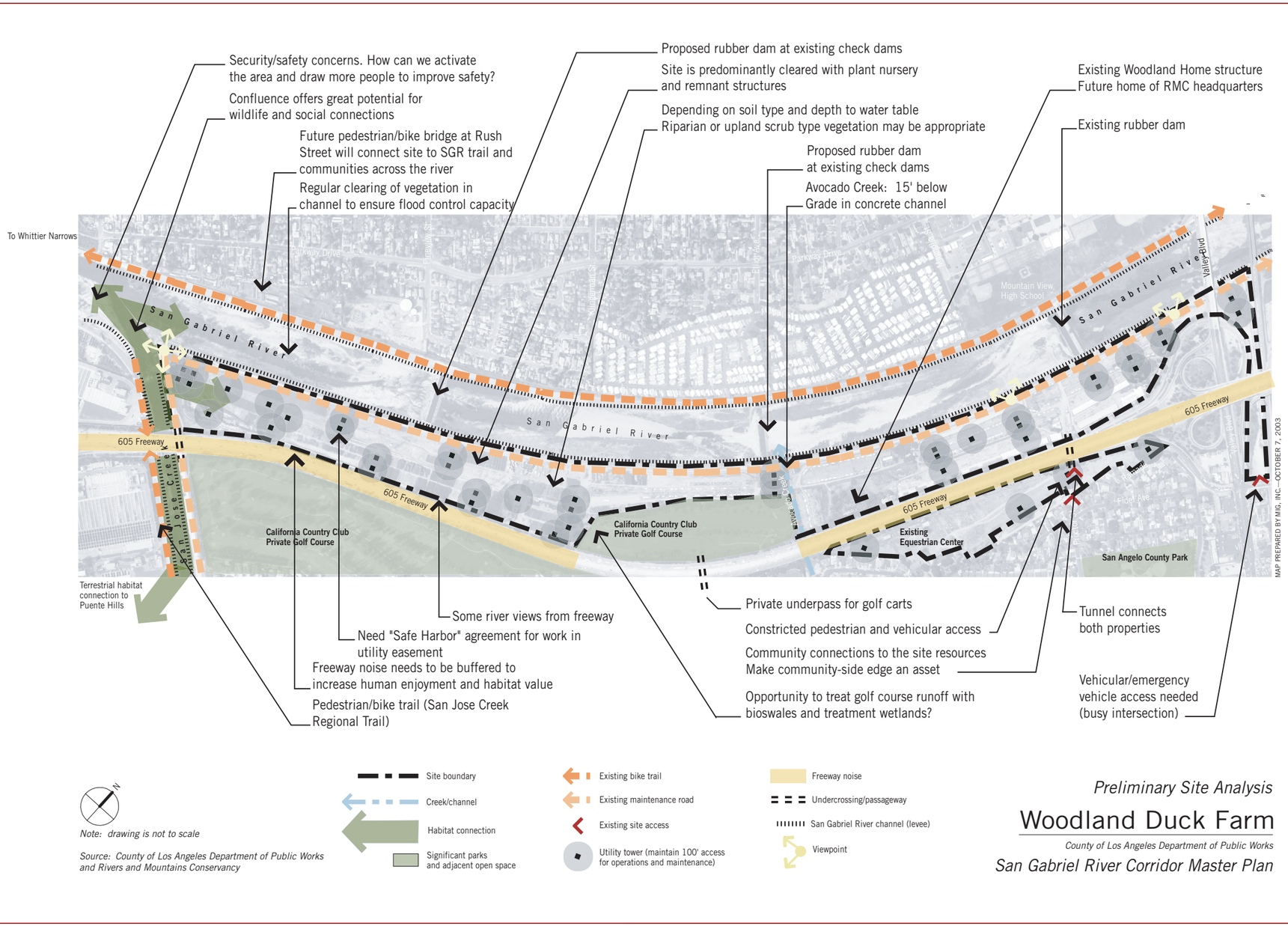
A series of multi-use trails, trail nodes and educational kiosks can be integrated throughout the site, winding through the treatment wetlands and offering a variety of experiences from short loops to longer trail circuits. Signage along the way will orient trail users to the site features, the San Gabriel River, San Jose Creek and to their place along the river corridor. An overlook at the confluence could explain its significant biological richness.

Using utility easements for open space and trails is an important feature of the project design. A stepping-stone approach is suggested, beginning with first phase implementation with trails and non-native, low-water use plants. If a safe harbor agreement is in place, a second phase of low-growing native plants and habitat can be established. All plantings, non-native and native, would have to be consistent with the ground and aerial clearances for the towers.

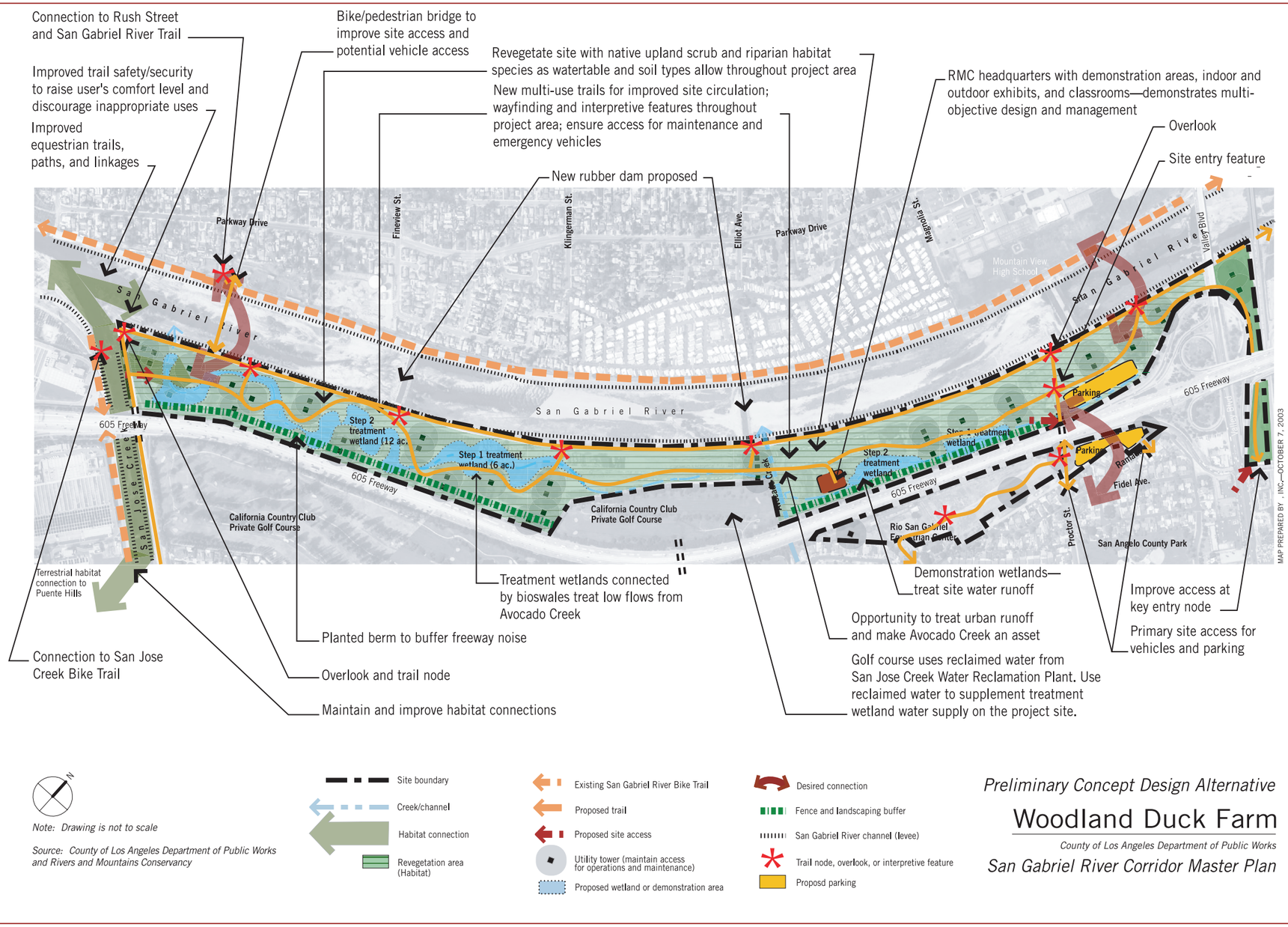
Plans for the new RMC headquarters in the original ranch house may include demonstration gardens, outdoor gathering spaces, and other exhibits. Site and building development should demonstrate green building techniques and an attractive, watershed-appropriate site design. The overall plan for the Duck Farm project might also include additional visitor serving facilities and other enhancements including improved equestrian trails, paths and linkages.

Key Components of the Concept Design Study

- Improved site access and parking
- Re-vegetation and habitat restoration
- Treatment wetlands and bioswales or wet detention basins to treat low flows from Avocado Creek
- Multi-use trails for improved site circulation, wayfinding and interpretive features
- Designated habitat and recreational spaces
- Wildlife habitat corridor connections
- Educational and interpretive opportunities
- Improved equestrian trails, paths, linkages and facilities
- Planted berm to buffer freeway noise
- Spanish style-ranch house as new RMC/WCA headquarters
- Native plant nursery



Map 3-12. Preliminary Site Analysis—Woodland Duck Farm.



Map 3-13. Preliminary Concept Design Alternative—Woodland Duck Farm. For illustration purposes only.

3.8.3 San Gabriel River Discovery Center at Whittier Narrows

Project Description

A new, regional education center will be a multi-faceted showcase at the heart of the San Gabriel River, providing residents and area visitors a chance to explore and reconnect with the river. The new center will be built at the site of the well-used Whittier Narrows Nature Center—at the geographic and hydrologic middle of the San Gabriel River. It will model environmentally-sensitive design, featuring a museum, conference center, and indoor/outdoor programming focused on the watershed. It will also provide information about other locations in the watershed that can be visited (including nearby Lario Creek, the Woodland Duck Farm, and the Rio Hondo). The principal groups involved in the project are County of Los Angeles Department of Parks and Recreation, the San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy and the Upper San Gabriel Valley Municipal Water District.

Opportunity

The 320-acre Whittier Narrows Nature Area is owned by the U.S. Army Corps of Engineers for flood control purposes. Lario Creek (the Zone 1 Ditch) also passes through the area. The existing Nature Center was originally operated by the Audubon Society as a bird sanctuary because of the large numbers of resident and migratory birds. The County of Los Angeles Department of Parks and Recreation took over operations when Legg Lake and the Whittier Narrows Regional Park opened.

Many visitors and school nature programs enjoy the recreational opportunities of the Whittier Narrows Regional Park, visit the current Center, and use the lakes and nature trails. Yet, few realize the historic importance of the San Gabriel River to all the people who have lived in the area for hundreds of years. The river has done its job so well that it has allowed area residents to forget about it as it runs through the valley.

The current Nature Center includes a small museum, picnic area, exhibits and about 320 acres of native but somewhat degraded habitat. The Nature Reserve section, adjacent to Lario Creek, is a riparian habitat dominated by sycamore, cottonwood and willows. However, large areas of low quality ruderal (weedy) habitat are dominated by non-native grasses and invasive species such as castor bean and *arundo donax* (giant reed). Replanting with native vegetation can increase habitat and provide demonstration gardens.

Figure 3-67. An outdoor terrace can visually link the indoor exhibits with the native landscape and trails outside.

The current building was constructed in the 1960s. It is small and badly needs renovation and updating. A new Center, built to "green" standards, will replace the current dated facility, expanding educational and community-building opportunities.

The Discovery Center complex will link the San Gabriel River to Lario Creek and its new wetlands (see Section 3.8.4). The Center's river showcase will help community members, schools and visitors reconnect with the sense of place the river offers, encourage stewardship, and raise public understanding about the importance of the river and its watershed.

Issues and Challenges

The site is on high ground within the floodplain behind the Whittier Narrows Dam. Designers will need to include mitigation measures to ensure that there will be no reduction in available flood storage.

The current entrance to the Nature Center is on a blind curve, making it very difficult and dangerous to enter and exit. There is little signage so visitors often miss the entrance and need to turn around. South El Monte High School is across from the center, but there is no safe way to cross. The entrance will need to be redesigned, with new signage and safe pedestrian crossings that will encourage more student participation at the Center.

Figure 3-68. The existing Whittier Narrows Nature Center will be replaced.

The connections between the Center and the river are tenuous. The San Gabriel River Bike Trail runs quite close by, but there is no signage marking a trail to the Center. At the Center, there is no indication that one can easily walk to the river and the trail. In fact, it is difficult to see the river at all because flood control levees entirely block views. It may be possible to redesign part of the site to offer at least some views of the river.

Parking will need to be increased to accommodate more visitors, which will also increase stormwater runoff. That water will need to be treated and returned to the river or Lario Creek, in keeping with the green design of the Center.

Design Concepts

BUILDING. The new facility will be a model of environmentally-sensitive design, touching the river as lightly as possible. It is planned as a Leadership in Energy and Environmental Design (Leeds)-certified green building, incorporating environmentally-friendly and recycled building materials, solar electricity and heating, and the native landscape palette.

PROGRAMMING. The 16,000-square-foot Discovery Center will include about 8,000 square feet of exhibit space, offering a comprehensive view of the formation of the San Gabriel River Watershed (natural and cultural history and water-related topics such as water quality and supply, recycling and conservation). It will include an orientation center for area visitors, conference center, theater, library, and exhibit space.

There will also be an outdoor amphitheater and outdoor exhibits (such as fossils, water cycles, and natural history) with interpretive signage.

The grounds will offer a demonstration garden of watershed-friendly landscape practices, including using rainwater for irrigation. Near the Discovery Center, inviting blooms can display an array of Californian natives. Farther away, visitors will see the open growth patterns of the natural ecology of the landscape.

TRAILS. The site will be easily accessible from the San Gabriel River Bike Trail and a trail loop being developed along the Rio Hondo, across Peck Road Water Conservation Park, and down the San Gabriel River Trail back to Whittier Narrows.

A variety of trails will draw visitors to the Lario Creek demonstration wetlands and the San Gabriel River. Water-themed signage can lead trail users along paths, with interpretive elements to expand on the exhibit topics. Equestrian trails will intermingle on the site with bike trails.

TREATMENT WETLANDS. Stormwater runoff from the site, including the parking lot, can be sent through a bioswale filtration system down to the demonstration wetlands between Lario Creek and the Center. That area is currently low quality ruderal habitat. That system could also treat low-flow runoff coming from the Peck Road and Durfee Road drains. The wetland area, about 3-6 acres, could treat the first 3/4" of stormwater runoff

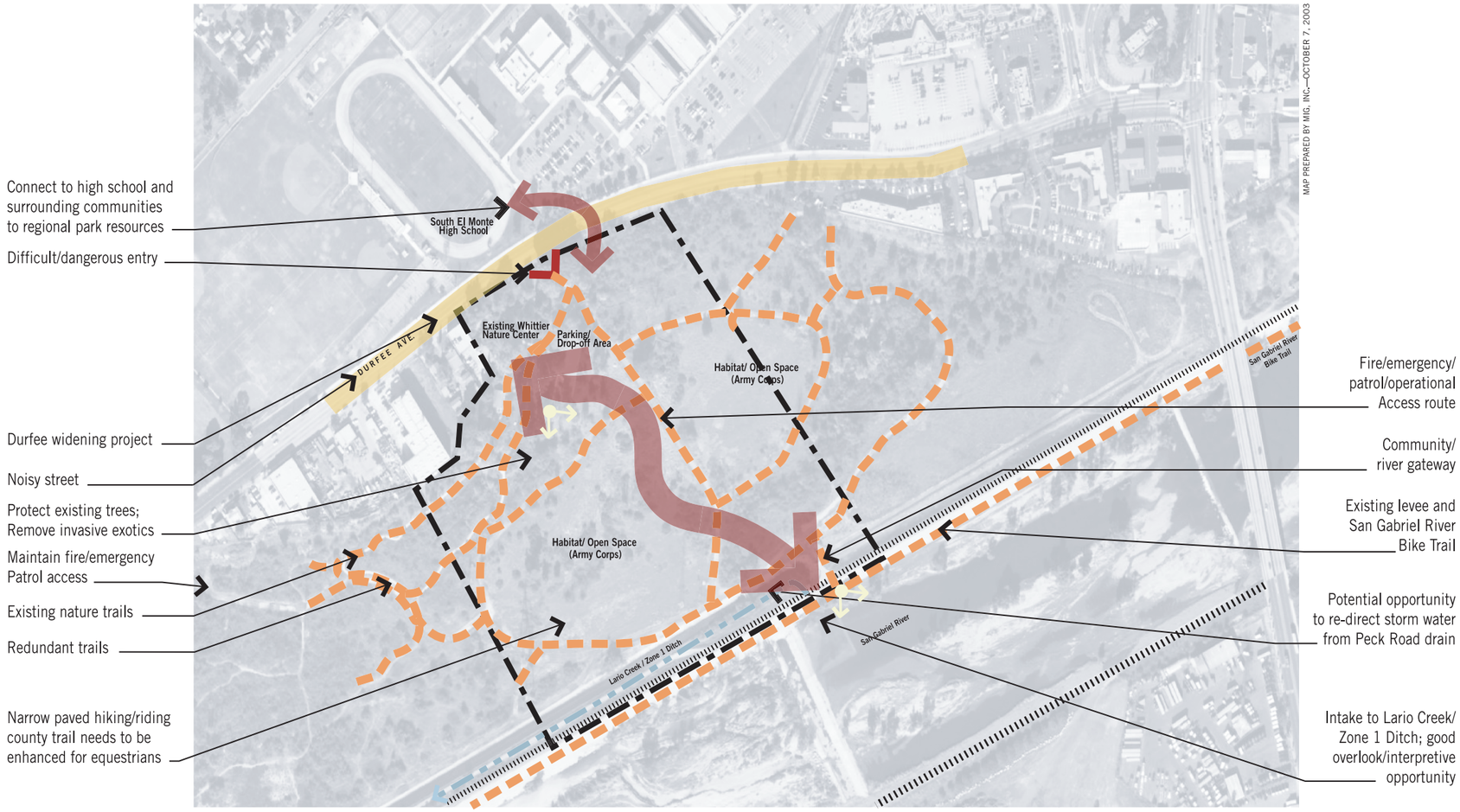
Figure 3-69. Interpretive signage, such as this display by North East Trees, will provide additional visitor education.

from about 120 acres. These demonstration wetlands will be designed to minimize mosquito production, which can become an additional educational component. Supplemental water can be directed from Lario Creek. Once treated, this water will be returned to Lario Creek.

HABITAT. Areas surrounding the constructed wetland could be planted with cottonwood and willow. Dominant invasive species can be replaced with riparian/mule fat scrub, walnut, and Mexican elderberry woodland. Maintenance removal of exotic invasives throughout the site will allow natives to establish and spread. Extending native habitat areas will dramatically increase the value of the land to wildlife for foraging and nesting.

Key Components of the Concept Design Study

- New Education Center facilities with expanded functions
- Green building and design techniques
- Indoor/outdoor exhibits: natural/cultural history, watershed, conservation, water quality
- Watershed-appropriate demonstration gardens
- Conference center for community use
- New demonstration wetland (part of Lario Creek)
- Enhanced riparian habitat
- Multi-use trails with wayfinding system
- On-site stormwater runoff treatment



Map 3-14. Preliminary Site Analysis—San Gabriel River Discovery Center.

Map 3-15. Preliminary Concept Design Study—San Gabriel River Discovery Center. For illustration purposes only.

3.8.4 Lario Creek/Zone 1 Ditch

Project Description

The Lario Creek project, which is adjacent to the San Gabriel River Discovery Center at Whittier Narrows, will integrate a man-made water conveyance channel with the natural systems of Whittier Narrows. Located within the 50-year flood zone of the San Gabriel River, the Creek diverts water from the San Gabriel River to the Rio Hondo, where it flows into productive spreading grounds to recharge the groundwater. Its primary purpose is to carry imported water from the San Gabriel River to the Rio Hondo for recharge. North East Trees, a local non-profit organization, LADPW, and the California State Department of Water Resources have partnered to revitalize the channel. Improvements will demonstrate new bioengineering techniques, increase the creek's capacity and enhance the downstream spreading grounds, divert high flows to treatment wetlands, expand high quality habitat, and link regional multi-use trails. Proposed site improvements include channel improvements, interpretive trails, overlook points, habitat restoration, and a treatment wetland.

Opportunity

The project site is about 75 linear acres just north of the Whittier Narrows Dam. Historically, the San Gabriel River and the Rio Hondo commingled here—there were braided streams, wetlands, and sandbar islands in a rich natural habitat. Lario Creek was created in the 1950s when the two rivers were channelized and the complex floodplain hydrology was simplified into single purpose flood flow conduits.

The alternative name for Lario Creek best describes its current character: Zone 1 Ditch. It is a functional, human-made 1.8-mile waterway operated by LADPW. The Creek's intake is near the Whittier Narrows Nature Center, on the west side of the San Gabriel River. It heads southwest, parallel to Durfee Road, and empties into the Rio Hondo on the west side of Rosemead Boulevard.

During the dry season—most of the year—the flow contains reclaimed and imported water. A temporary EPA outfall discharges treated groundwater that had been contaminated with volatile organic compounds. Reclaimed and imported water is released into the San Gabriel River, upstream of the creek. LADPW uses the creek to divert some or all of the water from the San Gabriel River to the Rio Hondo and to the Rio Hondo Spreading Grounds in Pico Rivera to recharge the groundwater.

During the winter, the flow also includes stormwater runoff. The Creek is currently too small to divert all the water during heavy rains. However, the channel is critical to LADPW and the Water Replenishment District's water conservation operations and LADPW already has plans to widen it. That offers an opportunity to enhance its functioning as a hydrological system, provide educational opportunities and create another link in the habitat corridor between the Puente Hills on the east and the Montebello Hills on the west.

Issues and Challenges

Lario Creek is now steeply embanked with levees. Its highly compacted banks are subject to steady erosion and reinforced with riprap in some locations. The current practice of clearing vegetation in the channel increases the flow capacity, but leaves the banks barren and dry. Parts of the creek have been taken over by exotic and invasive vegetation such as non-native grasses, castor bean and arundo. What little vegetation remains does not shade the water, increasing the water temperature. Replanting with native vegetation, allowing the Creek to meander, and adding wetlands would improve the aesthetics and increase habitat.

The channel is almost flat; there is very little change in elevation between its intake and where it empties. As a result, the water moves very slowly and is thick with algae. To better serve its primary purpose of conveying water, the water needs to flow faster, without increasing the elevation

Figure 3-70. A meandering stream provides riparian habitat and shade for trail users.

change. One challenge to be addressed is that replanting with native vegetation could slow down water flow. Because the creek is human-made and flows are controlled, there is no real seasonal pattern to the water flow. The flow can vary throughout the year from zero to full capacity depending on the availability of water for groundwater recharge. It has a capacity of 250cfs, although the mean daily flow is only about 40cfs.

The imported water in the ditch is costly and evaporation is deducted from the purchased amount. This is a cost factor to the replenishing agencies. One proposal is to widen Lario Creek, which would increase evaporation although not significantly. This will be verified during the design of the project.

A major constraint is the concern that Lario Creek could become a vector control problem. If water is diverted to support restored wetlands and other habitats, there could be a problem during dry seasons when slower flows could create conditions that support mosquito proliferation. The planning and design of Lario Creek will need to be coordinated with the local mosquito and vector control agency to avoid mosquito breeding. An ongoing, sustainable, and well-funded vegetation maintenance management program will be essential to keep out non-native vegetation and for vector control.

There are some trails along the creek that are poorly marked and do not connect. Power line corridors, roads, levees, and trails criss-cross the site, fragmenting it and making wayfinding difficult.

Figure 3-71. Lario Creek begins at the San Gabriel River, just below the Whittier Narrows Nature Center.

Figure 3-72. There is now practically no vegetation along the banks.

Design Concepts

LADPW and North East Trees are now working on concept plans, under a grant from the California State Department of Water Resources Urban Streams Grant Program.

LADPW plans to increase the creek's capacity to a minimum of 300cfs to provide more flexibility for its groundwater recharge operations. Additional water from the upstream San Jose Creek Water Reclamation Plant could be released and diverted to Lario Creek to increase the flow. And during the wet season, an upstream rubber dam on the San Gabriel River collects water that has a valve that can release up to 400cfs.

The original proposal was to widen the channel to increase capacity and increase habitat. It called for a stepped design: a deep, narrow low-flow channel and wide, vegetated terraces to handle increased flows during the wet season.

Stakeholders have now proposed a dual channel model—two parallel channels would run between the two rivers. In the dual channel proposal, the existing conveyance channel would be widened but would not be vegetated. A new habitat channel would be planted with native vegetation and meander like a natural creek. Natural-looking terraces built over engineered levees can stabilize the banks. During the wet season, that channel would provide water for the dry lake beds near the creek.

In both proposals, urban runoff from the area north of Lario Creek and the Whittier Narrows Area, supplemented with water from the creek, could flow to a constructed wetland near the north bank of the creek (between the creek and the Discovery Center). The new wetland will mimic the natural water purification process, sending water through an "obstacle course" of vegetation and soils that cleanse it. The water would then flow back into the Creek and on to the Rio Hondo. An elevated trail system and interpretive signage can lead visitors through the process.

A wetland treatment facility would enhance the water quality from the area by reducing various pollutants accumulated through stormwater runoff, such as phosphorus, bacteria and sediment.

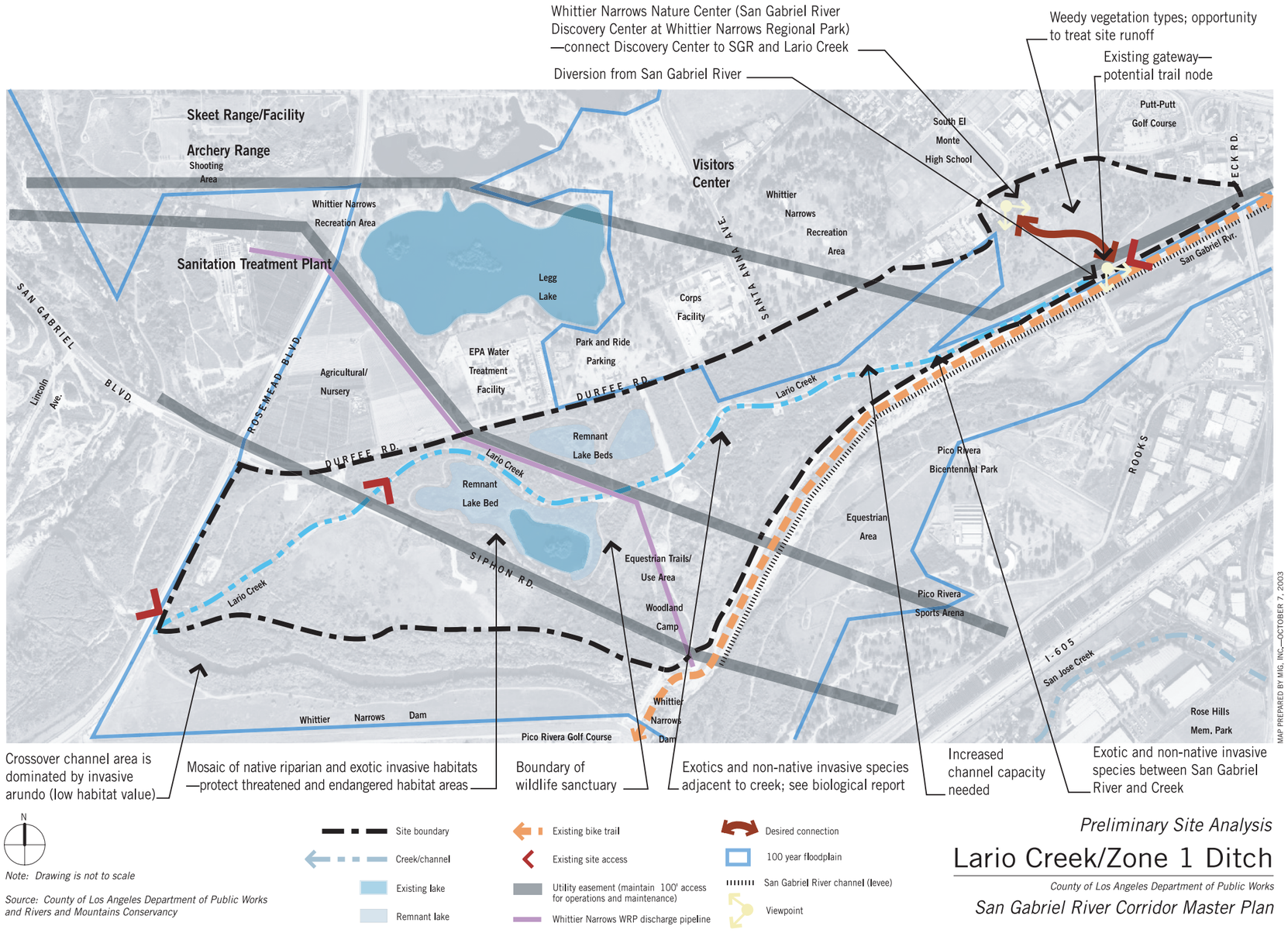
The new habitat channel (or the terraces of a widened single channel) will also provide areas for replanting native vegetation and developing valuable restored riparian habitat for birds on the Pacific Flyway. Native vegetation that can be restored include a riparian forest dominated by sycamore, cottonwood, and willows, and a mosaic of Mexican elderberry woodland, willow riparian scrub, coffeeberry scrub, annual grasslands, and small patches of coastal sage scrub and freshwater marsh.

The proposed design can consolidate trails, access nodes and facilities for all trail uses, including equestrian. The new Lario Creek trail, wayfinding and signage system can link the San Gabriel River with the Rio Hondo, the new Discovery Center, and the demonstration wetland, increasing outdoor educational and recreational opportunities.

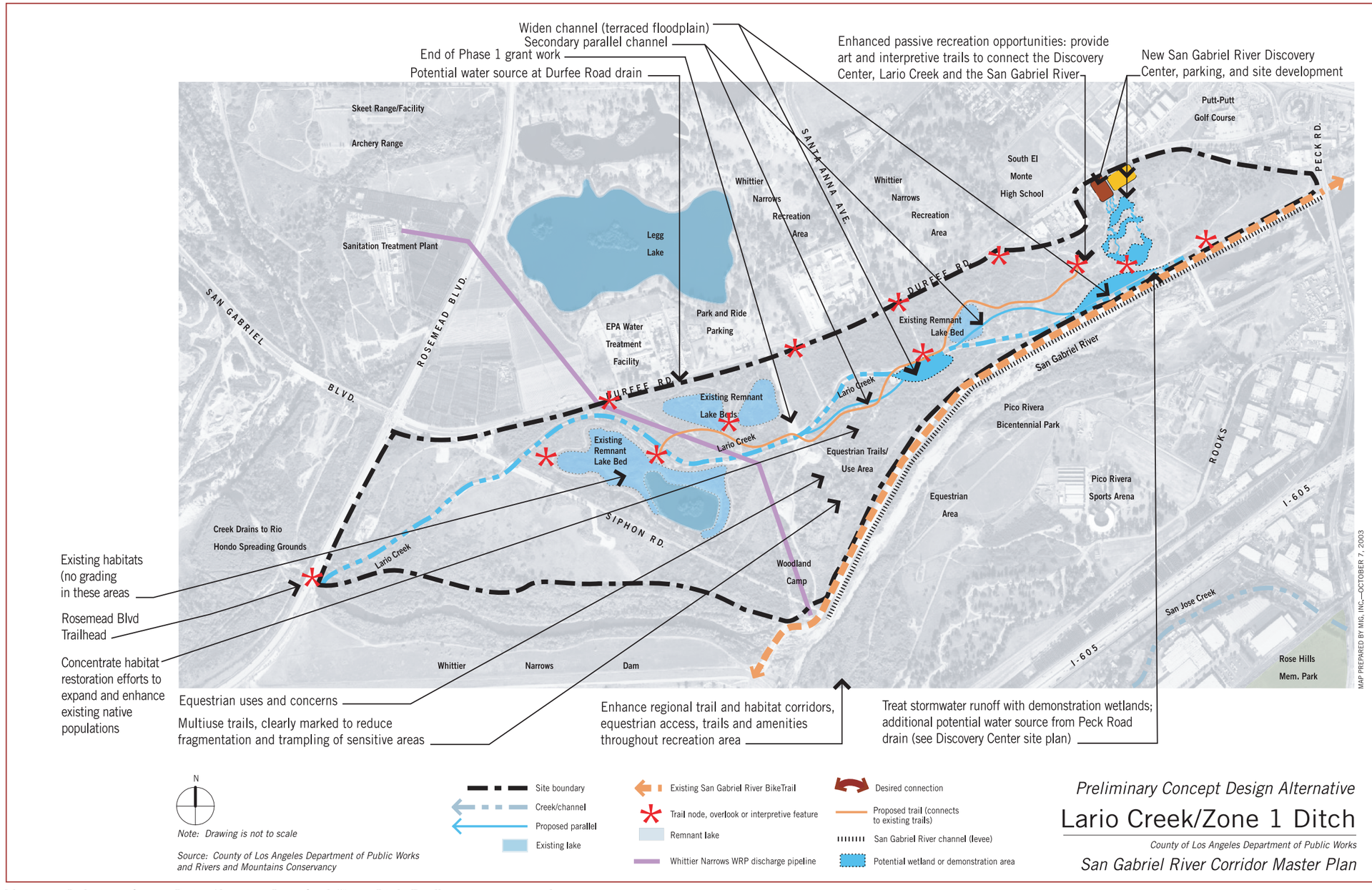
Since Lario Creek and the San Gabriel River Discovery Center at Whittier Narrows are directly adjacent to each other, site design and programming can be done jointly. However, from a planning and funding perspective, they are distinct. Each project has a different set of sponsors and stakeholders, with their own unique needs and requirements. In addition, given the distinct goals of the two projects, each project can pursue different funding sources. Overall funding for the two projects would likely be more limited were they combined into a single planned entity.

Key Components of the Concept Design Study

- Widened channel to increase capacity and flow
- New habitat channel with native vegetation
- Removal of exotic, invasive species
- Multi-use trails consolidation
- Interpretive signage
- Vector control in project design and maintenance



Map 3-16. Preliminary Site Analysis—Lario Creek/Zone 1 Ditch.



Map 3-17. Preliminary Concept Design Alterative—Lario Creek/Zone 1 Ditch. For illustration purposes only.

3.8.5 El Dorado Regional Park

Project Description

El Dorado Regional Park, owned by the City of Long Beach, is 500 acres of open space in a densely developed urban area. It is a long stretch of open land running along a concrete-lined section of the river. The park is a well-established urban recreation area, bordered by the river, Coyote Creek, and the 605 Freeway. The City and the RMC have partnered to develop a new Master Plan for the park, which will include new treatment wetlands, replacing exotic plants with natives, and creating new riparian habitats. An alternative vision includes returning this reach of the river to a more natural state with a soft bottom.

In a parallel process, the County of Orange is working with the U.S. Army Corps of Engineers on the Coyote and Carbon Creeks Watershed Management Plan, which includes the El Dorado Regional Park. That study will help determine the feasibility of elements of this project.

Opportunity

The park is at the confluence of the San Gabriel River and Coyote Creek, on land that was originally part of the floodplain. When the river and creek were channelized, the rich alluvial soils were perfect for farming. In the early 1950s, the City of Long Beach had the foresight to buy 500 acres of that farmland for a regional park to preserve open space. The farmland is long gone. The park is now surrounded by dense urban environments, the freeway—and two miles of the river. However, there is little connection between the park and the river: berms block views of the river from the park and SCE power lines run all along the river, precluding access except at two points.

The park is divided into four sections. The southernmost section, called South of Willow, is six City-owned acres of mostly undeveloped open space. Between that land and the river is 12 acres of SCE right-of-way. The area has been heavily disturbed through extensive construction and maintenance activities associated with the Wastewater Reclamation Plant (WRP) and the new Water Replenishment District groundwater injection facility—injecting water into the coastal basin to prevent saltwater intrusion. There is very little native habitat and minimal wildlife.

Area 1, just north of that site, includes the well-used El Dorado Nature Center, visited by more than 130,000 people a year. It offers natural trails and two lakes joined by a stream that meanders through forested areas and fields of wildflowers. To birds, the Center is a huge green oasis with water, cover and food—it is home to over 50 bird species. There is also a wide variety of mammals, including coyotes, foxes, squirrels, and raccoons. However, the area was initially planted with many non-native species that grow quickly, including pine, eucalyptus and oak. Many of these forested areas have now reached maturity and are beginning to die off. Grounds at the Center are overgrown with non-native grasses, and need replanting. The Nature Center itself has become shopworn and needs updating.

Areas II and III in the northern half of the site, offer a manicured park setting with common turf and ornamental, non-native trees planted for shade. These areas have paved trails and four more lakes, some concrete lined, stocked with fish. Wildlife diversity has dramatically decreased: mainly gophers and field mice remain, along with ducks, herons, and egrets on the lakes. During dry months, all the lakes are replenished with a combination of potable water and well water from the Long Beach Water Department.

This two-mile stretch of open space along the river presents several tantalizing, unique opportunities:

- With potable water an increasingly scare resource, the City is interested in creating a more sustainable lake and creek system. A new treatment wetland at the northern end of the Park could fully treat a year's worth of stormwater runoff from a portion of the surrounding urban areas, replenishing the lakes and perhaps providing Long Beach TMDL credit

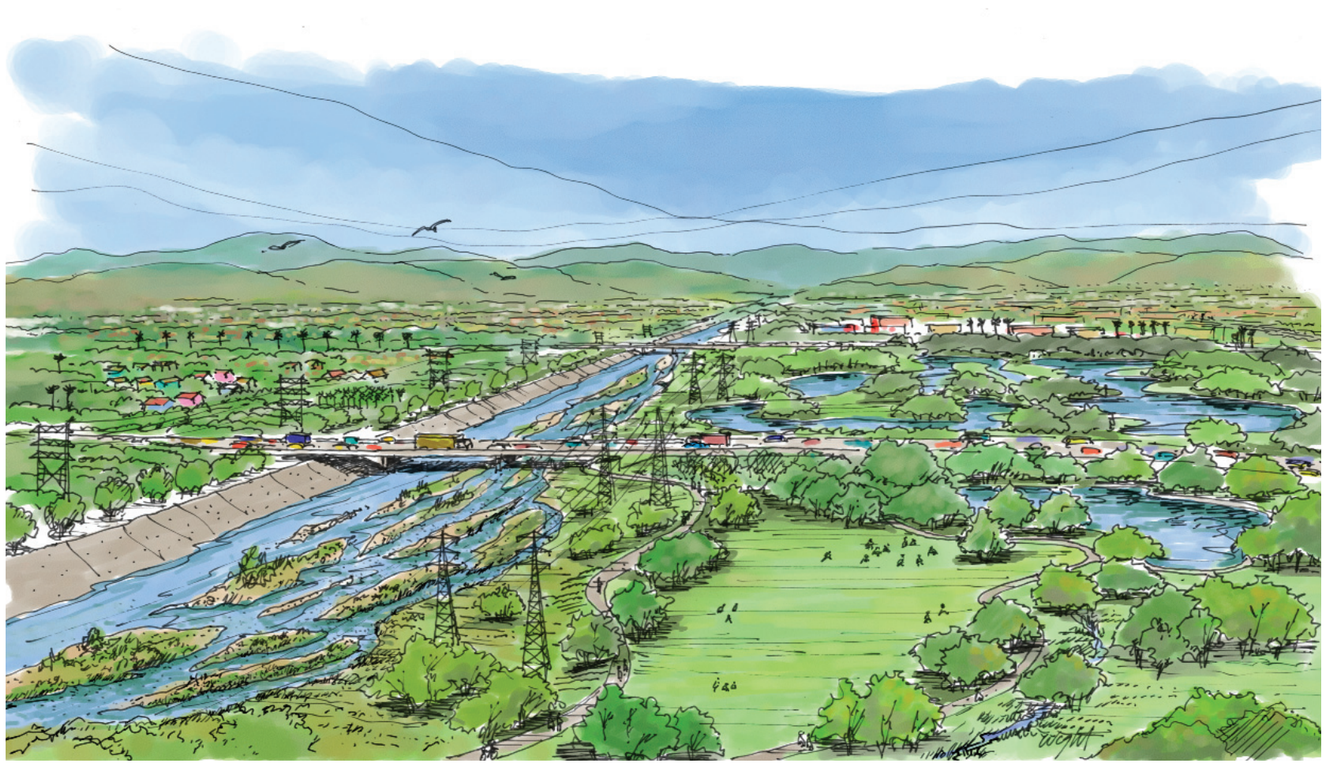


Figure 3-73. A partially restored floodplain brings an active riparian ecosystem to El Dorado Regional Park.

and increasing the amount of potable water for Long Beach residents. The wetland could also cleanse reclaimed water from the treatment plant at the south of the park, making it acceptable for replenishing the lakes. (Landscaped areas are already irrigated with reclaimed water.)

- Working with SCE to create habitat and allow river access in more places would set a precedent for more partnerships along the entire river.
- Vegetating with native plant species would increase food and cover, allowing wildlife to return to the area.
- A constructed wetland adjacent to the river at the south could further treat water in this reach of the river, which is mainly effluent from the Los Coyotes and Long Beach Water Reclamation Plants. That water currently flows to the ocean and could be recaptured through a new wetland.
- And, in a visionary alternative scenario, replacing the concrete bottom and east bank of this reach of the river with a soft bottom and terraced vegetated bank would widen the river, create valuable new riparian habitat, integrate the river with the park, and increase both recreational and educational opportunities.

Figure 3-74. The upper lake would be filled with runoff and reclaimed water as the first step in water treatment.

Figure 3-75. This underused northwest corner of the park could be the site of a treatment wetlands or floodplain restoration.

Challenges

Many other areas along the San Gabriel River are reclaiming unattractive landscapes and restoring native vegetation, which will vastly improve both aesthetics and habitat. El Dorado is already "green," although it is manicured and artificially created in Areas 2 and 3. This project proposes replacing the exotic and ornamental plants with native vegetation that will not require as much water and is better for habitat. However, it won't be as "green" all year long. Some people may prefer the manicured areas and may not like the change. Designs should include some of the most aesthetically pleasing native vegetation and ensure minimal loss of active recreation space. It will also require some awareness raising to promote the benefits of native vegetation. The completed El Dorado Nature Center Master Plan study may have also addressed this issue.

In the LA metropolitan area, it is also unprecedented to remove concrete channels from a river. These channels were built in the 1960s and 1970s, continuing four decades of flood control efforts. The community did not want any more damaging floods and the channel represents a major psychological and monetary investment. The open area here offers excess capacity to restore the natural floodplain for the river and it is feasible to remove the channel and maintain flood protection. But, it will take a major effort to convince all stakeholders that it is a wise and prudent idea. (Only the east side of the channel would be removed; the west will remain to provide flood protection for residential areas.)

A decision about whether to remove the concrete must be made before designing treatment wetlands in the southern area of the park, to take into account the larger floodplain that would be required. According to the 2003 State Water Resources Control Board, Section 303(d) list of Water Quality Limited Segment, the reach of the San Gabriel River adjacent to the park is considered impaired for algae, with abnormal fish histology and high coliform counts. That water would benefit from new treatment wetlands in the southern part of the park.

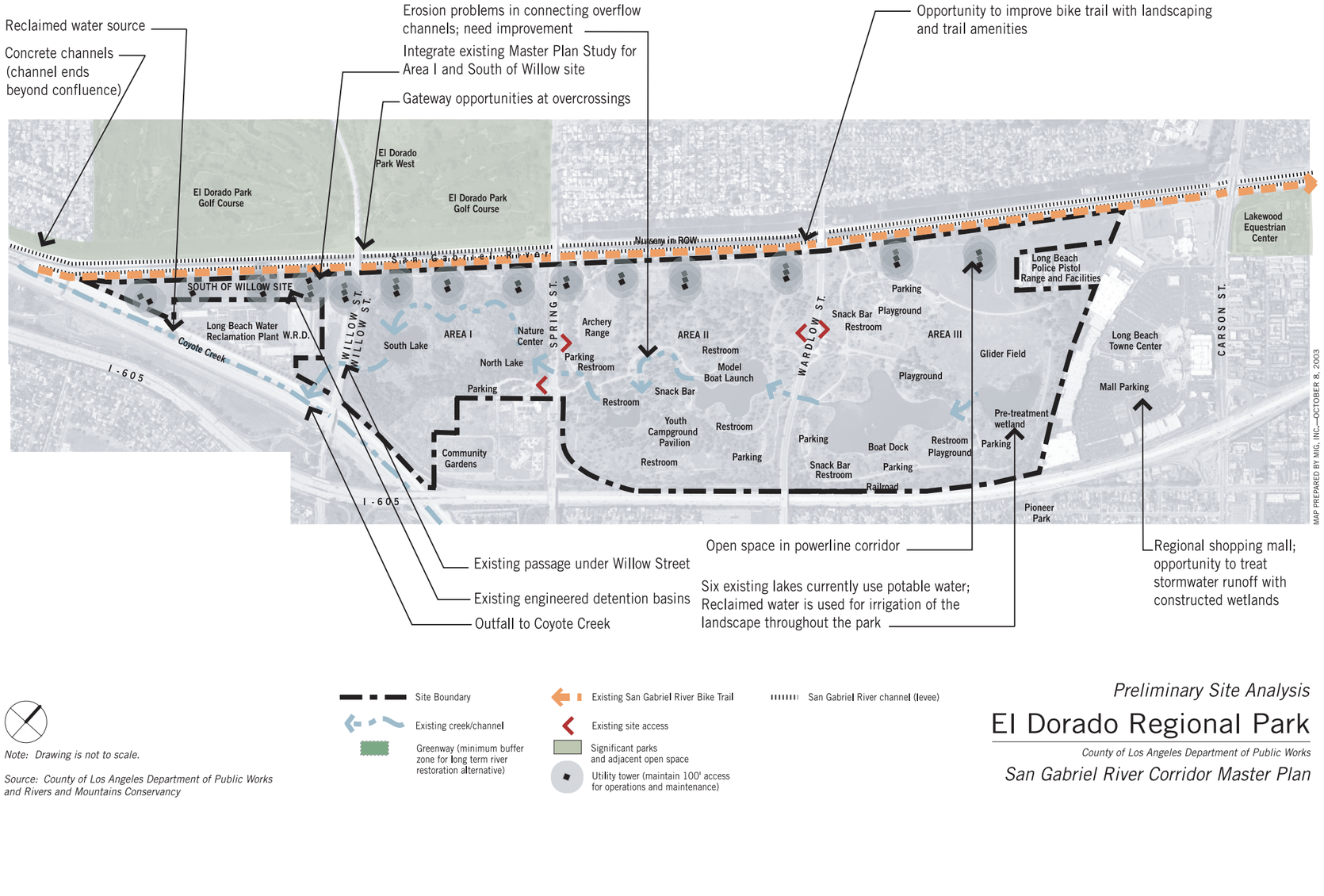
In addition, SCE power lines that run along the river would need to be moved further into the park area, away from the floodplain. In some areas of the country, power lines are placed in wetlands. However, it might be more feasible to relocate them in the park.

According to City of Long Beach park officials, using reclaimed water coming directly from the treatment plant for lakes that are stocked with fish is not acceptable to members of the public who may later catch and consume those fish. Also, reclaimed water is high in nutrients like nitrates and phosphates that might cause algae blooms in a lake. It is too costly for the Long Beach WRP to remove those nutrients, so treatment would be an ideal solution. However, that water would first need to be pumped up to the new north treatment wetlands.

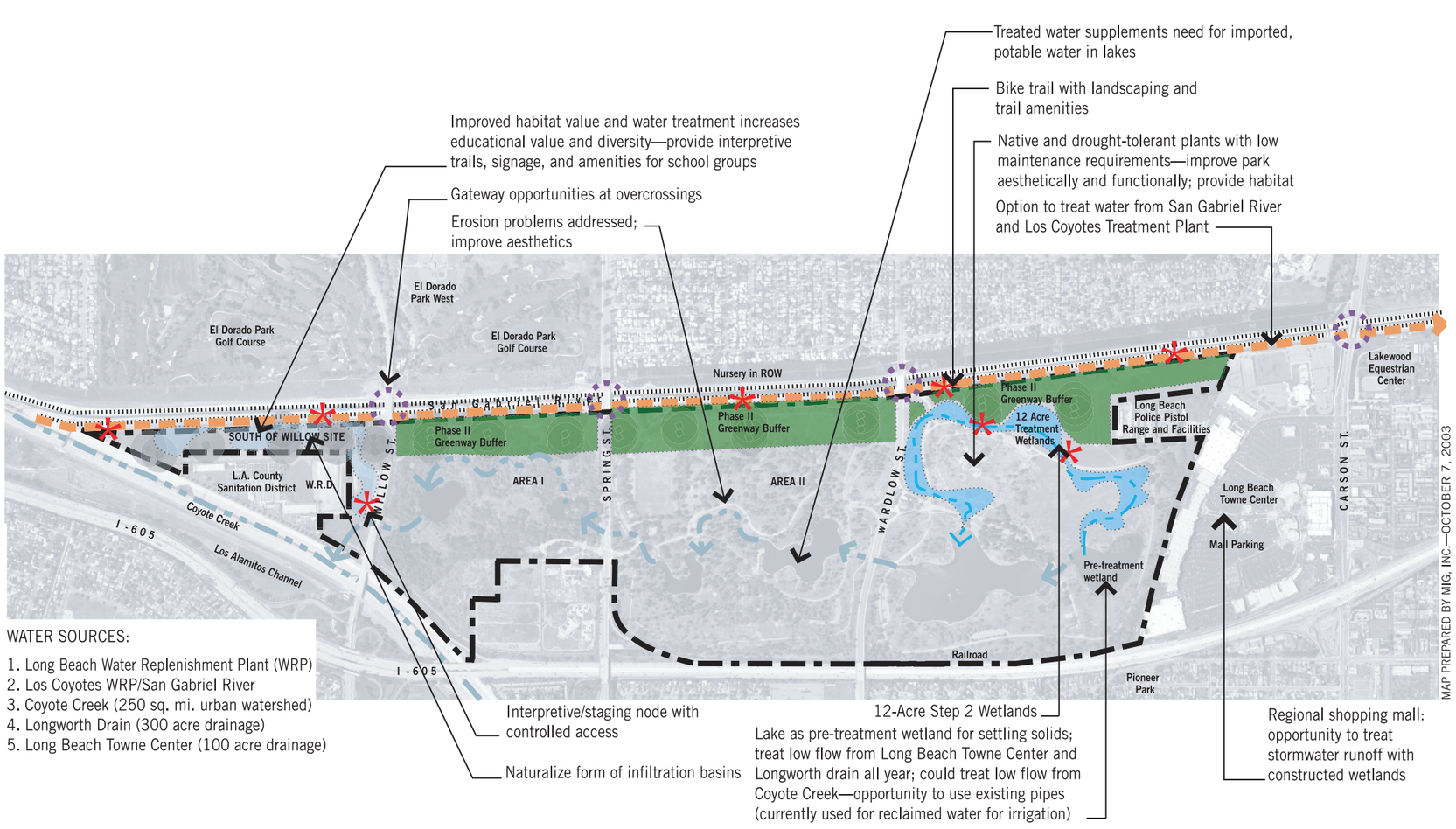
Design Concepts

WETLANDS. The wetland would cover about 6 acres, situated about 10 feet below the existing grade. Stormwater runoff from the adjacent residential and commercial areas in Lakewood and the Long Beach Towne Center, would flow into the northernmost lake. That lake will act like a settling pond. Sediments like oily sands would settle at the bottom and be removed. Water then flows into a snaky maze of vegetation within a newly created wetland, which very effectively cleanses the water. From there, the cleansed water flows into the second lake.

Reclaimed water pumped up into the wetland area would be cleansed of nutrients by the wetlands before flowing into the second lake. During the dry season, reclaimed water from the Long Beach WRP would supplement the urban runoff throughout the treatment wetland system to ensure continuous water flows and help the cleansing process. Water would flow continuously through the lakes, and back out into the river.



Map 3-18. Site Analysis—El Dorado Regional Park.



Map 3-19. Preliminary Concept Design Alternative—El Dorado Regional Park. For illustration purposes only.

A second wetland, at the south end of the park, would treat stormwater runoff and the discharge from the Los Coyotes WRP, returning cleansed water to the river. The habitat areas can be designed to meet the access requirements of SCE and promote multiple uses on the utility corridor rights of way. A decision about removing the concrete channel would need to be made before designing this wetland. The planning and design of both wetlands would be in coordination with the local mosquito and vector control agency to reduce mosquito breeding and not create any public health risk. Long-term maintenance and monitoring will also be developed as part of the final design.

RESTORED FLOODPLAIN. An alternative vision is replacing the concrete bottom with a soft bottom and a series of terraces for flood protection. That is a long-term goal requiring extensive reengineering of the river corridor. The river here is about 100 feet wide and flows are consistently between 100 and 150 cfs. The channel capacity now is almost 59,000 cfs, greater than the 100–year flood.

A soft bottom would require increasing the width of the river with its terraces to 300 feet to provide the same flood control capacity—in most places that would require less than 10 percent of the parklands. The western bank of the San Gabriel River channel and the eastern bank of the Coyote Creek channel would remain, while the two internal channels would be removed. This would create about 8.5 acres of riparian habitat, with willow and cottonwood trees, baccharis and mule fat scrub. It would provide habitat for the least Bell's vireo, yellow warbler and yellow-breasted chat, as well as foraging mudflats and shallow water for native sandpipers, egrets and herons. It would be an important link for migrating coastal birds.

An engineering study will be needed. This may be integrated into the U.S. Army Corps of Engineers study. In addition, operators of the water treatment plant will require assurance that there would be no negative impact on treatment.

TRAILS. Trail access, signage, artwork and shade trees will improve the trail experience and emphasize connections to the river. Overlook points and vistas can highlight the water conservation and water quality aspects of the wetlands and lakes. The current San Gabriel River Bike Trail runs along the park, and could be linked through the wetlands area. If the river becomes soft-bottomed, the terraces could provide soft equestrian trails as well as decomposed granite and asphalt multi-use trails.

LANDSCAPING. Potential habitat changes include replacing existing ornamentals with native drought-tolerant plants and re-vegetating land on the eastern bank with native trees and an understory of gooseberry and mule fat, which attract flying birds and provide foraging habitat for shoreline birds. The eucalyptus in the Nature Center area would be removed and replaced with native trees. The ruderal vegetation adjacent to the water treatment plant can be replaced with a mosaic of willow trees and native scrub, including sage scrub that supports declining wildlife species such as the cactus wren and California gnatcatcher.

Key Components of the Concept Design Study

- Connected system of wetlands and stream corridors, treating stormwater and reclaimed water
- Potable lake water replaced with treated water
- New habitat areas, replacing exotic plants with native plants
- The river integrated with the park
- Improved, linked trail system with interpretive signage
- Multi-use on the utility right of way
- Potentially removing concrete channels on east side, restoring the floodplain—feasibility study required

3.8.6 Lessons Learned

The purpose of the concept design studies was to apply the principal theme of this Master Plan: the multi-objective approach to river corridor project planning, designed to respond to the needs and interests of multiple users. Each study was conceived as an experiment designed to explore the planning process of simultaneously addressing the goals of habitat, recreation and open space, along with the pre-existing priorities of flood protection, water quality and water supply. In this way, the studies helped measure the benefits and limitations of this multi-objective/multi-user approach. The lessons learned from the concept design studies will be useful to other project sponsors as they navigate the challenges created by integrating seemingly divergent program elements.

A key finding is that the multi-objective approach can only be successfully applied on a case-by-case basis. There is no "cookie-cutter" design or formula for success. A successful combination of divergent program elements is dependent on both the physical setting to which it is applied and the talent of the planning team whose site designs are created in response to that setting. In addition, the multi-objective planning process must also take into account institutional, regulatory, and political factors that may limit the available options. As a result, what may work in one setting may have to be significantly modified to be successful elsewhere, and the multi-objective approach may not work in all settings. However, a planning team should approach all future project opportunities from the assumption that a multi-objective approach is applicable unless the emerging design process should prove otherwise. This approach represents a significant shift from past planning practices that began each project with the assumption that it was a single-purpose endeavor, as multi-objective projects were then seen as the exception rather than the rule.

San Gabriel Canyon Spreading Grounds (R3.8)

This site was an opportunity to integrate open space, recreation, and habitat objectives into a major single-function infrastructure. But it came with significant challenges. The ambitious visions initially conceived for the site had to be more tailored to match physical and operational realities. These included safety and liability concerns created by the unusual depth of the spreading basins, the steepness of the banks surrounding the basins, and 80-foot water fluctuations during the course of the year. There were also concerns that some habitat designs might attract wildlife, which could have negative effects on water quality. The concept design addressed these and other concerns by focusing on the edges of the site, making it an attractive place to visit but not in which to linger, and by keeping visitors away from the operational heart of the spreading grounds. Some of the other lessons to keep in mind include:

- Single-function infrastructures, whether designed for flood control, water conservation or other purposes, may contain other, hidden open space opportunities.
- Often, single-purpose land areas are sterile, barren landscapes. It is possible to redesign these areas to provide other benefits such as open space and habitat for people and wildlife, in a way that is compatible with the primary function of the site.
- It is important to look at other, similar situations with new eyes. Look beyond the current reality to see the hidden possibilities for adding life and vitality, making more efficient and beneficial use of all available open space possibilities along the river.

- Project designs must be carefully considered to make sure that the pursuit of additional goals beyond the primary function of the site does not inadvertently create additional liabilities, especially regulatory ones.

Woodland Duck Farm (R4.15)

This significant land reclamation opportunity will provide nearby residents with access to badly needed open space, recreation and restored habitat areas. However, the site design must take into account both physical and regulatory constraints. For instance, treatment wetlands can enhance aesthetics of the site and improve water quality. However, wetlands or other water features cannot for safety and regulatory reasons be located under the SCE power lines that dominate much of the site. This does not mean treatment wetlands are infeasible at this site, but simply that in the site design they must be carefully situated and engineered so as to not violate this spatial requirement. The lessons here are:

- It is important to take advantage of all available open space opportunities along the river; regardless of its current condition, past history, or strange configuration.
- Land reclamation and land re-cycling is an important tool for the enhancement of the river environment, especially as current industrial land uses reach the end of their useful life cycle.
- There is a patchwork of open space opportunities along the river that slowly, over time, can knit together into a re-greening of the river for recreation, habitat and other purposes.

San Gabriel River Discovery Center at Whittier Narrows (R4.26)

Being centrally located, this project will provide an ideal setting, for a regional river and watershed education center, complete with demonstration treatment wetlands. But like other projects along the San Gabriel River corridor that seek access to water, the site design must recognize existing water rights and the limitations they impose on water use, and so cannot diminish the amount of water available to water supplies and other water rights holders. Each project has to assess water availability and the constraints associated with it use. Where will it come from? How much is required? How can it be done without impacting the water supply? The use of unclaimed reclaimed water that is not adjudicated was one of various options raised in the design process. Other lessons:

- No water can be spread without the prior written authorization of the Watermaster.
- The potential impacts on the water supply from unintended groundwater contamination have to be understood and addressed in the site design.
- The enhancement of the river corridor requires a partnership among a wide range of stakeholders, and this project is a vivid example of what can be accomplished when such a cooperative arrangement and shared vision is in place.
- Buildings can be fully integrated into the natural systems of a site.

Lario Creek (R4.28)

Bringing a wide range of interests (i.e., potential multiple users) together in the planning process can lead to new design solutions that deal more effectively with potential constraints than the original design conceived by any single user group alone. In this instance, an alternative approach emerged from the group dialogue that would balance potentially conflicting water flow needs with vegetation growth needed for restored habitat. A new channel parallel to the primary conveyance channel would meet the goals of both the water supply interests and those wishing to restore natural habitat. Other lessons:

- Upgrading flood/water conservation infrastructure presents opportunities to incorporate additional benefits; in this case new habitat and open space.
- If one goal is potential restoration of the natural systems of Southern California, water usage at projects like Lario Creek should not be year-round. Otherwise, non-native species are going to be attracted to the area at the expense of native species that have adapted to a dry climate.
- No matter how well designed, projects containing wetlands will breed mosquitoes. For this reason, all planning and design for any new or restored wetland area for habitat or stormwater treatment must be done in coordination with the local mosquito and vector control agency to avoid creating any public health risk.
- An ongoing, sustainable, well-funded vegetation maintenance and management program must be built into all such projects.

El Dorado Regional Park (R6.21 and R6.22)

This rare, 497-acre open space opportunity of parkland adjacent to the river presents a very large and tempting canvas with which to work. How can one make the best use of this opportunity while recognizing that the site design must address significant constraints? The planning process led to a short-term plan to create urban runoff wetlands treatment systems and a long-term plan to partially restore the floodplain by removing one side of the concrete channel.

Both visions require hydrology studies to assess their feasibility. Because long-term plans will affect the treatment wetlands design and configuration, a decision about whether to restore the floodplain must be made before planning can begin on the wetlands.

Other observations include:

- The river should be front and center as it passes through all the cities along its path to the sea; it cannot remain a forgotten, hidden flood channel. Existing parks and open spaces can be re-oriented to face the river.
- Many parks along the river have the traditional ornamental landscape design. This project could be the prototype for a new river park design model based on native vegetation and river orientation.
- “Thinking big” (e.g., taking out the concrete) may open up other possibilities that no one would have thought of, even if the initial concept is not implemented in its pure form.

chapter 4 Future Master Plan Project Opportunities

CHAPTER 4

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Notes: Figures 4-4 and 4-42 courtesy of California State Polytechnic University, Graduate Department of Landscape Architecture 606 Studio project, "San Gabriel Confluence Park," sponsored by the Sierra Club Los Angeles Chapter, San Gabriel Valley Task Force.

Figures 4-10, 4-13, 4-16, 4-17, 4-19, 4-20 and 4-43 by Dan Burden and Figure 4-11 by Paul Demaio (City of Alexandria), courtesy of The Image Library, Pedestrian and Bicycle Information Center (PBIC).

chapter 4 Future Master Plan Project Opportunities

4.1 OVERVIEW

In addition to the many river enhancement projects described in Chapter 3, there are opportunities for even more projects in the future. A critical examination of the continued, collective impact of all defined projects reveals even more possibilities for habitat, recreation and open space enhancement.

This section is based on a comprehensive analysis of existing conditions in the river corridor and a detailed assessment of the 134 Master Plan projects identified in Chapter 3. It lays the groundwork for future project development opportunities to be identified and defined as the first of several rounds of Master Plan projects move forward to completion. It includes ten categories of potential opportunity:

- Habitat restoration and linkages
- Trail enhancements
- Bridges and gateways
- Interpretive facilities
- Park development
- Open space
- Redevelopment and reclamation
- Flood channel enhancements
- Groundwater recharge
- Water quality improvement

4.2 HABITAT RESTORATION AND LINKAGES

The San Gabriel River once functioned as a terrestrial and aquatic wildlife corridor, linking the Puente-Chino Hills and Montebello Hills with the San Gabriel Mountains. Restoring this habitat linkage will improve biodiversity by increasing open space available for wildlife movement.

Existing Conditions

Habitats for native plants and animal species have been displaced by urban development. The remaining habitat areas are fragmented and isolated, making them less capable of supporting native birds, fish and other wildlife. Major pinch points and other physical barriers limit aerial, aquatic and terrestrial movement between these habitat islands. In particular, dams and flood control facilities and the water supply system have significantly altered water flow and other habitat conditions, terminating or altering historic migration patterns. For example, before dams were built, thousands of steelhead trout traveled up the river in the winter and spring to spawn. Mammals are now mainly confined to specific open space areas or wildlife refuges that are surrounded by vast areas of developed land.

Beyond habitat fragmentation, there are other conditions worth noting:

- Habitat conditions in the San Gabriel Mountains (Reaches 1 and 2) are of the highest quality, but are increasingly stressed by heavy recreational use and recent drought conditions. Other high-quality natural habitat areas providing large, natural open space areas include those in the Santa Fe Dam Recreational Area and Whittier Narrows.
- Exotic plants have reduced native species habitat areas along the river. Arundo, a particularly invasive giant reed, has significantly affected the river environment. Although major efforts to remove arundo are underway, current management practices generally favor non-native species habitat.
- A managed vegetation control system is in effect along the river, in compliance with permits issued by regulatory agencies. To balance flood control with habitat maintenance, the County of Los Angeles Department of Public Works (LADPW) and the U.S. Army Corps of Engineers (COE) are performing vegetation management—but in different ways. As a result, the appearance of the reaches under their respective control varies.
- While it is important to identify, protect and expand existing high quality habitat areas, insufficient habitat mapping presents a challenge to understanding the current status of habitat and hinders planning for future habitat restoration.

COURTESY OF GABI MCLEAN ©2003

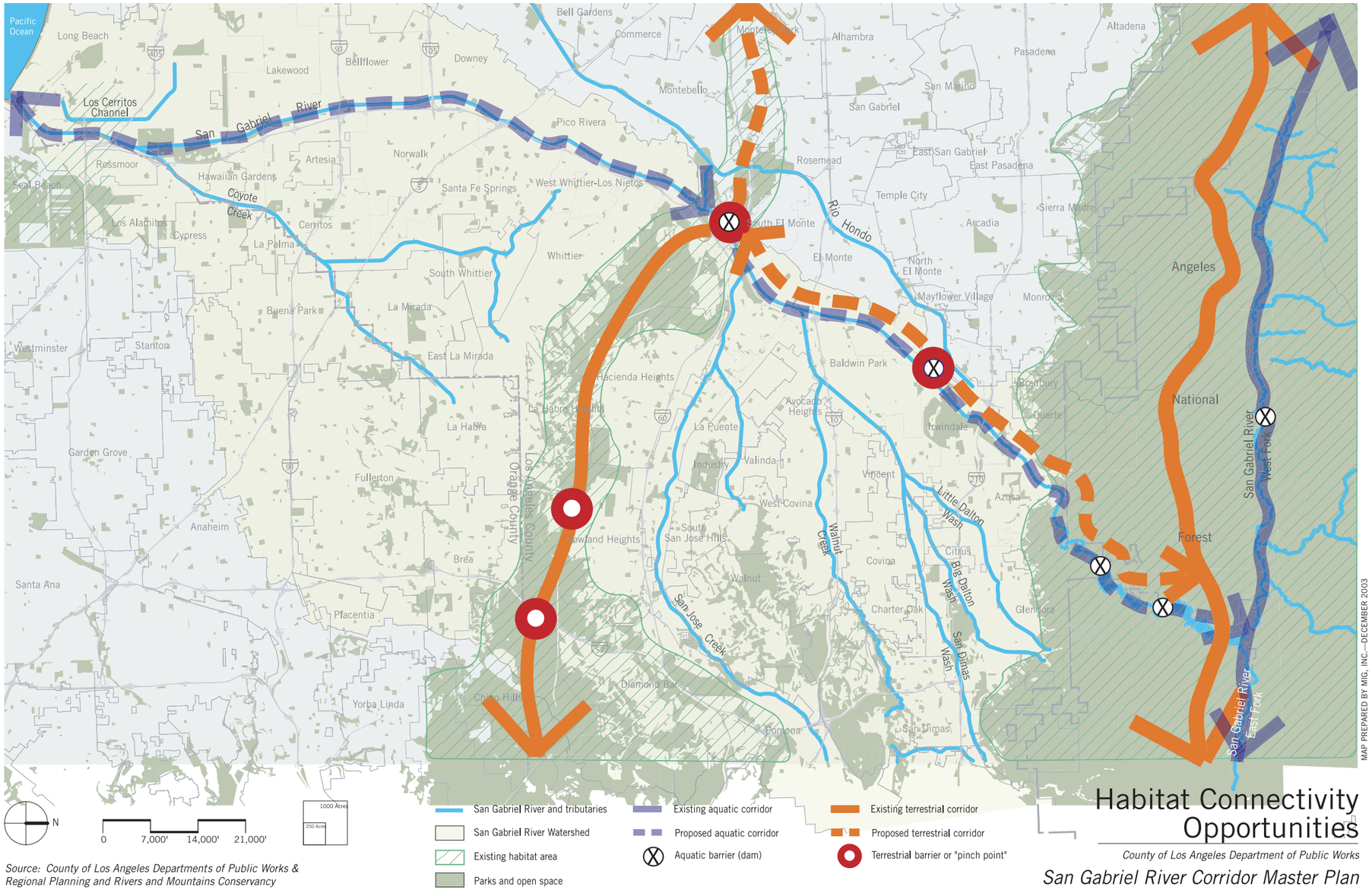
Figure 4-1. Analysis can reveal even more opportunities for future river corridor enhancements.

Future Opportunities

The most important habitat restoration opportunity is in Reach 4, the area between Whittier Narrows and the Santa Fe Dam. It provides the best opportunity to reconnect critical habitat between the Puente-Chino Hills and the San Gabriel Mountains. This would complement and reinforce benefits that will come from completing the Puente Hills Western Wildlife Corridor project (R4.23).

After successfully re-establishing the habitat linkage between the Puente Hills and Whittier Narrows, the program to extend this connection further north along Reach 4 and beyond could include:

- Soft-bottom habitat restoration in areas of the river exceeding the 100-year flood channel capacity



Source: County of Los Angeles Departments of Public Works & Regional Planning and Rivers and Mountains Conservancy

Map 4-1. Habitat connectivity opportunities.

- A habitat restoration element in future gravel quarry land reclamation projects
- Potential use of open space in utility right-of-way as a habitat easement, which will require pursuing essential institutional arrangements such as "safe harbor agreements"
- A habitat linkage or passage enabling wildlife to get around the barrier created by the Santa Fe Dam at the north end of Reach 4 (R3.26)

All future projects should incorporate habitat restoration. Examples among current Master Plan projects include:

- San Jose Creek Habitat and Trails Restoration Project (R4.19)
- Puente Hills Western Wildlife Corridor (R4.23)
- Whitter Narrows Nature Center Ecosystem Restoration (R4.27)

Habitat restoration efforts such as soft bottom vegetative management and exotic plant removal in Reach 3 (a key linkage from the Santa Fe Dam to canyon mountain habitats in Reach 2) would further strengthen efforts to re-establish the San Gabriel River as a habitat linkage. Examples among current Master Plan projects in Reach 3 include:

- Robert's Creek Restoration (R3.04)
- Fish Creek Restoration and Public Access (R3.12)
- Santa Fe Dam Recreation Area and Habitat Enhancements (R3.21)

Fish Creek restoration provides a model for other similar restoration efforts that may occur in the future. Vulcan recently restored the upper third of Fish Creek in the area that it owns. The restoration was very extensive and brought the creek back to its estimated original location before mining began. Vulcan is now working with the City of Azusa to create new mining and reclamation efforts at the Azusa Rock Quarry that will incorporate restoring the remaining portions of Fish Creek on Vulcan's site. The ultimate restoration of Fish Creek will be incorporated into the reclamation plan phasing.

In addition to the habitat corridor, there are other significant habitat restoration opportunities that should be pursued. In the San Gabriel Mountains, Reaches 1 and 2, programs and facilities to mitigate the impacts of recreational activities will be a priority. In Reach 2, minimum flow requirements—duration, quantity and timing—are critical considerations for habitat improvement. Findings from the flow study below Morris Dam (R2.07) will contribute to that effort. However, an agreement allowing the diversion of any water to support habitat or other benefits would have to be arranged with water rights holders.

Habitat restoration opportunities south of the Whittier Narrows Dam are more limited, especially in Reaches 5 and 6, where they are mainly confined to specific sites such as parks and open space. However, improving and restoring upstream river functions may provide future flexibility in downstream sections. In Reach 7, reclamation of oil fields and industrial properties can restore tidal basin wetlands, restoring critical habitat for birds and other native wildlife. Two current examples among the Master Plan projects include:

- Los Cerritos Wetlands Restoration (R7.07)
- Hellman Ranch Wetlands Freshwater Marsh Restoration (R7.10)

Nine proposed habitat restoration projects will contribute to the overall goal of expanding and linking existing habitat areas. Two restore the linkage between Puente-Chino Hills and the San Gabriel Mountains, and seven target individual habitat-restoration opportunities. Even more encouraging, more than one-third of all Master Plan projects include either a habitat enhancement element or a public education component designed to increase habitat awareness.

COURTESY OF BONTERRA CONSULTING

Figure 4-2. Stream and floodplain restoration projects will enhance the region's biodiversity.

COURTESY OF DAN SLATER

Figure 4-3. Great blue herons nest in tall tree tops and rocky cliffs, away from human activity.

Habitat Restoration Considerations

Planners should consider the following opportunities and/or challenges in all reaches of the river:

- Cross-sections of the river should be developed to map habitat restoration zones that vary by reach, according to current conditions and future possibilities. This will aid future planning and design efforts, by identifying appropriate locations outside these zones for non-habitat lakes and "natural" appearing facilities that are geared for recreation and other non-habitat functions. It will also help ensure that future bike, equestrian and hiking trails are designed along perimeters rather than through these habitat zones.
- Individual habitat-enhancement projects should follow system-improvement guidelines and similar resources. This includes adopting the Los Angeles River Landscape Guidelines and using the suggested native plant palettes that are appropriate to each habitat zone.
- Vegetation management practices must protect native habitats, remove exotic species and arrest the spread of ruderal species. Some needed institutional and regulatory changes have already occurred but more are needed. COE's mission now includes habitat restoration in addition to flood control.

Figure 4-4. In-river vegetation provides valuable habitat for birds and other wildlife.

- LADPW and utility easement holders, such as Southern California Edison (SCE), can benefit from safe harbor agreements that encourage programs to expand native species habitat on lands they own or control. Under these agreements, these agencies would not be penalized or fined if normal or emergency operations have an impact on the new habitats. Safe harbor agreements are available under Section 10 of the Endangered Species Act (ESA). But, public entities with activities in waters of the United States or US-owned property (National Forest- or COE-owned rights-of-way) are subject to Section 7 of the ESA, which may not allow safe harbor agreements. Further research is recommended. Legislative action may be needed to make these agreements an option.
- Increasing habitat connections will encourage wildlife in densely developed urban areas. Regional corridor enhancement projects should incorporate measures to reduce human-wildlife interactions because many species (wild birds, opossums, skunks, wild and commensal rodents, raccoons, coyotes and the fleas and ticks they carry) can transmit diseases of public health concern. Safeguards include encouraging (or mandating) "wildlife-proof" trash receptacles in parks and surrounding communities, creating buffer zones (via plantings or design) around corridors to discourage wildlife from leaving the created habitat zone, and developing educational outreach materials for local residents and park visitors. Littering, unkempt picnic areas, and dogs off-leash all have the potential to generate unfortunate human-wildife interactions.

A number of studies recently completed or now underway will help target other future habitat restoration opportunities.

- The South Coast Wildlands Project identified the San Gabriel River as one of 60 missing habitat linkages in the south coast ecoregion, because it can connect the Puente-Chino Hills with the San Gabriel Mountains.
- The Los Angeles and San Gabriel Rivers Watershed Council is undertaking a vegetation-mapping project of all soft-bottom rivers in Los Angeles County, including the San Gabriel. Digital data will be available in late 2004.
- San Gabriel Mountains Regional Conservancy (SGMRC) is conducting a habitat study of San Gabriel River Watershed, funded by Proposition 13 (State Water Resources Control Board) and Proposition 40 (Rivers and Mountains Conservancy). This will build on the foundation provided by SGRMC's "Reconnecting the San Gabriel Valley."
- The Watershed Council has developed a native plant list appropriate for the Los Angeles River. As there are many similar species between both the Los Angeles and San Gabriel River corridors, the Los Angeles River plant list is being used as a resource for development of the San Gabriel River plant list. However, because the San Gabriel River is much less "hardscaped" than the Los Angeles River, additional resources have also been used to develop the plant list specific to the San Gabriel River.

COURTESY OF LARRY MOATS, USFWS

Figure 4-5. Mountain lions hide during the day and emerge after dark to hunt for food.

4.3 TRAIL ENHANCEMENTS

The ideal trail system is continuous, providing connections to and from useful destinations for recreational bike riders, pedestrians and other trail users. Trail systems should not be limited to any one corridor or sub-region, but should instead provide extensive trail connections throughout the region. A successful trail system also integrates design elements (such as signage and fencing) to create a cohesive, navigable, safe and enjoyable trail experience.

Existing Conditions

The current trail network serves a variety of users. In the mountains, there are over 50 miles of hiking trails, many of which connect to the San Gabriel River Bike Trail (Bike Trail). The river trails are multi-use for hiking and biking. The standard width trail is paved for maintenance and emergency vehicle access and is accompanied by a parallel dirt track for equestrians.

The 39-mile class I Bike Trail runs parallel to the San Gabriel River from the edge of the San Gabriel Mountains in Azusa to the Pacific coast in Seal Beach. This trail can serve as the central spine for an extensive regional trail network, but limitations in the layout of the current trail system will have to be addressed before it can fully expand. At present, the trail is only on one side or the other of the river, making access more difficult. In addition, the current trail network is disjointed, with few east-west connections to and from the trail. The best current examples of bike trail connections include:

- The Rio Hondo via Lario Creek/Zone 1 Ditch
- Along San Jose Creek, ending on the east side of the San Gabriel River (however, it lacks a connection to the Bike Trail on the west side)
- Along Coyote Creek, crossing Coyote Creek to join the Bike Trail just before the confluence.

Local, city-maintained trails may fill some trail connection gaps, but the overall bike trail network is incomplete.

There are approximately 38 access points to the Bike Trail, usually via street intersections, bridge crossings and local parks. The majority of the river is reachable through these access points, except above Irwindale. In this stretch, industrial land uses sometimes lie between residential areas and the river/trail system. Even where access points exist, however, the lack of a cohesive wayfinding system makes it difficult to find them. Many access points do not include signage.

The appearance, usability and security of the river trail network can be enhanced through trail amenities and other improvements:

- The many different styles of fencing along the river create a disjointed look and feel. Chain link is the most prevalent style, often in poor condition and posted with warning signs. The river is usually "fenced in," with no physical access allowed. These fences and signs portray the river as a piece of infrastructure rather than as a living asset.
- Landscaping along much of the river is often non-native and water intensive.
- The asphalt-paved Bike Trail doubles as a maintenance access road and needs repair. It provides only two official staging areas.
- Safety lighting along the river is sporadic.
- There are few site amenities, such as restrooms or drinking fountains, and no signage to indicate where they are.
- There are few shade trees along the river.

COURTESY OF DAN SLATER

Figure 4-6. Graffiti along the bike trail in Reach 6 reflects its urban location.

Future Opportunities

There are many opportunities to expand on existing trails and create an integrated network with the river as a key component. The Bike Trail can be enhanced by building parallel trails along the entire length of both sides of the river, increasing its functionality for trail users and possibly reducing the need for additional bridges. Current stakeholder-proposed examples include:

- Westside Trail in Azusa (R3.05)
- Woodland Duck Farm (R4.15)
- West San Gabriel River Open Space Area in Lakewood (R6.18)

More east-west bike trail connections to the SGR Bike Trail are needed, at least once in each reach. East-west connections will help establish a more complete regional trail grid, linking the two most significant north-south trails running along both the Los Angeles and San Gabriel Rivers. Trails along river tributaries, such as San Jose Creek and the Rio Hondo, can also play a key role. Current Master Plan project examples include:

- Pacific Electric Rails-With-Trails (R3.15), providing a linkage to the SGR Bike Trail in the Upper San Gabriel Valley via the future Gold Line light rail extension corridor
- San Jose Creek Bike Trail Bridge (R4.17) and Phase II (R4.18)
- Whittier Greenway Trail and Connection (R5.05)
- West Branch Greenway Rails-to-Trails Project (R6.11)
- Pacific Coast Highway Bike Trail Extension (R7.11)

Local trails should link directly to regional trails to create a truly comprehensive network. Developing and improving connections between the San Gabriel River Bike Trail and adjacent communities can help. Master Plan projects include:

- Azusa Bike Trail Network (R3.14)
- Caltrans ROW Open Space and Trail in Baldwin Park (R4.09)
- Thienes Avenue Gateway (R4.20)
- Mines Avenue Bike Trail Connection (R5.10)
- Bellflower High Bike Trail Connection (R6.06)
- Cerritos College Bike Link (R6.09)
- Trail Connection Between Wetlands in Seal Beach (R7.09)

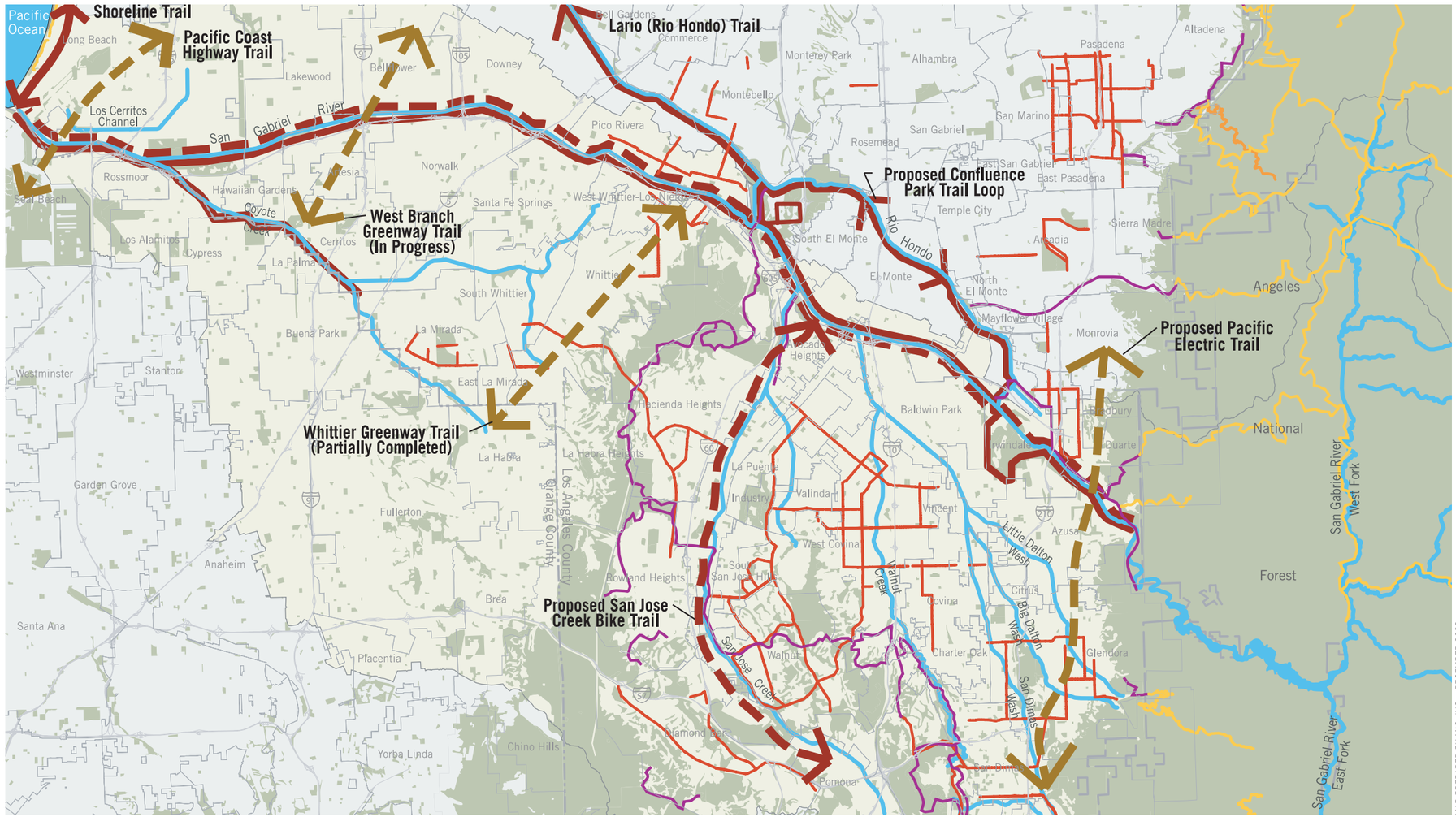
Figure 4-7. A former Union Pacific Railroad right-of-way will soon become the West Branch Greenway Trail in the City of Bellflower.

A continuous bike trail loop could be formed by linking existing trails in the San Gabriel Valley: the San Gabriel River Bike Trail, connecting to the Rio Hondo Bike Trail via Lario Creek, heading north up along the Rio Hondo to Peck Park, east to the Santa Fe Dam Recreation Area, south through the Duck Farm and San Jose Creek, then back to Whittier Narrows.

Qualitative Improvements

In addition to extending and completing the trail network, other more qualitative improvements to the trail network would enhance usability. These include implementing a comprehensive wayfinding system for the Bike Trail. This wayfinding system would provide trail users with a hierarchy of signage to indicate river reach, city, major arterials, community gateways, connections to other bike trails, public transit stops, points of interest, comfort stations, and mile markers. A variety of other amenities are also required.

- **Fencing:** Public safety can be ensured while applying aesthetic considerations; materials should reflect the reach; visual access to the river should be maintained or enhanced.



Source: County of Los Angeles Department of Public Works and Rivers and Mountains Conservancy

Note: Trails in Los Angeles County only. Data derived from RMC database and County of Los Angeles Department of Parks and Recreation, "Los Angeles County Riding and Hiking Trails" map, 2001. Local trails per city.

Trail Enhancement Opportunities

County of Los Angeles Department of Public Works

San Gabriel River Corridor Master Plan

Map 4-2. Trail enhancement opportunities.

Figure 4-8. City streets can link with the river bike trail, such as this connection from Todd Street in Azusa.

Figure 4-9. Fences can be simple, yet attractive, such as this fence surrounding the Rio Hondo Coastal Basin Spreading Grounds.

- **Landscaping:** Native, water-wise plants should be used for each reach.
- **Lighting:** Lighting can be designed to improve safety without disturbing habitat or nearby residences.
- **Trees:** Shade trees will screen nearby residences and enhance user comfort.
- **Staging areas:** Additional bike staging areas with water fountains and public restrooms will improve trail function and convenience for all users.

COURTESY OF PBIC

Figure 4-10. Lighting can be customized to reflect local themes.

COURTESY OF PEDESTRIAN AND BICYCLE INFORMATION CENTER

Figure 4-11. Whimsical bicycle racks add an art element to staging areas, such as this one in Alexandria, Virginia.

Safety must be incorporated in the design and maintenance of all trail enhancement projects, along with aesthetic improvements. New trail fencing can enhance the aesthetic experience of the river system, even when dictated by safety and liability concerns.

COURTESY OF NORTH EAST TREES

Figure 4-12. Drinking fountains can incorporate local materials like river rock.

COURTESY OF PBIC

Figure 4-13. Universal design will improve river and trail access for people of all abilities.

Trail-road intersections are also a major safety consideration. The river trail intersects numerous bridges, overpasses and other obstacles (for example, the 60/605 Freeway interchange near Whittier Narrows).

Staging and parking areas are required at endpoints of all trails, but should also be placed at regular intervals along the trail. They should be designed to meet the needs of all trail users, especially hikers, bicyclists and equestrians.

Universal access and design should be incorporated at every stage in the planning, design and implementation of all trails.

COURTESY OF NORTH EAST TREES

Figure 4-14. The yoga fitness trail on the Los Angeles River is a creative alternative to standard fitness trails.

Other future opportunities for improving the river trails system can be identified through additional research:

- Catalog all access points to the Bike Trail, including connections with other regional and local trails.
- Conduct an on-site survey of the Bike Trail to document all physical barriers to bike and equestrian use (no equestrian trail map is currently available).
- Identify opportunities to improve visual and/or physical access from the Bike Trail to the river.
- Integrate the Bike Trail with the existing and proposed education centers (see section 4.5). Incorporate interpretive themes into the design of trails, trail signage and other wayfinding elements.

4.4 BRIDGES AND GATEWAYS

The tremendous recreational resource that is the San Gabriel River can only be fully realized if people have access to the river corrridor itself. For the most part, access comes in the form of existing bridges, gateways and trail segments.

A total of 61 bridges cross the San Gabriel River or lie within the river corridor, ensuring easy passage over what would otherwise be a natural barrier for nearby residents and visitors on both sides of the river. However, most of the bridges are designed to carry automobiles, trucks and trains—not people on foot, bikes or horses. And they were not designed to integrate with and provide entry to the river and its environs. As a result, not only is it difficult to get access to the river, but the river is also largely "invisible" to the casual observer nearby.

Existing Conditions

Although there are bike paths or sidewalks on many arterial bridge crossings, there are currently only five bridges exclusively for bicyclists and pedestrians. Four of these are in Reach 6 and the fifth, a rails-to-trails conversion in Reach 3, provides the only bike-pedestrian bridge connection north of Whittier Narrows Dam.

Bike-pedestrian bridges are located at the following five locations:

- Puente-Largo Historic Rail Bridge, Azusa (Reach 3)
- Bridge at Foster Road, Downey and Norwalk (Reach 6)
- Bridge at Caruthers Park, Bellflower and Ironwood Golf Course, Cerritos (Reach 6)
- Bridge below Carson Street at Long Beach Towne Center, Long Beach (Reach 6)
- Bridge across Coyote Creek, just above San Gabriel River confluence, Long Beach (Reach 6)

Figure 4-15. Native vegetation grows on top of the Puente-Largo Historic Rail Bridge, alongside the bike trail.

TABLE 4-1. BRIDGE TYPES

Reach	Freeway Bridges	Street Bridges	Rail Bridges	Bike/Pedestrian Bridges
One	0	2	0	0
Two	0	0	0	0
Three	1	5	1	1
Four	5	8	1	0
Five	1	8	4	0
Six	2	11	1	4
Seven	2	4	0	0
Total	11	38	7	5

New bike-pedestrian bridges and new gateways on existing arterial bridges can substantially improve cross-river mobility. Gateways are entry points marked by street monuments or other design elements where city boundaries and the river intersect. They enhance the river's visibility and symbolically link it to the community in which it flows. Gateways can be designed to facilitate access to the river by pedestrians and bicyclists.

Table 4-1 lists the types and number of all 61 bridges found in each of the seven reaches.

Future Opportunities

The Master Plan proposes seven new or enhanced bike-pedestrian bridges and 21 gateways. Completing these bridges will be a major improvement over the current situation, but there will still be significant gaps along the river. For example, Reach 4 north of San Jose Creek and all of Reach 5 would still not have any bike-pedestrian crossings.

Reach 5 has the largest number of proposed gateways, suggesting that there are many arterial street bridges that could be modified for pedestrians and bicyclists.

The following is a summary of all proposed bike-pedestrian bridges and gateways and additional opportunities specific to each reach. (More detailed descriptions of these projects can be found in Section 3.5.)

COURTESY OF THE AZUSA HISTORICAL SOCIETY

Figure 4-16. Historic archives can inspire new gateway signage, for example this historic sign that once stood on Azusa Avenue.

Reaches One and Two

- None

Reach Three

BIKE-PEDESTRIAN BRIDGES

- Future Pedestrian Bridge (R3.09) at site of existing Vulcan Materials Conveyor Belt
- Foothill Boulevard Pedestrian Bridge, as part of Regional Rails to Trails Project (R3.15)
- Puente Largo Rail Bridge Enhancement, as part of Duarte Bike Trail Extension (R3.19)
- Bridge, Tunnel, or other connection around Santa Fe Dam, part of SGR Beautification and Environmental Enhancement (R3.28)

GATEWAY

- Route 66/Foothill Boulevard Gateway (R3.20)

The Vulcan Materials Conveyor Belt may be in operation for another four decades before it can be re-designed for use as a bike-pedestrian bridge (Project R3.09). Since this leaves a significant gap in pedestrian bridge crossings over the river, another site may need to be found that could be available for use much sooner. Project R3.28 would provide pedestrians and bicyclists with a more direct and secure connection around the Santa Fe Dam.

Reach 4

BIKE-PEDESTRIAN BRIDGES

- San Gabriel River Bike Trail Bridge (R4.16)
- San Jose Creek Bike Trail Bridge (R4.17)

GATEWAYS

- Ramona Boulevard Gateway (R4.08)
- Valley Boulevard Gateway (R4.13)
- Thienes Avenue Gateway (R4.20)

COURTESY OF PBIC

Figure 4-17. Local artists can create murals and other art work on bridges, reflecting local themes.

Completing the two proposed bike-pedestrian bridges will meet the needs of the southern portion of Reach 4, but the northern half of this reach may still need an additional bike-pedestrian crossing.

Reach 5

BIKE-PEDESTRIAN BRIDGES

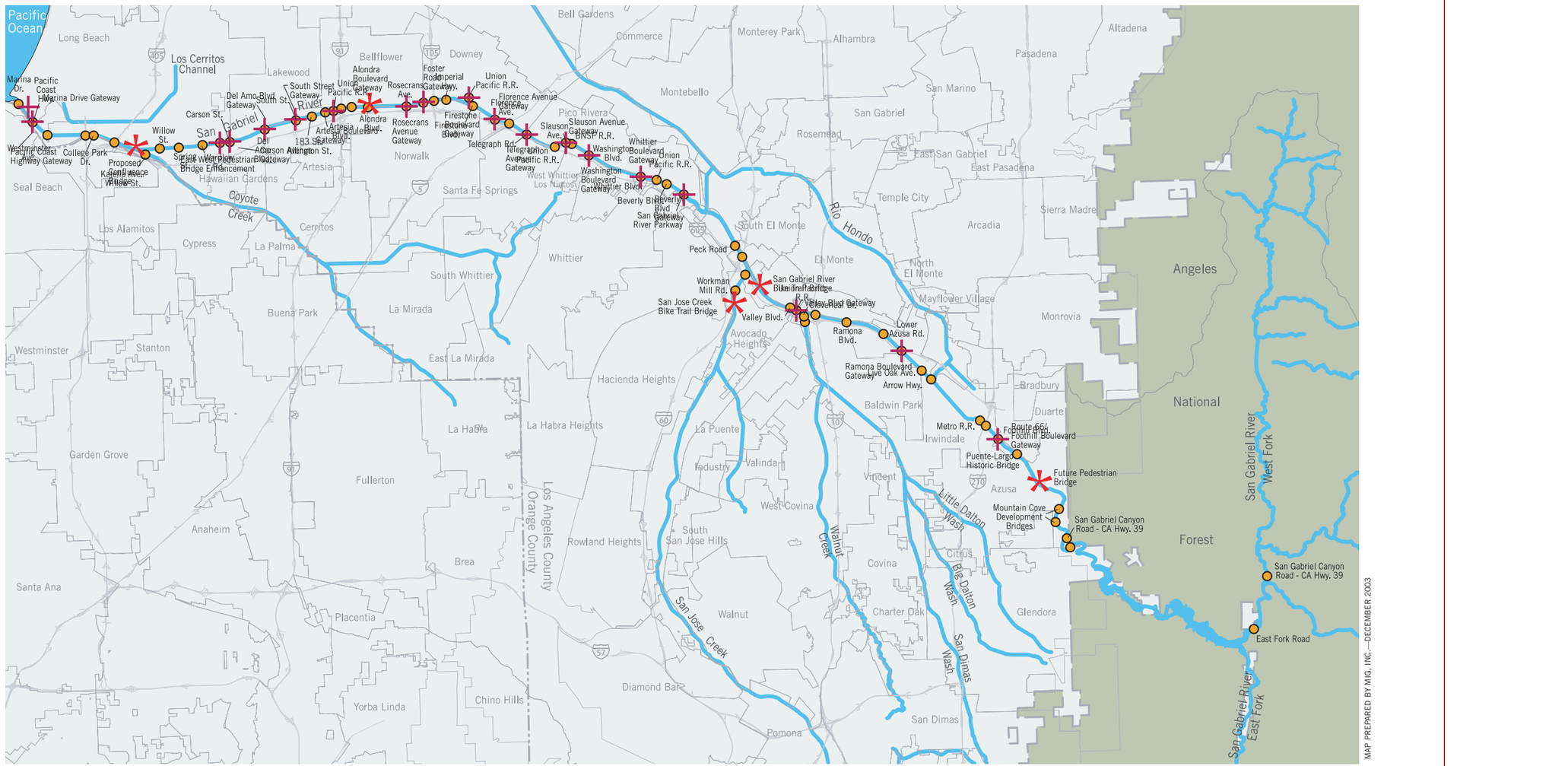
- None

GATEWAYS

- Beverly Boulevard Gateway (R5.03)
- Whittier Boulevard Gateway (R5.05)
- Washington Boulevard Gateway (R5.11)
- Slauson Avenue Gateway (R5.12)
- Telegraph Avenue Gateway (R5.13)
- Florence Avenue Gateway (R5.15)
- Firestone Boulevard Gateway (R5.18)

COURTESY OF NORTH EAST TREES

Figure 4-18. "Guardians of the River Gate" on the Los Angeles River, by artist Michael Amescua, incorporates folk art symbols and historic wildlife.



Source: County of Los Angeles Department of Public Works, Thomas Bros. Maps, and Rivers and Mountains Conservancy

Map 4-3. Bridge project opportunities.

Although there are no current or proposed bike-pedestrian bridges in Reach 5, the proposed gateway projects on existing arterial bridges may facilitate pedestrian and bike use.

Reach 6

BIKE-PEDESTRIAN BRIDGES

- East-West Pedestrian Bridge Enhancement (R6.20)

GATEWAYS

- Foster Road Gateway (R6.02)
- Rosecrans Avenue Gateway (R6.04)
- Excelsior Drive Gateway Park (R6.05)
- Alondra Boulevard Gateway (R6.08)
- Artesia Boulevard Gateway (R6.13)
- South Street Gateway (R6.14)
- Carson Avenue Gateway (R6.19)

This reach already has four bike-pedestrian bridges, the most of any reach.

COURTESY OF PBIC

Figure 4-19. Creative bike-pedestrian bridges, like this one in Spokane, Washington, can enliven trails.

Figure 4-20. The City of Cerritos placed this distinctive marker at the gateway to the City on Artesia Boulevard.

COURTESY OF DAN SLATER

Figure 4-21. The existing bridge at Coyote Creek could be expanded to cross the San Gabriel River near this point.

Reach 7

BIKE-PEDESTRIAN BRIDGES

- Proposed Confluence Bridge (R7.05)

GATEWAYS

- Pacific Coast Highway Gateway (R7.11)
- Marina Drive Gateway (R7.14)
- River's End Gateway (R7.17)

4.5 INTERPRETIVE FACILITIES

Educational centers provide a place to learn about the river and the watershed it serves. In a sense, these facilities speak for the river, telling its story to people who may be unaware of its history and significance. A series of strategically located educational centers will help the public perceive the river as an integrated system and rediscover it as the common thread linking communities from the mountains to the sea.

Existing Conditions

There are presently five individual educational centers located at various points within the San Gabriel River corridor:

- Rincon Station, managed by the Angeles National Forest, just below the confluence of the East Fork (Reach 1)
- The Peter Schabarum Nature Center, a Los Angeles County facility being operated by the San Gabriel Mountains Regional Conservancy, in the Santa Fe Reservoir Recreation Area (Reach 3)
- The Nature Center at Whittier Narrows, a County of Los Angeles Department of Parks and Recreation facility (Reach 4)
- Pio Pico State Historic Park (Reach 5)

COURTESY OF NORTH EAST TREES

Figure 4-22. A grizzly bear loses its grip on a tasty steelhead trout in this sculpture by Michael Amescua on the Los Angeles River.

COURTESY OF AZUSA HISTORICAL SOCIETY

Figure 4-23. Historic landmarks such as the Irwindale Church provide rich historical interpretive opportunities.

- The City of Long Beach's El Dorado Nature Center, just above the Coyote Creek confluence (Reach 6)

There are no interpretive centers in Reach 2 or Reach 7. There are outdoor interpretive exhibits and interpretive signage interspersed along the river, primarily in the mountains along Reaches 1 and 2.

The five major educational centers are primarily stand-alone facilities not designed to relate to each other as part of a larger educational program or network. Although many are located near the San Gabriel River Bike Trail, some centers do not have directional signage to the nearby river. Many of these centers are planning enhancements or upgrades to their facilities and educational programs.

Future Opportunities

A comprehensive network of educational centers would consist of at least one major educational center in each of the seven reaches of the river. Each reach could also have smaller, more specialized educational centers that complement and reinforce the major centers.

Eight different interpretive themes are recommended for the river corridor (additional interpretive themes may emerge during the process of developing the network). Some of these themes may be appropriate for the river as a whole, while others are more specific to particular reaches:

- San Gabriel River Watershed (all reaches)
- Water Conservation (all reaches)
- Native Habitat (all reaches)
- Regional Culture/History (all reaches)
- Mountains and Forest (Reaches 1 and 2)
- Flood Control and Water Supply (Reaches 2, 3 or 4)
- Geology/Mining/Quarry Operations (Reaches 3 and 4)
- Wetlands (Reach 7)

These interpretive themes should be developed in partnership with existing public and private interests along the river. For example, the geology, mining, and quarry operations theme suggested for Reaches 3 and 4 could be developed in partnership with quarry operators, who are best qualified to promote an understanding of mining, its ancillary uses, history and contributions to the growth of Southern California.

Each educational center would be distinguished by its reach location and particular interpretive theme(s). Each center would provide visitors information about the other centers, including locations and specialized

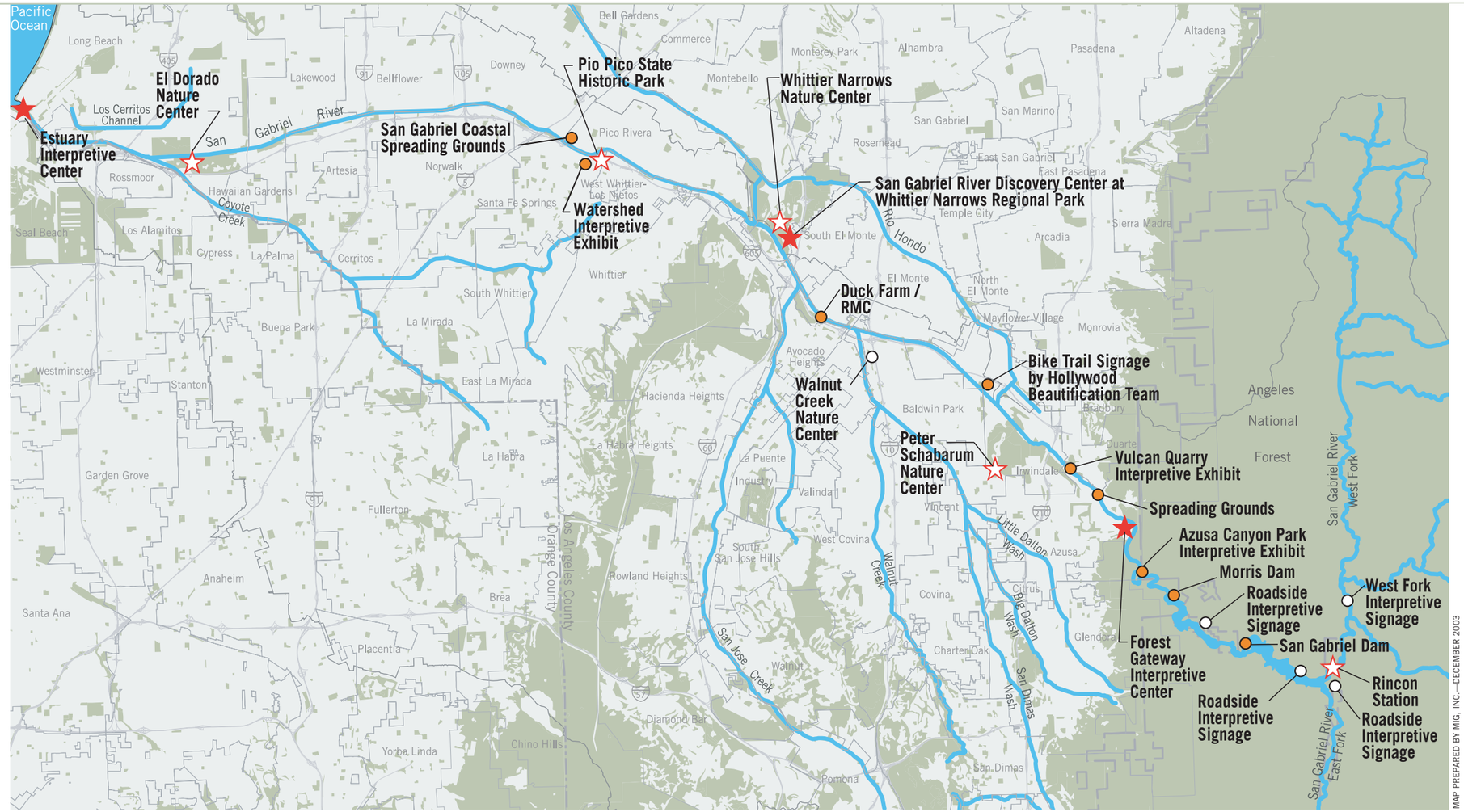
COURTESY OF ANNE DOVE, NPS

Figure 4-24. The San Gabriel Dam provides an interesting array of flood control and water conservation interpretive opportunities.

COURTESY OF VULCAN MATERIALS COMPANY

Figure 4-25. Children can learn about the importance of aggregate to Southern California through field trips to local mines.

Figure 4-26. El Dorado Nature Center is a model for regional education centers.



Source: County of Los Angeles Department of Public Works and Rivers and Mountains Conservancy

Map 4-4. Interpretive facility opportunities.

COURTESY OF THE SAN GABRIEL MOUNTAINS REG. CONSERVANCY

Figure 4-27. The Santa Fe Dam Nature Center celebrates its grand opening in April 2004.

interpretive themes. Staff would cooperate with each other on shared programs and events, promoting overall public awareness of the centers. Visitors could be issued "San Gabriel River Passports" to be stamped each time they visit one of the chain of educational centers along the river.

An overview of the educational center network, structured by reach and theme, might look something like the descriptions provided in Table 4-2.

Design guidelines should encourage *all* projects within the San Gabriel River corridor to incorporate an interpretive element that reflects river and watershed themes. Currently, several Master Plan projects already plan to include a significant interpretive element, complementing the educational programs of the major interpretive centers:

- Azusa Canyon River Park (R3.01)
- San Gabriel Canyon Spreading Grounds (R3.08)
- Buena Vista Wetlands (R3.24)
- Walnut Creek Nature Park and Nature Center (R4.11)
- Woodland Duck Farm (R4.15)
- Rio San Gabriel Park Interpretive Trail in Downey (R5.17)
- Downey Landing (R6.01)
- Riverview Park (6.07) in Bellflower

TABLE 4-2. FUTURE EDUCATIONAL CENTER NETWORK

Reach	Educational Centers	Area of Focus
1: Headwaters	■ Rincon Station	■ San Gabriel Mountains, U.S National Forest
2: San Gabriel Canyon	■ Morris Dam Peninsula Park (2.06)	■ San Gabriel Mountains; role of canyon dams in flood control, water supply and quality; military history of Morris Dam reservoir
3: Upper San Gabriel Valley	■ Forest Gateway Interpretive Center (R3.6)	■ U.S. National Forest ■ Geology, mining
	■ Peter Schabarum Nature Center (R3.22)	■ Watershed, water conservation, demo native plant gardens, education, culture, multi-age group activities, research
4: Lower San Gabriel Valley	■ San Gabriel River Discovery Center at Whittier Narrows (R4.26)	■ Watershed, water conservation ■ Geology, mining
5: Upper Coastal Plain	■ Pio Pico State Historic Park (R5.06)	■ Culture, history
	■ Los Cerritos Wetlands Restoration (R7.07)	■ Tidal wetlands
6: Lower Coastal Plain	■ El Dorado Nature Center (R6.22)	■ Nature, science, biology for school age groups, wetlands
7: Tidal Influence Zone	■ Hellman Ranch Wetlands Freshwater Marsh Restoration (R7.10)	■ Tidal wetlands; Tongva village archaeological site

COURTESY OF NORTH EAST TREES

Figure 4-28. Interpretive exhibits like this poster for the San Juan Bautista de Anza Trail can be built in even very small spaces.

4.6 PARK DEVELOPMENT

New and expanded parks along the river is a core strategy for "greening" the San Gabriel River. Parks and trails open up the river environment, making it accessible and attractive to nearby residents and other visitors who come for recreation or simply to relax and enjoy the view. River parks link people to the river, while also serving as a gathering place for the communities in which they are located.

Existing Conditions

There are approximately 52 parks within or near the San Gabriel River corridor. By far the largest open space with recreational opportunities is the Angeles National Forest. Three notable regional parks serve the San Gabriel River: Santa Fe Dam Recreation Area in Reach 3, the Whittier Narrows Recreation Area at the southern edge of Reach 4, and El Dorado Regional Park in Reach 6 just above Coyote Creek. There are about 49 city parks along the river corridor.

The majority of the urbanized river corridor is covered by parks: there are parks within walking distance of the river along 66% of the west bank of the river, and 80% of the east bank. Areas that are "missing" parks include communities with very dense populations such as Baldwin Park in

COURTESY OF ANNE DOVE, NPS

Figure 4-29. Fishing is a popular activity on the West Fork.

Reach 4. Other underserved communities include sections of El Monte, Pico Rivera, West Whittier-Los Nietos, Bellflower and Long Beach.

However, many of the river-adjacent parks are not oriented toward the river. As a result, park visitors may not even be aware that the river is nearby. This pattern stems from several factors. Public parks near the river are generally fenced off from the river except at one access point. They are often located beneath the top of the levee, preventing people in the park from seeing the river on the other side. Ornamental trees or shrubs planted along the fence line also limit visual and physical connections to the river. In some places, active rail lines separate parkland from the river.

Landscaping in many existing parks often does not reflect the river environment. The typical "park aesthetic" is lawn and ornamental landscaping that is water-intensive with high maintenance requirements.

Future Opportunities

There are major park development opportunities in all reaches. The most significant of these are within utility rights-of-way, subject to California State Public Utilities Commission guidelines and approval. Other opportunities include confluences and reclamation of brownfields and vacant open space.

Reach 1

In Reach 1, park development will most likely focus on the key issue of preventing future impacts from the thousands of annual visitors who travel Highway 39 along the San Gabriel River corridor into the Angeles National Forest. Highway turnoffs, vista points, interpretive areas, and parking, along with comfort stations and other amenities, can better serve the volume of visitors. This could be achieved through a series of parks along Highway 39, catering to people traveling by autos or bicycles. Management of trash and other user impacts is also a key issue in this reach.

Reach 2

Morris Dam Peninsula Park (R2.06) is the primary park development opportunity in this reach. Site remediation by the U.S. Navy will be necessary. As in Reach 1, highway turnoffs, vista points, and other similar mini-parks would better serve recreational visitors along Highway 39.

Figure 4-30. World War II torpedo chutes are still found on the Morris Dam Peninsula.

Reach 3

Future park development in this reach would consist primarily of opportunities created by reclamation of quarry operations and acquisition of privately held undeveloped lands. Current examples among Master Plan projects include:

- Robert's Creek Restoration (R3.04)
- Azusa Rock Quarry Restoration (R3.11)
- Fish Creek Restoration and Public Access (R3.12)
- Wright-Romvary Properties (R3.18)
- United Rock Products Quarry #3 (R3.25)

Although quarry reclamation offers huge potential for new parks, this will have to be balanced with economic development opportunities that are also important to local cities. The final use for the quarry sites, three or four decades from now, will be determined through negotiations between quarry operators and the Cities of Azusa and Irwindale. Local cities are interested in commercial, industrial, and to some extent, residential development. Parks, open space and habitat can be compatible with

Figure 4-31. The Santa Fe Dam Recreation Area offers both active and passive recreation activities.

economic development. Other Master Plan projects with a significant park and open space component in this reach include:

- Azusa Canyon River Park (R3.01)
- San Gabriel Canyon Spreading Grounds (R3.08)
- Santa Fe Dam Recreation Area and Habitat Enhancements (R3.21)

Reach 4

There are several park development opportunities in Reach 4. In the northern half of the reach, many of the Master Plan projects will help address the existing parks "gap" near Baldwin Park and South El Monte:

- Caltrans ROW Open Space and Trail (R4.09)
- Barnes Park (R4.10)
- Walnut Creek Nature Park and Center (R4.11)
- Woodland Duck Farm Project (R4.15)
- Proposed bridge projects such as the San Gabriel River Bike Trail Bridge (R4.16) and San Jose Creek Bike Trail Bridge (R.17), along with additional gateways (to facilitate access to the Bike Trail and provide the equivalent of a park-like setting along the river corridor)

Figure 4-32. Dog parks like this one at Seal Beach can be developed in "leftover" spaces such as underneath utility towers.

COURTESY OF NORTH EAST TREES

Figure 4-33. Pocket parks on small overlooked properties can provide shade, benches and water.

Quarry reclamation projects in Irwindale have significant park opportunities, if park development is included as an element in these reclamation plans. In the central and southern half of Reach 4, a variety of Master Plan projects in the unincorporated part of LA County in and near Whittier Narrows may form a chain of linked regional and local parks. This concept has been previously referred to as the San Gabriel Confluence Park, linking the Woodland Duck Farm (R4.15) to the Whittier Narrows, including the San Gabriel River Discovery Center (R4.26), the Lario Creek/Zone 1 Ditch Enhancement Project (R4.28), and the Rio Hondo.

Reach 5 and Reach 6

These reaches have the largest number of existing parks. They are very heavily used, suggesting that additional parks are needed. In these reaches, 13 new or enhanced park development projects area proposed. Additional opportunities may include the development of small parks, which can be especially valuable to underserved communities. Joint use programs with local schools can also provide a significant expansion of readily available park space for surrounding communities. The former NASA site in Downey (R5.01) could provide future long-term opportunities for creating new parks and open space.

Figure 4-34. These park benches are oriented to take advantage of picturesque river views on Naples Island, near the mouth of the river.

Reach 7

In Reach 7, proximity to the beach and marinas may create a different set of park opportunities:

- Coyote Creek Confluence
- DWP open spaces (R7.16)
- Oil field reclamation
- At the beach, possibly near River's End Gateway (R7.17)

4.7 OPEN SPACE

Open space has many different forms: parks, school playgrounds, greenways and natural areas. The defining element is that it offers a respite from the hard-edged urban environment where people spend most of their time. Open space may be just a small 50-foot by 50-foot parcel of unused urban land, several acres of river-adjacent parkland, miles of utility right-of-way corridor, or hundreds of square miles in the Angeles National Forest. And the river itself is linear open space.

The Master Plan includes projects that maintain and preserve open space areas along the river, as well as opportunities to reclaim land that could become open space in the future.

Existing Conditions

Open space along the river is sparse, but there are exceptions: the natural areas of the Angeles National Forest (Reaches 1 and 2), Santa Fe Dam Recreation Area (Reach 3), Whittier Narrows (Reach 4), and El Dorado Regional Park in northern Long Beach (Reach 6).

Land use patterns along the river corridor vary considerably by reach, affecting the present and future open space potential along the river. The most dramatic divergence is between the wilderness of Angeles National Forest (Reaches 1 and 2) and the rest of the river as it flows through the highly urbanized areas of Los Angeles County from the foothills to the sea (Reach 3 to Reach 7). Even within the urbanized reaches, however, there are variations in land use patterns that may impact future open space potential. These variations are summarized as follows:

- Reaches 1 and 2: open space
- Reach 3: primarily industrial and open space, with some commercial
- Reach 4: industrial, residential, and open space, with only a little commercial
- Reach 5: open space, but primarily residential and some commercial
- Reach 6: residential with some commercial and open space
- Reach 7: open space, residential, with some industrial and commercial

Utility rights-of-way and easements have had the effect of preserving open space along much of the river corridor. In some cases, these corridors traverse existing parks. SCE owns or leases approximately 85 percent of the adjacent land along the river corridor. LADPW also owns and leases land along the river. In the past, these areas have had only limited public use because of safety, maintenance, CPUC-mandated fiscal responsibilities, and operational requirements. The conversion of SCE rights-of-way lands from nurseries and equestrian facilities to storage units is a current trend that may reduce available open space. SCE is responding to CPUC financial requirements to obtain the "highest and best use" on its available open space lands.

Connections to public schools also expands the network of de facto open space. There are also vacant lands along the river, under-utilized industrial lands and SCE/LADPW hiatus areas that currently do not allow public access.

Figure 4-35. Rose Hills Memorial Park, overlooking the river, is a large open space area where many families gather to celebrate the lives of loved ones.

Future Opportunities

Opportunities for open space enhancement include protecting all existing available open spaces and creating new open spaces through incremental acquisition and conversion of land over time.

Utility Rights-of-Way

The most significant open space opportunity along the river corridor is the SCE utility rights-of-way, which could be enhanced for passive recreational and habitat purposes. There is precedent for utility corridors being used in this manner. For example, in Sun Valley, the City of Los Angeles Department of Water and Power easements are being used for treatment wetlands to assist local cities in meeting water quality regulatory requirements. Selected portions of utility corridors might be used for habitat-friendly gardens, parks and trails. Planting with native vegetation not only increases habitat but could also reduce maintenance costs for utility companies.

Regulatory and fiscal challenges will have to be addressed if this open space vision is to become a reality. For example, SCE will need a safe harbor agreement to protect its operations if endangered species take up residence in newly established habitat areas within the right-of-way.

Conservation easements can also play a major role by providing utilities with a financial incentive not to convert plant nurseries to storage facilities. Conservation easements may be a viable form of public subsidy to make up the difference between the revenue generated by storage units and other less environmentally-sensitive uses.

School Sites

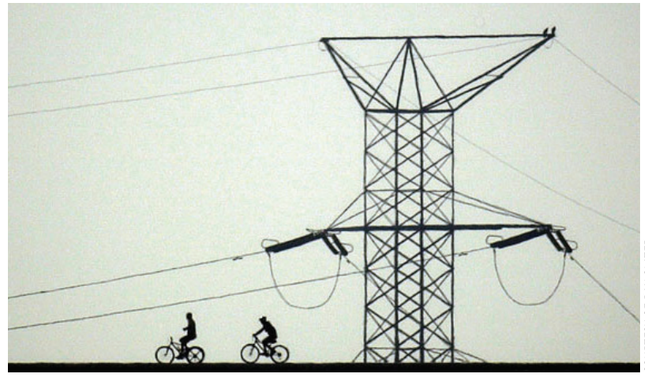
Public school properties can be a key element in the creation of additional open spaces. Opportunities include El Monte and Baldwin Park (in Reach 4) and the lower river communities of Pico Rivera, Downey, Cerritos and Norwalk (in Reaches 5 and 6).

Gravel Quarries

In Reaches 3 and 4, future gravel quarry land reclamation may provide additional open space for recreation and habitat in conjunction with other economic development opportunities on these sites. Quarry sites identified in the Master Plan include:

- Azusa Rock Quarry Restoration (R3.11)
- United Rock Products Quarry #3 (R3.25)
- Hanson Quarry (R4.05)
- Rodefer Quarry (R4.06)
- Durbin Quarry (R4.07)

These quarries are private property. Some quarries, such as the Durbin Quarry and United Rocks Product Quarry #3, offer valuable commercial and industrial area reuse opportunities. Local cities are extremely interested in the property development that will improve their tax base.



COURTESY OF DAN SLATER

Figure 4-36. The land along utility towers can provide significant open space areas.

Proposals to set aside any portions of these properties for open space will need to account for these economic realities.

Undeveloped Land

An additional open space priority in Reach 3 is acquiring privately held undeveloped lands that should be preserved as open space. An example is the Wright-Romvary Properties acquisition in Duarte (R3.18). Abandoned railroad or transportation rights-of-way offer opportunities to acquire linear open space that can be used for trails, habitat, and other community purposes. Examples include:

- Pacific Electric Rails-to-Trails Project involving cities along Foothill Boulevard (R3.15)
- Whittier Greenway Trail and Connection (R5.05)
- West Branch Greenway Rails-to-Trails in Bellflower (R6.11)

Converting underused or abandoned lands currently zoned commercial, industrial and residential may represent a long-term opportunity to create new open space. A survey to determine the extent of these properties is required to assess the potential of this strategy. Although many cities will consider the economic development potential of such sites a priority, the value of such properties increases where there is an open space component, especially in areas adjacent to or near the river. This approach may be especially valuable in heavily developed Reaches 5, 6 and 7, as older buildings and facilities reach the end of their useful lifespans. Converting the former NASA site in Downey (R6.01), which combines new open space with new commercial and business development, may serve as a prototype for future developments.

4.8 REDEVELOPMENT AND RECLAMATION

Redevelopment can transform landscapes from prior urban and industrial uses, making them available for new economically viable and ecologically sustainable uses. Land recycling from one use to another enhances its value.

Land reclamation is the process of improving disturbed land (soil, vegetation and water) to achieve land equivalent to or as close as possible to pre-disturbed conditions. For example, "brownfields" are lands where a hazardous substance, pollutant or contaminant must be cleaned up to prepare the land for reuse. Land reclamation should be guided by the economic and social needs of the communities in which these sites exist.

Figure 4-37. Community gardens, such as this one in Long Beach, can offer multiple benefits in underused open space.

Existing Conditions

The San Gabriel River corridor includes many productive gravel and sand mining operations, primarily in the alluvial deposits in the upper San Gabriel Valley (Reaches 3 and 4). There are 17 gravel quarries in Irwindale alone, and another active one in Azusa. These mines are in various stages of operation and have developed reclamation plans to be implemented during the next 7 to 30 years.

Many of these sites have significant economic development potential and for this reason are especially important for the future economic health of the cities in which they are located. In addition, the adjacency of these sites to the San Gabriel River adds to their significance. Multiple uses could complement or enhance their economic value. These uses could include parks and open space, habitat restoration, stormwater capture and cleanup, and flood hazard reduction.

A variety of challenges will need to be addressed at each site in order to reclaim them. In some of the deeper mining pits, such as Hanson Quarry, groundwater is currently exposed at a depth of 150 feet. Water levels in the groundwater basin have historically and naturally fluctuated greatly in depth. Erosion is also a problem on sites with significant excavation. However, bioengineering techniques could be used to control erosion, with the added benefit of restoring habitat and soil health. Some sites may include contaminated soils or remnant toxins that could be harmful to the environment. These substances must be contained or cleaned up as part of the reclamation plan, especially if site runoff transports these substances elsewhere.

Other significant land reclamation challenges include the EPA Superfund sites in the San Gabriel Valley, oil fields west of Whittier Narrows (Reach 4) and an area by the Los Cerritos Wetlands in Long Beach (Reach 7).

Future Opportunities

On many sites, existing conditions may not meet current safety, accessibility and water quality standards, and post-occupancy reclamation plans must be prepared. The Master Plan's integrated approach to future land uses supports a river system or watershed perspective. Each potential site should be examined in terms of its ability to address a variety of components. For example, the economic development potential of each site is very important, and must be addressed along with other potential benefits. Multiple uses can be integrated into some sites, rather than creating exclusive reserves for one function or another. Uses include:

- Land use conversion
- Open space
- Habitat restoration
- Interpretive features (demonstration areas)
- Groundwater recharge
- Flood protection
- Bioengineered wetlands (water quality)
- Economic development
- Reclaimed water

Gravel Quarries

Gravel quarries constitute the most significant land reclamation opportunity in the river corridor. A Quarry Reclamation Development Study (R4.04) is being conducted to more precisely determine the land reclamation potential of these projects, especially their potential feasibility for multiple beneficial purposes. For example, two former quarries that were already recycled as spreading grounds, are now sites for proposed second-tier land reclamation efforts. At the San Gabriel Canyon Spreading Grounds (R3.08), native landscaping improvements will enhance views of the nearby mountains by aesthetically improving the appearance of the

spreading basins—while also providing habitat. At the Buena Vista Wetlands (R3.24), LADPW plans to create bioengineered wetlands for habitat restoration. LADPW will need assurance that such habitat will not impose additional regulatory burdens. In addition to these existing efforts, Master Plan stakeholders have identified 11 gravel quarries as potential future land reclamation projects, including those listed below.

- Azusa Rock Quarry Restoration (R3.11)
- Azusa-Largo Pit (R3.16)
- Reliance Pit #2 (3.17)
- United Rock Products Quarry #3 (R3.25)
- United Rock Products Quarry #4 (R3.23)
- United Rock Products Quarry #1 (R4.01)
- United Rock Products Quarry #2 (R4.02)
- Bubalo Pit (R4.03)
- Hanson Quarry (R4.05)
- Rodefer Quarry (R4.06)
- Durbin Quarry (R4.07)

COURTESY OF VULCAN MATERIALS COMPANY

Figure 4-38. Reclamation plans for the Durbin Quarry can provide economic development and open space for the region.

The future end use of each of these quarry sites will vary depending on many factors, including the value of the land as determined by surrounding land uses. Some quarry sites can offer land reclamation that complements enhancements to the river corridor. Other quarry sites, especially those surrounded by commercial and industrial uses, will more likely be developed for purposes that can best enhance the tax base of the local cities in which they are located.

Abandoned and Underused Land

Other major stakeholder-proposed projects demonstrate the value of land recycling for creating new uses on abandoned or underused properties that have the potential to significantly transform the landscape. At Morris Dam Peninsula Park (R2.06), the proposed land reclamation project would transform a former Navy torpedo testing facility into a regional park. The Woodland Duck Farm (R4.15), a former agricultural facility, is being reclaimed to provide multiple recreational, habitats, and water quality benefits. At Downey Landing (R6.01), the 160-acre former NASA industrial facility is being recycled as a mixed-use commercial and business project, including a 11.5-acre park with a biofiltration swale system to capture and clean stormwater. The City of Downey has allocated $20.5 million to complete soil and groundwater cleanup at this reuse site.

Figure 4-39. The proposed Downey Landing park on the site of a former NASA facility is a significant land reclamation project.

Three stakeholder-proposed rails-to-trails projects include a land reclamation component:

- Pacific Electric Rails-to-Trails Project (R3.15)
- Whittier Greenway Trail Connection (R5.05) and
- West Branch Greenway Rails-to-Trails Project (R6.11)

RMC has granted the San Gabriel Valley Council of Governments funding to identify brownfield sites in the San Gabriel Valley, some of which are likely to be found within or near the San Gabriel River corridor. This study will be useful for identifying additional future land reclamation opportunities and obtaining funding for such projects.

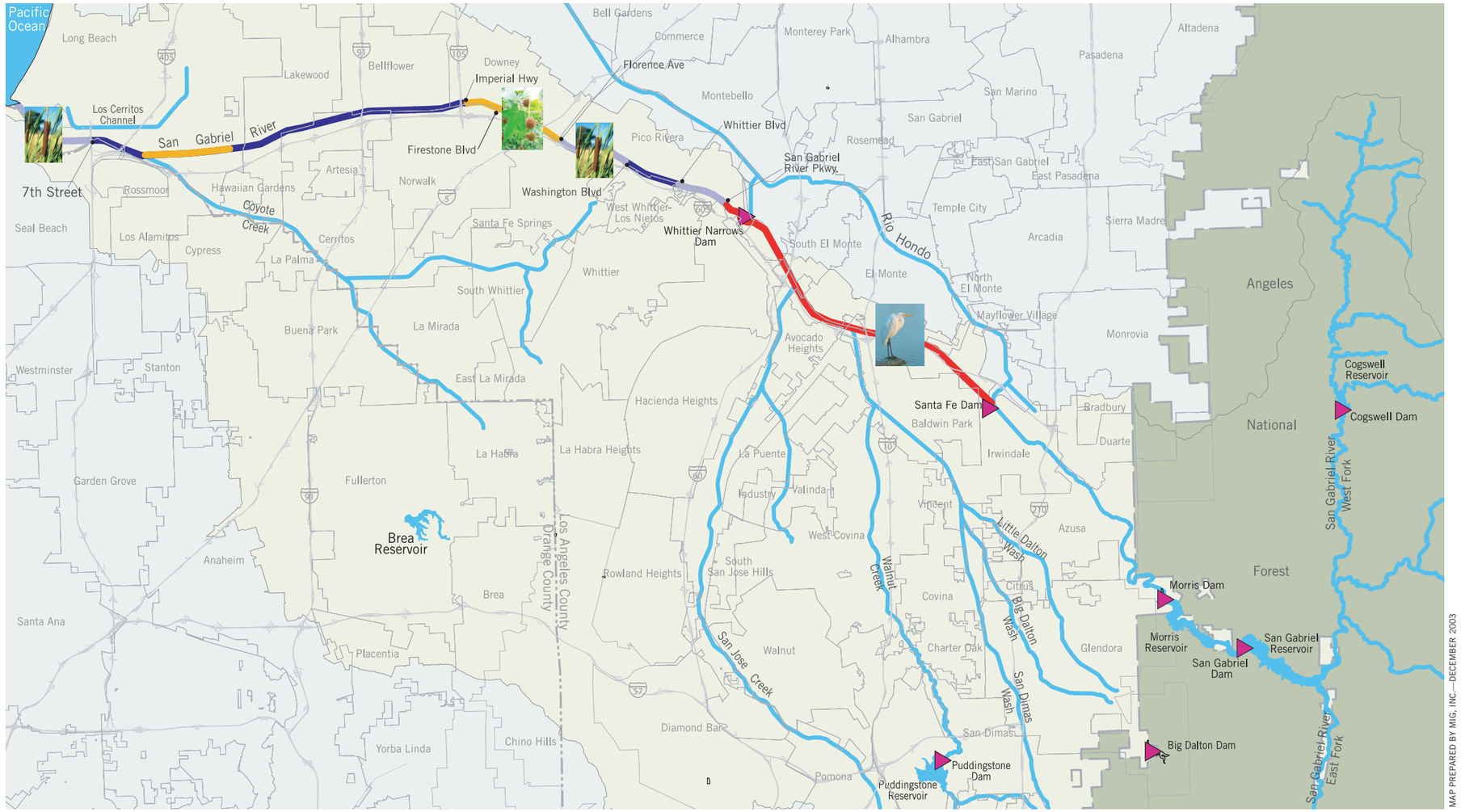
4.9 FLOOD CHANNEL ENHANCEMENTS

Flood channel enhancements refer to projects that can improve flood prevention for properties adjacent to the river. Following the multi-objective framework provided by this Master Plan, flood channel enhancements would also include elements of habitat restoration, recreation and open space. It is possible to creatively blend flood control engineering with ecology to improve flood protection and restore some of the natural attributes of the river system. For example, flood control levees can be set back from the river in adjacent open space areas to widen the floodplain, allowing habitat to be expanded—while still maintaining and improving flood protection for adjacent communities. Natural-looking terraces built over engineered levees can mimic natural features.

Existing Conditions

There is a complex relationship between flood control, water conservation and habitat restoration—all of which can be affected by a number of factors, including the design of the storm drain system, the capacity of the flood control channels, and the type of vegetation growing in those channels.

The existing storm drain system is designed to quickly move runoff from rooftops to streets to the San Gabriel River to the Pacific Ocean. This creates a “peak flow” situation when the river carries large volumes of water, traveling at a fast velocity, for a short period of time. As a result, stormwater that might otherwise be captured for storage, recharge and other values, is quickly lost to the sea.



Map 4-8. River bottom habitat restoration opportunities.

Figure 4-40. Even though the river is in a concrete channel, there is enough open space available at El Dorado Regional Park to consider partial floodplain restoration at this point.

The majority of the San Gabriel River channel is designed to meet capacity requirements for a 100-year flood event. Existing data on channel capacity indicates there are significant stretches of excess capacity along the channel. Computer modeling will be required to confirm this data. Excess capacity suggests that there are opportunities to undertake flood channel enhancements, which can provide benefits for habitat restoration, recreation and other purposes.

The longest stretch of excess capacity is about 9 miles long and carries 5,000-30,000 cfs in excess of 100-year flow. This occurs in Reach 4, from Santa Fe Dam down to just below Whittier Narrows Dam.

Lower Reach 5, from Florence Avenue to Imperial Highway, is a 3-mile stretch with excess capacity of 3,000-5,000 cfs.

There are two under-capacity reaches, one in Reach 5 from Whittier Boulevard down to Washington Boulevard (where the San Gabriel Coastal Basin Spreading Grounds are located) and one in Reach 7, from the I-405 Freeway down to 7th Street (just after the concrete ends and soft-bottom zone of tidal-influence begins).

The remainder of the river, half of Reach 5, all of Reach 6, and most of Reach 7 has excess capacity from 0-3,000 cfs.

Vegetation management and removal of exotic species (especially *Arundo donax*) can have a beneficial impact on channel capacity and on native habitat restoration. The distribution of native alluvial fan sage scrub and native riparian species, naturally adapted for seasonal periods of scarce water, is more widely spaced and less dense than arundo. Riparian species easily root in alluvial soils following a flood, providing rapid regeneration of habitat while preventing erosion of the fragile soils.

In contrast, an arundo forest is denser, taller and less diverse. Arundo forests out-compete native plant species, make less water available for recharge downstream, and provide little habitat value. This plant community also impedes groundwater infiltration because its dense, extensive root system retains water near the ground surface, where it either evaporates or is absorbed by the plants.

Future Opportunities

Over the long-term, river enhancement projects must be designed to attenuate peak flow by capturing and slowing down potential flood waters, reducing flood risk and allowing future stream restoration projects to safely move forward.

Flood Plain Restoration

Open space areas along the river may offer opportunities to set back levees from the river to restore flood plain functioning, including meandering channels and sandbars. Such restoration is most feasible where river-adjacent open space exists in conjunction with excess flood channel capacity, or where open space can even enhance flood control capacity. Utility easements, spreading basins and reclaimed gravel quarries offer opportunities to increase flood channel capacity while contributing to floodplain restoration efforts. The most significant wide, open space areas along the San Gabriel River exist in Azusa, Irwindale, Whittier Narrows and Long Beach. Other open space opportunities are the numerous river-adjacent community parks and industrial lands with reclamation potential.

Figure 4-41. The soft-bottom segment of the river in Reach 5 is regularly mowed to minimize vegetation for flood control purposes.

The El Dorado Regional Park Wetlands and Master Plan (R7.01) is an example of one possible future flood plain restoration opportunity. Long Beach park planners are studying proposals for removing concrete from the eastern side of the San Gabriel River channel adjacent to El Dorado Park to create a more natural channel. Removing the concrete would require that about 200 feet in width of the existing El Dorado Park become part of the floodplain. Much of El Dorado Park is over 2,500 feet wide, so the restored floodplain would be less than 10 percent of the current park width. However, the floodplain may only be partially flooded every one to five years. During dry periods, it could continue to provide open space for recreation and habitat.

Spreading Grounds

Quarry reclamation, as demonstrated by the San Gabriel Canyon Spreading Grounds in Azusa, provides an opportunity to reuse these sites as spreading grounds or as retention/detention areas for floodwaters. Closure plans for these quarries include additional open space and possible opportunities for retaining stormwater:

- United Rock Products Quarry #3 (R3.25)
- Quarry Reclamation/Water Storage Study (R4.04)
- Hanson Quarry (R4.05)
- Rodefer Quarry (R4.06)

Riparian Habitat

In the near term, segments of the soft-bottom portions of the San Gabriel River that have excess capacity could be managed to allow native riparian willow scrub plant communities to thrive. This would provide linear and riparian habitat, shade, cooler water temperatures and a visually pleasing river greenway. COE regularly maintains its channels, including annual mowing of vegetation. LADPW and COE would need to negotiate a “safe harbor” agreement that will allow vegetation to be maintained without penalty. A rigorous exotic species eradication and maintenance schedule would be needed so native plants can be established and sustained over the long term. A field study to identify areas within the river channel that

could handle the additional growth of native vegetation would also need to be undertaken.

The reaches with excess channel capacity also provide opportunities to expand the single-purpose flood channel for multiple-uses. The greatest opportunity is in Reach 4, in the 9-mile stretch from Santa Fe Dam to just below Whittier Narrows Dam. Coincidentally, this is also the location of the critical "missing habitat linkage" from the Puente-Chino Hills to the San Gabriel Mountains, which could be at least partially restored by allowing the regrowth of native plant communities in the soft bottom portions of the river.

Multi-Objective Solutions

Beyond flood plain restoration, the best overall opportunity for addressing flood protection is through individual projects that include multi-objective solutions. Over 50 percent of the Master Plan projects integrate this principle. For example, some recreational and habitat improvement projects will contribute to flood protection by incorporating designs to hold back stormwater and reduce peak flows, including:

- Santa Fe Dam Recreation Area and Habitat Enhancements (R3.21)
- Whittier Narrows Wildlife Lakes (R4.29)
- Whittier Narrows Legg Lake Improvements (R4.30)
- Whittier Narrows Dam Water Conservation Pool (R4.31)

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Figure 4-42. Above Whittier Narrows, vegetation is managed to allow for habitat.

Stream restoration projects can serve multiple purposes including providing habitat, improving water quality and reducing peak flows. Examples of these projects include:

- Robert's Creek Restoration (R3.04)
- San Jose Creek Habitat and Trails Restoration (R4.19)
- Lario Creek/Zone 1 Ditch (R4.28)
- North Caruthers Channel Improvements (R6.10)

Wetlands can be effective in attenuating peak flows by capturing runoff for habitat, including:

- Buena Vista Wetlands (R3.24)
- El Dorado Regional Park Wetlands and Master Plan (R6.21)
- Los Cerritos Wetlands Restoration (R7.07)
- Hellman Ranch Wetlands Freshwater Marsh Restoration (R7.10)

Open space can be an opportunity to incorporate wetlands, retention or spreading basins to hold back floodwaters, including:

- Woodland Duck Farm Project (R4.15)
- Pico Rivera Golf Course Enhancements (R5.01)
- Downey Landing (R6.01)
- DWP Open Space (R7.16)

Although these and other individual projects should strive to address flood protection in their design, hydrologic analysis must be performed in each case to verify the extent of their potential contribution to this goal.

Finally, current flood management projects, facilities, and practices should be re-examined for multi-objective possibilities including:

- Sediment Management and Removal Study (R2.04)
- Flow Study below Morris Dam (R2.07)
- San Gabriel Canyon Spreading Grounds (R3.08)
- Inflatable Rubber Dams to Increase Groundwater Recharge (R4.14)
- Paseo Del Rio at SG Coastal Basin Spreading Grounds (R5.08)
- Paseo Del Rio at Rio Hondo Spreading Grounds (R5.09)
- Marina Drive Urban Runoff Diversion System (R7.15)

Under-Capacity Areas

Two segments are under-capacity and do pose a potential flood hazard. These can be addressed by attenuating peak flows upstream in the watershed. In addition, the potential to use adjacent land for flood storage can be investigated. The first segment is just over 1-mile long, along the San Gabriel Coastal Basin Spreading Grounds in Pico Rivera from Whittier Boulevard to Washington Boulevard. These spreading grounds may be an opportunity to expand the floodplain in this segment, with no net loss in water conserved.

The second under-capacity segment is in Long Beach. It is about one-mile long, from the I-405 Freeway down to 7th Street (22 Freeway). Utility easements on both sides of the river in this stretch might provide land area for the additional needed capacity.

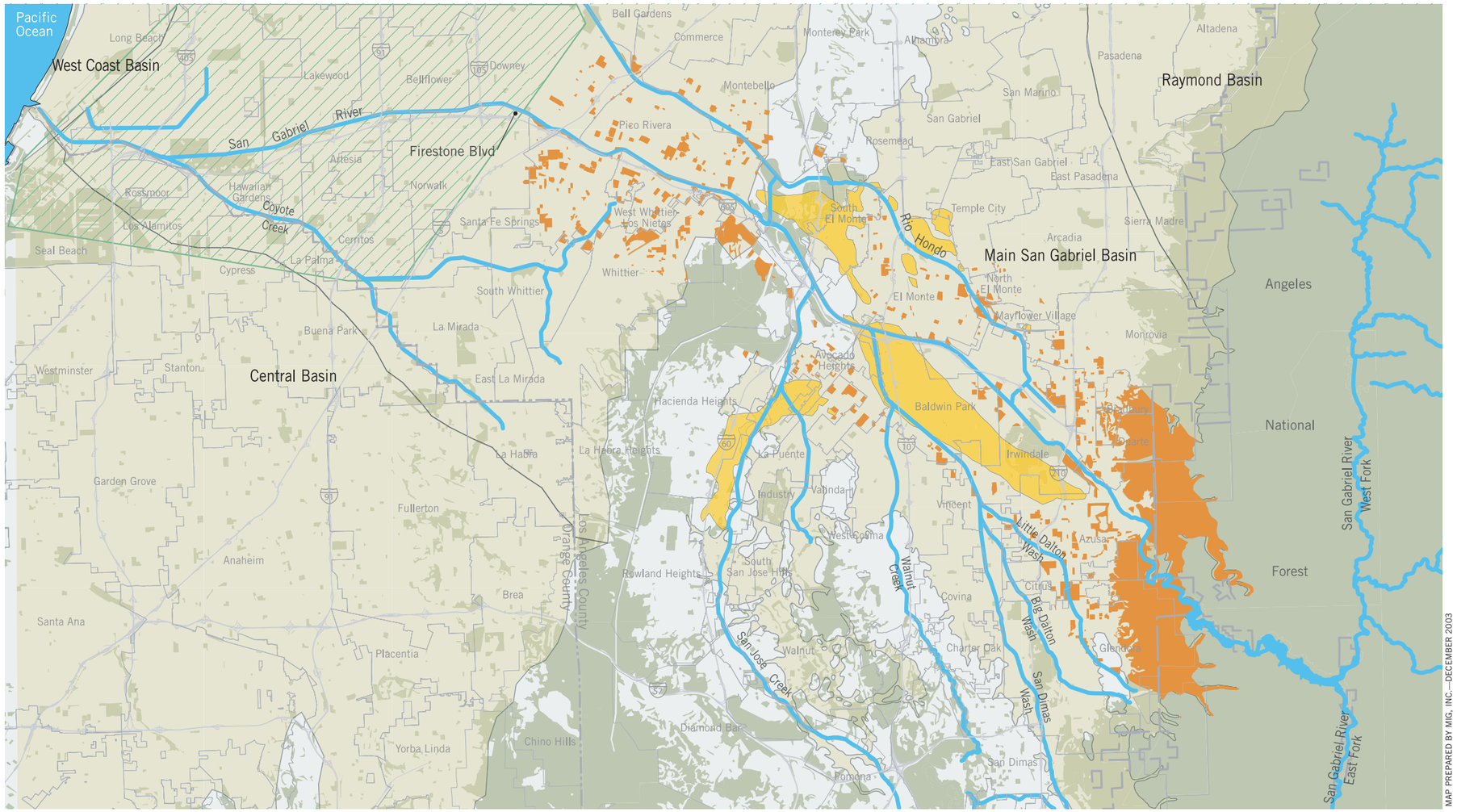
4.10 GROUNDWATER RECHARGE

The Southern California water supply is a combination of local surface and groundwater, imported water from the Colorado River watershed and Northern California, and reclaimed water. The San Gabriel Valley receives most of its water from the river and groundwater basins. The local water supply begins as rainfall that percolates into the underlying groundwater basins. Imported water helps fill the groundwater basins and meet local demand. Reclaimed water is treated wastewater made available for reuse purposes, including groundwater recharge. A complex web of water agencies buy, sell, pump and manage these precious water resources.

Existing Conditions

Groundwater basins store local rainfall for use, but demand far exceeds the available local water supply, so water must be imported and stored in the basins. Two groundwater basins underlie the San Gabriel River: the Main San Gabriel Basin and the Central Basin. A small portion of a third groundwater basin, the West Coast Basin, lies under the mouth of the river in Long Beach.

The Main San Gabriel Basin was created from erosion of the San Gabriel Mountains. That erosion resulted in a bowl of unconsolidated alluvium, or sand and gravel, filling the San Gabriel Valley. This created a permeable condition that retains rainfall underground—as long as the surface ground above remains unpaved. Similar conditions existed below Whittier Narrows, creating the Central Basin. The Montebello Forebay area is an especially productive recharge area. LADPW operates engineered spreading grounds,



Source: County of Los Angeles Department of Public Works and Rivers and Mountains Conservancy

Note: Potential groundwater recharge sites omitted due to two factors: Presence of aquaclude (clay lens prohibiting recharge) south of Firestone Boulevard, and contaminated groundwater plumes near Whittier Narrows, Baldwin Park and Irwindale.

Groundwater Recharge Opportunities

County of Los Angeles Department of Public Works

San Gabriel River Corridor Master Plan

Map 4-9. Groundwater recharge opportunities.

ensuring that a measurable quantity of water is continually recharged to these groundwater basins. These include:

- San Gabriel Canyon Spreading Grounds in Azusa
- Santa Fe Spreading Grounds in Irwindale
- San Gabriel Coastal Basin Spreading Grounds in Pico Rivera

Two spreading facilities on the Rio Hondo take water from the San Gabriel River. Below the Santa Fe Dam, water is sent through the Buena Vista Channel to the Peck Road Water Conservation Park. The Zone 1 Ditch, or Lario Creek, takes water from the San Gabriel River down to the Rio Hondo Coastal Basin Spreading Grounds in west Pico Rivera.

Other areas of the river corridor have impermeable conditions, which do not allow groundwater recharge. South of the Central Basin, an impermeable clay layer—called an aquaclude—sits underneath the river from Downey to the confluence of Coyote Creek in Long Beach. The urban fabric (parking lots, streets and buildings) can also create impermeable conditions, even in areas where favorable geologic conditions would otherwise enable groundwater recharge.

Untreated groundwater pollutants can also reduce the local water supply. Contaminated groundwater plumes in the lower Main San Gabriel Basin have been moving slowly southward toward the Central Basin. The primary area of the plume is just east of the San Gabriel River, starting above Irwindale by the I-210 Freeway, moving south parallel to the river through Baldwin Park, and resurfacing on the other side of the river below South El Monte, above Whittier Narrows. A groundwater treatment facility was built in the Whittier Narrows Recreation Area to treat these contaminated plumes.

The complex web of water suppliers include the Metropolitan Water District of Southern California as the wholesaler, and numerous local agencies as water purveyors and resellers. Jurisdictional responsibility goes to many agencies for surface water and groundwater supply and the quality of both surface and groundwaters. Water agencies and suppliers include:

- Main San Gabriel Basin Watermaster
- Metropolitan Water District of Southern California
- San Gabriel River Water Committee
- San Gabriel River Watermaster
- San Gabriel Valley Municipal Water District
- San Gabriel Valley Protective Association
- San Gabriel Valley Water Association
- Southeast Water Coalition
- Three Valleys Municipal Water District
- Upper San Gabriel Valley Municipal Water District
- Water Replenishment District
- Central Basin Municipal Water District

COURTESY OF PBIC

Figure 4-43. Permeable paving at the edges of parking lots and driveways can increase permeable surfaces that allow infiltration.

Future Opportunities

If the overall permeability of the watershed is increased, additional recharge of groundwater basins can expand the local water supply. In general, system-wide recharge opportunities should be encouraged on most land use types, starting with large open space areas on public lands. Applying best management practices and watershed-sensitive design to all planning, design and construction could offer significant recharge potential.

Many Master Plan projects have the potential for groundwater recharge. The two best opportunities are at the base of the San Gabriel Mountains (from Reach 3 to halfway down Reach 4 past the Santa Fe Dam) and from Whittier Narrows Dam in Reach 5 down to Firestone Boulevard. There may be opportunities on lands outside the existing spreading grounds that would be an adjunct to the significant groundwater recharge activities already taking place in these reaches.

In Reaches 6 and 7, the aquaclude or clay lens begins, preventing water from reaching the groundwater basin. In addition, recharge is not appropriate above the contaminated plumes.

There is some recharge potential among the many small parks and open spaces that lie above the groundwater basin along the entire river corridor. Many are less than 20 acres, which limits the amount of recharge potential from a single site. But, added together, the cumulative benefit from these sites could be substantial. Runoff from adjacent land uses could be diverted to these sites for groundwater recharge. These sites could be regraded to collect stormwater runoff in ponds, meandering streams or other holding areas.

Additional future opportunities to increase recharge potential include those listed below.

- Consideration can be given to those sites where excess reclaimed water is available from the San Jose Creek Water Reclamation Plant (55 MGD), Los Coyotes Water Reclamation Plant (30 MGD), and the Long Beach Water Reclamation Plant (17 MGD).
- Multi-agency coordination can resolve conflicts associated with lined lakes between water recharge, water-based recreation and habitat value.
- Additional recharge facilities between Whittier Narrows and Firestone Boulevard could further reduce the percent of rainfall water that is lost to the ocean.
- The Groundwater Augmentation Study being conducted by the Los Angeles and San Gabriel Rivers Watershed Council is exploring the opportunities and constraints of directly recharging aquifers with polluted urban stormwater runoff. Pilot projects can demonstrate best management practices for groundwater recharge design, implementation and management.

4.11 WATER QUALITY IMPROVEMENT

Water quality is a top priority for all local municipalities. The Clean Water Act regulatory requirements, administered by the State of California through the Regional Water Quality Control Boards (Regional Board), have set high water quality standards. Implementing the total maximum daily

load (TMDL) standards will require funding that may be beyond the capability of local jurisdictions. Regional solutions such as strategically located treatment wetlands in currently available open space areas may be at least part of the solution for urban water quality problems plaguing local streams and rivers.

Existing Conditions

The Los Angeles Regional Board has identified major watershed issues for the San Gabriel River in its Watershed Management Initiative Chapter of December 2001. These water quality issues include:

- 764 companies or other entities with minor, general, industrial stormwater, or construction stormwater permits under the National Pollution Discharge Elimination System (NPDES)
- Sluicing and disposal of sediments from reservoirs
- Protection of groundwater recharge areas
- Ambient toxicity
- Excessive trash in recreational areas of upper watershed
- Mining/stream modification
- Extensive stream modification for mining and water reclamation
- Urban and stormwater runoff quality
- Nonpoint source loadings from nurseries and horse stables
- Lack of understanding of estuary dynamics (e.g., the salinity)
- Septic systems leaking into groundwater

According to the Regional Board, impairments to the San Gabriel River include nitrogen and effects, trash, metals, historic pesticides, coliform, chlorides, and PCBs. Currently, the only completed TMDL plan is the East Fork Trash TMDL, which will take 10 years to bring the area into compliance. The currently scheduled TMDLs for the San Gabriel River include:

- Nitrogen and metals (river), fiscal year 04/05
- Coliform, fiscal year 02/03
- Nitrogen (lakes), fiscal year 03/04
- PCBs, pesticides and metals (lakes), fiscal year 05/06

The associated constituents or pollutants for reaches in the current 303(d) list include:

- Coyote Creek (entire stretch of main stem): Abnormal fish histology, algae, coliform, copper, lead, selenium, zinc
- San Gabriel River (from below I-91 Freeway to I-405 Freeway, below the confluence of Coyote Creek): Abnormal fish histology, algae, coliform
- San Gabriel River (below Whittier Narrows Dam to below I-91 Freeway): Coliform, copper, lead, zinc
- San Jose Creek, Reach 1 (from confluence with Puente Creek to confluence with San Gabriel River): algae, coliform
- San Jose Creek, Reach 2 (from top of main stem to confluence with Puente Creek): algae, coliform
- Walnut Creek (from Puddingstone Reservoir to confluence with Big Dalton Wash, excludes last stretch of Walnut Creek to the San Gabriel River confluence): pH, toxicity

The San Gabriel River has two impaired reaches listed, as well as impaired tributaries that flow into the river. The impaired tributaries bring in the listed impairments into the San Gabriel River system.

Future Opportunities

Roughly half of the Master Plan projects will address most of the Regional Board watershed issues for the San Gabriel River. This includes the proposed constructed treatment wetlands, which will improve urban and stormwater runoff quality. Both structural (constructed) and non-structural (education and outreach) best management practices (BMP) for reducing non-point source pollution must be implemented in order to fully address the water quality problems in the highly urbanized areas of the river.

Well-designed social marketing programs can enhance the effectiveness of all proposed programs. A public outreach campaign to all the communities along the river and within the watershed will raise awareness of how everyone's daily choices affect water quality.

Treatment Wetlands

Constructed treatment wetlands are engineered systems designed to mimic the natural water purification processes of wetland vegetation, soils, and microorganisms. They are usually located in large open spaces downstream of areas where industrial, commercial or heavy residential uses generate polluted stormwater runoff. These new wetlands send urban runoff through a veritable obstacle course of vegetation and soil that cleanses the water.

However, treatment wetlands might pose a threat to wildlife that will be attracted to what appears to be a new habitat—but which may actually harbor toxic compounds. Some constructed treatment wetlands are intended only to provide water quality treatment, not habitat. Other wetlands may offer multiple benefits, including habitat and recreation.

There are more constructed wetlands opportunities in Reach 3, between the Angeles National Forest and the Santa Fe Dam Recreation Area. Additional opportunities may exist in open space areas of Reach 4 near the confluence with San Jose Creek, in Reach 5 below Whittier Narrows, and in parks and other limited open space areas adjacent to the river in Reach 6. As surface water rights are fully appropriated, the issue of water rights will have to be addressed in the design and implementation of all proposed and future wetland projects.

Mapping the historic streams and wetlands may provide clues on how best to manage, design and restore surface and groundwater resources for maximum habitat, water supply and water quality benefits. It may be possible to daylight streams or remove concrete channels in selected locations.

Bioengineered wetlands that capture runoff from paved areas and vehicular traffic should be carefully studied before such water is allowed to percolate. Petroleum hydrocarbons and MTBE could contaminate the groundwater basin. Even if percolation is minimal, USEPA should be advised of such projects.

Vector Control

Any new or restored wetland area—whether for habitat or stormwater treatment—must be planned and designed in coordination with the local mosquito and vector control agency. Poorly designed and maintained

COURTESY SAN GABRIEL VALLEY MOSQUITO AND VECTOR CONTROL DISTRICT

Figure 4-44. Proper design and construction and regular maintenance of wetlands will minimize mosquito breeding.

wetlands could have negative impacts on the health of wildlife, park visitors, and nearby residents due to the potential for vector-borne diseases. These can include West Nile virus, St. Louis encephalitis, western equine encephalomyelitis, malaria, Hanta virus, plague, Murine typhus, and Lyme disease.

No matter how well designed these facilities are, they will breed mosquitoes and they will have an impact on human health. Given the potential risk to public health, the number and scope of bioengineered wetlands that can be fully monitored and safely maintained within the the San Gabriel River Corridor Master Plan project area should be carefully assessed. This calculation must take into consideration the available human and financial resources that can be confidently applied without interruption.

Additional Water Quality Improvement Opportunities

Nonpoint source loadings from nurseries and horse stables can be mitigated either on site, from another preferred location, or downstream through treatment wetlands processes. A more complete understanding of estuary dynamics will be needed. The Coyote and Carbon Creeks Watershed Management Plan (R7.01) will study the southern San Gabriel River Watershed, down to the mouth of the river. An assessment of septic systems needs to occur in the near future to identify their locations and current conditions and propose management recommendations, including future treatment conversion options.

Beyond constructed treatment wetlands, other Master Plan projects will address additional water quality issues identified by the Regional Board. The Sediment Management and Removal Study (R2.04) will address sluicing and disposal of sediments from reservoirs. Through thoughtful design of trail enhancements and edge treatments, the following projects could help protect groundwater recharge areas:

- Hanson Quarry (R4.05), land reclamation project to partially or completely fill the quarry to minimize exposure of groundwater
- Inflatable Rubber Dams to Increase Groundwater Recharge (R4.14)
- Paseo Del Rio at San Gabriel Coastal Basin Spreading Grounds (R5.08)
- Paseo Del Rio at Rio Hondo Spreading Grounds (R5.09)
- Marina Drive Urban Runoff Diversion (R7.15)

Trash Reduction

Excessive trash in recreational areas of the upper watershed in the Angeles National Forest is addressed by a proposed project that will assess recreational needs along Highway 39 and the San Gabriel River (R2.03). In the meantime, actions can be taken to reduce the amount of trash affecting the upper watershed. This includes providing trashcans, ash receptacles, portable toilets, and educating visitors to the forest about trash and restroom options both in the forest and in their communities.

Mining Mitigation

Several proposed land reclamation projects will mitigate surface or groundwater modifications brought about by mining activity:

- Azusa Rock Quarry Restoration (R3.11)
- United Rock Pit #3 (R3.25)
- Quarry Reclamation/Water Storage Study (R4.04)
- Hanson Quarry (R4.05)
- Rodefer Quarry (R4.06)
- Durbin Quarry (R4.047

Other Ongoing Studies

Other ongoing programs and studies will help shape the direction of future water quality improvement efforts along the San Gabriel River. Multiple agencies and organizations including the Friends of the San Gabriel River, Los Angeles and San Gabriel Rivers Watershed Council, the Regional Board, Southern California Coastal Waters Research Project (SCCWRP) and others joined together to perform system-wide water quality sampling in September 2002 and 2003. SCCWRP is using data gathered to develop computer models of flow and pollutant loading. The San Gabriel Mountains Regional Conservancy is developing the “San Gabriel River Watershed Management Plan Above Whittier Narrows” for the Regional Board. This multiple-objective plan will address nonpoint source pollution reduction strategies. SCCWRP has also proposed studying regional water quality treatment wetlands within the San Gabriel River Watershed.

chapter 5 Moving from Vision to Reality

CHAPTER 5

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chapter 5 Moving from Vision to Reality

5.1 OVERVIEW

Successfully implementing the San Gabriel River Corridor Master Plan and achieving its vision of a transformed river will require the continued engagement and support of the many organizations and individuals that actively participated in developing it. The core agency planning team will also continue to play a key role, communicating and interacting across all the organizational and jurisdictional boundaries that define our region. Prior to plan implementation, the Program Environmental Impact Report (Program EIR) process must be completed. (For more information on the Program EIR see Appendix D.)

This chapter introduces some of the implementation strategies and potential funding sources that project sponsors can draw on to support their efforts.

5.2 THE MASTER PLAN IMPLEMENTATION TEAM

Achieving the Master Plan vision will require a long-term collective effort stretching out over years—and decades. A Master Plan Implementation Team is needed to maximize interest and encourage active agency and community participation.

Inter-Agency Staff

The County of Los Angeles Department of Public Works (LADPW) and the State of California San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy (RMC) are working together to pursue projects of mutual interest. LADPW will focus on projects with major flood management, water quality, water conservation and groundwater recharge components. RMC will focus on projects related to open space, habitat and recreation.

To facilitate this partnership, RMC and the Los Angeles County Flood Control District, which is administered by LADPW, created the Watershed Conservation Authority (WCA) as a joint powers authority on April 17, 2003. The WCA will leverage funding and implement projects that serve the purposes of each member agency. It will likely focus on projects to preserve urban open space, in order to provide low-impact recreation and educational uses; wildlife and habitat restoration and protection; and watershed improvement projects in both the San Gabriel River and Lower Los Angeles River Watersheds. The WCA will support many of the current and future projects identified in this Master Plan.

Information about WCA can be found at the following website: http://www.wca.ca.gov/

Steering Committee

The San Gabriel River Corridor Master Plan Steering Committee, which played the central role in developing the Master Plan, should also play a continuing role in implementing it. It represents the full spectrum of public and private interests along the river corridor. It will continue to meet on a regular basis to build upon and sustain the community-wide momentum it created during the plan development phase. The Steering Committee will support and guide implementation of the Master Plan, working with LADPW, RMC and WCA in an advisory capacity.

The Master Plan integrates the individual planning efforts of many cities and other public and private organizations. It provides a guiding framework for these individual efforts, showing how each one contributes to the overall revitalization and enhancement of the river corridor. The Master Plan does not control when and how these projects will be implemented. The Master Plan Steering Committee will need to work closely with the WCA to develop a timeline for project funding and implementation.

While the vision and goals of the Master Plan will most likely remain unchanged in the future, the methods to achieve them will need to adapt to changing conditions; thus the Master Plan should be updated on a regular basis. This update process can be timed to coincide with LADPW's 5-year capital planning cycle. Periodic updates to the plan will help ensure its continued relevance and vitality, and maintain the community interest and support that will be key to sustaining the power of its long-term vision during the coming decades.

5.3 PROJECT PARTNERSHIPS

Creative partnerships among the many public and private agencies and organizations that have a stake in the river's future will generate project support. Collaborative efforts can range from an informal information exchange to joint project sponsorship and funding. Partnership opportunities include the following.

Large Public Land Owners

Large public land owners include Southern California Edison (SCE), the U.S.D.A. Forest Service, the U.S. Army Corps of Engineers (COE), the County of Orange and the many cities that line the river. These agencies could form partnerships to jointly fund projects, and promote key programs such as public safety, environmental conservation and river enhancement.

Municipalities and Special Districts

Many cities, special districts and other public entities along the river are facing substantial capital program investments for regulatory compliance, such as for Standard Urban Stormwater Mitigation Plan (SUSMP) and Total Maximum Daily Load (TMDL) requirements. LADPW and RMC can expand the joint powers authority concept to develop partnership agreements, both traditional and innovative, with appropriate agencies and organizations to ensure that the capital and maintenance investments made to meet these new mandates also support the specific projects and objectives of this Master Plan.

Nonprofits and Community-Based Organizations

Nonprofit organizations and other watershed groups can capitalize on individual and organizational passion and commitment to restoring and redeveloping the San Gabriel River corridor. Nonprofit organizations can sometimes move more quickly than government entities to respond to immediate opportunities. Memoranda of Understanding respecting roles and regional jurisdiction could be adopted to avoid competition for outside funding.

Private Property Owners

Care should be taken to work collaboratively with private property owners and find ways to maximize their goals while still meeting the public goals for improved habitat, recreation and open space. Outreach to property owners should be carried out on an on-going basis.

5.4 RIVER CORRIDOR MANAGEMENT PROGRAMS

A coordinated approach will be needed to maximize resources for Master Plan project implementation. The following programs are proposed.

River Reach Project Management

The concept of river reach project management, in which project managers work with all other related entities within a river reach, may go a long way towards implementing the Master Plan. Many federal, state, regional and local funds are narrowly focused on a single objective. A river reach project management model could help integrate various categories of funding programs within a geographic reach. "Layered" funding—from federal, state, regional, and local sources—brought to bear on individual projects requires sophisticated, river-oriented project and grant/finance management. Assigned managers will need to understand all potential funding sources for Master Plan objectives, and develop close working relationships with cities, special districts and other jurisdictional players in their reach.

Legislative Caucus

A regional legislative caucus could begin with those state and federal legislators who are already familiar with the San Gabriel River Corridor Master Plan and RMC. The caucus could grow to include all relevant Southern California legislators. Marketing the Master Plan document through well-prepared briefing material—perhaps in a series of briefings with legislators and their senior staff—could be a starting point for developing a coordinated San Gabriel River Corridor Master Plan long-term legislative initiative. With legislative support, funding efforts could be directed towards federal agencies, including the Environmental Protection Agency (EPA), COE, Department of Interior, Federal Emergency Management Agency (FEMA), and others. While federal and state funding will be intensely competitive, there will be points of financial opportunity over the 50-year time span of the Master Plan.

Private Trusts and Foundations

Organizations such as the Trust for Public Land, the San Gabriel Mountains Regional Conservancy, the Rio Trust and similar organizations acquire land for transfer to a third party, when financing is organized. These private trusts and foundations can provide additional opportunities for funding of Master Plan projects.

Operations, Maintenance, Public Health and Safety

New state and federal monies already identified for the projects in the Master Plan often address new capital projects. However, funds are also needed to operate, and maintain, and provide public health and safety.

It may be appropriate to target new local revenue measures to meet these needs. Creating an endowment for operations and maintenance should also be considered. An endowment could be created through a number of different funding sources. Steering Committee members have suggested mitigation banking; revenue-generating river corridor uses such as parking fees, concessions and leases; corporate sponsorships and "Adopt-a-River Trail" programs; and user fees (e.g., the Angeles National Park "Adventure Pass"). Other possibilities include partnerships with Employment and Job Training systems that could provide training for river facilities construction, maintenance and environmental restoration projects.

Stable Long-Term Revenue Stream

Long-term funding sources for both capital and operating needs will require working with regional partners to develop a strategy to seek future voter authorization of regional or local revenue-generating measures. This strategy can link with ballot initiatives to fund parks and open space—which may have significant appeal for voters. This can be successful if public entities develop good relationships and a reputation for using existing resources wisely and efficiently. On-the-ground demonstration projects that people can touch, feel and see will generate the enthusiasm that can lead to voter approval.

Modify Single Purpose Land Use Restrictions

SCE, Los Angeles County and other public entities own extensive and important lands in the river corridor. Use restrictions limit their use to a single purpose, such as utility tower maintenance. Agreements with these entities to allow for multiple uses, while respecting the primary use, will be an important tool in achieving the goals of the Plan over time. Issues of liability must first be solved when public use or additional uses are contemplated.

Other Models for River Corridor Development

Case studies demonstrating successful multi-objective river corridor projects may also be a source of inspiration. These projects can offer tools and methods for layering funding sources, creating and sustaining inter-agency partnerships, developing public outreach and education, using voter and taxpayer surveys, and developing fees, taxes or benefit assessments the public will support. For example, the Santa Clara Valley Water District successfully extended its benefit assessment program for watershed stewardship and flood protection through sophisticated community analysis, education and polling over a three-year period. The District's strategic approach is just one of many examples that can provide good models for the San Gabriel River Corridor Master Plan Implementation Team.

5.5 FINANCING THE MASTER PLAN

Some of the individual projects presented in the Master Plan are already funded, other long-term initiatives will require long-term financial planning.

Although project costs have not been individually calculated, a rough estimation of the total cost of the 134 projects identified in this Master Plan is about $625 million or $11 million per river mile (the 58 miles from Cogswell Dam to the Pacific). Since the majority of projects actually occur along the 38 miles from Azusa to Seal Beach, the cost per mile increases to $17 million per mile. These rough cost estimates fall well within the $16 million to $40 million per mile range for many other river enhancement and revitalization programs, including the following examples from around the country:

River Projects	Financed Cost	Cost per mile
El Rio Salado—Tempe, Arizona	$100 million	$20 million
Rio Salado—Phoenix, Arizona	$80 million	$16 million
Truckee River—Reno, Nevada	$225 million	$32 million
Napa River—California	$475 million	$35 million
White River—Indianapolis, Indiana	$56 million	$37 million

In the coming years, as more and more projects are identified, the total cost could approach $1–$1.5 billion using similar experiences around the

county as a guide. After annualization, an investment of about $30 million per year over a 50-year period is a reasonable estimate of the financing required for this Master Plan.

The Master Plan itself is critical to implementation because it complements and integrates other planning efforts and illustrates how small projects contribute to the broader efforts—which encourages project funding agencies and organizations. Clarifying the role of local projects is also a necessary first step in building the community excitement and support that could catalyze voter authorization of regional or local revenue-generating measures to support capital and operating funds.

5.6 POTENTIAL FUNDING SOURCES

Local agencies and community groups can call on a variety of funding resources and strategies to support implementation of Master Plan projects and programs. During the past ten years, California and Los Angeles County voters have approved a number of state bond measures for clean water, parks, recreation and open space. These proposition funds represent some of the best short-term opportunities for implementing projects. The projects of the Master Plan will likely be more attractive to funders than stand-alone efforts. Many funding organizations encourage collaborative, partnership-based projects and programs.

The following table provides an overview of funding sources. Some of the programs listed are transient or not always funded because they are based on governmental appropriations or funding through specific ballot or bond measures. Those seeking funding should check the website or call to determine the status of these programs.

The table is sorted by broad project categories, such as flood damage reduction, habitat, recreation and land acquisition. Funding sources in each category are presented by general source, such as federal, state or local government. An overview of local funding initiatives and Internet links to funding databases is also provided.

SAN GABRIEL RIVER CORRIDOR MASTER PLAN FUNDING SOURCE INVENTORY

PRIMARY FUNDING CATEGORY AND FUNDING SOURCE	FUNDING PROGRAM	PROGRAM DESCRIPTION	ADDITIONAL INFORMATION
FLOOD DAMAGE REDUCTION			
FEDERAL			
US Department of Agriculture (USDA) - Natural Resource Conservation District (NRCS)	Emergency Watershed Protection Program (Farm Bill Program)	EWP provides technical and financial assistance for watersheds ravaged by natural disasters. It provides funding for work such as clearing debris from clogged waterways, restoring vegetation and stabilizing riverbanks.	http://www.nrcs.usda.gov/
US Army Corps of Engineers (ACE)	Continuing Authorities Program -- Operations and -Maintenance	Annual federal budget provides operations and maintenance funding to the ACE LA District for operation and maintenance of the San Gabriel River flood control works under ACOE responsibility.	Annual federal budget
	Continuing Authorities Program -- New Projects	Small Flood Control Projects (Section 205): The Federal share may not exceed $5 million for each project.	Annual federal budget
		Snagging and Clearing for Flood Control (Section 208): The Federal share may not exceed $500,000 for each project. Emergency Stream-bank and Shoreline Erosion Protection for Public Facilities and Services (Section 14): The Federal Share may not exceed $500,000 for each project.	
		Project Modification for Environment Improvement (Section 1135 and Section 206): The Federal share may not exceed $3.75 million for each project. Ecosystem Restoration Programs address the degradation of ecological resources caused by ACE projects and ecological restoration requiring ACE expertise. Congressionally Authorized Reconnaissance and Feasibility Studies.	ACE
	Congressionally Authorized Studies	These studies look at problems for which solutions will exceed $5 million in construction costs, and can only be authorized by Congress.	The federal Water Resources Development Act is submitted by Congress every 2 years with funding through the annual appropriations cycle of the federal government
Federal Emergency Management Agency (FEMA)/ Office of Emergency Services (OES)	Flood Mitigation Assistance Program	FEMA's Flood Mitigation Assistance (FMA) program helps states and communities identify and implement measures for reducing or eliminating the long-term risk of flood damage to homes and other structures insurable under the National Flood Insurance Program (NFIP). This replaces the HMGP program.	Periodic RFP's, http://www.fema.gov/fima/nfip.shtm
	National Flood Insurance Program (NFIP)	Current flood insurance rates are unknown, but there may be potential for Community Rating System (CRS) rate reductions to NFIP insureds. CRS rate savings could be substantial and form the basis of residential/commercial property owner political support for comprehensive watershed management initiatives.	http://www.fema.gov/fima/planfma.shtm

SAN GABRIEL RIVER CORRIDOR MASTER PLAN FUNDING SOURCE INVENTORY (CONTINUED)

PRIMARY FUNDING CATEGORY AND FUNDING SOURCE	FUNDING PROGRAM	PROGRAM DESCRIPTION	ADDITIONAL INFORMATION
FLOOD DAMAGE REDUCTION (CONTINUED)			
FEDERAL (CONTINUED)			
	Hazard Mitigation Grant Program (HMGP)	The County might explore Northridge Earthquake Hazard Mitigation Grant Program (HMGP) funds that are still in the FEMA/OES pipeline and unspent. These could be redirected to SG Flood Hazard Reduction projects.	http://www.fema.gov/fima/mitgrant.shtm
STATE			
California Department of Water Resources	Flood Control Project Subventions Program	The Flood Control Subventions Program is designed to help ensure the construction of flood control and watershed management projects by providing financial assistance to local agencies that are cooperating with federal agencies in constructing the projects. Projects must be federally authorized.	http://www.water.ca.gov/grants-loans/
	Proposition 13 - Flood Protection Corridor Program	The Flood Protection Corridor Program provides funds to acquire easements and other interests, in real property, from willing sellers. Projects must provide for agricultural land preservation and/or wildlife habitat protection as well as demonstrate a significant reduction of peak flood flows, flood stage, flood risk or potential flood damage. The largest grants available are $5 million per project (except in unusual circumstances).	http://www.water.ca.gov/grants-loans/
	Urban Stream Restoration Program	Funding is provided for flooding and erosion projects that enhance the environmental and ecological values of urban streams and is available to local government agencies (city and county), and special districts and citizen groups statewide.	http://www.watershedrestoration.water.ca.gov/urbanstreams/
SPECIAL DISTRICTS & LOCAL			
LA County Flood Control District	Existing property assessments for drainage, local share of flood protection projects, and O&M of flood control facilities	The main sources of revenue for the Flood Control District are the Benefit Assessments and the District's share of the County-wide property tax revenues. The Benefit Assessment has not been raised since voter approval and adoption of Prop 218, which requires voter approval of a new or increased benefit assessment. The District's share of the property taxes was set by formula upon passage of Prop 13 in 1978. As a result, the revenues to the District are set by the existing tax rates and growth of property value. LADPW determines the allocation of these revenues for the maintenance and rehabilitation of the existing infrastructure, auxiliary functions and/or the construction of improvements for the County's flood control systems.	Annual budget adopted by Board of Supervisors
LAND ACQUISITION & EASEMENTS			
FEDERAL			
US Department of the Interior, National Park Service (administered through California Department of Parks and Recreation)	Land and Water Conservation Fund (LWCF)	The LWCF program provides matching grants to states and local governments for the acquisition and development of public outdoor recreation areas and facilities. The program is intended to create and maintain a nationwide legacy of high quality recreation areas and facilities and to stimulate non-federal investments in the protection and maintenance of recreation resources across the United States. The funding that is allocated to each state, or "stateside" funding, is administered by that state. Through the LWCF, the California Department of Parks and Recreation provides funds for statewide planning, and for acquiring and developing outdoor recreation areas and facilities. LWCF grant funds may be used for the acquisition and development of state and local facilities that provide active and/or passive recreation opportunities.	Federal funding of this program varies from year to year depending on appropriations. California's allocation for fiscal year 2004 is approximately $7.8 million. Approximately $4.2 million is available for grants to local agencies: 60% for Southern California and 40% for Northern California. For program information, visit: http://www.nps.gov/ncrc/programs/flp/index.html. For information on the stateside funding for LWCF, visit California State Parks: http://www.parks.ca.gov/ and link to the Grants & Bonds page.

SAN GABRIEL RIVER CORRIDOR MASTER PLAN FUNDING SOURCE INVENTORY (CONTINUED)

PRIMARY FUNDING CATEGORY AND FUNDING SOURCE	FUNDING PROGRAM	PROGRAM DESCRIPTION	ADDITIONAL INFORMATION
LAND ACQUISITION & EASEMENTS (CONTINUED)			
FEDERAL (CONTINUED)			
US Department of the Interior, National Park Service	Federal Lands to Parks (FLP)	The National Park Service's FLP Program conveys surplus federal land to communities, usually at no cost, for public park and recreation purposes. Over 1,400 properties, approximately 150,000 acres, have been transferred to state and local governments for parks and recreation areas since the program's inception in 1949. The Program also helps ensure continued public access and stewardship of resources.	Generally, resources are available on an on-going basis as properties become available. For more information on how to participate in this program, visit: http://www.nps.gov/ncrc/programs/flp/index.html
US Department of Agriculture (USDA) - Natural Resource Conservation District (NRCS) Farm Bill Programs	Wetlands Reserve Program	WRP restores wetland, upland and riparian complexes to improve habitat for migratory birds. The objectives of this program are to purchase conservation easements from willing sellers, restore and protect wetlands in agricultural settings, and assist landowners with the restoration of wetland hydrology and wildlife habitat.	http://www.nrcs.usda.gov/programs/wrp/
	Wildlife Habitat Incentives Program (WHIP)	WHIP encourages the voluntary establishment of high quality wildlife habitat on private lands. WHIP offers technical and financial help for all private landowners or local units of government who wish to plan and develop upland, wetland, riparian, or aquatic habitat on their property.	http://www.nrcs.usda.gov/programs/whip/
	Farmland Protection Program (FPP)	FPP assists states, tribes, local governments and non-profit organizations by purchasing conservation easements to limiting land conversion to non-agricultural uses.	http://www.nrcs.usda.gov/
	Watershed Protection and Flood Prevention (WPFP)	WPFP provides technical and financial assistance to state agencies and units of local government in planning and carrying out works of improvement and to protect, develop and utilize the land and water resources in small watersheds not exceeding 250,000 acres. This includes total resource management and planning to improve water quality and solve problems caused by flooding, erosion and sediment damage, conservation, development, utilization and disposal of water. The program emphasizes planning through interdisciplinary teams that include the sponsors, other agencies, and environmental groups in all stages of plan development.	http://www.nrcs.usda.gov/programs/watershed/
US Environmental Protection Agency (EPA)	Conservation Reserve Program (CRP)	CRP is a voluntary program that offers long-term rental payments and cost-share assistance to establish long-term, resource-conserving cover on environmentally sensitive cropland or, in some cases, marginal pastureland. The protective cover reduces soil erosion, improves water quality, and enhances or establishes wildlife habitat. Increased rental payments are available on certain land areas (e.g., land within a wellhead protection area may receive an additional 10 percent payment).	http://www.epa.gov/owow/funding.html
STATE			
California Department of Water Resources	Water Quality, Supply and Safe Drinking Water Projects, Coastal Wetlands Purchase and Protection Bonds	The California Department of Water Resources (DWR) administers grant and loan funding associated with legislation and several general obligation bond laws. State Propositions 13, 40, & 50 have each provided funding for a variety of water-related programs and grants.	http://www.water.ca.gov/
California Resources Agency	River Parkways Program	This program, currently funded through Proposition 50, is subject to allocation of the State budget. Check the Resources Agency website for updates.	http://resources.ca.gov/
California State Water Resources Control Board	Non-point Source Program (Chapter 7, Article 2)	This program provides grants to municipalities, local public agencies and nonprofit organizations for non-point source projects. The maximum funding for each project is $5 million.	http://www.swrcb.ca.gov/funding/index.html
	Non-point Source Implementation Grants (319 Program)	The EPA 319 program, administered by the State Water Resources Control Board, provides formula grants to the states and tribes to implement non-point source (NPS) projects and programs in accordance with section 319 of the Clean Water Act (CWA). Approximately $5-6 million may be available for NPS implementation projects in California for state fiscal year (FY) 2003-04 (federal FY 2003 funds) and are limited to $25,000 to $500,000.	http://www.swrcb.ca.gov/funding/index.html

SAN GABRIEL RIVER CORRIDOR MASTER PLAN FUNDING SOURCE INVENTORY (CONTINUED)

PRIMARY FUNDING CATEGORY AND FUNDING SOURCE	FUNDING PROGRAM	PROGRAM DESCRIPTION	ADDITIONAL INFORMATION
LAND ACQUISITION & EASEMENTS (CONTINUED)			
STATE (CONTINUED)			
San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy (RMC)	Miscellaneous	The RMC receives funding directly for the San Gabriel River for projects that address its mission. Often, State Bond programs for water and recreation, such as Propositions 40 and 50, include earmarks of funds for the San Gabriel River.	http://www.rmc.ca.gov/
California State Wildlife Conservation Board (WCB)	Land Acquisition	WCB acquires real property or rights in real property on behalf of the Department of Fish and Game and can also grant funds to other governmental entities or nonprofit organizations to acquire real property or rights in real property. All acquisitions are made on a "willing seller" basis pursuant to a fair market value appraisal as approved by the Department of General Services (DGS). The acquisition activities are carried out in conjunction with the Department of Fish and Game (DFG), with the DFG recommending priorities for proposed acquisitions. Following the DFG site evaluations, recommendations are submitted to the WCB for consideration for funding.	http://www.dfg.ca.gov/wcb/land_acquisition_program.htm
	Oak Woodlands Conservation Program	The program funds the purchase of oak woodland easements or fee interests, land improvement, cost-sharing incentive payments, public education and outreach, and assistance in the development of local general plans relative to oak woodland habitat.	http://www.dfg.ca.gov/wcb/oak_woodland_program.htm
	California Clean Water, Clean Air, Safe Neighborhood Parks, and Coastal Protection Act of 2002 (Proposition 40)	The passage of the California Clean Water, Clean Air, Safe Neighborhood Parks, and Coastal Protection Act of 2002 made $300 million available to the Wildlife Conservation Board (WCB). Funds can be used to acquire land in fee title and interests in land, such as conservation easements. The funds can also be used for habitat restoration and/or enhancement projects and for public access projects that provide wildlife-related public recreational opportunities. Applications for project funding are accepted on a continuous basis until the funding is exhausted. Specific project types can include: recovery of threatened and endangered species; linkages and corridors to connect large habitat areas; significant natural landscapes; public access for projects that provide public access and use of public lands for wildlife-related recreational activities such as hunting, fishing, and wildlife viewing.	Applications are accepted continuously. The Board meets every three months to consider. The breakdown of funding is: Section 5096.650(a)—$300 million. For updates: http://www.dfg.ca.gov/wcb/p40fundingallocations.htm
	Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002 (Proposition 50)	The passage of the Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002 made $940 million available to the Wildlife Conservation Board (WCB) for projects such as: Acquisition of fee or conservation easements by the Board or for grants to protect regional water quality, protect and enhance fish and wildlife habitat, and to assist local public agencies in improving regional water supply reliability.	Applications are accepted continuously. The Board meets every three months to consider. As of January 1, 2004, approximately $543.4 million in Proposition 50 funds have already been approved and allocated by the WCB. The WCB has also received and is currently evaluating a substantial number of new projects to be funded with the remainder of these funds. The WCB will continue to accept and consider new project proposals until all funds are exhausted. For updates: http://www.dfg.ca.gov/wcb/p50fundingallocations.htm
PRIVATE SECTOR			
River Network	Miscellaneous	River Network, a national non-profit organization, offers consulting, publications, acquisition of riverlands and small grants to help people raise money, build organizations, and monitor and protect rivers and watersheds. This organization offers assistance to: help people organize to protect and restore rivers and watersheds; support river conservationists at grass roots, state and regional levels; help build effective organizations and to link them together to build a nationwide movement for rivers and watersheds; and acquire and conserve riverlands critical to wildlife, fisheries, and recreation.	http://www.rivernetwork.org/howcanwehelp/index.cfm?doc_id=130
Southern California Edison	Partnership Opportunity	Southern California Edison controls 80% of the land along the San Gabriel River.	To learn about SCE's community programs, visit: http://www.sce.com/sc3/004_sce_comm/default.htm

SAN GABRIEL RIVER CORRIDOR MASTER PLAN FUNDING SOURCE INVENTORY (CONTINUED)

PRIMARY FUNDING CATEGORY AND FUNDING SOURCE	FUNDING PROGRAM	PROGRAM DESCRIPTION	ADDITIONAL INFORMATION
LAND ACQUISITION & EASEMENTS (CONTINUED)			
PRIVATE SECTOR (CONTINUED)			
Trust for Public Land (TPL)	Miscellaneous	TPL is interested in helping purchase one of the gravel pits in Sun Valley to support conversion to recreation, open space and water conservation. TPL finances the purchase and usually sells the land to a public agency for long-term management and operation. TPL's Southern California office has expressed a strong interest in helping acquire this land for the Sun Valley Watershed Project.	http://www.tpl.org
Patagonia	Environmental Grants Program	Focus is on preservation of wild and scenic areas, biodiversity, limited funding for urban restoration. They are mostly interested in projects that identify and work on the root causes of problems and that approach issues with a commitment to long-term change. Grants range from $3,000 to $8,000 per project.	Deadlines are usually April 30 and August 31 each year. www.patagonia.com/enviro/grants_app.shtml
HABITAT			
FEDERAL			
National Oceanic and Atmospheric Administration (NOAA) Community-Based Restoration Program	Community-based Resoration Program: Individual Project Grants	Grassroots restoration projects that will benefit marine resources and endangered and threatened species. $30,000 to $250,000 per project. Match not required, but recommended.	Typically September deadline. For updates: http://www.nmfs.noaa.gov/habitat/restoration/projects_programs/programs.html
	Community-based Restoration Project: National and Regional Partnerships	Grassroots, community-based projects for restoring and conserving marine resources and their habitats. Typical grants range from $100,000 to $600,000.	http://www.nmfs.noaa.gov/habitat/restoration/projects_programs/programs.html
US Forest Service	Cooperative Forestry Assistance Programs	The programs help State Foresters or equivalent agencies with forest stewardship programs intended to achieve ecosystem health and sustainability. Assistance is provided through the following programs: Forest Stewardship Program; Stewardship Incentive Program; Urban & Community Forestry Program; and, Cooperative Fire Protection Program	http://www.fs.fed.us/spf/coop/
US Department of Agriculture (USDA) - Natural Resource Conservation Service (NRCS)	Farm Bill: Wetlands Reserve Program	WRP restores wetland, upland and riparian complexes to improve habitat for migratory birds. The objectives of this program are to purchase conservation easements from willing sellers, restore and protect wetlands in agricultural settings, and assist landowners with the restoration of wetland hydrology and wildlife habitat.	http://www.nrcs.usda.gov/programs/wip
	Farm Bill: Wildlife Habitat Incentives Program	WHIP encourages the voluntary establishment of high quality wildlife habitat on private lands. WHIP offers technical and financial help for all private landowners or local units of government who wish to plan and develop upland, wetland, riparian, or aquatic habitat on their property. Funding for up to 75% of the cost of the project. Technical assistance also provided.	Contact local NRCS office. http://www.nrcs.usda.gov/programs/whip
US Fish & Wildlife Service	North American Wetlands Conservation Act (NAWCA) - Standard Grants	$51,000-$1.0M to fund a 4-year plan of action supported by a NAWCA grant and partner funds to conserve wetlands and wetlands-dependent fish and wildlife through acquisition (including easements and title donations), restoration, and/or enhancement. Match must be non-Federal and at least equal to the grant request.	http://northamerican.fws.gov/NAWCA/grants.htm
	North American Wetlands Conservation Act (NAWCA) - Small Grants	Up to $50,000 to fund a 4-year plan of action supported by a NAWCA grant and partner funds to conserve wetlands and wetlands-dependent fish and wildlife through acquisition (including easements and title donations), restoration, and/or enhancement. Match must be non-Federal and at least equal to the grant request.	http://northamerican.fws.gov/NAWCA/grants.htm
	Partners for Fish and Wildlife Program	Funding provided for work on private lands. Typical projects include (but not limited to) wetland and riparian habitat restoration and improvement for threatened or endangered species, anadromous fish, and exotic species control and removal. Typically in the range of $25,000 to $50,000 per project.	Applications accepted throughout the year. http://partners.fws.gov

SAN GABRIEL RIVER CORRIDOR MASTER PLAN FUNDING SOURCE INVENTORY (CONTINUED)

PRIMARY FUNDING CATEGORY AND FUNDING SOURCE	FUNDING PROGRAM	PROGRAM DESCRIPTION	ADDITIONAL INFORMATION
HABITAT (CONTINUED)			
STATE			
California Coastal Conservancy	Wetlands Program (through the Southern California Wetlands Recovery Project)	The WRP Small Grants Program provides funding for community-based restoration projects in coastal wetlands and watersheds in the region. The purpose of the program is to further the goals of the WRP Regional Strategy; build local capacity to plan and implement wetland restoration projects; promote community involvement in wetlands restoration activities; and foster education about wetlands ecosystems. Since 2002, the program has been funded by Earth Island Institute. It is administered by Environment Now, a non-profit group located in Santa Monica (http://www.environmentnow.org). Each January the WRP solicits proposals for the Small Grants Program. Nonprofit organizations and local agencies are eligible to apply. Proposals are reviewed by a committee that includes a representative from each of the 5 county task forces. Typically projects are selected and can begin receiving funds by early summer.	http://www.coastalconservancy.ca.gov/scwrp/index.html
California Bay-Delta Program (CALFED)	Miscellaneous	CALFED offers annual grants for water quality, water supply, watersheds, and ecosystem restoration programs. For 2004/05, CALFED is anticipated to offer grants through its Water Use Efficiency Program which addresses water quantity, water quality, and in-stream flow and timing improvements that directly or indirectly provide benefits to the Bay Delta.	http://calwater.ca.gov/GrantOpportunities/GrantOpportunities.shtml
California Department of Fish & Game	Fisheries Restoration Grant Program	Fisheries Restoration Grant program as to protect and restore coastal salmon and steelhead trout habitat, while collaborating with stakeholders to provide environmental, cultural and economic benefit to the state. There are no special requirements as to who qualifies to apply for this program. DFG has considered proposals for work in the subject areas of: in-stream habitat restoration, watershed and riparian habitat restoration, project maintenance for completed in-stream habitat, riparian habitat and watershed restoration projects, watershed evaluation, assessment, and planning, conservation easements that protect and improve water quality, effectiveness and implementation monitoring following project completion, watershed organization support and assistance, public school watershed and fishery conservation education, etc. Funding available for 2003 amounts to $15-$20 million, and most likely another $15-$20 million for 2004.	http://www.dfg.ca.gov/nafwb/fishgrant.html
State of California Wildlife Conservation Board	Riparian Habitat Conservation Program	The California Riparian Habitat Conservation Program (CRHCP) was created within the Wildlife Conservation Board (WCB) by legislation on 1991. The program has a basic mission to develop coordinated conservation efforts aimed at protecting and restoring the state's riparian ecosystems. The WCB is authorized to award grants for riparian conservation purposes to nonprofit organizations, local government agencies, state departments and federal agencies.	http://www.dfg.ca.gov/wcb/California_riparian_habitat_conservation_program.htm
	Habitat Enhancement and Restoration Program	The program funds the restoration and enhancement of habitats such as wetland, riparian, and forest land, as well as threatened or endangered species habitats.	http://www.dfg.ca.gov/wcb/habitat_enhancement_and_restoration_program.html

SAN GABRIEL RIVER CORRIDOR MASTER PLAN FUNDING SOURCE INVENTORY (CONTINUED)

PRIMARY FUNDING CATEGORY AND FUNDING SOURCE	FUNDING PROGRAM	PROGRAM DESCRIPTION	ADDITIONAL INFORMATION
HABITAT (CONTINUED)			
STATE (CONTINUED)			
	California Clean Water, Clean Air, Safe Neighborhood Parks, and Coastal Protection Act of 2002 (Proposition 40)	The passage of the California Clean Water, Clean Air, Safe Neighborhood Parks, and Coastal Protection Act of 2002 made $300 million available to the Wildlife Conservation Board (WCB). Funds can be used to acquire land in fee title and interests in land, such as conservation easements. The funds can also be used for habitat restoration and/or enhancement projects and for public access projects that provide wildlife-related public recreational opportunities. Eligible Recipients: Federal, state, and local governmental agencies, and non-profit conservation organizations.	Applications are accepted continuously. The Board meets every three months to consider. The breakdown of funding is section 5096.650(a) - $300 million. For updates: http://www.dfg.ca.gov/wcb/p40fundingallocations.htm
	Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002 (Proposition 50)	The passage of the Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002 made $940 million available to the Wildlife Conservation Board (WCB) for projects such as: Acquisition of fee or conservation easements by the Board or for grants to protect regional water quality, protect and enhance fish and wildlife habitat, and to assist local public agencies in improving regional water supply reliability. The specific breakdown of funding from the Bond Act for WCB is (Section 79565, Chapter 8, Integrated Regional Water Management) - $140 million. Eligible Recipients: Federal, state, and local governmental agencies, and non-profit conservation organizations	Applications for project funding are accepted continually. The Board meets every three months to consider. As of January 1, 2004, approximately $ 543.4 million in Proposition 50 funds have already been approved and allocated by the WCB. The WCB has also received and is currently evaluating a substantial number of new projects to be funded with the remainder of these funds. The WCB will continue to accept and consider new project proposals until all funds are exhausted. For updates: http://www.dfg.ca.gov/wcb/p50fundingallocations.htm
California Resources Agency	Environmental Enhancement and Mitigation Program (EEMP)	The Environmental Enhancement and Mitigation Program (EEMP) was established by the Legislature in 1989. It offers a total of $10 million each year for grants to local, state and federal government agencies and to nonprofit organizations for projects to mitigate the environmental impacts caused by new or modified state transportation facilities. State gasoline tax monies fund the EEMP. Grants are awarded in three categories: **Highway Landscape and Urban Forestry**: Projects designed improve air quality through the planting of trees and other suitable plants. **Resource Lands**: Projects for the acquisition, restoration, or enhancement of watersheds, wildlife habitat, wetlands, forests, or other natural areas. **Roadside Recreational**: Projects for the acquisition and/or development of roadside recreational opportunities.	http://resources.ca.gov/eem/
California Department of Parks and Recreation	Habitat Conservation Fund	Acquisition and restoration of wildlife habitats and significant natural areas. California counties, cities, and special districts. Up to $400,000 per project. Must have 1 to 1 match from non-state source	Proposals usually due in October. For updates, visit: http://www.parks.ca.gov/default.asp?page_id=21361
PRIVATE SECTOR			
American Rivers (partner with National Oceanic & Atmospheric Administration/ NOAA)	River Restoration Grants	$5,000 to $25,000 per project. Non-federal match not required, but encouraged. Grants provided to projects that are using dam removal or fish passage to restore and protect the ecological integrity of rivers and improve freshwater habitats for anadromous fish. State, local, and tribal governments, conservation groups, and other non-profits in California.	http://www.amrivers.org/dam removal/grantguidelines.htm
American Sportfishing Association and FishAmerica Foundation (partner with National Oceanic & Atmospheric Administration/ NOAA)	Restoration Grants	Projects that result in on-the-ground restoration in marine, estuarine and anadromous fish habitats – especially sportfish. Strong partnerships cooperation from local community groups and citizens are encouraged. Funding typically ranges from $5,000 to $30,000. Match not required, but encouraged.	Applications typically accepted twice each year (March and August). For updates, visit: http://www.fishamerica.org/content/conservation/fishamerica/faf_grant.cfm
The Conservation Fund (TCF)	Miscellaneous	The Conservation Fund is a national non-profit organization dedicated to preserving Americas land legacy by acquiring and protecting open space, wildlife habitat, and historic sites. The Fund also provides technical assistance, information, and small grants to assist with the greenway and trail projects across the nation.	http://www.conservationfund.org

SAN GABRIEL RIVER CORRIDOR MASTER PLAN FUNDING SOURCE INVENTORY (CONTINUED)

PRIMARY FUNDING CATEGORY AND FUNDING SOURCE	FUNDING PROGRAM	PROGRAM DESCRIPTION	ADDITIONAL INFORMATION
HABITAT (CONTINUED)			
PRIVATE SECTOR (CONTINUED)			
National Fish and Wildlife Foundation (NFWF)	Challenge Grant Program	NFWF awards grants to projects that address priority actions promoting fish and wildlife conservation and the habitats on which they depend; work proactively to involve other conservation and community interests; leverage available funding. $10,000 to $150,000 per project. 2-to-1 match preferred.	http://www.nfwf.org/programs/guidelines.htm
	Native Plant Conservation Initiative	The National Fish and Wildlife Foundation supports on–the-ground conservation projects that protect, enhance, and/or restore native plant communities on public and private land. Projects usually fall into one of the three categories and may contain elements of each: protection and restoration, information and education, and inventory and assessment. Deadlines for applications is December 1.	http://www.nfwf.org/programs/npci.htm
	Bring Back the Natives (BBN)	This National Fish and Wildlife Foundation (NFWF) program provides funds to restore damaged or degraded riverine habitats and their native aquatic species through watershed restoration and improved land management. Funding is provided by the Bureau of Land Management (BLM), Bureau of Reclamation (BOR), U.S. Fish and Wildlife Service (FWS), USDA Forest Service (FS), and NFWF. Successful projects will support the applied ecosystem strategy of BLM, BOR, FWS, FS, and NFWF and address any or all of the following: (1) revised land management practices to eliminate causes of habitat degradation; (2) multiple species benefits, (3) direct benefits to native fish and aquatic community resources in watersheds with land managed by BLM, BOR, or FS; (4) multiple resource management objectives, (5) multiple project partners and innovative partnerships; (6) where appropriate, demonstration of a landscape ecosystem approach; and (7) innovative projects that develop new technology that can be shared with others.	http://www.nfwf.org
	Five Star Restoration Challenge Grants	Community-based wetland riparian or coastal restoration projects (on-the-ground) with outreach, education, and community component. $5,000 to $20,000 per project. 1-to-1 match required. Grant offered in partnership with EPA and NOAA.	http://www.nfwf.org/programs/5star-rfp.htm
WATER SUPPLY			
FEDERAL			
US Bureau of Reclamation	Water Reuse and Reclamation Program	Title XVI of Public Law 102-575, the Reclamation Wastewater and Groundwater Study and Facilities Act, sets aside federal government funds to support up to 25 percent of a water recycling project's capital costs. In 1996, funds were authorized to support 18 projects, including the Pasadena Reclaimed Water program	http://www.usbr.gov/lc/region/scao/titlexvi.htm
	Challenge Grant Program	The Bureau of Reclamation is accepting proposals for matching grants from irrigation and water districts that seek to leverage their money and resources to create water markets and make more efficient use of existing water supplies through water conservation and efficiency projects. By law, proposals must have matching non-federal funds of at least 50 percent.	http://www.doi.gov/water2025/grant.html
STATE			
California Department of Water Resources	Proposition 13 Programs: Urban Water Conservation Capital Outlay Grants	The Urban Water Conservation Program (Proposition 13 - Chapter 8, Article 6) allows DWR to issue grants to public agencies and incorporated mutual water companies to finance feasible, cost-effective water conservation capital outlay projects or programs to improve water use efficiency. The California State Legislature appropriated $18.5 million for the fiscal year 2002-2003 funding cycle for urban projects.	http://www.water.ca.gov/grants-loans/#programs
	Groundwater Recharge Construction Loans	DWR will issue loans to public agencies and incorporated mutual water companies for the acquisition and construction of groundwater recharge facilities that will increase water supply reliability. The California State Legislature appropriated $8.7 million for the Fiscal Year 2002-2003 funding cycle for groundwater recharge construction loans.	http://www.water.ca.gov/grants-loans/#programs

SAN GABRIEL RIVER CORRIDOR MASTER PLAN FUNDING SOURCE INVENTORY (CONTINUED)

PRIMARY FUNDING CATEGORY AND FUNDING SOURCE	FUNDING PROGRAM	PROGRAM DESCRIPTION	ADDITIONAL INFORMATION
WATER SUPPLY (CONTINUED)			
STATE (CONTINUED)			
	Groundwater Storage Feasibility Study & Construction Grant	DWR will award grants to local agencies and/or other applicants working with the participation of local agencies, for construction of projects that enhance conjunctive management of surface water and groundwater to increase water supply reliability. No single project will receive more than $50,000,000 from the Groundwater Storage Construction Grant Program.	http://www.water.ca.gov/grants-loans/#programs
	AB303 - Local Groundwater Management Assistance Act of 2000 Grants	The Local Groundwater Management Assistance Act of 2000 (AB 303, Stats. Of 2000, Ch. 708) is designed to help local public agencies better understand how to manage groundwater resources effectively to ensure the safe production, quality, and proper storage of groundwater in California. It authorizes grants for local public agencies to conduct groundwater studies. The Fiscal Year 2002-2003 funding amount was $5 million.	http://www.water.ca.gov/grants-loans/#programs
SPECIAL DISTRICTS & LOCAL			
Metropolitan Water District of Southern California	Local Resources Program (LRP)	The LRP provided financial assistance for new sources of water that reduced MWD's demand for imported water. Under the LRP, MWD may provide public or private water agencies up $250 per acre-ft for the development of recycled water and groundwater projects that offset demands for imported water. Terms may be up to 25 years.	http://www.mwd.dst.ca.us/
WATER QUALITY			
FEDERAL			
US Environmental Protection Agency (EPA)	Watershed Initiative	Grants of $15,000-$20,000 for up to 20 watersheds nationally.	http://www.epa.gov/owow/funding.html
	The Wetland Program Development Grants	The Wetland Program Development Grants (WPDGs), initiated in FY90, provide eligible applicants an opportunity to conduct projects that promote the coordination and acceleration of research, investigations, experiments, training, demonstrations, surveys, and studies relating to the causes, effects, extent, prevention, reduction, and elimination of water pollution. While WPDGs can continue to be used by recipients to build and refine any element of a comprehensive wetland program, priority will be given to funding projects that address the three priority areas identified by EPA: Developing a comprehensive monitoring and assessment program; improving the effectiveness of compensatory mitigation; and refining the protection of vulnerable wetlands and aquatic resources. States, Tribes, local governments (S/T/LGs), interstate associations, intertribal consortia, and national non-profit, non-governmental organizations are eligible to apply.	http://www.epa.gov/owow/funding.html
STATE			
California State Water Resources Control Board	Clean Water State Revolving Fund	The Clean Water State Revolving Fund (CWSRF) provides loans for construction of publicly owned wastewater treatment and water reclamation facilities, implementation of non-point source and storm water pollution control activities and estuary enhancement activities. CWSRFs offer low interest rates with flexible terms. The loans are unsecured and interest rates for CWSRF loans average 2.4 percent.	http://www.swrcb.ca.gov/funding/index.html
	Water Reuse Variable Rate Loan Program	The California Water Reuse Finance Authority created the Variable Rate Loan Program, and avoids delays due to SRF processing requirements. Agencies with projects that qualify for this program may obtain up to 30 years of loans at interest rates currently averaging 3 to 4 percent.	http://www.swrcb.ca.gov/funding/index.html

SAN GABRIEL RIVER CORRIDOR MASTER PLAN FUNDING SOURCE INVENTORY (CONTINUED)

PRIMARY FUNDING CATEGORY AND FUNDING SOURCE	FUNDING PROGRAM	PROGRAM DESCRIPTION	ADDITIONAL INFORMATION
WATER QUALITY (CONTINUED)			
STATE (CONTINUED)			
	Consolidated Grants Program	Provides grant funds and loans for various types of assessment, planning, and implementation projects that reduce, eliminate, or prevent water pollution resulting from polluted runoff and enhance water quality in state waters. Nonprofits, local government agencies including special districts, Indian tribes, and educational institutions. State or federal agencies may qualify. Up to $5 million per project. Consultation with appropriate RWQCB or SWRCB is required prior to submitting an application.	Usually due in May or June. www.swrcb.ca.gov/funding/index/html
California Department of Transportation (Caltrans)	Environmental Enhancement & Mitigation Program (EEMP)/Proposition 11 Funds	In 1990, California voters approved Proposition 111, authorizing a nine-cent increase in the state gas tax. Proposition 111 directed the sales tax—about $60 million per year—to the Public Transportation Account. A portion of this money was used for grants for supplemental mitigation of the environmental impacts of modified or new public transportation facilities. Grants range to $250,000 for a project. Caltrans has had an ongoing fund of $10 million per year to mitigate community impacts from any highway construction or improvement project. The fund has provided monies for tree planting, recreation enhancement, land acquisition and other community improvements. Future funding for this program has not been confirmed.)	http://www.dot.ca.gov/hq/LocalPrograms/EEM/homepage.htm
EDUCATION & PUBLIC OUTREACH			
FEDERAL			
US Environmental Protection Agency (EPA)	Five Star Restoration Program	The Five Star Restoration Program brings together students, conservation corps, other youth groups, citizen groups, corporations, landowners and government agencies to provide environmental education and training through projects that restore wetlands and streams. The program provides challenge grants, technical support and opportunities for information exchange to enable community-based restoration projects. Funding levels are modest, from $5,000 to $20,000, with $10,000 as the average amount awarded per project.	http://www.epa.gov/owow/wetlands/restore/5star/index.html
STATE			
California Wildlife Conservation Board	Oak Woodlands Conservation Program	The program funds the purchase of oak woodland easements or fee interests, land improvement, cost-sharing incentive payments, public education and outreach, and assistance in the development of local general plans relative to oak woodland habitat.	http://www.dfg.ca.gov/wcb/index.html
California Department of Transportation (Caltrans)	Environmental Justice Grants	The program funds a series of one-time demonstration projects for integrating environmental justice into planning and decision-making, public outreach efforts, development of community organization databases, and identification of minority and low-income community needs and concerns in transportation, impact analyses, energy efficiency in transportation, and adopting new technology for improving mobility and access.	http://www.dot.ca.gov/hq/tpp/grants.htm
RECREATION			
FEDERAL			
US Department of Transportation	TEA-21 Reauthorization	U.S. Department of Transportation's Federal Highway Administration has become the nation's largest single source of funding for multiple use paths, trails, and related projects. Major transportation legislation (TEA-21) will benefit foot trails if it continues to be reauthorized. In California, the State Department of Transportation (Caltrans) administers transportation enhancement funds.	Federal TEA information: http://www.dot.gov TEA information from Caltrans: http://www.dot.ca.gov/hq/LocalPrograms/

SAN GABRIEL RIVER CORRIDOR MASTER PLAN FUNDING SOURCE INVENTORY (CONTINUED)

PRIMARY FUNDING CATEGORY AND FUNDING SOURCE	FUNDING PROGRAM	PROGRAM DESCRIPTION	ADDITIONAL INFORMATION
RECREATION (CONTINUED)			
FEDERAL (CONTINUED)			
US Department of the Interior, National Park Service	Urban Park and Recreation Recovery (UPARR)	The Urban Park and Recreation Recovery (UPARR) program was established in November 1978 by Public Law 95-625, authorizing $725 million to provide matching grants and technical assistance to economically distressed urban communities. The purpose of the program is to provide direct Federal assistance to urban localities for rehabilitation of critically needed recreation facilities. The law also encourages systematic local planning and commitment to continuing operation and maintenance of recreation programs, sites, and facilities. Only cities and urban counties meeting established criteria are eligible for assistance.	Although the House-passed version of the appropriation bill included $30 million for the UPARR grant program and the Senate version proposed $10 million, the Congress passed and the President signed the consolidated appropriations package (P.L. 108 7) which eliminated funding for new UPARR grants in FY 2003. For updates, visit: http://www.nps.gov/uprr/
Federal Highway Administration	Federal Highway Administration Bridge Replacement/ Rehabilitation (HBRR) Program	This federal program is administered by the California Department of Transportation (Caltrans), and was authorized within the Transportation Equity Act for the 21st Century (TEA21), which is being considered for renewal. This is an important source for bridge replacement and modifications. FHA pays 75%.	HBRR program information for California: http://www.dot.ca.gov/hq/LocalPrograms/hbrr99/hbrr99a.htm
STATE			
California Department of Parks and Recreation	Per Capita Grant Programs (Proposition 40)	Eligible projects include acquisition, development, improvement, rehabilitation, restoration, enhancement, and the development of interpretive facilities, of local parks and recreational lands and facilities. Per capita grant funds can only be used for capital outlay.	http://www.parks.ca.gov/default.asp?page_id=22333
California Wildlife Conservation Board	Cooperative Projects with Local Agencies for Public Access (Proposition 50)	The Wildlife Conservation Board (WCB) carries out a program that includes the development of facilities in cooperation with local agencies for public access to hunting, fishing or other wildlife-oriented recreation. Financial assistance is available to cities, counties and public districts or corporation for development such as fishing piers or floats, access roads, boat launching ramps, trails, boardwalks, interpretive facilities and lake or stream improvements. Support facilities such as restrooms and parking areas are also eligible for funding under this program.	http://www.dfg.ca.gov/wcb/public_access_program.htm
California Coastal Conservancy	Public Access Grant Program	The public access program provides capital funds and technical assistance for the construction of public access stairs, trails, limited-mobility-access projects, hostels, interpretive signs and other facilities that serve state and regional coastal access needs, and for the acquisition of interests in land necessary to enable the provision of access facilities. The Conservancy has helped build more than 300 accessways and trails, including major portions of the California Coastal Trail and the San Francisco Bay Trail, thus opening more than 80 miles of coastal and bay lands for public use.	http://www.coastalconservancy.ca.gov/Programs/programs.htm
	Urban Waterfronts Program	The urban waterfront program provides capital funds and technical assistance to protect, restore and expand coastal-dependent recreational, commercial and industrial facilities and to expand opportunities for public access and use of urban waterfronts in conjunction with new development, including the provision of technical assistance to landowners and local governments and through land acquisition and the construction and restoration of facilities. The Conservancy has assisted in the completion of more than 100 urban waterfront projects.	http://www.coastalconservancy.ca.gov/Programs/programs.htm
California Department of Parks & Recreation	Recreational Trails Program	The California Department of Parks and Recreation provides funds for recreational trails and trails-related projects. Support is for organizations that maintain and restore existing recreational trails; develop and rehabilitate trailside and trailhead facilities and trail linkages for recreational trails; purchase and lease recreational trail construction and maintenance equipment; construct new recreational trails. http://www.parks.ca.gov/ (Go to Grants & Bonds Page)	http://www.parks.ca.gov/default.asp?page_id=21362
	Habitat Conservation Fund	The program funds efforts for conservation of habitats that are either wetlands, riparian, or near recreational trails. The following categories will be funded during the upcoming grant cycle: Deer/Lion; Rare, Threatened and Endangered; Wetlands; and Riparian.	http://www.parks.ca.gov/default.asp?page_id=21361

SAN GABRIEL RIVER CORRIDOR MASTER PLAN FUNDING SOURCE INVENTORY (CONTINUED)

PRIMARY FUNDING CATEGORY AND FUNDING SOURCE	FUNDING PROGRAM	PROGRAM DESCRIPTION	ADDITIONAL INFORMATION
RECREATION (CONTINUED)			
STATE (CONTINUED)			
	Proposition 12 - Per capita Grant Program	This program funds may be used for the acquisition, development, improvement, rehabilitation, restoration, enhancement, and the development of interpretive facilities for local parks and recreational lands and facilities, including renovation of recreational facilities conveyed to local agencies resulting from the downsizing or decommissioning of federal military installations.	http://www.parks.ca.gov/default.asp?page_id=21349
	Murray-Hayden Urban Parks and Youth Service Program	Acquisition, development, and rehabilitation of parks, park facilities, environmental enhancement projects, youth centers, or environmental youth service centers that: are within the immediate proximity of a neighborhood that has a critical lack of park or open space lands and/or deteriorated park facilities; are in an area of significant poverty and unemployment, have a shortage of youth services for youth. Priority shall be given to capital projects that employ neighborhood residents and at-risk youth.	Under Prop 40, there will probably be little balance left following this grant cycle. Check for updates at: http://www.parks.ca.gov/default.asp?page_id=22295
	California Youth Soccer and Recreation Development	The intent of the Youth Soccer and Recreation Development program, which is currently funded through Proposition 40, is to provide financial assistance to local agencies and community-based organizations to foster the development of new youth soccer, baseball, softball, and basketball recreation opportunities in the state. Cities, counties, a city and county, districts, school districts and community-based organizations are eligible for the program. Eligible projects include capital projects that foster the development of new youth soccer, baseball, softball, and basketball recreation opportunities are eligible, including acquisition (willing sellers only) or development.	Due to uncertainty of when funds for these programs will be appropriated, the Department has postponed all technical assistance workshops and filing deadlines for these programs until further notice. It is expected that additional information will become available in spring 2004 regarding the rescheduled filing deadlines and technical assistance workshops. The next deadline will likely be in summer, 2004. For updates, visit: http://www.parks.ca.gov/default.asp?page_id=22320
	Roberti-Z'Berg-Harris Urban Open Space & Recreation Grants Program-Block Grant Program	Acquisition of park and recreation lands and facilities, development/rehabilitation of park and recreation lands and facilities, special major maintenance of park and recreation lands and facilities, and innovative recreation programs. The previous match requirement for this program has been eliminated. Note: Special Major Maintenance and/or Innovative Recreation Programs may not exceed 30% of grant funds. The Block Grant funds are allocated to eligible cities, counties, and districts based on population and location within urbanized and heavily urbanized areas. The RZH Grant Program, currently through Proposition 40, is intended to meet the urgent need for safe, open, and accessible local park and recreational facilities for increased recreational opportunities that provide positive alternatives to social problems. As a means of addressing these critical neighborhood parks needs, the 2002 Bond Act provides $186.7 million in funds to implement the RZH Program. $155 million of these funds have been allocated as Block Grants. The Block Grant funds are allocated on a population-based formula to cities, counties and Districts that meet the definition of "District" found on page 2. RZH grants shall be expanded for high-priority Projects that satisfy the most urgent park and recreation needs, with emphasis on unmet needs in the most heavily populated and most economically disadvantaged areas within each Jurisdiction. RZH grants to cities, counties and Districts are intended to supplement - not supplant - local expenditures for park and recreation facilities. They are not to diminish in any way the current efforts to provide park and recreation services.	Due to uncertainty of when funds for these programs will be appropriated, the Department has postponed all technical assistance workshops and filing deadlines for these programs until further notice. It is expected that additional information will become available in spring 2004 regarding the rescheduled filing deadlines and technical assistance workshops. http://www.parks.ca.gov/default.asp?page_id=22330
	Roberti-Z'Berg-Harris Urban Open Space & Recreation Grants Program: Urbanized Area Need Basis	The RZH Grant Program, currently funded through Proposition 40, is intended to meet the urgent need for safe, open, and accessible local park and recreational facilities for increased recreational opportunities that provide positive alternatives to social problems. As a means of addressing these critical neighborhood park needs, the 2002 Bond Act provides $186.7 million in funds to implement the RZH Program. $3.884 million of these funds will be awarded on a competitive basis to cities with populations less than 300,000 located in Urbanized Areas and recreation and park Districts in Urbanized Areas. RZH grants shall be expended for high-priority Projects that satisfy the most urgent park and recreation needs, with emphasis on unmet needs in the most heavily populated and most economically disadvantaged areas within each Jurisdiction. RZH grants to cities and recreation and park districts are intended to supplement—not supplant— local expenditures for park and recreation facilities. They are not to diminish in any way the current efforts to provide park and recreation	Due to uncertainty of when funds for these programs will be appropriated, the Department has postponed all technical assistance workshops and filing deadlines for these programs until further notice. It is expected that additional information will become available in spring 2004 regarding the rescheduled filing deadlines and technical assistance workshops. http://www.parks.ca.gov/default.asp?page_id=22332

SAN GABRIEL RIVER CORRIDOR MASTER PLAN FUNDING SOURCE INVENTORY (CONTINUED)

PRIMARY FUNDING CATEGORY AND FUNDING SOURCE	FUNDING PROGRAM	PROGRAM DESCRIPTION	ADDITIONAL INFORMATION
RECREATION (CONTINUED)			
STATE (CONTINUED)			
	Urban Park Act of 2001	Acquisition and/or development of property for new urban parks or new recreational or multipurpose facilities.	http://www.parks.ca.gov/default.asp?page_id=22294
	State Urban Parks and Healthy Communities Program	This program provides grants for the acquisition and development of properties for active recreational purposes. An active recreational purpose is an activity that requires athletic fields, courts, gymnasiums, or other recreational facilities/venues for youth soccer, baseball, football, basketball, tennis, or swimming, or any recreation activity which involves physical exertion and occurs within a facility/venue that was especially designed for this pursuit. Eligible projects include acquisition and/or development of properties for active recreational purposes such as activities that requires athletic fields, courts, gymnasiums, or other recreational venues for youth soccer, baseball, football, basketball, tennis, or swimming, or any activity the department identifies as meeting this definition.	Due to uncertainty of when funds for these programs will be appropriated, the Department has postponed all technical assistance workshops and filing deadlines for these programs until further notice. It is expected that additional information will become available in spring 2004 regarding the rescheduled filing deadlines and technical assistance workshops. The application deadline will likely occur in summer 2004. For updates, visit: http://www.parks.ca.gov/default.asp?page_id=22321
SPECIAL DISTRICTS & LOCAL			
County of Los Angeles Regional Park and Open Space District	LA County Safe Neighborhood Parks Act(2) 1992/1996 (Proposition A)	Los Angeles County voters approved Prop A funds in 1992 and 1996 for regional and local park improvements countywide. The County of Los Angeles Regional Park and Open Space District is the administrator of Proposition A funds. Two programs relate to the San Gabriel River: •San Gabriel River Funds for acquisition and capital improvement projects by cities creating public park and recreation space along the San Gabriel River and its tributaries; •Competitive Grants, for acquisition and capital improvement projects creating public park and recreation facilities, that will be awarded according to each project's respective ranking. Most of the funding from the 1996 Prop A has been allocated, however, some excess funds may still be available.	Contact the Regional Park and Open Space District or your local County Supervisor's office for updated information.
Local Redevelopment Agencies	Tax increment financing	Local redevelopment agencies along the San Gabriel River corridor have tax increment financing available for projects that address economic development and affordable housing. Funds are under extreme pressure with recent State budget troubles, but over time, the RDA's should look at the river corridor as an opportunity area to address its mission.	Annual budgeting process of individual cities and agencies.
LAND RECLAMATION & ECONOMIC DEVELOPMENT			
FEDERAL			
US Environmental Protection Agency (EPA)	Brownfields Assessment	EPA's brownfield program helps communities clean up and redevelop properties. EPA defines a brownfield site as "real property, the expansion, redevelopment, or reuse of which may be contaminated by the presence or potential presence of a hazardous substance, pollutant, or contaminant." The program helps mitigate potential health risks and assists in restoring economic vitality to areas where brownfields exist. EPA's Assessment Grants are directed toward environmental activities preliminary to cleanup, such as site assessment, site identification, site characterization, and site response or cleanup planning.	http://www.epa.gov/brownfields

SAN GABRIEL RIVER CORRIDOR MASTER PLAN FUNDING SOURCE INVENTORY (CONTINUED)

PRIMARY FUNDING CATEGORY AND FUNDING SOURCE	FUNDING PROGRAM	PROGRAM DESCRIPTION	ADDITIONAL INFORMATION
LAND RECLAMATION & ECONOMIC DEVELOPMENT (CONTINUED)			
FEDERAL (CONTINUED)			
US Department of Housing and Community Development (HUD)	Community Development Block Grant Program	The CDBG program provides annual grants on a formula basis to many different types of grantees through several programs. Over a 1, 2, or 3 year period selected by the grantee not less than 70% of the CDBG funds must be used for activities that benefit low- and moderate-income persons. All activities must meet one of the following national objectives for the program: benefit low- and moderate-income persons, prevention or elimination of slums or blight, community development needs having a particular urgency because existing conditions pose a serious and immediate threat to the health or welfare of the community.	http://www.hud.gov/progdesc/cdbgent.cfm
PLANNING & ORGANIZATIONAL DEVELOPMENT			
FEDERAL			
US Department of the Interior, National Park Service	Rivers, Trails & Conservation Assistance Program (RTCA)	The Rivers, Trails and Conservation Assistance Program, also known as Rivers & Trails or RTCA, works with community groups and local and State governments to conserve rivers, preserve open space, and develop trails and greenways. This is a technical assistance program, not a funding source. Instead of money, RTCA supplies a staff person with extensive experience in community-based conservation to work with a local group on a project for a preset duration, usually one to three years during a project's infancy.	Applications due July 1 of each year. For information visit: http://www.nps.gov/rtca/
US Environmental Protection Agency (EPA)	Targeted Watersheds Grant Program	The Watershed Initiative was conceived to encourage successful community-based approaches to restore, preserve, and protect the nation's watersheds. This new competitive grant program is a bold approach to watershed management in that it will provide needed resources to those watershed organizations whose restoration plans are ripe, and who are anxious to achieve quick, yet tangible environmental change.	http://www.epa.gov/owow/watershed/initiative
STATE			
California Department of Transportation (Caltrans)	Environmental Justice Grants	The program funds a series of one-time demonstration projects for integrating environmental justice into planning and decision-making, public outreach efforts, development of community organization databases, and identification of minority and low-income community needs and concerns in transportation, impact analyses, energy efficiency in transportation, and adopting new technology for improving mobility and access.	http://www.dot.ca.gov/hq/tpp/offices/opar/titleVIand%20EJ.htm
PRIVATE SECTOR			
River Network	Watershed Assistance Grants	Assists in organizational development and long-term effectiveness. $1,000 to $30,000 per project. Very competitive funding source.	Future funding has not been secured. Check the website for updates. www.rivernetwork.org
William C. Kenney Watershed Protection Foundation	General	Projects that seek to protect wild rivers and river ecosystems (large ecosystem campaigns). Funding available for general support, technical assistance, capacity building, advocacy and special projects. Funding is NOT available for watershed restoration, land acquisition, endowments, research or legal. Grant size is generally $7,500 to $15,000 per project.	Submit one-page letter of inquiry. Applications accepted year-round. www.kenneyfdn.org

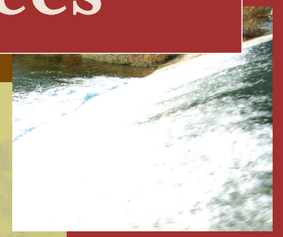
SAN GABRIEL RIVER CORRIDOR MASTER PLAN FUNDING SOURCE INVENTORY (CONTINUED)

PRIMARY FUNDING CATEGORY AND FUNDING SOURCE	FUNDING PROGRAM	PROGRAM DESCRIPTION	ADDITIONAL INFORMATION
LOCAL FUNDING INITIATIVES			
Tax-based Funding	Special Purpose Sales Tax	An additional countywide sales tax could be levied on top of the existing sales tax base to pay for park and recreation facilities. The stream of revenue from such a tax could be used to pay off debt from a bond issuance or used annually as revenues accrue. The passage of a sales tax measure would require a 2/3 majority vote of residents.	
	Special Purpose Parcel Tax	A flat per-parcel tax places a set amount of additional tax on every parcel in the subject area. It could be levied countywide.	
	Special Purpose Real Estate Transfer Tax	A real estate transfer or conveyance tax is a tax levied on the sale of property that increases with the value of the property being sold. The cost can be borne by either the seller or buyer. Tax rates and dispositions vary from state to state. California has a property tax of $1.10 per $1,000 in assessed value, with $0.55 allocated to the City for general purposes and $0.55 to the County for general purposes. An additional real estate transfer/conveyance tax could also be established for special purposes through a 2/3 vote.	
	Mello-Roos Community Facilities District Special Tax	A Mello-Roos places a special tax on an area to finance authorized community facilities and services. The cities within Solano County have created Mello-Roos Community Facility Districts to pay for park development and maintenance. Mello-Roos Districts tend to encompass large development projects and require a 2/3 majority vote of property owners.	
	Benefit Assessment District	Benefit Assessment Districts, which are subject to Proposition 218, must be based on a determination that the assessment is proportional to the benefit received by the parcels in the district. A Landscape & Lighting District is one type of Benefit Assessment District. Unlike most Benefit Assessment Districts, a Landscape & Lighting District can be used to pay for maintenance, operations, and servicing of park improvements. Votes of property owners in the district require 50% +1 for approval.	
	General Obligation Bonds/Property Tax Overrides	The County could issue a GO Bond for the acquisition, development, and rehabilitation of regional parks. The bond could finance capital improvements while the bond principal and interest would be paid back over time, generally by an increase in taxes. The passage of such a bond would require a 2/3 majority vote of county residents.	
Development-Based Funding & Programs	Park & Open Space Dedications and Fees	The Quimby Act allows a city or county to require payments and/or dedication of land for parks as a condition of subdivisions approval. The payments or dedications cannot exceed the amounts specified in the Act, which are tied to the size of the development. Quimby exactions have been used by the cities of Benicia, Vallejo, and Fairfield to secure park and open space land and improvements in conjunction with major residential developments. However, due to Solano County's Orderly Growth Initiative, urban development is directed to existing urban areas. Therefore, when a major residential development occurs, the land is annexed into a city and the development fees collected would be directed back to each city's park program rather than being directed at building a countywide regional park system.	
	Transfer of Development Credits	A transfer of development credits program could be established that offers incentives to developers to avoid developing lands suitable for regional parks. Landowners or developers are permitted to develop certain areas at higher densities than currently zoned in exchange for their not developing designated regional park lands.	

SAN GABRIEL RIVER CORRIDOR MASTER PLAN FUNDING SOURCE INVENTORY (CONTINUED)

PRIMARY FUNDING CATEGORY AND FUNDING SOURCE	FUNDING PROGRAM	PROGRAM DESCRIPTION	ADDITIONAL INFORMATION
FUNDING DATABASE/LISTS			
FEDERAL			
Federal Grants	grants.gov	Grants.gov is a simple, unified "storefront" for all customers of Federal grants to electronically find, apply for, and manage grants. Grants.gov encompasses over 900 grant programs offered by the 26 Federal grant-making agencies. It streamlines the process of awarding over $350 billion annually to state and local governments, academia, not-for-profits and other organizations. Grants.gov is one of the 24 Federal cross-agency E-Government initiatives focused on improving access to services via the Internet.	http://grants.gov/
	Catalog of Federal Domestic Assistance	The online Catalog of Federal Domestic Assistance provides access to a database of all Federal programs available to state and local governments (including the District of Columbia); federally recognized Indian tribal governments; territories (and possessions) of the United States; domestic public, quasi-public, and private profit and nonprofit organizations and institutions; specialized groups; and individuals.	http://www.cfda.gov/public/granttopics.asp
	Catalog of Federal Funding Sources for Watershed Protection	The Catalog of Federal Funding Sources for Watershed Protection website, hosted by the US EPA, is a searchable database of financial assistance sources (grants, loans, cost-sharing) available to fund a variety of watershed protection projects.	http://www.epa.gov/watershedfunding/
STATE			
State of California Grants	GetGrants	This web site facilitates the identification of Grant Programs within State of California agencies and departments through a single search, without being required to know the name of the responsible entity.	http://getgrants.ca.gov/
PRIVATE SECTOR			
American Trails	Miscellaneous funding information	American Trails is a national, nonprofit organization working on behalf of all trail interests, including hiking, bicycling, mountain biking, horseback riding, water trails, snowshoeing, cross-country skiing, trail motorcycling, ATVs, snowmobiling and four-wheeling. Its goal is to support America's trails by finding common ground and promoting cooperation among all trail interests. American Trails' website contains information about funding strategies in general and specific information on federal funding sources.	Federal Funding: http://www.americantrails.org/resources/fedfund/index.html Funding and Resources: http://www.americantrails.org/resources/funding/index.html
American Hiking Society	Miscellaneous funding information	Updates on the status of funding from a variety of agencies for land acquisition and trail development	http://www.americanhiking.org/policy/current/funding.html http://www.americanhiking.org/news/trail_fund.html
Rails-to-Trails Conservancy	Miscellaneous funding information	The Rails-to-Trails Conservancy is a non-profit organization created to enrich America's communities and countryside by creating a nationwide network of public trails from former rail lines and connecting corridors. They coordinate a Trails & Greenways Clearinghouse website that contains resource information, including a funding database. RTC also maintains a California field office, whose website has funding information specific to California.	National Trails & Greenways Clearinghouse: http://www.trailsandgreenways.org/resources/highlights/default.asp RTC California Field Office: http://www.railtrails.org/field/california/default.asp
Sonoran Institute	Conservation assistance tools	The Sonoran Institute, with several public and private partners, has developed a free technical and funding resource database. The database, which covers nationwide funding and sources specific to selected western states, includes federal, state and regional sources, and private foundations. The database currently does not include funding sources specific to California, but the nationwide sources are relevant.	http://cat.sonoran.org/

Appendices



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appendix A Master Plan Projects Action Grid

MASTER PLAN PROJECTS ACTION GRID

Reach 1

ID NUMBER	LOCATION/ CITY	PROJECT NAME	PROJECT DESCRIPTION	PROJECT LEAD(S)	Plan Elements: Habitat	Recreation	Open Space	Flood Protection	Water Quality & Supply	Land Use/Econ. Dev't.	Project Concepts: Habitat Enhancement	Parks & Open Space	Water Quality & Supply	Trail Enhancement	Bridges & Gateways	Education Center	Land Reclamation	Studies
R1.01	ANGELES NATIONAL FOREST	FISHERMAN'S TRAIL ABOVE COGSWELL DAM	The Fly Fishers Club of Orange County (FFCOC) has proposed establishing a recreational easement (Trail) across or around the LADPW facility at Cogswell Dam allowing access to the upper West Fork of the San Gabriel River. Pedestrian access to the River was blocked by completion of Cogswell Dam in 1934. Project implementation will require close coordination with LADPW and the U.S. Forest Service. Access to the West Fork of the San Gabriel River above Cogswell Dam now requires a very long hike through the mountains from the area near Mt. Wilson. A trail around Cogswell Reservoir would involve access through LADPW and USFS controlled property. An alternative route would require a new trail around either the north or south side of the reservoir. The Project's scope could be expanded to include access across or around Cogswell Dam, which was recently closed by LADPW due to increased security considerations. This recent closure cut off access to the existing Devil's Canyon trail, the San Gabriel Wilderness area and the stream in Devil's Canyon. The Fisherman's Trail project might be able to provide access to both the West Fork and to the existing Forest Service trail into Devil's Canyon.	Fly Fishers Club of Orange Co. (FFCOC); US Forest Service (USFS)		●	○				○	○		○					
R1.02	ANGELES NATIONAL FOREST	SEDIMENT MANAGEMENT PLAN (COGSWELL RESERVOIR)	Under the Sediment Management Plan, Cogswell Dam will be cleaned out about every 10 years, by means of mechanical excavation. NEPA and CEQA reviews for the Sediment Management Plan were concluded in 1997 and 1998, respectively.	County of Los Angeles Dept. of Public Works (LADPW)	○	○		●	●										●
R1.03	SAN GABRIEL RIVER - WEST FORK / ANF	LONG TERM MANAGEMENT PLAN: WEST FORK SAN GABRIEL RIVER	This plan, developed in 1989 by the West Fork Working Group (WFWG), addresses management of the West Fork, including Cogswell Reservoir. The WFWG includes the USDA Forest Service, County of Los Angeles Department of Public Works (LADPW), California Department of Fish and Game, California Trout, Incorporated, Main San Gabriel Basin Watermaster, San Gabriel Valley Protective Association, and the San Gabriel Water Committee. Six objectives of the Plan include flood control, dam safety, water rights, fisheries optimization, recreation and land use management.	West Fork Working Group	○	●	○						○					●
R1.04	ANGELES NF	FOREST MASTER PLAN UPDATE	The four southern National Forests including Angeles, San Bernardino, Los Padres and Cleveland, are updating their Master Plans. The Forest Plans address issues of resource management, recreational access issues, habitat and other concerns of forest stakeholders.	USFS	●	●	●	●	●	●	○	○	○	○			○	●
R1.05	ANGELES NF	OFF-HIGHWAY VEHICLE AREA IMPROVEMENTS	Near the eastern edge of the Headwaters Reach, just above its confluence with the East Fork, is a large, flat river bottom area that is a favorite spot with off-highway vehicle users. The Azusa Canyon Off-Roaders Association (ACORA) is proposing improvements to existing stream crossings and habitat restoration for the Santa Ana sucker to minimize impacts from off-road vehicle use, while providing selected amenities for the benefit of off-highway enthusiasts and other river visitors.	Azusa Canyon Off-Roaders Assoc. (ACORA), California Off-Road Vehicle Association (CORVA), USFS	○	●	○	○	○		○	●		○				
R1.06	SAN GABRIEL RIVER WATERSHED	SAN GABRIEL RIVER WATERSHED MANAGEMENT PLAN ABOVE WHITTIER NARROWS	This planning study by the San Gabriel Mountains Regional Conservancy (SGMRC) is funded by Proposition 13. The project will develop land use-based recommendations that address water quality and supply, habitat, recreation and open space, and land and water stewardship opportunities. The "Think River! Youth Watershed Conference" is an outgrowth of this project. Within the Angeles National Forest, the focus will be on the heavily used areas of Highway 39 and the North and East Forks of the San Gabriel River. In the lower urbanized sub-watersheds of San Jose and Walnut Creeks, the focus will be on water quality, education, stewardship, habitat linkages and open space.	San Gabriel Mountains Regional Conservancy (SGMRC)	●	●	●	●	●	○	○	○	○	○	○	○	○	●
R1.07	ANGELES NF	SAN GABRIEL WATERSHED HABITAT RESTORATION ASSESSMENT PROJECT	This study will augment the San Gabriel River Watershed Management Plan (R1.06) by mapping and assessing current habitat conditions in the San Gabriel River Watershed. It will also evaluate the opportunities and constraints for habitat restoration along urban corridors, undeveloped areas, and protected open spaces in a manner that will also protect other resources such as water quality. Attention will be given to potential wildlife corridor improvement opportunities and protection of regional species biodiversity.	SGMRC	●	●	●	●	●	●	○	○	○	○			○	●

○ = Potential Opportunity ● = Definite Opportunity

MASTER PLAN PROJECTS ACTION GRID

Reach 2

ID NUMBER	LOCATION/ CITY	PROJECT NAME	PROJECT DESCRIPTION	PROJECT LEAD(S)	Plan Elements: Habitat	Recreation	Open Space	Flood Protection	Water Quality & Supply	Land Use/Econ. Dev't.	Project Concepts: Habitat Enhancement	Parks & Open Space	Water Quality & Supply	Trail Enhancement	Bridges & Gateways	Education Center	Land Reclamation	Studies
R2.01	ANGELES NF	BLACK-FLY VECTOR RESEARCH	On behalf of the FFCOC, a funded research study conducted by consultants of the San Gabriel Mountains Regional Conservancy is evaluating the river's black fly populations, a source of fish food. Fluctuations in black fly populations have implications for stream ecology, interdependent organisms, bio-indicators, as well as human health and vector control methods.	SGMRC	●	●	❍		●		❍	❍	❍					●
R2.02	ANGELES NF	SAN GABRIEL RESERVOIR RECREATIONAL STUDY	This 1992 LADPW study investigated expanding non-water oriented recreational activities at or near the reservoir. Its recommendations need to be updated in light of today's increased security considerations.	LADPW	❍	●	❍	❍	❍			❍	❍	❍				●
R2.03	ANGELES NF	HIGHWAY 39/SAN GABRIEL RIVER RECREATION NEEDS ASSESSMENT	The SGMRC is developing a proposal to address issues relating to high usage along the Highway 39 area of the river, for a Proposition 13 Nonpoint Source Pollution grant. A significant amount of trash has accumulated in the river and along Highway 39. Toilet facilities are insufficient for the thousands of visitors, and more parking, trash and ash receptacles, and information/interpretive kiosks are needed. A needs assessment study will explore current recreational usage and needs, as well as potential impacts on habitat and water quality.	USFS, Caltrans, SGMRC	●	●	●	❍	●	●	❍	❍	❍	❍	❍			●
R2.04	ANGELES NF	SEDIMENT MANAGEMENT PLAN (SAN GABRIEL CANYON)	A current LADPW study explores options for removing sediment that has accumulated behind both the San Gabriel Dam and the Morris Dam. In the wake of the 2002 Curve and Williams Fires, LADPW is planning to undertake a 5-million cubic yard emergency clean out of San Gabriel Reservoir, which is anticipated to start in 2004 and last for several years.	LADPW	❍	❍		●	●		❍	❍	❍				❍	●
R2.05	ANGELES NF	FISHING AT MORRIS AND SAN GABRIEL RESERVOIRS STUDY	This FFCOC study will investigate the feasibility of providing limited access to Morris and San Gabriel Reservoirs for non-body contact fishing and related recreational activities, including allowing float tubes and non-motorized boats onto the reservoirs. The feasibility study will use the existing Department of Health Services Guidelines for non-body contact public access onto reservoirs, and access limitations successfully employed at other locations where recreational fishing is permitted at public reservoirs. It will address all concerns related to necessary operations at LADPW facilities. The study recognizes that access may be seasonally limited, with further restrictions required to accommodate maintenance of the reservoirs and associated facilities. As with all projects in the Master Plan, it will be important to ensure that the multi-objective framework of habitat, recreation, open space, flood protection, water quality, and regulatory compliance is maintained. Both LADPW and the Upper San Gabriel Valley Water District will jointly fund the feasibility study.	FFCOC	❍	●	❍	❍	❍			❍						●
R2.06	ANGELES NF	MORRIS DAM PENINSULA PARK	The largest available open space along the national forest section of the river, this 40-acre peninsula juts into the Morris reservoir at the former site of a Navy torpedo testing facility adjacent to Highway 39. It can be reclaimed and developed for recreational day-use, overnight camping, trails and an interpretive center for the national forest, including a historic military interpretive site. The development of this park would provide additional needed park facilities with parking and other site amenities to relieve the serious weekend congestion of Angeles National Forest visitors.	USFS,LADPW	❍	●	❍				❍	❍		❍		❍	●	
R2.07	ANGELES NF, AZUSA	MINIMUM STREAM FLOWS BELOW MORRIS DAM PROJECT	Upon further consideration among all interested groups, this proposal is withdrawn for the time being.															
R2.08	ANGELES NF	OLD SAN GABRIEL CANYON ROAD	This two-mile County service road extends south from Morris Dam at a pump station down to Azusa by the El Encanto Restaurant. A City of Azusa project, this road can provide river access for hikers and bikers and could also be linked to the nearby San Gabriel River Bike Trail via the Canyon Inn and El Encanto properties. A safe crossing of Highway 39 is needed.	Azusa		●	❍					❍		●	❍			

● = Definite Opportunity ❍ = Potential Opportunity

MASTER PLAN PROJECTS ACTION GRID

Reach 3

ID NUMBER	LOCATION/ CITY	PROJECT NAME	PROJECT DESCRIPTION	PROJECT LEAD(S)	Plan Elements: Habitat	Recreation	Open Space	Flood Protection	Water Quality & Supply	Land Use/Econ. Dev't.	Project Concepts: Habitat Enhancement	Parks & Open Space	Water Quality & Supply	Trail Enhancement	Bridges & Gateways	Education Center	Land Reclamation	Studies
R3.01	AZUSA	AZUSA CANYON RIVER PARK	This City of Azusa project aims to acquire land to develop a river-focused park at the southern end of San Gabriel Canyon. It includes a visitor's center surrounded by a native plant garden, interpretive signage, restored habitat areas, and paths leading down to the river. Landscaping, picnic tables and a small play area will encourage national forest users to visit. Camping in a natural park area will be available. The City of Azusa has already acquired part of the park. This park is adjacent to the Rainbow Canyon Equestrian Center.	Azusa	●	●	●	❍	❍		❍	●		❍	❍	❍		
R3.02	AZUSA	SAN GABRIEL RIVER BIKE TRAIL EXTENSION	This project will extend the 38-mile regional bike trail from its current terminus near the southern edge of San Gabriel Canyon by the proposed Interpretive Center, to the proposed Azusa Canyon River Park and eventually all the way to Angeles National Forest. A one-mile extension is being built to the Mountain Cove development, near the mouth of the San Gabriel Canyon.	Azusa		●	❍							●	❍			
R3.03	AZUSA	ROBERT'S CREEK TRAIL ACCESS	Public access to Robert's Creek will be provided through Mountain Cove private residential development, from Azusa Canyon River Park and/or the San Gabriel River Bike Trail Extension.	Azusa	❍	●	❍							●	❍			
R3.04	AZUSA	ROBERT'S CREEK RESTORATION	This will be a habitat restoration and park expansion in the canyon area behind Mountain Cove.	Azusa, USFS	●	❍	❍		●		❍	❍		●				
R3.05	AZUSA	WESTSIDE TRAIL	A new, multi-purpose trail at the far edge of the flood plain, running parallel to the San Gabriel River on its west side and opposite to the San Gabriel River Bike Trail will be developed. This one-mile trail will run along the San Gabriel Valley Gun Club and provide a connection between the Robert's Creek and Fish Creek Trails.	Azusa	❍	●	●					❍		●	❍			
R3.06	AZUSA	FOREST GATEWAY INTERPRETIVE CENTER	This project will create a new USDA Forest Service Ranger Station and Interpretive Center at the entrance to Azusa Canyon. Diverse educational opportunities will provide information about the canyon, the national forest and native habitat. "Green" building practices and watershed sensitive design principles will be incorporated into the site. North East Trees has already developed the building and site designs for this open space area. The project is currently funded and will be built in 2004.	Azusa, USFS	●	●	●		❍	●	❍	❍	❍	❍	❍	●		
R3.07	AZUSA	GLENDORA RIDGE ROAD TRAIL ACCESS	Public access for pedestrians and bicycles to the existing fire road through the mountains on the south side of the canyon will be provided, either by an access easement through private property, or by creating a new access point. This road leads to Mount Baldy.	Azusa, SGMRC		●	❍					❍		●	❍			
R3.08	AZUSA	SAN GABRIEL CANYON SPREADING GROUNDS	This project will study possibilities for providing landscaping, native habitat restoration, decorative fencing, interpretive signage, trails and other park amenities for public enjoyment and education at two deep spreading basins adjacent to the San Gabriel River. The 165-acre site project will be compatible with the groundwater recharge function of the two basins. Due to the deepness of the two basins, and the fact that it is a major water supply for Azusa, health and safety issues will be key project determinants.	Azusa, LADPW	●	●	●	❍	❍		❍	●	❍	❍	❍	❍	❍	❍
R3.09	AZUSA	FUTURE PEDESTRIAN BRIDGE	The City of Azusa has indicated to Vulcan Materials Company (Vulcan) that it would like to investigate the use of the existing conveyor belt that traverses across the San Gabriel River as a potential bicycle and pedestrian bridge (about 30 years from now after mining operations cease). Although Vulcan does not have any objections to using this bridge when mining is completed, it has not yet engaged in negotiations with the City to discuss potential liability and cost for converting the conveyor crossing to a bicycle and/or pedestrian bridge.	Azusa		●	❍							❍	●			
R3.10	AZUSA	WEST RIVERBANK TREE PLANTING PROJECT AT THE SAN GABRIEL VALLEY GUN CLUB	The San Gabriel Valley Gun Club has proposed planting 200+ trees on the west levee of the San Gabriel River, beside its facilities on land it leases from Vulcan. The Gun Club serves over 100,000 people each year, including recreationists and training organizations such as law enforcement. The trees will provide much needed shade along the river and dampen the sounds that currently echo up the canyon from Gun Club activities. The City of Azusa, representatives of Vulcan and representatives from the San Gabriel Valley Gun Club are in negotiations to mitigate noise emanating from the Club into residential areas. Vulcan has not included these trees as potential mitigation to noise impacts.	San Gabriel Valley Gun Club		●	❍				❍	●					❍	

● = Definite Opportunity ❍ = Potential Opportunity

MASTER PLAN PROJECTS ACTION GRID

Reach 3 (continued)

ID NUMBER	LOCATION/ CITY	PROJECT NAME	PROJECT DESCRIPTION	PROJECT LEAD(S)	Habitat	Recreation	Open Space	Flood Protection	Water Quality & Supply	Land Use/Econ. Dev't.	Habitat Enhancement	Parks & Open Space	Water Quality & Supply	Trail Enhancement	Bridges & Gateways	Education Center	Land Reclamation	Studies
R3.11	AZUSA	AZUSA ROCK QUARRY RESTORATION	Vulcan is currently pursuing a revised reclamation plan for the Azusa Rock Quarry to rehabilitate and restore the area when mining is complete. The existing reclamation plan is subject to negotiations between Vulcan and the City of Azusa. A revised reclamation plan would change the quality of reclamation that currently exists at this quarry site.	Azusa, Vulcan Materials Co. (Vulcan)	●	●	●	●	●	●	❍	❍	❍	❍			●	
R3.12	AZUSA	FISH CREEK RESTORATION & PUBLIC ACCESS	Vulcan is currently working with the City of Duarte on (and discussing with the City of Azusa), limited public access through the Azusa Rock Quarry along Fish Creek. For safety and liability reasons, Vulcan will limit access to daylight hours and non-operational hours of the quarry, probably on weekends and holidays. These discussions are ongoing; an agreement has not been reached as of this writing. After mining is complete at the Azusa Rock Quarry site, and with Vulcan's permission, it may be possible to daylight and restore the stream and provide fuller public access through the quarry site.	Azusa, USFS	●	●	❍				●	❍		❍	❍		❍	
R3.13	AZUSA	TODD AVENUE BIKE TRAIL CONNECTION	This project will connect an existing City of Azusa bike path at the south end of the spreading grounds with the San Gabriel River Bike Trail. The project will provide the local community with a much needed access point to the River Trail.	Azusa		●	❍							●				
R3.14	AZUSA	AZUSA BIKE TRAIL NETWORK	This will develop a system of street-side bicycle paths to help bicyclists enter Azusa Canyon from Sierra Madre Avenue or Azusa Canyon Road and connect to the San Gabriel River Bike Trail.	Azusa		●	❍			●				●	❍			
R3.15	DUARTE, AZUSA	PACIFIC ELECTRIC RAILS-TO-TRAILS PROJECT	A proposed multi-city project will create an east-west bike trail on an abandoned rail line running parallel to Foothill Boulevard between Monrovia in the west and Claremont in the east. The proposed bike trail design will need to take into account a potential light rail line which is being considered for this route. This trail may integrate with the Duarte Bike Trail, crossing the San Gabriel River at the Puente-Largo Bridge.	To be determined		●	❍							●	❍			
R3.16	AZUSA	AZUSA-LARGO QUARRY	This quarry operation, located north of Foothill Boulevard, houses the current aggregate production facility of Vulcan, as well as shop facilities and asphalt plant production facilities. The plant at the Azusa-Largo Quarry produces material from the area in which it exists, as well as material that is transported via a conveyor system from Azusa Rock Quarry. The operation will supply aggregate, construction grade materials as well as asphalt materials for over 40 years. The eventual land use post-mining will be determined later in negotiations between the City of Irwindale and Vulcan.	Azusa, Vulcan Materials Co.	●	●	●	●	●	●	❍	❍	❍	❍			●	
R3.17	AZUSA	RELIANCE #2 QUARRY	This is an existing landfill operated by Vulcan at a site located south of Foothill Boulevard bordered by the Foothill Freeway (I-210), and bordered on the east by Irwindale Avenue. This operation is currently being used for silt deposition from the existing Reliance Plant and operates as a landfill facility that can ultimately be filled and used for some commercial activity. It is subject to negotiation between the City of Irwindale and Vulcan to determine potential land use and other issues. The time to complete the landfill is not known at this time.	Azusa, Vulcan Materials Co.	●	●	●	●	●	●	❍	❍	❍	❍			●	
R3.18	DUARTE	WRIGHT-ROMVARY PROPERTIES	The City of Duarte plans to acquire a total of 365 acres of land for open space protection, trails and habitat restoration. The property is adjacent to Van Tassel Creek, a tributary of the San Gabriel River. This project is dependent on funding availability.	Duarte	●	❍	●				❍	●		❍				
R3.19	DUARTE	DUARTE BIKE TRAIL EXTENSION	This project will extend and improve an existing 1.5-mile multi-use trail for an additional mile from Royal Oaks Park in the City of Duarte across the historic Puente Largo Rail Bridge to San Gabriel River Bike Trail in Azusa. Improvements will create a safer connection and will include signage, paint lines, lighting, and pavement resurfacing.	Duarte		●	❍			●				●	❍			
R3.20	DUARTE, AZUSA	ROUTE 66/FOOTHILL BOULEVARD GATEWAY	This future City of Duarte gateway project, in partnership with the City of Azusa, is located on the historic Route 66 Highway.	Duarte, Azusa		●	❍			●					●			
R3.21	IRWINDALE, LA COUNTY	SANTA FE DAM RECREATION AREA & HABITAT ENHANCEMENTS	The County of Los Angeles Department of Parks and Recreation (LADPR) plans improvements to habitat areas and trails, including the protection and restoration of remnant alluvial fan sage scrub plant communities by replanting native plants and removing exotics. Other improvements include improving access to the Park's bicycle path by establishing safe crossings and directional signage.	LADPR	●	●	●	●	●		❍	●		❍				

● = Definite Opportunity ❍ = Potential Opportunity

MASTER PLAN PROJECTS ACTION GRID

Reach 3 (continued)

ID NUMBER	LOCATION/ CITY	PROJECT NAME	PROJECT DESCRIPTION	PROJECT LEAD(S)	Habitat	Recreation	Open Space	Flood Protection	Water Quality & Supply	Land Use/Econ. Dev't.	Habitat Enhancement	Parks & Open Space	Water Quality & Supply	Trail Enhancement	Bridges & Gateways	Education Center	Land Reclamation	Studies
R3.22	IRWINDALE	SANTA FE DAM NATURE CENTER	A recently re-opened nature center operated by the SGMRC in partnership with the County of Los Angeles, provides interpretive trails, habitat restoration, a native plant demonstration garden, outdoor amenities improvements and possible camping, as well as community education and outreach programs. Project sponsors are seeking outreach partners for docent and interpretive programs.	LADPR, SGMRC	●	●	○	○	○	●	○	○		○		●		
R3.23	IRWINDALE	UNITED ROCK PRODUCTS QUARRY #4	This is currently the processing plant for United Rock Products. Material mined in Quarry #2 and Quarry #3 are processed on the site. Additionally, this site has two asphalt plants, two ready mix concrete plants, and equipment shops. United Rock Products and the City of Irwindale are negotiating the mining and reclamation options for this site.	Irwindale, United Rock Products	●	●	●	●	●	●	○	○	○	○			●	
R3.24	IRWINDALE	BUENA VISTA WETLANDS	This project will create bio-engineered wetlands for habitat restoration in a LADPW spreading basin west of Santa Fe Dam. A conveyor line, operated by United Rock Products, runs across the westerly part of this property. The line has been in operation since 1983 and is scheduled to be in use until circa 2035. The design and implementation of the wetlands will need to ensure the continued safe operation of this conveyor.	LADPW	●	○	●	○	●		○	○	●	○		○	○	
R3.25	IRWINDALE	UNITED ROCK PRODUCTS QUARRY #3	This is an active quarry that will be in operation until 2035. United Rock Products and the City of Irwindale are in negotiations for the reclamation of this site, which is scheduled to be completed in 2061.	Irwindale, United Rock Products	●	●	●	●	●	●	○	○	○	○			●	
R3.26	IRWINDALE	HABITAT PASSAGE AROUND SANTA FE DAM	This project will provide a habitat linkage at this "pinchpoint" to complete the Puente Hills to San Gabriel Mountains habitat corridor. The U.S. Army Corps of Engineers (ACE) owns key parcels in this area. ACE is willing to partner with other agencies and private groups to identify opportunities for creating this linkage.	To be determined	●	●	●	○		○	●	○					○	
R3.27	IRWINDALE	KARE YOUTH LEAGUE SPORTS PARK	This under-used open space area is at the base of the Santa Fe Dam, north of Arrow Highway. It is owned by COE. Kare Youth League is a potential lessee, that would build a soccer field with some amenities on existing disturbed paved areas. There is an existing habitat on the property that could be restored as part of the habitat corridor. There will be a trail linkage to the San Gabriel River Bike Trail.	COE, Kare Youth League	●	●	●	○			○	●		○			○	
R3.28	IRWINDALE	SAN GABRIEL RIVER BEAUTIFICATION & ENVIRONMENTAL ENHANCEMENT	An environmental beautification opportunity for the City of Irwindale in partnership with the Hollywood Beautification Team, this 1.4-mile enhancement of the existing bike trail would including a bike staging area and other improvements designed to provide a better interface between the Santa Fe Dam and the San Gabriel River Bike Trail south of Arrow Highway. The project includes landscaping, drought-tolerant trees, irrigation, signage and other amenities.	HBT, Irwindale, Watershed Conservation Authority (WCA)	○	●	○			○				●	○				
R3.29	IRWINDALE	ARROW HIGHWAY TRAIL CONNECTION	Bike trail users need a safer passage across Arrow Highway. An assessment on best connection needs to be made. Alternatives include building a new bridge over Arrow Highway, or going underneath through an existing tunnel, which also needs drainage repairs.	ACE, LADPW, Irwindale	○	●	●	○			○	○		●	○			
R3.30	IRWINDALE	TRAFFIC FLOW IMPROVEMENTS AROUND SANTA FE DAM RECREATION AREA	The LADPW proposed this study of vehicular traffic circulation patterns to identify improvements that will enhance public safety and improve pedestrian and bicycle access near the Santa Fe Dam.	LADPW, Irwindale		●	○			○								●

● = Definite Opportunity ○ = Potential Opportunity

MASTER PLAN PROJECTS ACTION GRID

Reach 4

ID NUMBER	LOCATION/ CITY	PROJECT NAME	PROJECT DESCRIPTION	PROJECT LEAD(S)	Plan Elements: Habitat	Recreation	Open Space	Flood Protection	Water Quality & Supply	Land Use/Econ. Dev't.	Project Concepts: Habitat Enhancement	Parks & Open Space	Water Quality & Supply	Trail Enhancement	Bridges & Gateways	Education Center	Land Reclamation	Studies
R4.01	IRWINDALE	UNITED ROCK PRODUCTS QUARRY #1	United Rock Products Quarry #1 is currently being reclaimed, according to agreements with the City of Irwindale. The property will be returned to a condition suitable for development. The anticipated completion is 2020.	Irwindale, United Rock Products	●	●	●	●	●	●	❍	❍	❍	❍			●	
R4.02	IRWINDALE	UNITED ROCK PRODUCTS QUARRY #2	United Rock Products Quarry #2 is currently being mined. United Rock and the City of Irwindale are negotiating the details of the mining and reclamation options. Mining operations are expected to cease by 2061.	Irwindale, United Rock Products	●	●	●	●	●	●	❍	❍	❍	❍			●	
R4.03	IRWINDALE	BUBALO QUARRY	A reclamation plan for this quarry is in progress.	Hanson Aggregate West	●	●	●	●	●	●	❍	❍	❍	❍			●	
R4.04	IRWINDALE	QUARRY RECLAMATION/WATER STORAGE/RECREATIONAL FACILITIES DEVELOPMENT STUDY	The Upper San Gabriel Valley Municipal Water District, Sierra Club, and the State of California Rivers and Mountains Conservancy (RMC) initiated a study to identify potential reuse of gravel quarries for multiple purposes after mining is completed, including stormwater capture and cleanup, recharge of storm and imported water, flood reduction, recreation and habitat restoration, as well as aesthetic improvements. The study will require several years to conduct and any implementation of this study under the San Gabriel Master Plan will require future environmental review beyond the scope of this Master Plan and EIR. The study will also require substantive conversations with mine operators and other stakeholders such as the City of Irwindale. A separate forum has been proposed to provide study participants with essential mining community input.	Upper San Gabriel MWD (USGMWD), Rivers & Mountains Conservancy (RMC), Sierra Club	●	●	●	●	●	●	❍	❍	❍	❍		❍	❍	●
R4.05	IRWINDALE	HANSON QUARRY	The City of Irwindale is interested in multiple possible uses for the 400 acre Hanson Quarry site, which offers a significant economic development opportunity. A long-term quarry reclamation plan is being developed to be implemented once mining operations have ceased, including new business and industrial uses, shopping, parks and open space, and possibly groundwater recharge and cleanup.	Irwindale, Hanson Aggregate West	●	●	●	●	●	●	❍	❍	❍	❍		❍	●	
R4.06	ARCADIA	RODEFER QUARRY	This privately-owned quarry is an inholding of the City of Arcadia and is currently being filled with inert materials such as dirt and concrete. It is now zoned for industrial land use. Future reclamation plans could include park and open space, and other uses.	To be determined	❍	●	●	❍	●	●	❍	❍	❍	❍		❍	●	
R4.07	IRWINDALE	DURBIN QUARRY	The City of Irwindale is interested in multiple uses for the Durbin Quarry site, which offers a significant economic development opportunity. It is developing a long-term quarry reclamation plan for reclamation after mining is complete, including new business and industrial uses, shopping, parks and open space, and possibly groundwater recharge and cleanup. However, the Durbin Quarry, owned and operated by Vulcan, will be an ongoing mining operation for the next 30 to 40 years. The City of Irwindale is keenly interested in its potential for economic development and is now negotiating with Vulcan about final reclamation and landform. Development would occur significantly after mining operations cease because of extensive fill requirements.	Irwindale, Vulcan Materials Co.	❍	●	●	❍	●	●	❍	❍	❍	❍		❍	●	
R4.08	EL MONTE, BALDWIN PARK	RAMONA BOULEVARD GATEWAY	The Ramona Boulevard gateway project will provide a key entry point to the San Gabriel River Bike Trail and the City of El Monte.	El Monte, Baldwin Park		●	❍			●				❍	●			
R4.09	BALDWIN PARK	CALTRANS RIGHT-OF-WAY OPEN SPACE & TRAIL	This Baldwin Park project will upgrade an existing 2-acre right-of-way with landscaping and trails to connect Barnes Park, the San Gabriel River Bike Trail, and neighborhood schools.	Baldwin Park, Caltrans		●	❍				❍	❍	❍	●				
R4.10	BALDWIN PARK	BARNES PARK	Baldwin Park plans to improve the existing Barnes Park with habitat enhancements and an interpretive programs center.	Baldwin Park		●	❍					●						
R4.11	BALDWIN PARK	WALNUT CREEK NATURE PARK AND NATURE CENTER	Baldwin Park will improve the Walnut Creek Park with a 3,300 square foot community center, walking trails, spray pool, playgrounds, new turf, fencing and irrigation.	Baldwin Park	●	●	❍	●	❍		❍	●		❍		❍		
R4.12	EL MONTE	DURFEE SCHOOL RECREATION AREA	The City of El Monte wants to develop active recreation and landscaping along the San Gabriel River and provide access to the San Gabriel River Bike Trail.	El Monte	❍	●	❍		❍			❍		●				

● = Definite Opportunity ❍ = Potential Opportunity

MASTER PLAN PROJECTS ACTION GRID

Reach 4 (continued)

ID NUMBER	LOCATION/ CITY	PROJECT NAME	PROJECT DESCRIPTION	PROJECT LEAD(S)	Habitat	Recreation	Open Space	Flood Protection	Water Quality & Supply	Land Use/Econ. Dev't.	Habitat Enhancement	Parks & Open Space	Water Quality & Supply	Trail Enhancement	Bridges & Gateways	Education Center	Land Reclamation	Studies
R4.13	EL MONTE	VALLEY BOULEVARD GATEWAY	This City of El Monte project will improve connections from Mountain View High School and surrounding neighborhoods to the San Gabriel River Bike Trail. The project includes entry signage.	El Monte		●	❍			●				❍	●			
R4.14	EL MONTE	INFLATABLE RUBBER DAMS	LADPW is building two new inflatable rubber dams over existing drop structures in the river. The dams provide temporary water storage and also create rich and attractive natural habitat.	LADPW	●	❍		●	●		❍		●					
R4.15	CITY OF INDUSTRY, UNINCORP. LA COUNTY	WOODLAND "DUCK" FARM	The 57-acre Duck Farm Project grants a unique opportunity to provide a much needed open space and recreation area in a densely urbanized portion of the San Gabriel Valley. The property is located along the east side of the San Gabriel River just north of the confluence of the San Gabriel River and San Jose Creek. The portion of the property on the west side of the 605 Freeway had been operated as a Duck Farm. In addition to offering increased area for passive recreation such as bike and pedestrian trails, bird watching and rest areas, the project has the potential to incorporate design elements such as groundwater recharge, water quality improvements, flood management, interpretive educational signage, exhibits, displays, as well as the reintroduction of native habitat. The WCA's goal is to create a project that will be a model for sustainable, multi-benefit watershed projects that address the open space recreation and watershed needs of the San Gabriel Valley. By connecting the surrounding communities to the San Gabriel River, the Duck Farm project will establish a local connection to Whittier Narrows Recreation facilities; regional connectivity to the San Gabriel River Trail system and the Emerald Necklace network of recreation facilities.	Watershed Conservation Authority	●	●	●	❍	●	●	❍	❍	❍	❍	❍	❍	●	
R4.16	UNINCORP. LA COUNTY	SAN GABRIEL RIVER BIKE TRAIL BRIDGE	LADPW is studying possibilities for a multi-use bridge to connect El Monte, South El Monte, and unincorporated LA County communities with the San Gabriel River Trail, the San Jose Creek Trail and the Duck Farm.	LADPW, MTA		●								❍	●			
R4.17	UNINCORP. LA COUNTY	SAN JOSE CREEK BIKE TRAIL BRIDGE	This multi-use bridge would be part of a project to expand the San Jose Creek Bike Trail system. The bridge would connect bicyclists and pedestrians from the south bank of San Jose Creek with the north bank and the San Gabriel River Bike Trail.	LADPW, MTA	❍	●	❍	●	●					❍	●			
R4.18	UNINCORP. LA CO., CITY OF INDUSTRY, POMONA, CLAREMONT	SAN JOSE CREEK BIKE TRAIL PHASE II	LADPW is studying potential expansion of the existing San Jose Creek Bike Trail, beginning along the southern bank of the creek from the San Gabriel River traveling east to Cal Poly Pomona and to Claremont along Thompson's Creek (a San Jose Creek tributary).	LADPW, MTA, Pomona, Claremont		●	❍					❍		●	❍			
R4.19	UNINCORP. LA COUNTY, CITY OF INDUSTRY	SAN JOSE CREEK HABITAT & TRAILS RESTORATION	North East Trees, with funding from Los Angeles County Open Space District, is restoring native plants along the northern slopes of San Jose Creek. The project area includes a 1.5-mile stretch of creek and trails, starting at the San Gabriel River past Workman Mill Road Bridge. The project includes landscaping to enhance the equestrian trail on the north and south bank and removal of exotic arundo in the creek.	North East Trees, Sierra Club, LA Co. Regional Parks & Open Space District (LAOSD)	●	●	❍	❍	❍		●	❍	❍	❍				
R4.20	SOUTH EL MONTE, UNINCORP. LA COUNTY	THIENES GATEWAY	This gateway is an equestrian staging area and local access point to the equestrian trails along the west bank of the river. Improvements by the Hollywood Beautification Team and Friends of the San Gabriel River, with funding from the Los Angeles County Open Space District, include an artful gate by a local artist, horse tie posts, drinking water, signage, seating and native landscaping including trees.	South El Monte, HBT, Friends of the San Gabriel River (FSGR) LAOSD	❍	●	❍		❍			❍		❍	●			
R4.21	UNINCORP. LA COUNTY	PELLISSIER POCKET PARK	A pocket park was proposed for this location near the San Jose Creek. It has subsequently been determined to no longer be a viable project.	HBT, FSGR, RMC														
R4.22	UNINCORP. LA COUNTY	HORSEMAN'S PARK	This project includes landscaping and a gateway to improve connections between surrounding neighborhoods and Horseman's Park.	HBT, FSGR, RMC	❍	●	❍		❍	❍		●			❍			

● = Definite Opportunity ❍ = Potential Opportunity

MASTER PLAN PROJECTS ACTION GRID

Reach 4 (continued)

ID NUMBER	LOCATION/ CITY	PROJECT NAME	PROJECT DESCRIPTION	PROJECT LEAD(S)	Habitat	Recreation	Open Space	Flood Protection	Water Quality & Supply	Land Use/Econ. Dev't.	Habitat Enhancement	Parks & Open Space	Water Quality & Supply	Trail Enhancement	Bridges & Gateways	Education Center	Land Reclamation	Studies
R4.23	UNINCORP. LA COUNTY	PUENTE HILLS WESTERN WILDLIFE CORRIDOR	This project will create a habitat movement corridor between the Puente-Chino Hills and Whittier Narrows, either near Rose Hills Cemetery along Sycamore Canyon, or down the north slope towards San Jose Creek. A connection facilitating northbound and southbound movement to and from the San Gabriel Mountains may eventually become possible. A study by a biological research institute will be required before terrestrials can be re-introduced to the river area.	Puente Hills Landfill Native Habitat Preservation Authority (HPA); City of Whittier	●	○	○				●	○		○			○	
R4.24	UNINCORP. LA COUNTY, PICO RIVERA	EQUESTRIAN FACILITIES ENHANCEMENT	Potential upgrades and water quality runoff mitigation measures will be considered for these existing equestrian facilities. Planned improvement will mitigate any potential wildlife habitat conflicts.	LADPR, Pico Rivera		●	○		○			●	○	○				
R4.25	UNINCORP. LA COUNTY	NATURE CENTER MULTI-USE TRAIL	A trail connection between the San Gabriel River Discovery Center at Whittier Narrows and the San Gabriel River Bike Trail will improve user access, safety and convenience. New signage to and from the River Discovery Center will enhance existing unmarked paths.	LADPR	●	●	○				○	○		●	○	○		
R4.26	UNINCORP. LA COUNTY	SAN GABRIEL RIVER DISCOVERY CENTER AT WHITTIER NARROWS REGIONAL PARK	LADPR, RMC, and the Upper San Gabriel Valley Municipal Water District are jointly developing a new regional indoor/outdoor museum and conference center on the site of the existing Whittier Narrows Nature Center. It will focus on watershed and water-related topics, historical information and wildlife education. The project's innovative building design will demonstrate green building technologies and watershed-appropriate site development. A joint powers authority is being set up to build and operate the Discovery Center.	USGMWD, Sierra Club, LADPR	●	●	●	○	●	●	○	○	○	○		●		
R4.27	UNINCORP. LA COUNTY	WHITTIER NARROWS NATURE CENTER ECOSYSTEM RESTORATION	This project, supported by LADPR, has been in development for six years, based on a U.S. Army Corps of Engineers project options study. Because the project is located at the northern most boundary of the Montebello Forebay, this area is subject to rising waters, and therefore is not a good site for groundwater recharge. The selected option is to build a .25-acre pond, line two lakes to reduce water loss from percolation, remove invasive plants, and restore native vegetation. The lakes could be interconnected to Lario Creek (see R4.28) and water in the lakes could flow through the system and down to the Rio Hondo Spreading Grounds. The volume of water required to maintain the lakes is minimal compared with the tens of thousands of acre feet that flow through the system annually.	LADPR, COE	●	●	●	●	●		●	○	○	○			○		
R4.28	UNINCORP. LA COUNTY	LARIO CREEK/ZONE 1 DITCH	This project is an opportunity to build upon and enhance an already planned LADPW project to expand the flow capacity of an existing canal. North East Trees proposes to temporarily divert high water flows to protect and extend wetlands. This will restore valuable habitat to support wildlife and increase the aesthetic and educational value of the area, which is adjacent to the San Gabriel River Discovery Center.	North East Trees, Ca. Dept. of Water Resources (DWR), LADPW	●	○	○	●	●		○	○	●	○				
R4.29	UNINCORP. LA COUNTY	WHITTIER NARROWS WILDLIFE LAKES	LADPR believes it is important to preserve these two large lakes as wetlands. The lakes, located at the Nature Center, could be lined to reduce water consumption.	LADPR; Water Replenishment District (WRD)	●	○	○	●			●	○	○	○				
R4.30	UNINCORP. LA COUNTY	WHITTIER NARROWS LEGG LAKE IMPROVEMENTS	These three recreational lakes should be upgraded to improve ADA accessibility and reduce erosion.	LADPR; WRD	●	○	○	●			○	●	○	○				
R4.31	UNINCORP. LA COUNTY	WHITTIER NARROWS DAM WATER CONSERVATION POOL	The COE completed a feasibility study to expand the current water conservation pool behind the Whittier Narrow Dam from 2,500-acre feet at elevation 201.6 feet up to as high as elevation 209 feet. The pool, to be built by the Water Replenishment District (WRD), will increase groundwater percolation for increased water supply; it is expected to save the WRD $1 million annually. The COE regional headquarters in San Francisco is currently reviewing the study. The project will affect other projects proposed within the Whittier Narrows flood control basin. Opportunities to integrate recreational and habitat uses in the design of the ponding area should be explored.	WRD; LADPR	●	●	○	●	●		○	○	●	○				

● = Definite Opportunity ○ = Potential Opportunity

MASTER PLAN PROJECTS ACTION GRID

Reach 5

ID NUMBER	LOCATION/ CITY	PROJECT NAME	PROJECT DESCRIPTION	PROJECT LEAD(S)	Plan Elements: Habitat	Recreation	Open Space	Flood Protection	Water Quality & Supply	Land Use/Econ. Dev't.	Project Concepts: Habitat Enhancement	Parks & Open Space	Water Quality & Supply	Trail Enhancement	Bridges & Gateways	Education Center	Land Reclamation	Studies
R5.01	PICO RIVERA	PICO RIVERA GOLF COURSE	This proposed golf course would replace an old campground south of the Pico Rivera Sports Arena. An environmentally-friendly "green" golf course design will be needed to address water quality issues. The design suggests at least three holes in the riverbed.	Pico Rivera; Congressmember Esteban Torres	●	●	●	❍	●	●	❍	●	❍					
R5.02	PICO RIVERA	PEGASUS RANCH PARK	A river adjacent park was proposed for this site at a former equestrian facility. It has subsequently been determined to no longer be a viable project.	RMC														
R5.03	PICO RIVERA	BEVERLY BOULEVARD GATEWAY	This gateway provides a key entry point from the City of Pico Rivera to the river and the San Gabriel River Bike Trail.	Pico Rivera		●	❍			●				❍	●			
R5.04	UNINCORP. LA COUNTY	AMIGO PARK IMPROVEMENTS	LADPR would like to revitalize Amigo Park, adjacent to the east bank of the river. Providing access from the park to the river may provide more opportunities for the community to exercise safely. Planting native trees would improve the area's appearance and contribute to wildlife habitat. Landscaping, directional signage and more amenities will also enhance safety, security and enjoyment of the park.	LADPR, Pico Rivera	❍	●	●		❍			●		❍	❍			
R5.05	WHITTIER	WHITTIER GREENWAY TRAIL & CONNECTION	The City of Whittier recently built a 5-mile bike trail along an abandoned railroad right-of-way, which added 38 acres of linear open space to the City. Another extension is needed to connect it to the San Gabriel River Bike Trail. Whittier is studying four possible routes, including one to Pio Pico State Historic Park. When fully completed, the bike trail will extend from the river to the City of Brea in Orange County. This trail is part of the MTA Regional Bike Plan.	Whittier		●	●			●	❍	❍		❍	❍		●	
R5.06	WHITTIER	PIO PICO STATE HISTORIC PARK	Pio Pico was the last Governor of Mexican California. His historic Pio Pico Mansion was recently renovated and re-opened in September 2003. A new watershed enhancement project at this site will include a watershed interpretive exhibit and native, drought-tolerant landscaping. The project will open a pedestrian and bicycle access way under the existing rail line, between the park and the east side of the river. At present, the levy/rail line completely blocks the view of the river. A viewing platform may be constructed over the river, allowing people to take in the view without standing in the bike path.	Friends of Pio Pico State Historic Park Improvements	●	●	●		❍		❍	❍		❍		●		
R5.07	WHITTIER, PICO RIVERA, UNINCORP. LA COUNTY	WHITTIER BOULEVARD GATEWAY	A new gateway for the Cities of Whittier and Pico Rivera at the San Gabriel River would be designed to help enhance the image of the western portions of the two cities. The current "Gateway District" for Whittier is 2 miles east of the river. Possible partners include the California State Department of Parks and Recreation, LA County, and Caltrans.	Pio Pico SHD, City of Whittier		●	❍							❍	●			
R5.08	PICO RIVERA	PASEO DEL RIO AT SAN GABRIEL COASTAL SPREADING GROUNDS	This multi-objective 128-acre LADPW project will provide a bike trail, new native and drought-tolerant landscaping, shade structures and other park-like amenities to beautify open space surrounding the existing spreading grounds. The occasional presence of surface water creates the appearance of a lake to be enjoyed by nearby residents and other visitors. The project entails limited public access, with passive recreational and educational opportunities.	LADPW, Pico Rivera	●	●	●	❍	●		❍	●	❍	❍				
R5.09	PICO RIVERA	PASEO DEL RIO AT RIO HONDO SPREADING GROUNDS	This multi-objective 570-acre LADPW project will provide a bike trail, new native and drought-tolerant landscaping, shade structures and other park-like amenities to beautify open space surrounding the existing spreading grounds. The occasional presence of surface water creates the appearance of a lake to be enjoyed by nearby residents and other visitors. The project entails limited public access, with passive recreational and educational opportunities.	LADPW, Pico Rivera	●	●	●	❍	●		❍	●	❍	❍				
R5.10	PICO RIVERA	MINES AVENUE BIKE TRAIL CONNECTION	This City of Pico Rivera bike trail will provide a two-mile connection from the Rio Hondo Spreading Grounds east to the San Gabriel Spreading Grounds and from there to the San Gabriel River Bike Trail. This will be a conversion from a Class 2 bike trail to a Class 1, separating the trail from automobile traffic for increased safety.	Pico Rivera		●	❍							●	❍			

● = Definite Opportunity ❍ = Potential Opportunity

MASTER PLAN PROJECTS ACTION GRID

Reach 5 (continued)

ID NUMBER	LOCATION/ CITY	PROJECT NAME	PROJECT DESCRIPTION	PROJECT LEAD(S)	Habitat	Recreation	Open Space	Flood Protection	Water Quality & Supply	Land Use/Econ. Dev't.	Habitat Enhancement	Parks & Open Space	Water Quality & Supply	Trail Enhancement	Bridges & Gateways	Education Center	Land Reclamation	Studies
R5.11	PICO RIVERA	WASHINGTON BOULEVARD GATEWAY	This project will provide a key entry point to the river and the San Gabriel River Bike Trail from the City of Pico Rivera.	Pico Rivera		●	❍			●				❍	●			
R5.12	PICO RIVERA	SLAUSON AVENUE GATEWAY	The Slauson Avenue Gateway will serve as a key entry point to the San Gabriel River Bike Trail from the City of Pico Rivera.	Pico Rivera		●	❍			●				❍	●			
R5.13	PICO RIVERA, SANTA FE SPRINGS	TELEGRAPH AVENUE GATEWAY	This gateway will improve access to the Santa Fe Springs Park Expansion project from the Cities of Pico Rivera and Santa Fe Springs (see project R5.14).	Pico Rivera, Santa Fe Springs		●	❍			●				❍	●			
R5.14	SANTA FE SPRINGS	SANTA FE SPRINGS PARK EXPANSION	The existing 14-acre park across Telegraph Road will be expanded, with the south side for active recreational users and the north for passive recreation and habitat. The expanded north half is a proposed 13-acre Nature Sanctuary. The project will connect the San Gabriel River Bike Trail with a pedestrian-oriented zone on Telegraph Avenue, and include gateway entry features, native vegetation and potential storm water management practices.	Santa Fe Springs	❍	●	●		❍			●		❍	❍			
R5.15	DOWNEY	FLORENCE AVENUE GATEWAY	In conjunction with Wilderness Park, this project will connect the San Gabriel River Bike Trail and the City of Downey.	Downey						●				❍	●			
R5.16	DOWNEY	WILDERNESS PARK RECLAIMED WATER & OPEN SPACE PARK	This 26-acre park in the City of Downey offers varied recreational activities for residents throughout Southeast LA County. The park has a large lake of reclaimed water, which is often used for fishing derbies. A reclaimed water project will connect the lake to the park's irrigation system, reducing the need for chemical treatment of lake water and providing a migrating rest area for birds. Another project will develop six acres of land for passive recreation, using native plants. The City of Downey holds a long-term lease from Southern California Edison (SCE), which currently owns the land.	Downey	●	●	●		●		❍	●	❍	❍				
R5.17	DOWNEY	RIO SAN GABRIEL PARK INTEPRETIVE TRAIL	This existing 16-acre park adjacent to the river combines high- and low-impact recreational activities with one building for meetings and special indoor activities. The City of Downey plans to develop a native plant interpretative trail around the perimeter of the park, beginning at the river's edge. The project will include a trail made of decomposed granite, benches, trash receptacles, signage, restrooms and a picnic shelter.	Downey	●	●	●		❍	●	❍	❍		●				
R5.18	DOWNEY	FIRESTONE BOULEVARD GATEWAY	The Firestone Boulevard Gateway will provide a key entry point to the river and the San Gabriel River Bike Trail from the Cities of Downey and Norwalk.	Downey, Norwalk		●	❍			●				❍	●			

● = Definite Opportunity ❍ = Potential Opportunity

MASTER PLAN PROJECTS ACTION GRID

Reach 6

ID NUMBER	LOCATION/ CITY	PROJECT NAME	PROJECT DESCRIPTION	PROJECT LEAD(S)	Habitat	Recreation	Open Space	Flood Protection	Water Quality & Supply	Land Use/Econ. Dev't.	Habitat Enhancement	Parks & Open Space	Water Quality & Supply	Trail Enhancement	Bridges & Gateways	Education Center	Land Reclamation	Studies
R6.01	DOWNEY	DOWNEY LANDING	The City of Downey plans to develop a new, combination low-impact/high impact recreation area with ballfields and a walking trail at what was once a parking lot for the former NASA site (home to the Apollo and Space Shuttle Orbiter programs). An interpretive trail along the perimeter of the 11.5-acre park will include natural vegetation and a biofiltration swale system to capture and clean 130 acres of urban storm water runoff and provide flood protection. The project includes trailhead and trailside facilities, restrooms, a shade structure for educational purposes, benches, trashcans, drinking fountains and bike racks. The trail will be enhanced with trees providing a canopy of shade, the creek-like swale system and natural vegetation. Interpretive signage will provide information on the process being used to clean the storm water. Adjacent to the park site will be the 20,000 square foot Columbia Memorial Space Learning Center.	Downey	❍	●	●	●	●	●	❍		❍	❍		❍	●	
R6.02	DOWNEY, BELLFLOWER NORWALK	FOSTER ROAD GATEWAY	The Foster Road Gateway will serve as a key entry point and pedestrian bridge to the San Gabriel River Bike Trail for the Cities of Downey, Bellflower and Norwalk.	Downey, Bellflower, Norwalk		●	❍			●		❍		❍	●			
R6.03	BELLFLOWER	H. BYRUN ZINN PARK IMPROVEMENTS	The City of Bellflower plans open space enhancements including a pedestrian path, trees and benches to an existing four-acre park where Foster Road comes to a dead end at the river. Landscape improvements will maintain the current passive, low-impact recreational use. The project will be integrated with the Foster Road Gateway (R6.02). It is located in the Southern California Edison right-of-way.	Bellflower	❍	●	●		❍		❍	●	❍	❍				
R6.04	BELLFLOWER NORWALK	ROSECRANS AVENUE GATEWAY	This project will provide a key entry point to the San Gabriel River Bike Trail for the Cities of Bellflower and Norwalk.	Bellflower, Norwalk		●	❍			●				❍	●			
R6.05	NORWALK	EXCELSIOR DRIVE GATEWAY PARK	Excelsior Drive Gateway Park will serve as a potential entry point from Norwalk to the San Gabriel River Bike Trail.	Norwalk						●		●		❍	❍			
R6.06	BELLFLOWER	BELLFLOWER HIGH BIKE TRAIL CONNECTION	This bike trail connection from Bellflower High School east to the San Gabriel River Bike Trail at the MTA right-of-way will improve local community access to the river trail.	Bellflower		●	❍			●		❍		●				
R6.07	BELLFLOWER	RIVERVIEW PARK	Riverview Park will be a new 15-acre recreation area fronting the river. The project will provide a natural, riverfront environment serving the residents of Bellflower and many other communities up and down the river. Proposed improvements include a paved bikeway, landscaping, park benches and informational signage. A direct linkage to the San Gabriel River Bike Trail will be created, as well as linkage to the City of Bellflower West Branch Greenway. There will be an information kiosk for both the River Trail and the West Branch Bikeway (see R6.11). The State of California Resources Agency awarded the City of Bellflower a grant of $2.97 million for Riverview Park, which will be funded by Proposition 12 park bond funds. The funds will be used for land acquisition, trails, botanical gardens with native plants and passive recreation. In addition, the RMC recently awarded the City of Bellflower $100,000 in Proposition 40 planning grants to fund planning activities for the property.	Bellflower	❍	●	●		❍			●		❍		❍		❍		
R6.08	BELLFLOWER NORWALK	ALONDRA BOULEVARD GATEWAY	The Alondra Boulevard Gateway will provide a key entry point to the San Gabriel River Bike Trail for the Cities of Bellflower and Norwalk.	Bellflower, Norwalk		●	❍			●				❍	●			
R6.09	CERRITOS	CERRITOS COLLEGE BIKE LINK	A bike trail connection from Cerritos College along Alondra Boulevard west to the San Gabriel River Bike Trail will greatly improve local community access.	Cerritos, Norwalk		●	❍							●				
R6.10	BELLFLOWER	NORTH CARUTHER'S CHANNEL IMPROVEMENTS	Improvements are needed to address the algae and mosquito problem caused by slow moving water at this tributary to the San Gabriel River. Solutions include creating a soft-bottom and naturalistic channel design to facilitate water flow.	Bellflower	❍			●	●		❍	❍	●	❍				
R6.11	BELLFLOWER	WEST BRANCH GREENWAY RAILS-TO-TRAILS PROJECT	This new 2.5 mile rails-to-trails project on an abandoned Pacific Electric right-of-way will provide an west-east connection from Lakewood Boulevard to the San Gabriel River Bike Trail. The project will result in a Class I bikeway and pedestrian trail.	Bellflower, Paramount, Artesia		●	●			●	❍	❍		❍	❍		●	
R6.12	BELLFLOWER	WEST BRANCH GREENWAY BIKE CONNECTION AREA	This site is proposed for a BMX park. Acquisition of an open space area between the abandoned Pacific Electric railway and the river will be needed to create a full connection between the West Branch Greenway and the river.	Bellflower		●	❍					❍		●	❍			

● = Definite Opportunity ❍ = Potential Opportunity

MASTER PLAN PROJECTS ACTION GRID

Reach 6 (continued)

ID NUMBER	LOCATION/ CITY	PROJECT NAME	PROJECT DESCRIPTION	PROJECT LEAD(S)	Habitat	Recreation	Open Space	Flood Protection	Water Quality & Supply	Land Use/Econ. Dev't.	Habitat Enhancement	Parks & Open Space	Water Quality & Supply	Trail Enhancement	Bridges & Gateways	Education Center	Land Reclamation	Studies
R6.13	BELLFLOWER CERRITOS	ARTESIA BOULEVARD GATEWAY	The Artesia Boulevard Gateway will provide a key entry point to the San Gabriel River Bike Trail for the Cities of Bellflower and Cerritos.	Bellflower, Cerritos		●	❍			●				❍	●			
R6.14	LAKEWOOD CERRITOS	SOUTH STREET GATEWAY	This gateway could improve access to the San Gabriel River west side maintenance road and a future trail to West Gate Park. No plans have been started for this project. Design of such a project might depend on adopted recommended design guidelines that provide for some degree of consistency up and down the river.	Lakewood, Cerritos		●	❍			●				❍	●			
R6.15	CERRITOS	LIBERTY PARK IMPROVEMENT PROJECT	Improvements will be made to this existing park to provide accessibility for park users with disabilities and passive natural areas with sensory amenities. The project will upgrade an existing playground to universal access standards and provide additional playground space. Additional accessible parking will be provided along with an artificial surface track and walking trail. Amenities will also be provided for bikers and joggers on the San Gabriel River Bike Trail.	Cerritos	❍	●	●		❍			●		❍				
R6.16	LAKEWOOD CERRITOS	DEL AMO BOULEVARD GATEWAY	The Del Amo Boulevard Gateway could provide a key entry point to the San Gabriel River Bike Trail for the Cities of Lakewood and Cerritos. No plans have been started for this project. Design of such a project might depend on adopted recommended design guidelines that provide for some degree of consistency up and down the river.	Lakewood, Cerritos		●	❍			●				❍	●			
R6.17	LAKEWOOD	MAE BOYER PARK RENOVATION	The project includes river parkway enhancements and trail access to an existing 6.8-acre park adjacent to the river. Renovations include picnic shelter replacement and amenity upgrades such as parking lots, restrooms and landscaping. Construction of the first phase of this project is nearing completion. The City of Lakewood has applied for a grant for the next phase of the project.	Lakewood	❍	●	●		❍			●		❍				
R6.18	LAKEWOOD	WEST SAN GABRIEL RIVER OPEN SPACE AREA	This recently completed City of Lakewood project extends open space adjacent to the west side of the river from Carson Boulevard north to Monte Verde Park. This project provides improved bike path linkage on the west side of the river and the San Gabriel River Bike Trail on the east side, an automatic irrigation system, several species of California indigenous trees, meadow grasses and shrubs. Low growing plants are being used under the utility easements. This new park faces Rynerson Park on the east side of the river, creating landscaped parks on both sides of the river. The City of Lakewood has recently submitted a grant for Phase 2 of the project. This second phase will be an extension of the first phase from Monte Verde Park to Del Amo Boulevard.	Lakewood	❍	●	●		❍		❍	●		❍				
R6.19	LONG BEACH LAKEWOOD	CARSON AVENUE GATEWAY	The Carson Avenue Gateway will provide a key entry point to the San Gabriel River Bike Trail for the Cities of Lakewood and Long Beach. Better signage is needed for the Lakewood Equestrian Center at Rynerson Park. The intersection may require a traffic signal or an undercrossing of the service road to provide a connection from the West San Gabriel River Open Space Area to the Heartwell Golf Course and Park, which lies farther west along Carson Street. No plans have been started for this project. Design of such a project might depend on adopted recommended design guidelines that provide for some degree of consistency up and down the river. Lakewood and Long Beach may need to coordinate with each other on this project.	Lakewood, Long Beach		●	❍			●				❍	●			
R6.20	LONG BEACH	EAST-WEST PEDESTRIAN BRIDGE ENHANCEMENT	Enhancements to an existing bridge will provide a connection between the San Gabriel River Bike Trail on the east side of the river and the maintenance road used by bicyclists on the west side.	Long Beach		●	❍							❍	●			
R6.21	LONG BEACH	EL DORADO REGIONAL PARK WETLANDS	This park borders the river for about two miles, but flood control levees (berms) along the river sever the connection between activities in the park and the river. The City of Long Beach proposed this project to reconnect El Dorado Park with the river. It will create treatment wetlands in the northern section of El Dorado Park and treat San Gabriel River water, stormwater runoff, and/or reclaimed water to replace the potable water supply to the lakes and streams within the regional park.	Long Beach	●	●	●	●	●		❍	❍	●	❍		❍		
R6.22	LONG BEACH	EL DORADO NATURE CENTER MASTER PLAN	A recent Master Plan updates the existing Nature Center and surrounding landscape. Improvements will transition the landscape to more low-water and native plants. The ponds and aeration will be improved and the area south of Willow Street will be developed to expand park and open space. That area may also include treatment wetlands.	Long Beach	●	●	❍		❍		❍	●	❍	❍		❍		
R6.23	LONG BEACH	SAN GABRIEL RIVER WALK PHASE 1 & 2	The City of Long Beach proposed developing a 1.5-mile pedestrian and bicycle trail through a restored native landscape along the western bank of the river in the City of Los Angeles Department of Water & Power right-of-way. Phase 1 can be built now. The project will begin at Spring Street to the north at the El Dorado Park Golf Course, and run south to Atherton Drive just above the San Diego Freeway. Atherton Drive will provide regional access to California State University Long Beach and El Dorado Regional Park. A bridge will connect the regional trails on the east bank of the river and along Coyote Creek with the Long Beach trail system. Phase 2, another 1.5-mile stretch of new trail and open space, will begin at Spring Street and travel north along the right of way to Carson Avenue. This will connect the West San Gabriel River Open Space Area (see R6.18) in Lakewood above Carson Avenue.	Long Beach	●	●	●		❍		❍	❍		●	❍			

● = Definite Opportunity ❍ = Potential Opportunity

MASTER PLAN PROJECTS ACTION GRID

Reach 7

ID NUMBER	LOCATION/ CITY	PROJECT NAME	PROJECT DESCRIPTION	PROJECT LEAD(S)	Habitat	Recreation	Open Space	Flood Protection	Water Quality & Supply	Land Use/Econ. Dev't.	Habitat Enhancement	Parks & Open Space	Water Quality & Supply	Trail Enhancement	Bridges & Gateways	Education Center	Land Reclamation	Studies
R7.01	COYOTE CREEK WATERSHED	COYOTE & CARBON CREEKS WATERSHED MANAGEMENT PLAN	This is a two-phased project. The Phase I Management Plan headed by the County of Orange will identify and prioritize potential projects for implementation through stakeholder input and spatial analysis using Geographic Information System (GIS) mapping. The Phase II Coyote Creek-Lower San Gabriel River Watershed Feasibility Study is in its early stages pending increased funding for the U.S. Army Corps of Engineers.	County of Orange	●	●	●	●	●	○	○	○	○	○	○	○	○	●
R7.02	LOS ALAMITOS CERRITOS	COYOTE CREEK REGIONAL BIKEWAY IMPROVEMENTS	The County of Orange is currently partnering with a local non-profit organization, Trails4All, to request funding from the San Gabriel and lower Los Angeles River & Mountains Conservancy to develop this bikeway improvements project. This project will involve a Working Group of all landowners along Coyote Creek, including several cities, the Counties of Los Angeles and Orange, and other key stakeholders to develop a regional bikeway signage program and to develop a long-term Trails Needs Assessment and Master Plan.	Cerritos, Los Alamitos	○	●	○	○	○					●	○				
R7.03	LOS ALAMITOS	COYOTE CREEK DEBRIS BOOM	The City of Seal Beach received a grant from the Coastal Conservancy to investigate upgrading a debris restraint system and physical net and boom, similar to that of a fishing net, to catch and hold debris. This project will help reduce the flow of debris into the Pacific Ocean. Design has been completed by the Los Angeles County Department of Public Works.	Seal Beach	●		○	○	●				●						
R7.04	LOS ALAMITOS	LOS ALAMITOS CHANNEL TREATMENT WETLAND	Orange County proposes urban stormwater treatment wetlands to treat Coyote Creek flows, as part of the COE Coyote Creek Watershed Plan study.	County of Orange	○		●		●		○	○	●	○				
R7.05	LONG BEACH	PROPOSED CONFLUENCE BRIDGE	A proposed bike and pedestrian bridge at the Coyote Creek Confluence will connect the San Gabriel River Bike Trail to the Coyote Creek Bike Trail.	Long Beach	○	●	●	○							●			
R7.06	LONG BEACH	SAN GABRIEL RIVER WALK PHASE 3	This project is a continuation of the San Gabriel River Walk (see R6.23). This stretch of trail will extend from Atherton Drive, along the side west side of the river, potentially down to the Long Beach Marina. It will involve Seal Beach for a small segment where College Estates s Park exists, just above the 22 Freeway.	Seal Beach	○	●	●		○					●				
R7.07	SEAL BEACH LONG BEACH	LOS CERRITOS WETLAND RESTORATION (BRYANT & BIXBY)	This project proposes acquiring about 266 acres of land currently used for oil operations. The Bixby property is 181 acres and the Bryant property approximately 85 acres. The sites, located near the end of the river just north of Alamitos Bay, are surrounded by urban development but still provide valuable habitat for birds and a salt marsh field.	Seal Beach, Long Beach	●	○	●	○	●		●	○	○	○				
R7.08	SEAL BEACH	COUNTY OF ORANGE FLOOD CONTROL BASIN	This project is a modification of the existing Los Alamitos basin and pump station to expand the flood capacity for runoff flowing from southwest Orange County. Flooding probems will be alleviated in the community of Rossmoor.	County of Orange	●	○	○	●	●		○	○	●	○			○	
R7.09	SEAL BEACH	TRAIL CONNECTION BETWEEN WETLANDS	This project will connect bike trails within the City of Seal Beach to provide a complete circuit around the community linking several parks and open space areas.	Seal Beach	○	●	○							●				
R7.10	SEAL BEACH	HELLMAN RANCH WETLANDS	Potential acquisition by the City of Seal Beach of 100-acre, deed restricted property and restoration of tidally influenced trail wetland and upland habitat areas, with trail connection to Gum Grove Park and San Gabriel River Bike Trail contemplated.	Seal Beach	●	○	●	○	●	○	●	○	○	○				
R7.11	SEAL BEACH	PACIFIC COAST HIGHWAY GATEWAY	This project will provide a key entry point to the San Gabriel River Bike Trail for the Cities of Seal Beach and Huntington Beach.	Seal Beach		●	○			●				○	●			
R7.12	SEAL BEACH	PACIFIC COAST HIGHWAY BIKE TRAIL EXTENSION	This proposed extension of the Pacific Coast Highway Bike Trail through Seal Beach will connect the San Gabriel River Bike Trail to a major north/south coastal route. The final design stage has been completed but the project has not yet been constructed.	Seal Beach		●	○							●				
R7.13	SEAL BEACH	SAN GABRIEL RIVER TRAIL ENHANCEMENT	This project by the City of Seal Beach will rehabilitate the existing San Gabriel River Bike Trail. The north section of the project includes Marina Drive to Pacific Coast Highway and the south section includes Marina Drive to First Street. It will introduce new signage, fencing, educational kiosks, new picnic and bicycle storage areas, and native landscaping and vegetation. The restoration will provide public awareness and education, as well as low-impact recreation.	Seal Beach	○	●	●		○			○		●				

● = Definite Opportunity ○ = Potential Opportunity

MASTER PLAN PROJECTS ACTION GRID

Reach 7 (continued)

ID NUMBER	LOCATION/ CITY	PROJECT NAME	PROJECT DESCRIPTION	PROJECT LEAD(S)	Habitat	Recreation	Open Space	Flood Protection	Water Quality & Supply	Land Use/Econ. Dev't.	Habitat Enhancement	Parks & Open Space	Water Quality & Supply	Trail Enhancement	Bridges & Gateways	Education Center	Land Reclamation	Studies
R7.14	LONG BEACH SEAL BEACH	MARINA DRIVE GATEWAY	This project included the construction of a regional trail and landscaping along Marina Drive from 1st Street to 5th Street and provided a key entry point to the San Gabriel River Bike Trail for the Cities of Seal Beach and Long Beach. There was also a street pavement reduction from four lanes to two lanes. This project has already been completed.	Long Beach, Seal Beach			●	○		●					○	●		
R7.15	SEAL BEACH	MARINA DRIVE URBAN RUNOFF DIVERSION	The City of Seal Beach is seeking to enhance the capacity of the West End Pump Station to provide protection equivalent to the 25-year storm flow and will also construct a low flow diversion to the sewer system. This project will improve water quality to both the San Gabriel River and to Seal Beach. This project is currently 50% through its design stage and the City is seeking to obtain permits from the Orange County Sanitation District (OCSD).	Seal Beach		●			●	●				●				
R7.16	SEAL BEACH	LOS ANGELES DEPARTMENT OF WATER AND POWER OPEN SPACE	This project concerns the future dedication of land for a passive open space area at the mouth of the San Gabriel River. The amount of land dedication is to be negotiated between the City of Seal Beach and property owner during project entitlement consideration. It will have direct connections to four other projects – R7.11, R7.13, R7.14 and R7.17.	Seal Beach		○	●	●	○	○	○	○	●	○	○			
R7.17	SEAL BEACH	RIVER'S END GATEWAY	The City of Seal Beach received grants from the Rivers and Mountains Conservancy (RMC) to study open space opportunities throughout the City and to prepare concept plans for a staging area for the San Gabriel River Bike Trail at its terminus in Seal Beach. Enhancements at the staging area, which are part of overall improvements to the San Gabriel River Bikeway (projects R7.06, and R7.17), include landscaping, decorative gates, water fountains, and benches. The project is 50% through its design phase.	Seal Beach		○	●	○		○	●		○		○	●		

● = Definite Opportunity ○ = Potential Opportunity

appendix B Native Plants in the River Corridor

Planting species from the following list can enhance the overall quantity and quality of native habitat for the San Gabriel River region. While not exhaustive, the list provides an overview of the native plant species appropriate to each of the seven reaches in the San Gabriel River corridor. These plants are not considered rare, threatened or endangered (although in some cases, their associated plant community may be "special status habitat") and planting individual plant species does not necessarily constitute creating a specific habitat type.

Reach One

- *Acer macrophyllum* (big-leaf maple)
- *Alnus rhombifolia* (white alder)
- *Amorpha fruticosa* (false indigo)
- *Artemisia californica* (California sagebrush)
- *Artemisia douglasiana* (mugwort)
- *Baccharis salicifolia* (mule fat)
- *Brickellia californica* (California bricklebush)
- *Ceanothus sp.* (California lilac)
- *Cercocarpus betuloides* var. *betuloides* (mountain mahogany)
- *Epilobium canum* ssp. *latifolium (Zauschneria californica) (*California fuschia)
- *Eriogonum fasciculatum* var. *foliolosum* (California buckwheat)
- *Eriophyllum confertiflorum* (golden yarrow)
- *Lasthenia californica* (California goldenfields)
- *Lessingia filaginifolia* var. *filaginifolia* (California aster)
- *Lotus scoparius* (deer weed)
- *Lupinus bicolor* (miniature lupine)
- *Melica imperfecta* (Coast Range melic)
- *Mimulus aurantiacus* (bush monkeyflower)
- *Muhlenbergia rigens* (deergrass)
- *Nassella cernua* (nodding needlegrass)
- *Nassella pulchra* (purple needlegrass)
- *Prunus ilicifolia* ssp. *ilicifolia* (hollyleaf cherry)
- *Quercus chrysolepsis* (canyon live oak)
- *Rhamnus californica* ssp. *californica* (California coffeeberry)
- *Ribes aureum* var. *gracillimum* (golden currant)
- *Rosa californica* (California rose)
- *Rubus ursinus* (California blackberry)
- *Salix exigua* (narrow-leaved willow)
- *Salix lasiolepis* (arroyo willow)
- *Salix laviegata* (red willow)
- *Solidago californica* (California goldenrod)
- *Symphoricarpos mollis* (creeping snowberry)
- *Umbellularia californica* (California bay laurel)

Reach Two

- *Alnus rhombifolia* (white alder)
- *Amorpha fruticosa* (false indigo)
- *Artemisia californica* (California sagebrush)
- *Artemisia douglasiana* (mugwort)
- *Baccharis salicifolia* (mule fat)
- *Brickellia californica* (California bricklebush)
- *Ceanothus sp.* (California lilac)
- *Cercocarpus betuloides* var. *betuloides* (mountain mahogany)
- *Elymus condensatus* (giant wild rye)
- *Epilobium canum* ssp. *latifolium (Zauschneria californica) (*California fuschia)
- *Eriogonum fasciculatum* var. *foliolosum* (California buckwheat)
- *Eriophyllum confertiflorum* (golden yarrow)
- *Heteromeles arbutifolia* (toyon)
- *Lasthenia californica* (California goldenfields)
- *Lessingia filaginifolia* var. *filaginifolia* (California aster)
- *Lotus scoparius* (deer weed)
- *Lupinus bicolor* (miniature lupine)
- *Melica imperfecta* (Coast Range melic)
- *Mimulus aurantiacus* (bush monkeyflower)
- *Muhlenbergia rigens* (deergrass)
- *Nassella cernua* (nodding needlegrass)
- *Nassella pulchra* (purple needlegrass)
- *Platanus racemosa* (western sycamore)
- *Populus fremontii* (Fremont's cottonwood)
- *Prunus ilicifolia* ssp. *ilicifolia* (hollyleaf cherry)
- *Quercus chrysolepsis* (canyon live oak)
- *Rhamnus californica* ssp. *californica* (California coffeeberry)
- *Rhus ovata* (sugar bush)
- *Ribes aureum* var. *gracillimum* (golden currant)
- *Rosa californica* (California rose)
- *Rubus ursinus* (California blackberry)
- *Salix exigua* (narrow-leaved willow)
- *Salix lasiolepis* (arroyo willow)

- *Salix laviegata* (red willow)
- *Solidago californica* (California goldenrod)
- *Symphoricarpos mollis* (creeping snowberry)
- *Umbellularia californica* (California bay laurel)

Reach Three

- *Amorpha fruticosa* (false indigo)
- *Artemisia californica* (California sagebrush)
- *Artemisia douglasiana* (mugwort)
- *Baccharis pilularis* (coyote brush)
- *Baccharis salicifolia* (mule fat)
- *Brickellia californica* (California bricklebush)
- *Ceanothus sp.* (California lilac)
- *Cercocarpus betuloides* var. *betuloides* (mountain mahogany)
- *Elymus condensatus* (giant wild rye)
- *Epilobium canum* ssp. *latifolium (Zauschneria californica) (*California fuschia)
- *Eriogonum fasciculatum* var. *foliolosum* (California buckwheat)
- *Eriophyllum confertiflorum* (golden yarrow)
- *Heteromeles arbutifolia* (toyon)
- *Lasthenia californica* (California goldenfields)
- *Layia platyglossa* (tidy-tips)
- *Lessingia filaginifolia* var. *filaginifolia* (California aster)
- *Lotus scoparius* (deer weed)
- *Lupinus bicolor* (miniature lupine)
- *Malosma laurina* (laurel sumac)
- *Mimulus aurantiacus* (bush monkeyflower)
- *Muhlenbergia rigens* (deergrass)
- *Nassella cernua* (nodding needlegrass)
- *Nassella pulchra* (purple needlegrass)
- *Platanus racemosa* (western sycamore)
- *Populus fremontii* (Fremont's cottonwood)
- *Prunus ilicifolia* ssp. *ilicifolia* (hollyleaf cherry)
- *Quercus agrifolia* (coast live oak)
- *Quercus chrysolepsis* (canyon live oak)
- *Rhamnus californica* ssp. *californica* (California coffeeberry)
- *Rhamnus crocea* (spiny redberry)
- *Rhus ovata* (sugar bush)
- *Rhus integrifolia* (lemonade berry)
- *Ribes aureum* var. *gracillimum* (golden currant)
- *Rosa californica* (California rose)
- *Rubus ursinus* (California blackberry)
- *Sambucus mexicana* (Mexican elderberry)
- *Salix exigua* (narrow-leaved willow)
- *Salix goodingii* (black willow)
- *Salix lasiolepis* (arroyo willow)
- *Salix laviegata* (red willow)
- *Umbellularia californica* (California bay laurel)
- *Yucca whipplei* (our Lord's candle or chaparral yucca)

Reach Four

- *Amorpha fruticosa* (false indigo)
- *Artemisia californica* (California sagebrush)
- *Artemisia douglasiana* (mugwort)
- *Baccharis pilularis* (coyote brush)
- *Baccharis salicifolia* (mule fat)
- *Brickellia californica* (California bricklebush)
- *Ceanothus sp.* (California lilac)
- *Elymus condensatus* (giant wild rye)
- *Eriogonum fasciculatum* var. *foliolosum* (California buckwheat)
- *Eriophyllum confertiflorum* (golden yarrow)
- *Heteromeles arbutifolia* (toyon)
- *Juglans californica* (California walnut)
- *Lasthenia californica* (California goldenfields)
- *Layia platyglossa* (tidy-tips)
- *Lessingia filaginifolia* var. *filaginifolia* (California aster)
- *Lotus scoparius* (deer weed)
- *Lupinus bicolor* (miniature lupine)
- *Malosma laurina* (laurel sumac)
- *Melica imperfecta* (Coast Range melic)
- *Mimulus aurantiacus* (bush monkeyflower)
- *Nassella cernua* (nodding needlegrass)
- *Nassella pulchra* (purple needlegrass)
- *Platanus racemosa* (western sycamore)
- *Populus fremontii* (Fremont's cottonwood)
- *Prunus ilicifolia* ssp. *ilicifolia* (hollyleaf cherry)
- *Quercus agrifolia* (coast live oak)
- *Rhamnus crocea* (spiny redberry)
- *Rhus integrifolia* (lemonade berry)
- *Ribes aureum* var. *gracillimum* (golden currant)
- *Rosa californica* (California rose)
- *Rubus ursinus* (California blackberry)
- *Sambucus mexicana* (Mexican elderberry)

- *Salix exigua* (narrow-leaved willow)
- *Salix goodingii* (black willow)
- *Salix lasiolepis* (arroyo willow)
- *Salix laviegata* (red willow)
- *Yucca whipplei* (our Lord's candle or chaparral yucca)

Reach Five

- *Amorpha fruticosa* (false indigo)
- *Artemisia californica* (California sagebrush)
- *Artemisia douglasiana* (mugwort)
- *Baccharis pilularis* (coyote brush)
- *Baccharis salicifolia* (mule fat)
- *Brickellia californica* (California bricklebush)
- *Ceanothus sp.* (California lilac)
- *Elymus condensatus* (giant wild rye)
- *Eriogonum fasciculatum* var. *foliolosum* (California buckwheat)
- *Eriophyllum confertiflorum* (golden yarrow)
- *Heteromeles arbutifolia* (toyon)
- *Juglans californica* (California walnut)
- *Lasthenia californica* (California goldenfields)
- *Layia platyglossa* (tidy-tips)
- *Lessingia filaginifolia* var. *filaginifolia* (California aster)
- *Lotus scoparius* (deer weed)
- *Lupinus bicolor* (miniature lupine)
- *Malosma laurina* (laurel sumac)
- *Melica imperfecta* (Coast Range melic)
- *Mimulus aurantiacus* (bush monkeyflower)
- *Nassella cernua* (nodding needlegrass)
- *Nassella pulchra* (purple needlegrass)
- *Platanus racemosa* (western sycamore)
- *Populus fremontii* (Fremont's cottonwood)
- *Prunus ilicifolia* ssp. *ilicifolia* (hollyleaf cherry)
- *Quercus agrifolia* (coast live oak)
- *Rhamnus crocea* (spiny redberry)
- *Rhus integrifolia* (lemonade berry)
- *Ribes aureum* var. *gracillimum* (golden currant)
- *Rosa californica* (California rose)
- *Rubus ursinus* (California blackberry)
- *Sambucus mexicana* (Mexican elderberry)
- *Salix exigua* (narrow-leaved willow)
- *Salix goodingii* (black willow)
- *Salix lasiolepis* (arroyo willow)
- *Salix laviegata* (red willow)
- *Yucca whipplei* (our Lord's candle or chaparral yucca)

Reach Six

- *Amorpha fruticosa* (false indigo)
- *Artemisia californica* (California sagebrush)
- *Artemisia douglasiana* (mugwort)
- *Baccharis pilularis* (coyote brush)
- *Baccharis salicifolia* (mule fat)
- *Ceanothus sp.* (California lilac)
- *Elymus condensatus* (giant wild rye)
- *Eriogonum fasciculatum* var. *foliolosum* (California buckwheat)
- *Eriophyllum confertiflorum* (golden yarrow)
- *Heteromeles arbutifolia* (toyon)
- *Lasthenia californica* (California goldenfields)
- *Layia playtglossa* (tidy-tips)
- *Lessingia filaginifolia* var. *filaginifolia* (California aster)
- *Lotus scoparius* (deer weed)
- *Lupinus bicolor* (miniature lupine)
- *Malosma laurina* (laurel sumac)
- *Mimulus aurantiacus* (bush monkeyflower)
- *Nassella cernua* (nodding needlegrass)
- *Nassella pulchra* (purple needlegrass)
- *Platanus racemosa* (western sycamore)
- *Populus fremontii* (Fremont's cottonwood)
- *Quercus agrifolia* (coast live oak)
- *Rhamnus crocea* (spiny redberry)
- *Rhus integrifolia* (lemonade berry)
- *Rosa californica* (California rose)
- *Rubus ursinus* (California blackberry)
- *Sambucus mexicana* (Mexican elderberry)
- *Salix exigua* (narrow-leaved willow)
- *Salix goodingii* (black willow)
- *Salix lasiolepis* (arroyo willow)
- *Salix laviegata* (red willow)
- *Yucca whipplei* (our Lord's candle or chaparral yucca)

Reach Seven

- *Amorpha fruticosa* (false indigo)
- *Artemisia californica* (California sagebrush)
- *Artemisia douglasiana* (mugwort)
- *Baccharis pilularis* (coyote brush)

- *Baccharis salicifolia* (mule fat)
- *Ceanothus sp.* (California lilac)
- *Elymus condensatus* (giant wild rye)
- *Eriogonum fasciculatum* var. *foliolosum* (California buckwheat)
- *Eriophyllum confertiflorum* (golden yarrow)
- *Heteromeles arbutifolia* (toyon)
- *Lasthenia californica* (California goldenfields)
- *Layia platyglossa* (tidy-tips)
- *Lessingia filaginifolia* var. *filaginifolia* (California aster)
- *Lotus scoparius* (deer weed)
- *Lupinus bicolor* (miniature lupine)
- *Malosma laurina* (laurel sumac)
- *Mimulus aurantiacus* (bush monkeyflower)
- *Nassella cernua* (nodding needlegrass)
- *Nassella pulchra* (purple needlegrass)
- *Platanus racemosa* (western sycamore)
- *Populus fremontii* (Fremont's cottonwood)
- *Quercus agrifolia* (coast live oak)
- *Rhus integrifolia* (lemonade berry)
- *Rosa californica* (California rose)
- *Rubus ursinus* (California blackberry)
- *Sambucus mexicana* (Mexican elderberry)
- *Salix exigua* (narrow-leaved willow)
- *Salix goodingii* (black willow)
- *Salix lasiolepis* (arroyo willow)
- *Salix laviegata* (red willow)

appendix C Design Guideline Topic Areas

Many of the design guidelines developed for the Los Angeles River should be applicable to the San Gabriel River. During implementation of the San Gabriel River Corridor Master Plan, it is envisioned that the Steering Committee will assess the design guidelines developed for the Los Angeles River and will adapt them to the San Gabriel River corridor. The following comprises a list of topic areas to be covered in the functional design guidelines that will be prepared for the San Gabriel River Master Plan as separate technical appendices. These topic areas are derived from the three design guideline manuals prepared for the Los Angeles River Master Plan:

Landscaping Guidelines and Plant Palettes

- Landscape Design Considerations
- Land Use and Maintenance Standards
- River Planting Guidelines
  - Site Characterization
  - Design Following Site Characterization
  - Design with Native Plants
  - Planting Patterns, Density, and Setback Guidelines
  - Species and Structural Density
  - Existing Landscape Plants
  - Gateways
  - Plants That Should Never Be Planted Along the River
  - Plant Community Lists
- Site Preparation Guidelines
  - Capture and Infiltration of Rainfall
  - Weed Abatement
  - Soil Amendment
- Landscape Planting Guidelines
  - Contract Collecting and Growing
  - Container Plant Sizes and Installation Guidelines
  - Installation Schedule
  - Seed Planting
- Landscape Maintenance Guidelines
  - Supplemental Irrigation
  - Extended Maintenance Program
  - Pruning and Removal of Plants
  - Weeding and Supplemental Mulching
- Hardscape Elements
  - Fences and Gates
  - Lighting
  - Benches
  - Seatwalls
  - Trash Receptacles
  - Bicycle Racks
  - Drinking Fountains
  - Trails and Paths
  - Signs

Landscaping Maintenance and Operations

- Los Angeles County Flood Control District Maintenance Standards
- Irrigation System Management
- Weed Management
- Tree Maintenance
- Shrub Maintenance
- Groundcover Maintenance
- Wildflower and Meadow Maintenance
- Grass, Sedge, and Yarrow Management
- Vine Maintenance
- Litter Control
- Hardscape, Site Furnishings, and Graffiti
- Soils Testing, Fertilization, and Mulch
- Pest Management
- Green Waste Management

Sign Guidelines

- Use and Purpose of Sign Guidelines
- Standard Design Elements
- Design Specifications
- Installation and Maintenance

appendix D Program EIR Summary

A Program Environmental Impact Report (Program EIR) was released for public review and comment in conjunction with the Draft San Gabriel River Corridor Master Plan. The Program EIR is intended to streamline the environmental review and documentation process for stakeholders proposing projects in the river corridor. The document is available for review at County offices in Alhambra and on the County website: http://ladpw.org/pln/sgrmp/

CEQA Requirements

Pursuant to the California Environmental Quality Act (CEQA), discretionary decisions by public agencies regarding certain public and private projects are subject to environmental review. The San Gabriel River Corridor Master Plan must comply with CEQA because it is a "project" as defined by Section 15378 of the State CEQA Guidelines.

LADPW has prepared a Program EIR in compliance with the CEQA Statutes (Public Resources Code Section 21000 *et. seq.*) and the State CEQA Guidelines (Title 14, California Code of Regulations Section 15000 *et. seq.*) as amended.

The purpose of the Program EIR is to:

1. Fully disclose to the project's decision-makers, responsible agencies, interested parties, and to the general public the significant or potentially significant environmental effects of implementing the proposed project;
2. Identify possible ways to avoid or reduce those impacts; and
3. Describe reasonable alternatives to the proposed project.

Program EIR Approach

The San Gabriel River Corridor Master Plan is a set of policies and actions to increase open space, habitat and recreation in the San Gabriel River corridor. The Program EIR considers the environmental impacts, mitigation measures and alternatives of the proposed Master Plan as a whole. This approach avoids duplication, allows the lead agency to consider broad policy alternatives and mitigation measures at an early time when there may be more flexibility to address the issues, and addresses cumulative impacts that might be overlooked in a project-level EIR.

Program EIRs are broader and contain less detail than Project EIRs. That's because specific sites and/or construction and operation plans have not been determined. The level of detail in the impact analysis reflects the level of detail in the project description. Based on preliminary planning, more detailed environmental analysis is provided for the two County-sponsored Concept Design Studies (San Gabriel Canyon Spreading Grounds and Lario Creek) and three other Concept Design Studies (Woodland Duck Farm, El Dorado Regional Park Wetlands and San Gabriel River Discovery Center at Whittier Narrows Regional Park).

As the Concept Design Studies are proposed for implementation, project proponents would review the Program EIR and determine if it sufficiently analyzes the environmental effects of the individual project. If the subsequent activity would have effects not covered by the Program EIR, a second-tier CEQA document (a Negative Declaration or an EIR) would then be prepared. For other projects within the Master Planning area, the Program EIR provides data on existing conditions, CEQA thresholds of significance, possible mitigation measures, and future analyses expected to be required.

EIR Process

Notice of Preparation

LADPW filed a Notice of Preparation (NOP) for this Program EIR with the State Clearinghouse in April 2003. It was distributed to responsible agencies and interested parties for a 30-day review and comment period, ending May 28, 2003. LADPW received 21 comment letters on the NOP. CEQA related comments were also received during the CEQA scoping meeting held at LADPW offices in Alhambra on May 12, 2003. The comments received related to surface and groundwater quality, flood control, water rights, mineral resources, construction impacts on utilities, traffic/transportation facilities, recreational facilities (e.g., bike trails), and effects on public health (creation of habitat for mosquitoes and other vectors).

Program EIR Public Review

Following publication of the Draft Program EIR, there will be a public review and comment period during which LADPW will accept written comments on the document. LADPW will hold a public meeting on the Draft Program EIR, at which time other agencies, interested parties and the public will be invited to orally comment on the document. Written and oral comments which raise environmental issues will be responded to, and the comments and responses will be published in a document entitled Final Program Environmental Impact Report (Final Program EIR). Following its publication, the Final Program EIR will be certified by the County of Los Angeles Board of Supervisors prior to adoption of the San Gabriel River Corridor Master Plan and the Mitigation Monitoring and Reporting Plan.

Scope of the EIR

Based on a preliminary analysis of environmental issues associated with the project and comments received on the NOP, LADPW concluded that the proposed project has the potential to have impacts on the following environmental issues:

- Air quality
- Biological resources
- Cultural resources
- Geology and soils
- Hazards and hazardous materials
- Hydrology and water quality
- Land use
- Noise
- Public services and utilities
- Recreation
- Transportation and traffic

Based on the preliminary analysis, LADPW determined that the proposed project would have no or negligible impacts on the environmental issues listed below. Therefore, these environmental issues have been excluded from analysis in the Program EIR.

- Agricultural resources
- Population and housing (growth inducing impacts are addressed in Section 6 of the EIR.)

Areas of Known Controversy

In the course of preparation of the San Gabriel River Corridor Master Plan and the Program EIR, the following issues of concern have been identified and are addressed in the Program EIR:

- Potential effects on existing flood control facilities and capacities associated with actions involving modification of the river channel
- Potential effects on surface and groundwater rights associated with actions involving groundwater recharge or surface diversions
- Potential effects on public health from increase in mosquito-breeding conditions associated with creation of constructed wetlands or other surface water features

Organization of the Program EIR

The Program EIR is organized in six major sections.

SECTION 1—SUMMARY. A summary of the contents of the Program EIR.

SECTION 2—INTRODUCTION. Background, project objectives, lead agency identification, the purpose and overview of the EIR process, scope of the Program EIR, responsible agencies and approvals, and areas of known controversy.

SECTION 3—PROJECT DESCRIPTION. Project location, and descriptions of the Concept Design Studies, and Master Plan policies.

SECTION 4—ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES. Description of the environmental setting, criteria for determining impact significance, analysis of project-related impacts, description of mitigation measures for each environmental topic, and summary of future analyses.

SECTION 5—CUMULATIVE IMPACTS. A discussion of past, present and reasonably anticipated future activities that could add impacts to those of the proposed project.

SECTION 6—ADDITIONAL CEQA ANALYSIS. Additional analyses required by CEQA, including a discussion of the impacts of project alternatives, irreversible environmental changes, unavoidable environmental impacts, growth-inducing impacts, and consistency with regional and local planning.

APPENDICES. A list of references, acronyms and abbreviations, glossary, organizations and persons consulted, and preparers of the Program EIR; NOP and comments received; and the technical materials and data supporting the air quality and cultural resources analyses presented in the Draft Program EIR.

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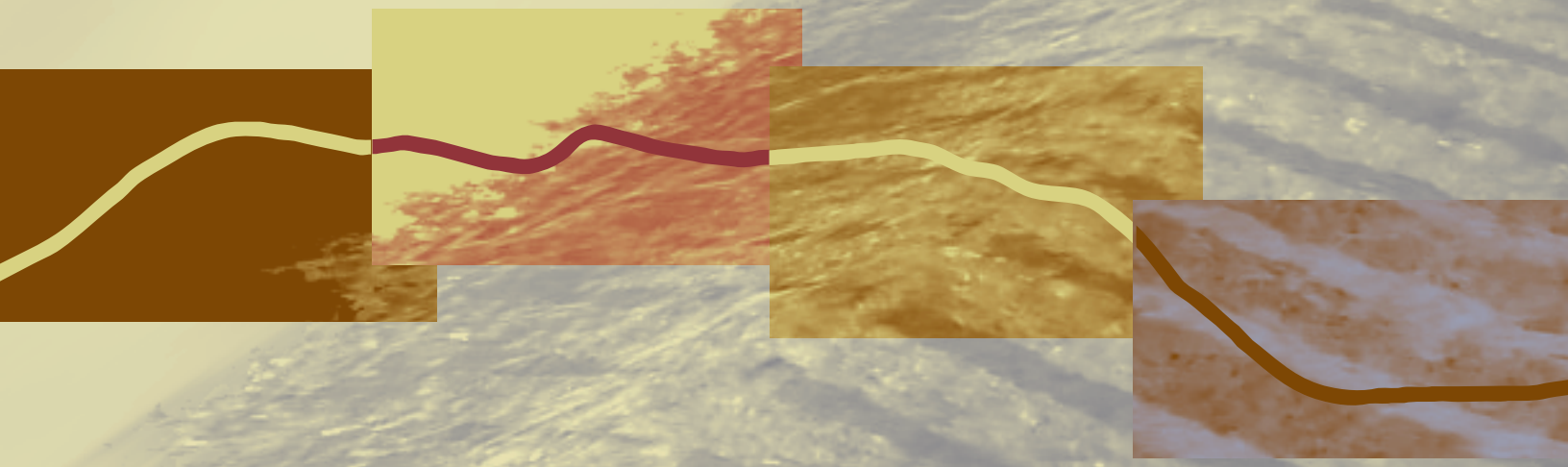
SAN GABRIEL RIVER MASTER PLAN

SCH NO. 2003041187

JUNE 2006

final program environmental impact report



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County of Los Angeles
Department of Public Works

prepared by
MWH

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

Final
Program Environmental Impact Report

San Gabriel River Corridor Master Plan

SCH No. 2003041187

June 2006

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Section 1
Executive Summary

This Final Program Environmental Impact Report (Program EIR) presents the results of an analysis of the environmental effects of the San Gabriel River Corridor Master Plan (Master Plan) proposed by the County of Los Angeles Department of Public Works (LADPW) as CEQA Lead Agency. The agency and public comments received on the Draft Program EIR and responses to these comments are presented in **Appendix F**. The Master Plan is an overall conceptual plan that focuses primarily on developing the river corridor as an integrated watershed system that enhances habitat, provides recreational benefits, and protects open space, while maintaining and enhancing flood protection and water resources.

1.1 BACKGROUND

The San Gabriel River extends from the Angeles National Forest through the San Gabriel Valley and the Los Angeles Coastal Plain to the Pacific Ocean. Engineered modifications currently present along the River provide flood protection for surrounding urban development. These modifications have also allowed development almost to the River's edge, decreasing open space and altering natural habitats. In order to address conditions along the River, the County of Los Angeles Board of Supervisors passed a resolution in 1999 instructing the Department of Public Works to prepare a San Gabriel River Master Plan for Board approval, with the assistance of the Department of Regional Planning, Department of Parks and Recreation, and the National Park Service (NPS) (Rivers, Trails, and Conservation Assistance Program). To develop the Master Plan, LADPW established the San Gabriel River Master Plan Steering Committee (Steering Committee) composed of a broad range of stakeholders, including: cities along the river; water and regulatory agencies; interested community, business, and environmental groups; and other interested individuals. The Steering Committee is open to the public, and members have met more than 40 times over the past 4 years. In addition to the Steering Committee, a Planning Committee consisting of Los Angeles County, San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy (RMC), and NPS staff meets monthly.

1.2 PROJECT OBJECTIVES

The Steering Committee and LADPW developed a vision statement and a set of broad goals. As defined by the Steering Committee, the vision for the project is:

> *The San Gabriel River will be the corridor of an integrated watershed system while providing protection, benefit and enjoyment to the public.*

The following goals of the Master Plan support the vision for the San Gabriel River:

1. Habitat: Preserve and enhance habitat systems through public education, connectivity, and balance with other uses.

2. Recreation: Encourage and enhance safe and diverse recreation systems, while providing for expansion, equitable and sufficient access, balance, and multi-purpose uses.

3. Open Space: Enhance and protect open space systems through conservation, aesthetics, connectivity, stewardship, and multi-purpose uses.

4. Flood Protection: Maintain flood protection and existing water and other rights while enhancing flood management activities through the integration with recreation, open space, and habitat systems.

5. Water Supply and Water Quality: Maintain existing water and other rights while enhancing water quality, water supply, groundwater recharge, and water conservation through the integration with recreation, open space, and habitat systems.

6. Economic Development: Pursue economic development opportunities derived from and compatible with the natural aesthetic and environmental qualities of the river.

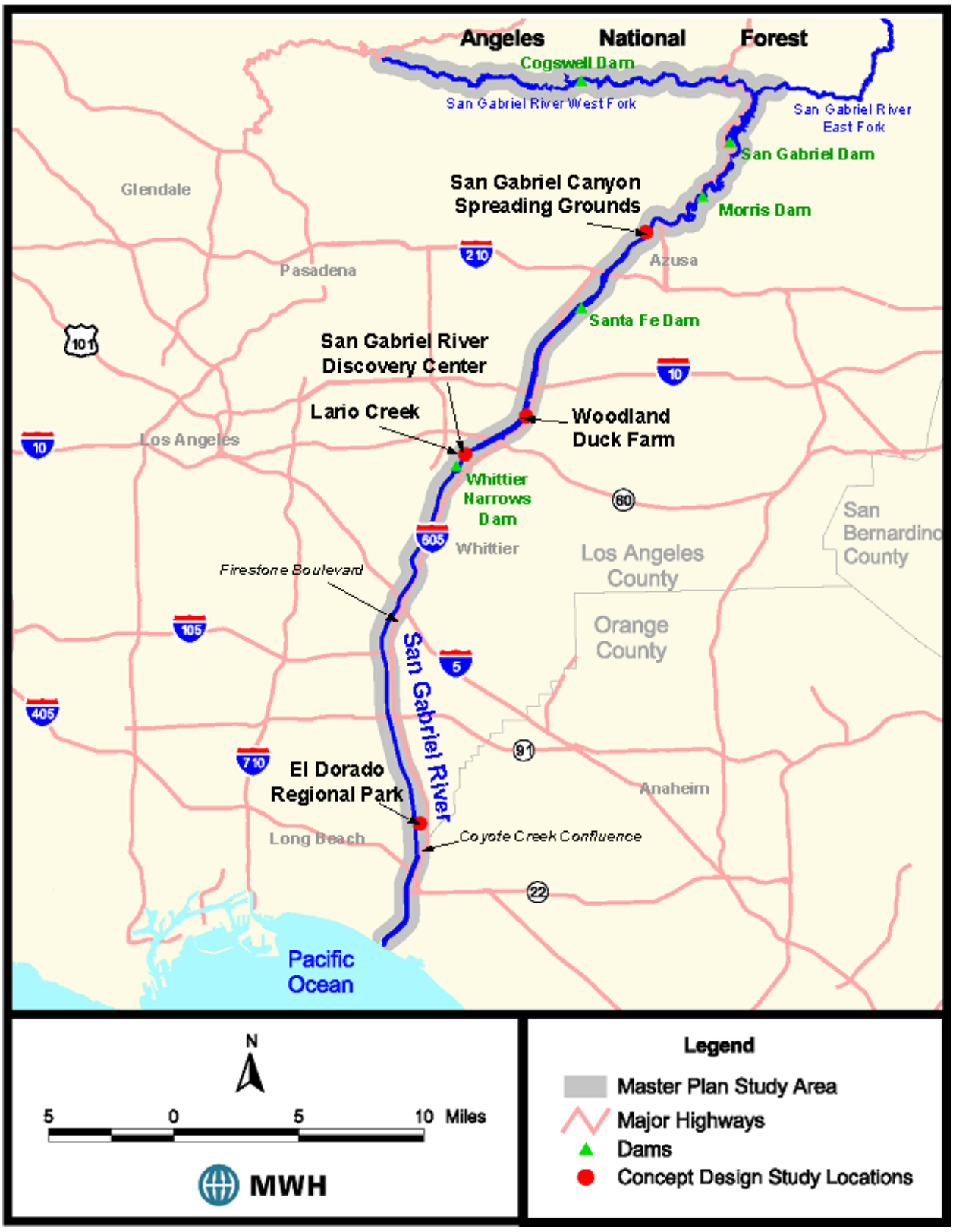
Pursuant to State CEQA Guidelines Section 15124, these goals also serve as the CEQA project objectives for the Master Plan.

1.3 PROJECT LOCATION AND ENVIRONMENTAL SETTING

The Master Plan study area is a 1-mile wide corridor along 58 river miles of the San Gabriel River from its headwaters in the San Gabriel Mountains to its terminus at the Pacific Ocean between Long Beach and Seal Beach (**Figure 1-1**). The headwaters extend from the West Fork of the River upstream of Cogswell Dam in the Angeles National Forest. The study area includes 19 cities as well as unincorporated areas of Los Angeles and Orange Counties, and encompasses a total of approximately 58 square miles.

The northern-most portion of the Master Plan study area from the headwaters to the area downstream of Morris Dam is located within the San Gabriel Mountains. Existing land uses in this area consist mostly of open space and recreation areas (Angeles National Forest) and public facilities related to flood control and water resource management (e.g., San Gabriel Dam, Morris Dam and associated maintenance facilities). Downstream of Morris Dam beginning in the City of Azusa, the Master Plan study area consists of a variety of urban land uses, including residential, commercial, and industrial. From Azusa to Long Beach, the River parallels almost the entire length of the Interstate 605 Freeway. Other freeways that cross the study area are (from north to south): Foothill Freeway (I-210), San Bernardino Freeway (I-10), Pomona Freeway (SR 60), Santa Ana Freeway (I-5), Century Freeway (I-105), Artesia Freeway (SR 91), and San Diego Freeway (I-405).

Figure 1-1
Project Location



The San Gabriel River is part of an extensive network of channels, dams, and spreading grounds used for flood control and water conservation. LADPW and the United States Army Corps of Engineers are the two primary agencies responsible for operating these facilities. Except in reaches upstream of Morris Dam, the River has been modified to make the channel straighter, deeper, and narrower, and the sides and/or the bottom of the channel have been lined with concrete or stones. The San Gabriel River Watershed (the area that drains into the River) encompasses 635 square miles. The major tributaries to the River are Walnut Creek, San Jose Creek, and Coyote Creek. The Rio Hondo, a distributary of the River, branches from the River just below Santa Fe Dam and flows westward to the Whittier Narrows area.

At Whittier Narrows, portions of the flow from the San Gabriel River are conveyed to the Rio Hondo, which then joins the Los Angeles River. Major flood control and water resource management facilities located along the San Gabriel River include Cogswell Dam, San Gabriel Dam, Morris Dam, Santa Fe Dam, and Whittier Narrows Dam. The Master Plan study area spans two groundwater basins: the San Gabriel Valley Basin and Central Basin. Many spreading grounds are used to recharge these groundwater basins.

1.4 PROJECT DESCRIPTION

During the course of the Master Plan development process, over 130 independently sponsored enhancement projects were identified by the member agencies and organizations of the Steering Committee. Each of these projects incorporate one or more of the Master Plan goals of enhancing habitat, recreation and open space, while maintaining and enhancing flood protection, water supply and water quality. The Master Plan provides guidelines to help coordinate these independent projects and to facilitate the achievement of the shared vision and goals for the San Gabriel River corridor.

The Master Plan includes:

- **Master Plan Vision, Goals, Objectives and Performance Criteria –** For each Master Plan goal (habitat, recreation, open space, flood protection, water supply and water quality, and economic development; see **Section 1.2**), the Steering Committee and LADPW defined multiple objectives that support the Master Plan vision and the goal. Performance criteria were then developed to measure progress toward those objectives.

- **River Enhancement Project Concepts –** The following eight categories of project concepts were developed from a collective review of proposed projects along the San Gabriel River. The eight project concepts illustrate the types of projects that can be implemented along the river corridor to help achieve the vision and goals of the Master Plan.

    - □ Trail Enhancements
    - □ Educational Centers
    - □ Bridges, Gateways and Connections
    - □ Parks and Open Space
    - □ Redevelopment and Reclamation
    - □ Habitat Enhancement
    - □ Water Quality and Supply

- Studies

- **River Corridor Projects, Policies, and Programs**, **and Design Guidelines –** River corridor-wide efforts, policies, and guidelines intended to connect site-specific projects or address issues common to most Master Plan projects. The aesthetic design guidelines identify the types of materials, colors, and forms that can be incorporated into the design of project facilities (e.g., fences, gates, and walls) and landscaped areas to create an identity for the River.

- **Stakeholder Projects –** Summary descriptions of 134 projects suggested or proposed by Steering Committee members. Five of these projects are highlighted in the Master Plan as Concept Design Studies (see below).

- **Concept Design Studies –** Five of the stakeholder projects are highlighted in the Master Plan as Concept Design Studies (see **Figure 1-1** for locations). The Concept Design Studies were defined to illustrate the types of multi-purpose projects to be fostered by the Master Plan. The conceptual project descriptions detailed in the Master Plan are the result of a Steering Committee exercise to help provide tangible examples of how the Master Plan multi-objective approach might apply to projects in the San Gabriel River corridor. These studies are intended for illustration purposes only and do not necessarily reflect the intent of the project sponsors. Environmental analysis in this Program EIR is based on the conceptual project descriptions in the Master Plan.

  - **San Gabriel Canyon Spreading Grounds** – Proposed by LADPW and the City of Azusa, this project will provide aesthetic improvements and recreational amenities for the area between the River and the San Gabriel Canyon Spreading Grounds. Potential project elements include improvements to the fencing around the spreading basins, landscaping, habitat restoration/enhancements, trail enhancement, and interpretive signage.

  - **Woodland Duck Farm** – Proposed by the Watershed Conservation Authority (WCA), this project will modify an abandoned duck farm site into an open space area with passive recreation and native habitat enhancements. Potential project elements include trails, habitat, improved site access and parking, an educational center, and constructed wetlands.

  - **San Gabriel River Discovery Center at Whittier Narrows** – Proposed by the Upper San Gabriel Valley Municipal Water District, County of Los Angeles Department of Parks and Recreation, and RMC, this project will include replacement of the existing Whittier Narrows Nature Center building with a new San Gabriel River Discovery Center, habitat restoration/enhancements, improvements to the existing trail system, and development of constructed wetlands.

  - **Lario Creek** – Proposed by LADPW and North East Trees, this project will enhance water conservation by increasing the capacity of Lario Creek, a man-made conveyance structure operated by LADPW to divert water from the San Gabriel River to the Rio Hondo through the Whittier Narrows Flood Control Basin. The project also proposes

improvements to the surrounding Whittier Narrows Nature Area (e.g., trails, signage, constructed wetlands, and habitat restoration/enhancements).

- **El Dorado Regional Park** – Proposed by the City of Long Beach, this project includes improvements to the City's El Dorado Regional Park. Potential project elements include: development of constructed wetlands, replacement of the existing water supply for the man-made lakes in the park with a non-potable source, and habitat restoration/enhancements.

1.5 PROGRAM EIR APPROACH

The Master Plan is a set of policies and actions to increase open space, habitat, and recreation opportunities in the San Gabriel River corridor. Pursuant to the State CEQA Guidelines Section 15168, this document has been prepared as a Program EIR to consider the environmental impacts, mitigation measures and alternatives of the proposed Master Plan as a whole. Because this document is a Program EIR, it generally contains less detail than typical development project EIRs. For the most part, specific sites and/or construction and operation plans have not been determined. The level of detail in the impact analysis reflects the level of detail in the project description. Based on the conceptual designs described in the Master Plan, more detailed descriptions are provided for the Concept Design Studies (San Gabriel Canyon Spreading Grounds, Lario Creek, Woodland Duck Farm, El Dorado Regional Park, and San Gabriel River Discovery Center at Whittier Narrows).

However, since the project descriptions for the Concept Design Studies are conceptual and not approved plans, this EIR is not meant to be a project-level review of the Concept Design Studies, but instead analyzes their impacts (as best as can be determined at this preliminary stage in their design) as examples of Master Plan projects and the types of impacts expected. For each of these sites, the actual planning process by project sponsors still needs to be carried out or is ongoing, including appropriate public involvement and environmental review. For several sites, potential project elements that are different from the concept designs described in the Master Plan have been identified during the planning process by project sponsors. As the Concept Design Studies or other future Master Plan projects are proposed for implementation, project proponents will prepare a second-tier CEQA document (a Negative Declaration or an EIR) for each project. The data on existing conditions, CEQA thresholds of significance, and the programmatic analyses and mitigation measures presented in this Program EIR will then serve as a source of background information and model to guide further project-level CEQA review for the Concept Design Studies, or other Master Plan projects. This document is intended to streamline the environmental review and documentation process for Steering Committee members proposing projects in the river corridor.

1.6 CEQA ALTERNATIVES

The Master Plan document does not detail any alternatives. Therefore, for the purposes of EIR analysis, the environmental effects of the following alternatives to the Master Plan were evaluated (**Table 1-1**):

Table 1-1
Summary of CEQA Alternatives

Alternative	Impact Discussion
No Project – Under this alternative, there would not be any unifying planning process or Master Plan document to guide individual projects along the river corridor proposed by various municipalities, agencies and interest groups.	• Biological resources – reduced consistency of restoration projects, possible reduction in the use of native species and therefore reduced habitat values, no planned wildlife corridors or linkages would be established, reduced coordination for invasive species removal and therefore potentially reduced success of individual efforts • Recreation – reduced integration of trails and reduced focus on underserved areas • Open space – reduced integration of land acquisition, potentially reduced coordination of clean-up efforts • Water resources – elimination of another coordination mechanism for TMDL and NPDES processes • Aesthetics – reduced potential for common design elements for signs, fences, gates, etc. Under the No Project alternative, the environmental benefits that would result from the collaborative process and the multi-objective planning approach advocated by the Master Plan would be reduced. Therefore, the No Project alternative is not considered environmentally superior to the Proposed Project.
Maximum Habitat Alternative - Under this alternative, each future Master Plan project would maximize the opportunities for habitat preservation and enhancement available at each site. The recreation component of each project would consist mostly of passive forms of recreation that are compatible with the habitat component of the project (e.g., bird watching, wildlife appreciation, etc.).	This alternative does not avoid any significant unmitigable impacts identified for the Proposed Project but would have greater beneficial impacts on biological resources than the proposed Master Plan by encouraging a greater number of projects to maximize habitat enhancement and preservation of open space. The Maximum Habitat Alternative would mostly avoid potentially adverse impacts associated with the Recreation, Flood Protection, Water Quality, and Economic Development Elements. For example, this alternative would largely avoid the traffic, noise, and air pollutant emissions related to an increase in recreational visitor trips associated with active recreation. For this reason, and since this alternative would maximize habitat restoration efforts within the river corridor resulting in greater beneficial impacts on biological resources, it can be considered the environmentally superior alternative. However, this alternative would not encourage projects that provide active recreation to the communities along the river. Since it would fail to meet the goal of balancing habitat, recreation, and open space, as intended by the Board of Supervisors' resolution and as defined by the project objectives, it is rejected and not proposed for adoption by the Board and the other municipalities in the river corridor.

Table 1-1 (Continued)
Summary of CEQA Alternatives

Alternative	Impact Discussion
Maximum Recreation Alternative - Under this alternative, each future Master Plan project would maximize the opportunities for providing recreational facilities, particularly those for active forms of recreation. The habitat component of each project would consist of landscaping, tree planting, and other forms of enhancements that are compatible with human activities.	This alternative does not avoid any significant impacts identified for the Proposed Project but would have greater beneficial impacts on recreation than the proposed Master Plan by encouraging a greater number of projects to maximize recreational opportunities. The Maximum Recreation Alternative would mostly avoid potentially adverse impacts associated with the Habitat, Open Space, Flood Protection, Water Quality, and Economic Development Elements. For example, this alternative would avoid impacts associated with development of stormwater retention facilities such as an increase in mosquito breeding habitat or potential liquefaction concerns. However, this alternative would have increased operational impacts on traffic, air quality, and noise associated with recreational visitors as compared to the Proposed Project. This alternative would not encourage projects that provide habitat restoration and preservation of open space reducing beneficial impacts on biological resources. Since it would fail to meet the goal of balancing habitat, recreation, and open space, as intended by the Board of Supervisors' resolution and as defined by the project objectives, this alternative is not identified as the environmentally superior alternative and it is rejected and not proposed for adoption by the Board and the other municipalities in the river corridor.
Maximum Master Plan – Under this alternative, the goal of the Master Plan would be to restore the river to more a natural state reminiscent of its condition prior to urban development (e.g., removal of dams, lined channels and other engineered features that provide flood control and water supply benefits).	Removal of concrete to re-naturalize the river would result in: • Significant flooding impacts from decreased flood control capacity currently designed into the system, or • Significant land use changes from expansion of the floodplain to accommodate flood flows, for example, the displacement of existing residential, commercial, and industrial land uses through building demolition and replacement with open space. This alternative does not avoid any significant impact identified for the proposed project but could maximize beneficial impacts on biological resources, recreation, and open space. However, this alternative would have significant impacts on water supply, flooding, land use, population, and housing. This alternative is not identified as the environmentally superior alternative and it is rejected and not proposed for adoption by the Board and the other municipalities in the river corridor.
Specific Alternatives for Individual Master Plan Projects – For many of the future Master Plan projects, more than one project description will be considered. These alternatives may focus on balancing project objectives at specific sites.	Overall, definition of component-specific alternatives will focus on balancing the multiple uses of the sites to accommodate various interests and maximize beneficial effects.

1.7 AREAS OF KNOWN CONTROVERSY

In the course of preparation of the Master Plan and the Program EIR, the following issues of concern have been identified:

- Potential impact on existing operation and maintenance of flood control facilities and capacities associated with actions involving modification of the river channel related to the integration of recreation and habitat elements.
- Potential impact on surface and ground water rights associated with actions involving groundwater recharge or surface diversions.
- Potential impact on public health from increase in mosquito- and other vector-breeding conditions associated with creation of constructed wetlands, surface or underground stormwater capture/treatment devices, other surface water features, and corridor enhancement projects in close vicinity to urban development..

Mitigation measures have been identified to reduce impacts related to these topics to less than significant levels.

1.8 SUMMARY OF IMPACTS AND MITIGATION MEASURES

As summarized below in **Table 1-2,** many of the impacts on the environment related to implementation of the Master Plan are beneficial or less than significant. For topics with potentially significant impacts, mitigation measures have been identified to reduce impacts to below a level of significance; mitigation has also been identified to further reduce less than significant effects. Impacts and mitigation measures identified for the Concept Design Studies based on the design concepts described in the Master Plan are summarized separately in **Table 1-3**.

Table 1-2
Summary of Master Plan Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
Air Quality			
• Air pollutant emissions during construction	PS	**MP-A1** Evaluations of air quality impacts during project construction will be conducted as follows during site-specific environmental review of each future Master Plan project: 1. Based on the site-specific project description, the following should be determined: • Acreage of site disturbance that would occur during excavation, grading, and/or filling • List of necessary construction equipment (number, type, hours of operation per day, and number of days in operation for each phase of construction) • Length of construction period • Number of construction workers and vehicles 2. Based on the above information, and using the latest version of the SCAQMD CEQA Handbook, construction emissions will then be estimated and compared to the thresholds of significance (Section 4.1.2). 3. If the estimated construction emissions exceed the SCAQMD threshold of significance for fugitive dust, then one or more of the following dust control measures will be implemented as applicable: • Clean dirt from construction vehicle tires and undercarriages when leaving the construction site and before entering local roadways. • During earth-moving activities, water the construction area as necessary, but at least twice per day. • Water temporary open storage piles once per hour or install temporary covers. • Water unpaved roadways three times per day or apply non-toxic soil stabilizers. (Note: Use of soil stabilizers near wetlands, streams, or other water features may be limited by regulatory agencies such as the U.S. Army Corps of Engineers and the California Department of Fish and Game.)	LS

B: Beneficial impact LS: Less than significant impact PS: Potentially significant impact

Table 1-2 (Continued)
Summary of Master Plan Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
		• Limit construction vehicle speed on the project site to 15 miles per hour (mph) or less. • Cover dirt in trucks during on-road hauling. • Cease earth-moving activities on days when wind gusts exceed 25 mph or apply water to soil not more than 15 minutes prior to moving such soil. • Sweep streets near the construction area at the end of the day if visible soil material is present. • For applicable construction areas, establish a vegetative groundcover as soon as feasible after active operations have ceased. Groundcover will be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting. • Per SCAQMD Rule 403(e), large construction operations (greater than 50 acres of disturbed area or daily earth-moving or throughput volume of 5,000 cubic yards three times during the most recent 365-day period) will implement applicable dust suppression measures specified in Table 2 of Rule 403 at all times. When the applicable performance standards cannot be met through use of Table 2 measures, the applicable contingency control measures specified in Table 3 of Rule 403 will be implemented. 4. If the estimated construction emissions exceed the SCAQMD threshold of significance for CO, ROC, NOx, SOx, then one or more of the following measures will be implemented: • Prohibit all vehicles from idling in excess of 10 minutes, both on and off-site. • Maintain construction equipment in proper tune. • Encourage contractors to establish trip reduction plans. The goal of these plans will be to achieve a 1.5 average vehicle ridership (AVR) for construction employees.	

B: Beneficial impact LS: Less than significant impact PS: Potentially significant impact

Table 1-2 (Continued)
Summary of Master Plan Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
		To further reduce tailpipe emissions from construction equipment, implementation of the following optional measure will be considered at the time of construction of individual projects. Aside from fugitive dust, the majority of construction emissions, particularly for NO_x, are generally associated with tailpipe emissions from diesel-fueled construction equipment. Using construction equipment with alternative fuel(s) can achieve high reduction efficiency for tailpipe emissions. The approximate NO_x emissions reduction rates of various alternative fuels are: 60 percent for compressed natural gas (CNG), 10 percent for emulsified diesel fuel, and 2 to 10 percent for biodiesel fuel (EPA, 2003c). However, use of construction equipment with alternative fuel(s), while effective, may not be applicable to all projects (i.e., limited equipment availability and high costs may make it infeasible to use a large fleet of construction equipment with alternative fuel(s)). • Select construction equipment with low pollutant emissions and high energy efficiency. Factors to consider include model year and alternative fuels (e.g., compressed natural gas, biodiesel, emulsified diesel, methanol, propane, butane, and low sulfur diesel).	
• Operational impacts on air quality due to increased vehicle trips for maintenance activities and visitors to recreational facilities	LS	**MP-A2** Evaluations of air quality impacts during project operation will be conducted as follows during site-specific environmental review of each future Master Plan project: 1. Based on the site-specific project description, the number of vehicle trips that would be generated by operation of proposed facilities (e.g., ongoing maintenance activities and/or visitors to recreational or educational facilities) will be estimated, and air emissions associated with those vehicle trips will be determined. If project operation involves use of electricity (e.g., lighting for parks, education center or park buildings, pumps, etc.), air emissions associated with electricity consumption will be estimated. 2. Based on the above information, and using the latest version of the SCAQMD CEQA Handbook, operational emissions will be compared to the thresholds of significance (Section 4.12).	LS

B: Beneficial impact LS: Less than significant impact PS: Potentially significant impact

Table 1-2 (Continued)
Summary of Master Plan Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
		3. One or more of the following measures will be implemented as applicable to reduce air emissions: • Implement dust control if dry conditions and substantial area is disturbed for operations and maintenance activities that involve ground disturbance. • Select energy efficient lighting features or other building design considerations for proposed facilities (e.g., park buildings or interpretive centers) to minimize emissions associated with power generation. • Select low-emissions equipment and vehicles for operations and maintenance to reduce tailpipe emissions. • Implement an employee ride-share plan to reduce vehicle trips to the facility and associated tailpipe emissions.	
Biological Resources			
• Construction impacts on special status plant and wildlife species and special status habitat types	PS	**MP-B1** Site-specific evaluations for biological resources will be conducted prior to completion of detailed design plans for each of the future projects to determine the presence of high-value vegetation types and the potential for special status plant and wildlife species to occur. The following tasks will be completed by these evaluations: 1. Identify and determine the extent of site disturbance proposed by the project. For sites where biological resources have any potential to be sensitive, continue evaluation as outlined below. 2. General plant and wildlife surveys will be performed by a qualified biologist to determine if any focused surveys for special status species are necessary. If the general surveys indicate that there is potential for sensitive plant or wildlife species to occur on the project site, focused surveys will be conducted for those species in accordance with relevant protocols at the appropriate time of the year. 3. If any special status species or high-value vegetation types are identified, the proposed	LS

B: Beneficial impact LS: Less than significant impact PS: Potentially significant impact

Table 1-2 (Continued)
Summary of Master Plan Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
		facilities will be designed and/or sited to avoid disturbance and loss of the sensitive resources. If nesting habitat of special status bird species will be impacted, project construction will be scheduled outside of the breeding season if feasible. If scheduling construction outside of the breeding season is not feasible, then a pre-construction survey will be conducted to identify nests and to establish a buffer zone between the construction area and the nests to avoid construction impacts. 4. In some instances, depending on the location of sensitive resources and/or construction schedule requirements, project redesign and/or construction phasing that avoids biological resources while still meeting the project objective may be infeasible. Therefore, if avoidance is not feasible, the following measures will be detailed and disclosed in second tier CEQA documentation and implemented under the direction of a qualified biologist: • Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment; and/or • Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the project; and/or • Compensating for the impact by replacing or providing substitute resources or environments. 5. If avoidance of impacts to listed species is not feasible, then consultation with the USFWS shall be required for federally-listed species, and consultation with the CDFG shall be required for state-listed species. If special status plants are identified, a mitigation program shall be developed following focused surveys and submitted to the appropriate agencies for review.	
• Impacts related to invasive plant species	LS - B	**MP-B2** Landscaping of vegetation will not include any invasive plant species as listed on the California Invasive Plant Council Pest Plant List.	B

B: Beneficial impact LS: Less than significant impact PS: Potentially significant impact

Table 1-2 (Continued)
Summary of Master Plan Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
• Lighting impacts on nocturnal and crepuscular (active at dawn and dusk) wildlife	LS	**MP-B3** For projects that involve use of night lighting in public areas (e.g., parks) for health and/or safety reasons, lighting will be designed to minimize effects on the behavior patterns of nocturnal and crepuscular (active at dawn and dusk) wildlife (e.g., small ground-dwelling animals that use the darkness to hide from predators, and on owls that are specialized night foragers). To reduce light impacts on nocturnal and crepuscular wildlife, night lighting will be low intensity directional lighting focused away from open space areas.	LS
• Disturbance of wildlife behavior and habitat associated with human activity (e.g., recreational visitors)	PS	**MP-B4** For projects that involve recreational uses near habitat areas, a management plan to reduce impacts from human uses (e.g., riding, hiking, biking) on native habitats will be incorporated into detailed design plans. As relevant, the management plan will include access points including parking and restrooms, signage for trails and restricted uses, appropriate fencing, and restrictions on domestic animals. This plan will be written by a qualified biologist and approved by the sponsoring agency prior to initiation of site development	LS
Cultural Resources			
• Construction impacts (site disturbance or modifications to existing structures) on cultural resources	PS	**MP-C1** Site-specific evaluations for cultural resources will be conducted as follows prior to completion of detailed design plans for each future Master Plan project: 1. Identify and determine the extent of site disturbance and/or structural modifications proposed by the project. For sites where ground will be newly disturbed (i.e., not fill soils or previously completely disturbed sites) and/or for sites with potentially historic structures present, continue evaluation as outlined below. 2. Conduct background research to identify previous cultural resources investigations and known cultural resources relevant to the project site (review records at the South Central Coastal Information Center, contact local historical societies, the Native American Heritage Commission, etc.). 3. Conduct field reconnaissance if the project site has not been surveyed for cultural resources in the last five years. 4. If potential resources are identified in the field reconnaissance, determine if avoidance is	LS

B: Beneficial impact LS: Less than significant impact PS: Potentially significant impact

Table 1-2 (Continued)
Summary of Master Plan Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
		feasible (e.g., design project to locate the proposed structures or site disturbance away from or around the area of the potential resource; a buffer of 100 meters is recommended in most cases). If feasible, the resource shall be avoided. 5. If avoidance is not feasible, evaluate the significance of the potential resource. The evaluation process may include excavation, additional review of records and literatures, interviews, field examination by a an architectural historian, and/or laboratory analysis. Based on the results of the evaluation, the significance of the potential resource should be determined using the criteria listed in Section 4.3.1.3. 6. If the resource is found to be significant, determine significance of project impacts on the resource. (Significant change to a resource includes demolition, replacement, substantial alteration, or relocation (California Code of Regulations [CCR] Section 15064.5)). 7. If project impacts are determined to be significant, the following measures (in order of preference) will be implemented to reduce impacts to below a level of significance: • Incorporating the resource into the project design (e.g., for projects involving park development or interpretive centers); or • Remove and relocate the resource to an appropriate location (e.g., museum, public library, or school)	
• Construction impacts on buried cultural resources and/or human remains	PS	**MP-C2** If previously unknown cultural resources are discovered in the course of excavation for project construction, the construction inspector shall have the authority and responsibility to halt construction until a qualified archaeologist can evaluate the significance and distribution of the materials, and identify future activities needed. If the cultural material discovered is determined to be of potential archaeological significance, the investigation and future activities shall be conducted in consultation with a culturally affiliated Native American or other parties, as necessary.	LS
		MP-C3 If human remains are discovered in the course of excavation for project construction, the County Coroner shall be contacted and provisions of State CEQA Guidelines Section 15064.5 shall be followed.	

B: Beneficial impact LS: Less than significant impact PS: Potentially significant impact

Table 1-2 (Continued)
Summary of Master Plan Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
Geology and Soils			
• Impacts related to slope instability (for projects that involve gravel mine reclamation)	PS	**MP-G2** Site-specific evaluation of slope stability will be conducted as a part of the geotechnical analyses during design of each future Master Plan project that involves modification of a gravel mine. The recommendations of the geotechnical study will include optimum slope design for stability and safety, soil compaction or recompaction requirements, surface cover, and potentially other slope stabilizing measures. The recommendations of the geotechnical analysis will be incorporated into the detailed design of the project. The results of site-specific evaluations and detailed mitigation measures, if any, will be disclosed in subsequent CEQA documentation.	LS
• Impacts related to seismic ground shaking and surface rupture	LS	None	LS
• Impacts related to liquefaction potential from proposed stormwater infiltration	PS	**MP-G1** During facility design, a site-specific geotechnical analysis will be conducted to determine soil types and groundwater levels. Based on the results of the geotechnical analysis, the potential increase in liquefaction potential from the proposed infiltration will be evaluated. Factors that will be considered include the capacity of the infiltration facility and the associated amount of water proposed for infiltration, infiltration rate, proximity and types of nearby structures (including pipelines) that could be damaged from liquefaction, and infiltration at adjacent spreading grounds, if any. If the project is determined to have the potential to cause groundwater levels to rise within 30 feet of the surface, new monitoring wells and/or existing wells in the project area will be used to detect any substantial increase in groundwater levels. If monitoring indicates a substantial rise in groundwater levels that could impact adjacent structures, stormwater would not be infiltrated and would be diverted into storm drains or onto street surfaces or routed to other stormwater management facilities as applicable. Re-diversion of storm flows will be in compliance with the applicable provisions of the relevant NPDES municipal stormwater permits.	LS
• Impacts on power line towers related to expansive soils from proposed stormwater infiltration	PS	See **MP-P4** under **Public Services and Utilities**	LS

B: Beneficial impact LS: Less than significant impact PS: Potentially significant impact

Table 1-2 (Continued)
Summary of Master Plan Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
• Impacts on habitable structures related to geologic hazards	LS	**MP-G3** The site plan and building footprint will be reviewed by a registered professional to ensure that project siting and design provides adequate protection from geologic hazards such as fault rupture (including Alquist-Priolo Earthquake Fault Zones), expansive soils, liquefaction, and unstable slopes. If a project site is located in known high risk areas with respect to geological hazards, a site-specific geotechnical study will be performed during facility design to identify potential concerns and recommended measures to reduce hazards. Recommendations in the geotechnical study will be incorporated into the final design.	LS
• Construction impacts on soil erosion	PS	See **MP-W2** under **Hydrology and Water Quality**	LS
Hazards and Hazardous Materials			
• Impacts related to potential soil contamination at project sites	PS	See **MP-W8** under **Hydrology and Water Quality**	LS
• Impacts related to handling of hazardous materials (disposal of potentially contaminated sediments during maintenance of stormwater facilities)	LS	None	LS
• Public health impacts related to potential increase in mosquito habitat	PS	**MP-H1** Project plans and designs will be submitted to the applicable vector control district (see Section 4.5.1.4) for review and comment with respect to control of mosquitoes and other vectors. Upon consultation with the vector control district, appropriate vector management measures will be incorporated into the project design. Potential management measures include the following: • Design to minimize and/or provide periodic removal of vegetation on bank slopes and periphery of water bodies to minimize areas of stagnant water. • Design and/or manage to optimize water depths and flow pattern. For mosquito control, maintain water depths and encourage/provide water circulation. For black fly control, minimize aeration of flowing water. If necessary, design water features to allow for periodical drying to desiccate vector larvae. • Work with the vector control district to stock ponds and other permanent water features with	LS

B: Beneficial impact LS: Less than significant impact PS: Potentially significant impact

Table 1-2 (Continued)
Summary of Master Plan Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
		mosquito-eating fish as needed. • Provide site access to vector control district specifications (e.g., dikes with access roads or trails) to potential breeding areas for maintenance (e.g., vegetation removal) and treatment (e.g., application of Bti or other larvicides). • Design stormwater retention facilities/devices to drain completely within 72 hours, or design with the capability to be dewatered rapidly if needed for vector control. • Incorporate measures into project designs that serve to educate the public about wildlife safety and vector-borne disease issues, prevent wildlife-human interactions, and prevent wildlife access to trash and unnatural food and water sources that are likely to result in unnatural population levels. • Design underground utility vaults, if needed for project implementation, to prevent retention of standing water thereby reducing vector breeding habitat. • Regularly consult with the vector control district to identify mosquito management problems, mosquito monitoring and abatement procedures, and opportunities to adjust water and vegetation management practices to reduce mosquito production. • Incorporate funding for vector management activities into project funding or implement a secure and reliable funding source for vector management activities.	
• Impacts related to potential increase in bird/wildlife air strike hazard at nearby airports	LS	**MP-H2** For projects located within 5 miles of El Monte Airport or Long Beach Airport, the potential for the proposed facilities to attract waterfowl and other birds will be evaluated. If the evaluation indicates that the project would attract birds, the FAA Western Pacific Regional Office, Long Beach Airport, El Monte Airport and Los Alamitos Joint Forces Training Base will be notified of the proposed land use change to recognize potentially significant hazards early in the planning process and avoid or minimize the hazards.	LS

B: Beneficial impact LS: Less than significant impact PS: Potentially significant impact

Table 1-2 (Continued)
Summary of Master Plan Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
Hydrology and Water Quality			
• Beneficial reduction in local and downstream flooding	B	None	B
• Increase in impervious surfaces or change in drainage patterns	LS	None	LS
• Impacts on channel flood capacity	PS	**MP-W1** Future projects that propose modifications to an existing flood control channel will include detailed engineering studies, including hydrologic and hydraulic modeling as applicable, to assess potential impacts on the channel's flood control capacities and effects on upstream and downstream floodplain properties and recommendations to avoid or minimize these impacts. Recommendations of the engineering studies will be incorporated into project design. Modifications to Federal Emergency Management Agency (FEMA) floodplain maps will be made as needed.	LS
• Construction impacts on surface water quality related to soil erosion	PS	**MP-W2** For future projects involving constructing, clearing, grading or excavation on areas over 1 acre in size, develop and implement a Storm Water Pollution Prevention Plan (SWPPP) to minimize the amount of runoff and associated pollutants (e.g., sediments) leaving the construction site by containing the runoff onsite, containing the sediments onsite, and/or minimizing the potential for stormwater to come in contact with pollutants. The following are possible measures to be incorporated into site-specific SWPPPs as applicable. Additional sample measures and guidelines for developing SWPPPs are available in California Stormwater Quality Association's Stormwater Best Management Practice Handbook – Construction (CASQA, 2003). Measures to reduce fugitive dust generated during construction (see Section 4.1.5 – Air Quality) will also minimize the potential for soil erosion. • Install perimeter silt fences or hay bales. • Stabilize soils through hydroseeding with native plant species where possible and use of soil stabilizers. • Install temporary sedimentation basins.	LS

B: Beneficial impact LS: Less than significant impact PS: Potentially significant impact

Table 1-2 (Continued)
Summary of Master Plan Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
		• Conduct earth moving activities during the dry season (April through October), as feasible. • Designate storage areas for construction materials, equipment, and maintenance supplies (e.g., fuels, lubricants, paints, solvents, adhesives) to keep these materials out of the rain and minimize contact with stormwater. • Conduct regular inspections to ensure compliance with the SWPPP.	
• Construction impacts on water quality during channel modifications	PS	**MP-W3** For future projects involving channel modifications, COE, Regional Board, U.S. Fish and Wildlife Service, and California Department of Fish and Game will be consulted. All necessary federal and state approvals (including CWA Section 404 permits, CWA Section 401 water quality certifications or waivers, and California Fish and Game Code Section 1602 Streambed Alteration Agreements) will be obtained prior to the implementation of construction activities. Any conditions of agency approvals (e.g., measures to minimize the potential water quality impacts associated with the channel modification) will be incorporated into the project design. Water quality mitigation options for use during construction of in-channel improvements include diversion of flows around the construction site, installation of in-stream silt curtains, or use of off-channel sediment retention ponds or tanks.	LS
• Reduction in discharges of stormwater pollutants	B	None	B
• Water quality impacts of pesticide/herbicide use in landscaped areas or for exotic species removal	PS	**MP-W4** For future projects involving landscaping, habitat restoration, and/or removal of exotic plant species, select biological or non-chemical means of controlling exotics and pests unless not feasible because biological or non-chemical controls are not readily available for the specific exotics to be controlled. If chemical pesticide or herbicide use is necessary, compounds that are less persistent in the environment will be selected, and application will be conducted in accordance with manufacturers' recommendations and general standards of use, e.g., restricted application before and during rain storms.	LS

B: Beneficial impact LS: Less than significant impact PS: Potentially significant impact

Table 1-2 (Continued)
Summary of Master Plan Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
• Operational impacts on water quality related to channel modifications	PS	**MP-W5** For future projects involving channel modifications, detailed engineering studies (including sediment transport as applicable) will be conducted to assess the impact of the proposed changes on the channel's stability and erodability and will include recommendations to avoid or minimize the impact. Recommendations of the engineering studies will be incorporated into project design to minimize impacts on surface water quality associated with potential increase in erosion of channel banks from proposed modifications.	LS
• Operational impacts on groundwater quality from stormwater infiltration	PS	**MP-W6** For projects that involve stormwater infiltration, a comprehensive stormwater and groundwater quality monitoring program will be designed and implemented, or the results of existing monitoring programs will be considered. Monitoring results will be used to assess the ongoing effectiveness of the proposed stormwater treatment methods in protecting both surface and groundwater. If monitoring results indicate substantial water quality degradation associated with project infiltration, the following strategy will be followed: • Provide additional treatment prior to infiltration, or • Redesign project to reduce or eliminate infiltration (e.g., lining), or • Identify an alternative water source (e.g., reclaimed water).	LS
• Groundwater hydrology impacts (Potential inundation of landfill material from stormwater infiltration and potential interference with ongoing cleanup of existing Superfund contamination plume in the San Gabriel Valley)	PS	**MP-W7** For projects involving groundwater recharge, the project site's proximity to existing groundwater contamination plumes and landfills (or other known hazardous materials sites that could become a contamination source if inundated with groundwater) will be evaluated. If a project site is located within or adjacent to a plume or in the vicinity of a contamination source, the effect of the proposed recharge on groundwater hydrology (changes in flow direction and levels) will be evaluated. As applicable, groundwater modeling would be conducted to determine whether the rate and amount of recharge proposed by the project could result in substantial changes to the location or shape of existing contamination plumes, or in the inundation of landfills or other contamination sources. As part of the investigation, relevant agencies, including the Regional Board, Watermasters, and agencies involved in groundwater clean-up activities (e.g., EPA and WQA), will be consulted. As applicable, Mitigation Measure CD-W4 will be implemented to prevent interaction of infiltrated water with landfill materials or other contaminant sources.	LS

B: Beneficial impact LS: Less than significant impact PS: Potentially significant impact

Table 1-2 (Continued)
Summary of Master Plan Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
• Groundwater quality impacts related to potential soil contamination at infiltration sites	PS	**MP-W8** For projects involving substantial ground disturbance where prior land use is unknown and the potential for soil contamination or other constraints (e.g., oil or gas wells) from previous land uses exists, a Phase I Environmental Site Assessment (ESA) will be conducted to determine the site-specific potential for soil contamination or other constraints. The Phase I ESA will be conducted in accordance with the latest version of the American Society of Testing and Materials (ASTM) 1527 "Standard Practice for Environmental Site Assessments: Phase I Environmental Assessment Process." This document outlines the customary practice for performing ESA's in the United States. Phase I ESA will consist of a review of site-specific documents and historical maps to determine past uses of the site, a site visit to visually inspect the property for signs of potential environmental contamination, and investigation of state and federal environmental regulatory databases to identify recognized hazardous materials usage or spills, and include review of California Department of Conservation Division of Oil, Gas, & Geothermal Resources records of oil, gas, and geothermal wells. For project sites with infiltration, the boundary of the Phase I ESA will include parcels located within 500 feet of the project site boundary to identify active or abandoned landfills or other land uses with the potential for contaminated soils which would be incompatible with infiltration (to be cross-referenced with Mitigation Measure CD-W4). If the Phase I ESA concludes that there is no substantial potential for soil contamination or other constraints, no further action would be required. If the Phase I ESA indicates that there is potential for soil to be contaminated, additional investigation (Phase II ESA, including soil sampling and analysis) will be conducted to determine the presence and extent of the contamination. If the proposed project would involve disturbance of soil in the contaminated area, soil would be removed and disposed of in compliance with applicable regulations at approved disposal sites. If the proposed project site includes or is in the immediate vicinity of oil or gas wells or if any unrecorded wells are damaged or uncovered during excavation or grading, the project proponent shall submit the information outlined in the "Construction Project Site Review and Well Abandonment Procedure" to the California Department of Conservation Division of Oil, Gas & Geothermal Resources. In order of preference, wells should be avoided, plugged or re-plugged to current Division specifications, or an adequate gas venting system should be installed if construction over an abandoned well is unavoidable.	LS

B: Beneficial impact LS: Less than significant impact PS: Potentially significant impact

Table 1-2 (Continued)
Summary of Master Plan Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
Land Use			
• Land use impacts (physical division of an established community; conflicts with applicable land use plans, policies or regulations)	B	None	B
• Impacts on availability of mineral resources	PS	**MP-L1** For future projects that propose development of facilities that would result in restriction of future mineral extraction operations (e.g., reclamation of an existing gravel mine before gravel extraction activities have been completed), site-specific evaluations described below will be conducted and the results will be disclosed in subsequent CEQA documentation: 1. Determine the site-specific availability of mineral resources by reviewing relevant publications from the California Geological Survey (e.g., SMARA Mineral Land Classification, available at: http://www.consrv.ca.gov/cgs/minerals/mlc/index.htm) and/or mine reclamation plans (if the proposed project site is an existing mine). 2. Contact the relevant SMARA lead agency (see Section 4.7.1.1) to determine whether the proposed land use change could restrict or preclude the extraction of mineral resources designated as regionally significant (MRZ-2) or locally important (as designated in a local land use plan).	LS
Noise			
• Construction noise impact on sensitive receptors	PS	**MP-N1** Evaluations of construction noise generation will be conducted as follows during site-specific environmental review of each future Master Plan project: 1. Identify noise-sensitive land uses located in the vicinity of the project site (e.g., residences, hospitals, schools, guest lodging, libraries, convalescent and retirement facilities, houses of worship, auditoriums and concert halls, outdoor theaters, nature and wildlife preserves, parks, and cemeteries). 2. Determine the existing noise environment of the project area (e.g., rural vs. high density urban). Identify nearby existing noise sources that affect the project site (e.g., heavy industrial	LS

B: Beneficial impact LS: Less than significant impact PS: Potentially significant impact

Table 1-2 (Continued)
Summary of Master Plan Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
		operations or major highways). 3. Review the relevant jurisdiction's noise regulations and policies (e.g., noise ordinances and general plan noise element) to identify construction noise standards and noise/land use compatibility guidelines. 4. Estimate the construction equipment needed and resultant noise generation (see Section 4.8.5.1). Compare the estimated construction noise levels that would be experienced by the nearest sensitive receptor to the relevant jurisdiction's construction noise standards. The impact evaluation will also take into consideration construction duration, whether the noise generated would be intermittent or continuous, and the existing noise environment of the project area. 5. If the estimated noise levels exceed the standards, one or more of the following applicable site-specific measures will be implemented to reduce noise levels to meet the relevant jurisdiction's noise standards: • Equip all mobile construction equipment with properly operating mufflers or other noise reduction devices • Install sound walls, sound curtains, or other temporary sound barriers • Select quieter construction procedures and/or equipment 6. For projects at school sites: schedule the noisier phases of construction on Saturdays, school vacation periods, and/or after regular class hours but before 9 p.m., as feasible; and maintain ongoing communications with the schools' administrators to address any construction noise-related issues.	
• Operational noise impacts of new or expanded facilities for active recreation	PS	**MP-N2** Projects that involve new or expanded facilities for active recreation (e.g., athletic fields) will be designed to minimize impacts on nearby noise-sensitive land uses, if any, by siting facilities away from noise-sensitive land uses, limiting hours of operation, installation of sound barriers, and/or using other appropriate measures as necessary.	LS

B: Beneficial impact LS: Less than significant impact PS: Potentially significant impact

Table 1-2 (Continued)
Summary of Master Plan Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
Public Services and Utilities			
• Construction impact on police and fire protection services from temporary lane and/or road closures during construction of storm drains, etc.	PS	**MP-P1** For future projects with substantial construction periods, the following measures will be implemented as applicable to minimize construction impacts on emergency response requirements of relevant police and fire departments. (See also Section 4.11.6 regarding mitigation measures related to construction impacts on traffic and roadways). • Prior to the start of construction, consult the fire station(s) serving the project area and review phasing, road/lane closure, and detour plans. The fire station(s) may then identify alternative fire and emergency medical response routes. • Prior to the start of construction, consult the police station(s) serving the project area, as appropriate, of project-related lane and/or road closures and detour plans. The police station(s) may then identify alternative police emergency response routes. • If determined to be necessary by the relevant police and/or fire service providers, implement one or more of the following applicable traffic control measures capable of reducing the temporary adverse effects to police and emergency vehicle travel during project construction: − Use flagmen to direct traffic − Post "No Parking" signs along the affected area − Install temporary signals or signs to direct traffic − Other equivalent traffic control measures	LS
• Operational impact on police and fire protection services	LS	None	LS
• Construction impact on school access and student safety • Construction impacts on school commuting routes from temporary lane and/or road closures during construction	PS	**MP-P2** For future projects located adjacent to a school, evaluate the impact on school access (vehicles and pedestrians) and student safety from operation and/or parking of construction vehicles and equipment near the school property. The school district or the school administrator will be contacted to identify any policies that the school or the school district has established regarding construction on or near school properties (e.g., noise and traffic control standards) and to	LS

B: Beneficial impact LS: Less than significant impact PS: Potentially significant impact

Table 1-2 (Continued)
Summary of Master Plan Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
of storm drains, etc.		provide sufficient notice to forewarn school bus operators, children, and parents if existing pedestrian and vehicular routes to school would be affected. As necessary to protect the safety of children, parents and employees accessing the school, one or more of the following measures will be implemented in coordination with the school administrators: • Develop temporary alternative pedestrian and vehicular routes to the school that avoid construction areas • Install appropriate temporary traffic controls (signs, crossing guards, and/or signals) as needed to ensure pedestrian and vehicular safety • Minimize use of haul routes past the school when school is in session • Prohibit parking or staging of construction or worker vehicles on streets adjacent to the school.	
• Potential interference with existing utilities within street rights-of-way from construction of storm drains, etc.	PS	**MP-P3** For future projects that include construction of pipelines or other underground structures, identify the roadways or other rights-of-way that would be affected during construction. During facility design, contact the relevant utilities (e.g., water, sewage, electricity, natural gas, telephone, cable, and oil) to identify existing and proposed buried facilities in affected roadways. To the extent feasible, the alignment of new facilities will be designed to avoid the existing utilities. If avoidance is not feasible, one or more of the following measures will be implemented as applicable: • If relocation is required, sequence construction activities to avoid or minimize interruptions in service. • If utility service disruption is necessary, notify residents and businesses in the project area a minimum of 2 to 4 days prior to service disruption through local newspapers, direct mailings to affected parties, or public posting of notices. • If project construction would occur near existing utilities, require the contractor to excavate around utilities, including hand excavation as necessary, to avoid damage and to minimize interference with safe operation and use. Hand tools must be used to expose the exact location of buried gas or electric utilities.	LS

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Table 1-2 (Continued)
Summary of Master Plan Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
• Operational impacts related to sewer and wastewater treatment systems, water supply systems, electricity consumption, and solid waste	LS	None	LS
• Operational impact on power line towers from stormwater infiltration	PS	**MP-P4** For future projects that include stormwater infiltration in the vicinity of power line towers, a geotechnical investigation will be conducted during facility design to assess the characteristics and stability of the soil around the power line towers. If results of the investigation indicate that stormwater infiltration may saturate the soil and affect the stability of the towers, one or more of the following changes will be incorporated into the site design as applicable: • Site the proposed retention basins to avoid the towers, if possible, or construct a series of drywells so that water would be infiltrated deeper into the ground to avoid saturation of surface soils. • Install a liner along the sideslope of the basin closest to the power line towers to prevent infiltration. (The liner would cover only a small portion of the infiltration basin.)	LS
• Impact on landfill capacity from generation of solid waste during construction	LS	**MP-P5** State in the plans and specifications for the proposed project that the construction contractor is required to identify and implement programs for minimizing solid waste generated during construction. These programs could include recycling of asphalt and concrete paving materials, reuse and composting of green waste materials on site where appropriate (e.g., where there is limited potential for inadvertent spreading of invasive plants), and balance of graded soil on site to the maximum extent feasible.	LS
• Impact on solid waste collection routes from temporary lane and/or road closures during construction of storm drains, etc.	LS	**MP-P6** Prior to construction, notify the relevant municipality of the construction schedule and planned lane or road closures. The municipality or agency may then modify the solid waste collection routes and access in the area.	LS
Recreation			
• Construction impact on existing recreational facilities	PS	**MP-R1** For projects that include modifications of existing recreational facilities, the timing, duration and areal extent of disturbance that would occur during construction of the proposed	LS

B: Beneficial impact LS: Less than significant impact PS: Potentially significant impact

Table 1-2 (Continued)
Summary of Master Plan Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
		facilities will be identified during facility design. If temporary closures of existing recreational facilities would be necessary, the potential increase in use of other nearby recreational facilities will be evaluated. Factors to be considered in the evaluation include the duration of the closure, acreage and type of facility that would be unavailable due to the closure, and existing usage levels at the relevant recreational facilities. If the impacts on nearby recreational facilities are determined to be potentially significant, one or more of the following measures will be implemented: • Minimize construction period • Modify construction phasing to limit disturbance of existing recreational facilities • Avoid construction during peak use periods	
• Increased acreage and quality of recreational facilities	B	None	B
Traffic and Transportation			
• Temporary impact on traffic in the project area from construction vehicles and equipment • Temporary impact on traffic in the project area from construction activities in the street rights-of-way (e.g., storm drains) • Operational impacts on traffic from increased visitors to proposed recreational facilities	LS - PS	**MP-T1** A traffic impact study will be prepared for any Master Plan project that is projected to meet or exceed the site-generated traffic volume thresholds cited in the Los Angeles County Congestion Management Program "Guidelines for CMP Transportation Impact Analysis." The guidelines indicate that a study is required if a project would add 50 or more vehicle trips during either the a.m. or p.m. weekday peak hours to a CMP arterial monitoring intersection or freeway on- or off-ramp. An analysis will be conducted if the project would add 150 or more trips in either direction to a mainline freeway during either the a.m. or p.m. weekday peak hours. A traffic study will also be prepared if the project meets the criteria for the municipality in which the project site is located (i.e., an incorporated city, County of Los Angeles, or County of Orange). If the project would result in significant traffic impacts, one or more of the following measures will be implemented as applicable. • A construction traffic management plan shall be developed for each project site that will include but not be limited to such measures as designated haul routes for construction-related	LS

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Table 1-2 (Continued)
Summary of Master Plan Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
		traffic (e.g., construction equipment, pickup and dump trucks, and other material delivery trucks), travel time restrictions for construction-related traffic to avoid weekday peak periods on selected roadways, designated site access locations, driveway turning restrictions, temporary traffic controls and/or flaggers, and designated parking/staging locations for workers and equipment. • A construction area traffic control plan and/or detour plan shall be prepared for any location where construction activities would encroach into the right-of-way of a public roadway. The plan would include, but not be limited to such features as warning signs, lights, barricades, cones, lane closures, and restricted hours during which lane closures would not be allowed (e.g., 6:00 to 9:00 a.m. and 3:00 to 6:00 p.m., or as directed by the affected public agency). • Provide advance notification to affected property owners, businesses, residents, etc. of possible driveway blockages or other access obstructions and implement alternate access and parking provisions where necessary. • Provide alternative pedestrian and bicycle access/circulation routes if existing facilities such as sidewalks, crosswalks, and bike lanes would be obstructed to ensure safe pedestrian/bicycle travel. • Coordinate with emergency service providers (police, fire, and ambulance/paramedic agencies) prior to construction to provide information regarding lane closures, construction schedules, driveway blockages, etc., if any, and develop a plan to maintain or accommodate essential emergency access routes (e.g., plating over excavations and use of detours). • Coordinate with public transit agencies (e.g., MTA) to provide information regarding lane closures, bus stop disruptions, etc. so that MTA or relevant agency can designate alternate pick-up/drop-off locations, if appropriate, and provide for uninterrupted service. • As necessary, obtain a transportation permit from Caltrans for transportation of heavy construction equipment and/or materials which requires the use of oversized-transport vehicles on State highways. • Other relevant traffic control measures.	

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Table 1-3
Summary of Concept Design Study Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
Air Quality			
• PM10 emissions during construction (earth moving activities) (all CDS)	LS	**CD-A1** Clean dirt from construction vehicle tires and undercarriages when leaving the construction site and before entering local roadways. **CD-A2** During earth-moving activities, water the construction area as necessary, but at least twice per day. **CD-A3** Water temporary open storage piles once per hour or install temporary covers. **CD-A4** Water unpaved roadways three times per day or apply non-toxic soil stabilizers. (Note: Use of soil stabilizers near wetlands, streams, or other water features may be limited by regulatory agencies such as the U.S. Army Corps of Engineers and the California Department of Fish and Game.) **CD-A5** Limit construction vehicle speed on the project site to 15 miles per hour (mph) or less. **CD-A6** Cover dirt in trucks during on-road hauling. **CD-A7** Cease earth-moving activities on days when wind gusts exceed 25 mph or apply water to soil not more than 15 minutes prior to moving such soil. **CD-A8** Sweep streets near the construction area at the end of the day if visible soil material is present. **CD-A9** For applicable construction areas, establish a vegetative groundcover as soon as feasible after active operations have ceased. Groundcover shall be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting.	LS

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Table 1-3 (Continued)
Summary of Concept Design Study Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
		CD-A10 Per SCAQMD Rule 403(e), large construction operations (greater than 50 acres of disturbed area or daily earth-moving or throughput volume of 5,000 cubic yards three times during the most recent 365-day period) shall implement applicable dust suppression measures specified in Table 2 of Rule 403 at all times. When the applicable performance standards cannot be met through use of Table 2 measures, the applicable contingency control measures specified in Table 3 of Rule 403 shall be implemented.	
• Construction tailpipe emissions (all CDS)	LS	**CD-A11** Prohibit all vehicles from idling in excess of 10 minutes, both on and off-site. **CD-A12** Maintain construction equipment in proper tune. **CD-A13** Encourage contractors to establish trip reduction plans. The goal of these plans will be to achieve a 1.5 average vehicle ridership (AVR) for construction employees. To further reduce tailpipe emissions from construction equipment, implementation of optional Mitigation Measure CD-A14 shall be considered at the time of construction of individual projects. **CD-A14** Select construction equipment with low pollutant emissions and high energy efficiency. Factors to consider include model year and alternative fuels (e.g., compressed natural gas, biodiesel, emulsified diesel, methanol, propane, butane, and low sulfur diesel).	LS
• Impacts related to odor	LS	None	LS
• Operational impacts on air quality due to increased vehicle trips for maintenance activities and visitors recreational facilities (all CDS)	LS	**CD-A15** Implement dust control if dry conditions and substantial area is disturbed for operations and maintenance activities that involve ground disturbance **CD-A16** Select energy efficient lighting features or other building design considerations for proposed facilities (e.g., park buildings or interpretive centers) to minimize emissions associated with power generation.	LS

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Table 1-3 (Continued)
Summary of Concept Design Study Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
Biological Resources			
• Construction impacts on special status plant species (all CDS)	PS	**CD-B1** Prior to completion of detailed design plans for each of the five Concept Design Study sites, a qualified biologist shall conduct general plant and wildlife surveys to determine if any focused surveys for special status species are necessary. If the surveys confirm the potential for one or more special status species to occur, focused surveys for those species shall be conducted as described in Mitigation Measure CD-B2. **CD-B2** If the general biological survey (Mitigation Measure CD-B1) indicates that there is potential for sensitive plant species to occur on the project site, a spring survey shall be conducted prior to finalizing the project designs. The special status plant species surveys shall follow guidelines developed by the CNPS (CNPS, 2001). These surveys, as outlined in the guidelines, shall be conducted during the appropriate time of year for each species as determined by a qualified botanist. Collection of special status plant species, if any, shall follow the guidelines of CDFG and USFWS collection permits. If any special status plant species are located, their rarity and abundance shall be evaluated. If the general biological survey indicates that there is potential for special status wildlife species to occur on the project site, protocol surveys for those species shall be conducted in accordance with appropriate survey protocols at the appropriate time of the year. The results of these investigations and the appropriate mitigation measures to reduce any potentially significant environmental impacts to a level that is less than significant shall be disclosed in second tier CEQA documentation. If any special status wildlife species are identified, the proposed facilities shall be designed and/or sited to avoid or reduce potentially significant impacts to the species during construction to levels that are less than significant. If nesting habitat of special status bird species will be impacted, project construction shall be scheduled outside of the breeding season, or a pre-construction survey shall be conducted to identify nests and to establish a buffer zone between the construction area and identified nests to avoid construction impacts. However, depending on the location of sensitive resources and/or construction schedule	LS

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Table 1-3 (Continued)
Summary of Concept Design Study Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
		requirements, project redesign and/or construction phasing that avoids biological resources while still meeting the project objective may be infeasible. Therefore, if avoidance is not feasible, the following measures shall be detailed and disclosed in second tier CEQA document and implemented under the direction of a qualified biologist: • Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment; or • Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the project; or • Compensating for the impact by replacing or providing substitute resources or environments. If avoidance of impacts to listed species is not feasible, then consultation with the USFWS shall be required for federally-listed species and consultation with the CDFG shall be required for state-listed species. As relevant, a special status plant mitigation program shall be developed following focused surveys and submitted to the appropriate agencies for review.	
• Construction impacts on least Bell's vireo (DC, LC, and ED)	PS	**CD-B3** Least Bell's Vireo - Since least Bell's vireos are known to occur in the vicinity of the San Gabriel River Discovery Center, Lario Creek, and El Dorado Regional Park, the following mitigation measure shall be implemented to reduce impacts on this Endangered species: To the extent feasible, no construction shall occur within the project site during the nesting season for least Bell's vireo (March 15 to September 1). However, if construction work is necessary between March 15 and September 1, a qualified biologist shall survey suitable habitat within the impact area, plus 1,000 feet (300 meters) on either side of the impact area, to identify the presence of any least Bell's vireo. No construction activities shall occur within 1,000 feet of a least Bell's vireo territory until the end of the nesting season (September 1) or when the least Bell's vireo departs the area, as determined by the biologist and with confirmation from the USFWS. The biological monitor shall use their discretion to increase the distance from vireo territory that construction can occur (in excess of 1,000 feet) or to limit use of the noisiest equipment to outside the nesting season if deemed necessary based on the type of construction equipment to be used.	LS

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Table 1-3 (Continued)
Summary of Concept Design Study Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
• Construction impacts on nesting raptors (DC, LC, and ED)	PS	**CD-B4** Nesting Raptors – The following mitigation measure shall be implemented to avoid raptor impacts: One week prior to construction and clearing activities that would occur during the nesting/breeding season of native bird species potentially nesting on the site (typically February through August), a survey shall be conducted by a qualified biologist to determine if active nests of bird species protected by the Migratory Bird Treaty Act and/or the California Fish and Game Code are present within 300 feet (within 500 feet for raptors) of the construction zone. Construction can proceed if no active avian nests are located during this survey. If an active nest is found during the survey, a 500-foot (this distance may vary depending on the bird species and construction activity, as determined by the biologist) fence barrier shall be erected around the nest site. Clearing and construction within the fenced area shall be postponed or halted, at the discretion of the biologist, until the nest is vacated and juveniles have fledged, as determined by the biologist, and there is no evidence of a second attempt at nesting. The biologist shall serve as a construction monitor during those periods when construction activities may occur near active nests to ensure that no inadvertent impacts on these nests occur. Results of the raptor survey and any subsequent monitoring shall be provided to the CDFG and any other appropriate agency.	LS
• Construction impacts on special status habitat types (DC, LC, and ED)	LS	None	LS
• Construction impacts on respiratory function of plants (dust accumulation on leaf surfaces) (all CDS)	LS	None	LS
• Impacts related to invasive plant species (all CDS)	LS - B	**CD-B5** Invasive Plant Species – Landscaping of surrounding vegetation shall not include any invasive plant species as listed on the California Invasive Plant Council Pest Plant List.	LS - B

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Table 1-3 (Continued)
Summary of Concept Design Study Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
• Lighting impacts on nocturnal and crepuscular (active at dawn and dusk) wildlife (all CDS)	LS	**CD-B6** Night Lighting – Night lighting is expected to be used in public areas for health and safety reasons. Lighting would inadvertently affect the behavior patterns of nocturnal and crepuscular (active at dawn and dusk) wildlife at these areas. Of greatest concern is the effect on small ground-dwelling animals that use the darkness to hide from predators, and on owls that are specialized night foragers. To reduce light impacts on nocturnal and crepuscular wildlife, night lighting shall be low intensity directional lighting focused away from open space areas.	LS
• Disturbance of wildlife behavior and habitat associated with human activity (e.g., recreational visitors) (all CDS)	PS	**CD-B7** Human Activity – An appropriate plan for the management of native habitats shall accompany each Concept Design Study site to reduce impacts from human uses (e.g., riding, hiking, biking) on habitat areas. The management plan shall include access points including parking and restrooms, signage for trails and restricted uses, appropriate fencing, and restrictions on domestic animals. This plan shall be written by a qualified biologist and approved by the sponsoring agency prior to initiation of site development.	LS
• Operational impacts on special status plant and wildlife species, special status habitat types, and native plant species from habitat restoration/enhancement projects (all CDS)	LS - B	None	LS - B
Cultural Resources			
• Construction impacts on buried cultural resources (SG, LC, DC, and ED)	PS	**CD-C1** On the first day of subsurface work at the San Gabriel Canyon Spreading Grounds, a professional monitor qualified in historical archaeology shall be present to assess whether further monitoring might be warranted. Further monitoring may be required if subsurface cultural material was uncovered on the first day of earthwork and/or if the monitor determined that there was a high probability of additional subsurface cultural materials being encountered. **CD-C2** A professional monitor qualified in historical archaeology shall be present at the San Gabriel River Discovery Center for subsurface work between the surface and 5 feet (or more as determined by the monitor based on soil conditions) in depth. If potentially important cultural	LS

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Table 1-3 (Continued)
Summary of Concept Design Study Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
		deposits are encountered in the course of construction, work shall be temporarily diverted from the vicinity of the discovery until the monitoring archaeologist can identify and evaluate the importance of the find and conduct any appropriate assessment and activities, as necessary. **CD-C5** A professional monitor qualified in historical archaeology shall be present at the Lario Creek project site for subsurface work between the surface and 5 feet (or more as determined by the monitor based on soil conditions) in depth. If potentially important cultural deposits are encountered in the course of construction, work shall be temporarily diverted from the vicinity of the discovery until the monitoring archaeologist can identify and evaluate the importance of the find and conduct any appropriate assessment and activities, as necessary. **CD-C6** On the first day of subsurface work at El Dorado Regional Park, a professional monitor qualified in historical archaeology shall be present to assess whether further monitoring might be warranted.	
• Construction impact on historic resources (WF)	PS	**CD-C7** During the design phase of Woodland Duck Farm, WCA shall evaluate if any onsite structures that are 45 years and older may be affected by the project. For each structure that is 45 years and older and shall be affected by the project, the structure's significance shall be evaluated by a professional architectural historian, using the criteria listed in CEQA Guidelines Section 15064.5[a]. Results of this evaluation would be disclosed in second-tier environmental documentation. If the resource is found to be significant, the significance of project impacts on the resource shall be determined. (Significant change to a resource includes demolition, replacement, substantial alteration, or relocation (CCR Section 15064.5)). If project impacts are determined to be significant, the relevant resources shall be: • Incorporated into the project design, or • Removed and relocated to an appropriate location (e.g., museum, public library, or school)	LS

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Table 1-3 (Continued)
Summary of Concept Design Study Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
• Replacement of the Nature Center building (DC)	PS	**CD-C3** During the design phase of the San Gabriel River Discovery Center, the project proponent shall evaluate whether the Nature Center building is a significant historical resource using the criteria described in Section 15064.5(a) of the State CEQA Guidelines. If it is determined to be a significant historical resource, the lead agency shall: • Remove and relocate the building or historically significant portion of the building to an appropriate location, or • Incorporate the historically significant elements of the existing building into the new Discovery Center.	LS
• Construction impacts on potential cultural resources identified during the records search and field reconnaissance (LC)	PS	**CD-C4** During the design phase of Lario Creek, LADPW shall evaluate if the project can be designed to avoid the structures identified in Section 4.3.1.4 (locate the proposed structures or site disturbance at least 100 meters away from or around the structures). If avoidance is not feasible for one or more of the structures, the structure's significance shall be evaluated, using the criteria listed in CEQA Guidelines Section 15064.5[a]. Results of this evaluation would be disclosed in second-tier environmental documentation. If the resource is found to be significant, the significance of project impacts on the resource shall be determined. (Significant change to a resource includes demolition, replacement, substantial alteration, or relocation (California Code of Regulations [CCR] Section 15064.5)). If feasible, the significant resource(s) shall be avoided. If project impacts are determined to be significant, LADPW shall: • Incorporate the resource into the project design, or • Remove and relocate the resource to an appropriate location (e.g., museum, public library, or school)	LS
• Construction impacts on paleontological resources (all CDS)	LS	None	LS

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Table 1-3 (Continued)
Summary of Concept Design Study Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
• Construction impacts on buried cultural resources and/or human remains (all CDS)	PS	**CD-C8** If previously unknown cultural resources are discovered in the course of excavation for project construction, the construction inspector shall have the authority and responsibility to halt construction until a qualified archaeologist can evaluate the significance and distribution of the materials, and identify future activities needed. If the cultural material discovered is determined to be of potential archaeological significance, the investigation and future activities shall be conducted in consultation with a culturally affiliated Native American or other parties, as necessary. **CD-C9** If human remains are discovered in the course of excavation for project construction, the County Coroner shall be contacted and provisions of State CEQA Guidelines Section 15064.5 shall be followed.	LS
Geology and Soils			
• Impacts related to seismic ground shaking and surface rupture (all CDS)	LS	None	LS
• Impacts related to liquefaction potential from proposed stormwater infiltration (WF, LC, DC, and ED)	PS	**CD-G1** Prior to construction, conduct a geotechnical investigation to define site-specific subsurface conditions, including determination of site-specific groundwater levels and soil conditions to evaluate the potential for liquefaction onsite or at adjacent properties. Based on the results of the geotechnical analysis, the potential increase in liquefaction potential from the proposed infiltration shall be evaluated. Factors that should be considered include the capacity of the infiltration facility and the associated amount of water proposed for infiltration, infiltration rate, proximity and types of nearby structures that could be damaged from liquefaction, and infiltration at adjacent spreading grounds, if any. If the project is determined to have the potential to cause groundwater levels to rise within 30 feet of the surface, new monitoring wells and/or existing wells in the project area shall be used to detect any substantial increase in groundwater levels. If monitoring indicates a substantial rise in groundwater levels that could impact adjacent structures, stormwater would not be infiltrated and would be diverted into storm drains or onto street surfaces with sufficient capacity. Re-diversion of	LS

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Table 1-3 (Continued)
Summary of Concept Design Study Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
		storm flows will be in compliance with the applicable provisions of the relevant NPDES municipal stormwater permits.	
• Impacts on power line towers related to expansive soils from proposed stormwater infiltration (WF, LC, DC, and ED)	PS	See **CD-P10** under **Public Services and Utilities**	LS
• Impacts on habitable structures related to expansive soils (DC)	PS	**CD-G2** During facility design, evaluate site soils to determine the area and thickness of expansive soils. If expansive soils are found, one or more of the following measures shall be specified in the construction plans to minimize potential hazards associated with expansive soils: • Replacement of expansive soils with granular non-expansive soils, or • Treatment of expansive soils with lime to reduce expansivity, or • Other appropriate geotechnical practices. These measures that mitigate for expansive soils shall be incorporated into the construction documents.	LS
• Impacts related to subsidence (all CDS)	LS	None	LS
• Construction impacts on soil erosion (all CDS)	PS	See **CD-W1** under **Hydrology and Water Quality**	LS
Hazards and Hazardous Materials			
• Impacts related to potential soil contamination at project sites (all CDS)	PS	See **CD-W3** under **Hydrology and Water Quality**	LS

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Table 1-3 (Continued)
Summary of Concept Design Study Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
• Impacts related to handling of hazardous materials (sodium hypochlorite for stormwater disinfection and disposal of potentially contaminated sediments during maintenance of stormwater facilities) (WF, LC, DC, and ED)	LS	None	LS
• Impacts related to potential increase in bird/wildlife air strike hazard at nearby airports (WF and ED)	LS	**CD-H2** During the detailed design phase, FAA Western Pacific Regional Office and El Monte Airport (for Woodland Duck Farm) and Long Beach Airport (for El Dorado Regional Park) shall be notified of the proposed land use change to recognize potentially significant hazards early in the planning process and avoid or minimize the hazards.	LS
• Public health impacts related to potential increase in mosquito habitat (all CDS)	PS	**CD-H1** Project plans and designs shall be submitted to the applicable vector control district (SGVMVCD for San Gabriel Canyon Spreading Grounds and Woodland Duck Farm and GLAVCD for San Gabriel River Discovery Center, Lario Creek, and El Dorado Regional Park) for review and comment with respect to control of mosquito and other vectors. Upon consultation with the vector control district, appropriate vector management measures shall be incorporated into the project design. Potential management measures include the following: • Design to minimize and/or provide periodic removal of vegetation on bank slopes and periphery of water bodies to minimize areas of stagnant water. • Design and/or manage to optimize water depths and flow pattern. For mosquito control, maintain water depths and encourage/provide water circulation. For black fly control, minimize aeration of flowing water. If necessary, design water features to allow for periodical drying to desiccate vector larvae. • Work with the vector control district to stock ponds and other permanent water features with mosquito-eating fish as needed. • Provide site access to vector control district specifications (e.g., dikes with access roads or	LS

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Table 1-3 (Continued)
Summary of Concept Design Study Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
		trails) to potential breeding areas for maintenance (e.g., vegetation removal) and treatment (e.g., application of Bti or other larvicides). • Design stormwater retention facilities/devices to drain completely within 72 hours, or design with the capability to be dewatered rapidly if needed for vector control. • Incorporate measures into project designs that serve to educate the public about wildlife safety and vector-borne disease issues, prevent wildlife-human interactions, and prevent wildlife access to trash and unnatural food and water sources that are likely to result in unnatural population levels. • Design underground utility vaults, if needed for project implementation, to prevent retention of standing water thereby reducing vector breeding habitat. • Regularly consult with the vector control district to identify mosquito management problems, mosquito monitoring and abatement procedures, and opportunities to adjust water and vegetation management practices to reduce mosquito production. • Incorporate funding for vector management activities into project funding or implement a secure and reliable funding source for vector management activities.	
• Public health impacts of recycled water and stormwater reuse (WF, LC, DC, and ED)	LS	None	LS
Hydrology and Water Quality			
• Beneficial reduction in local and downstream flooding (WF, LC, DC, and ED)	B	None	B
• Increase in impervious surfaces or change in drainage patterns (SG, WF,	LS	None	LS

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Table 1-3 (Continued)
Summary of Concept Design Study Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
and DC)			
• Impacts on channel flood capacity (ED, LC, and WF)	LS	None	LS
• Construction impacts on surface water quality related to soil erosion (all CDS)	PS	**CD-W1** Develop and implement a Storm Water Pollution Prevention Plan (SWPPP) for projects that involve constructing, clearing, grading or excavation on areas over 1 acre in size to minimize the amount of runoff and associated pollutants (e.g., sediments) leaving the construction site by containing the runoff onsite, containing the sediments onsite, and/or minimizing the potential for stormwater to come in contact with pollutants. The following are possible measures to be incorporated into site-specific SWPPPs. Additional sample measures and guidelines for developing SWPPPs are available in California Stormwater Quality Association's Stormwater Best Management Practice Handbook – Construction (CASQA, 2003). Measures to reduce fugitive dust generated during construction (see Section 4.1.5 – Air Quality) will also minimize the potential for soil erosion. • Install perimeter silt fences or hay bales. • Stabilize soils through hydroseeding with native plant species where possible and use of soil stabilizers. • Install temporary sedimentation basins. • Conduct earth moving activities during the dry season (April through October), as feasible. • Designate storage areas for construction materials, equipment, and maintenance supplies (e.g., fuels, lubricants, paints, solvents, adhesives) to keep these materials out of the rain and minimize contact with stormwater. • Conduct regular inspections to ensure compliance with the SWPPP.	LS
• Construction impacts on water quality during channel modifications (ED, LC,	PS	**CD-W6** For projects involving channel modifications, COE, Regional Board, U.S. Fish and Wildlife Service, and California Department of Fish and Game shall be consulted. All necessary	LS

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Table 1-3 (Continued)
Summary of Concept Design Study Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
and WF)		federal and state approvals (including CWA Section 404 permits, CWA Section 401 water quality certifications or waivers, and California Fish and Game Code Section 1602 Streambed Alteration Agreements) shall be obtained prior to the implementation of construction activities. Any conditions of agency approvals (e.g., measures to minimize the potential water quality impacts associated with the channel modification) shall be incorporated into the project design. Water quality mitigation options for use during construction of in-channel improvements include diversion of flows around the construction site, installation of in-stream silt curtains, or use of off-channel sediment retention ponds or tanks.	
• Reduction in discharges of stormwater pollutants (WF, LC, DC, and ED)	B	None	B
• Water quality impacts of pesticide/herbicide use in landscaped areas or for exotic species removal (all CDS)	PS	**CD-W2** For projects involving landscaping, habitat restoration, and/or removal of exotic plant species, select biological or non-chemical means of controlling exotics and pests unless not feasible because biological or non-chemical controls are not readily available for the specific exotics to be controlled. If chemical pesticide or herbicide use is necessary, compounds that are less persistent in the environment shall be selected, and application shall be conducted in accordance with manufacturers' recommendations and general standards of use, e.g., restricted application before and during rain storms.	LS
• Operational impacts on water quality related to channel modifications (ED)	LS	None	LS
• Groundwater quality impacts related to potential soil contamination at infiltration sites (WF, LC, DC, and ED)	PS	**CD-W3** For projects involving substantial ground disturbance, conduct a Phase I Environmental Site Assessment (ESA) to determine the site-specific potential for soil contamination. The Phase I ESA shall be conducted in accordance with the latest version of the American Society of Testing and Materials (ASTM) 1527 "Standard Practice for Environmental Site Assessments: Phase I Environmental Assessment Process." This document outlines the customary practice for performing ESA's in the United States. Phase I ESA shall consist of a review of site-specific documents and historical maps to determine past uses of the site, a site visit to visually inspect the	LS

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Table 1-3 (Continued)
Summary of Concept Design Study Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
		property for signs of potential environmental contamination, and investigation of state and federal environmental regulatory databases to identify recognized hazardous materials usage or spills. For project sites with infiltration, the boundary of the Phase I ESA shall include parcels located within 500 feet of the project site boundary to identify active or abandoned landfills or other land uses with the potential for contaminated soils which would be incompatible with infiltration (to be cross-referenced with Mitigation Measure CD-W4). If the Phase I ESA concludes that there is no substantial potential for soil contamination, no further action would be required. If the Phase I ESA indicates that there is potential for soil to be contaminated, additional investigation (Phase II ESA, including soil sampling and analysis) shall be conducted to determine the presence and extent of the contamination. If the proposed project would involve disturbance of soil in the contaminated area, soil would be removed and disposed of in compliance with applicable regulations at approved disposal sites.	
• Groundwater hydrology impacts (Potential inundation of landfill material from stormwater infiltration) (WF, LC, DC, and ED)	PS	**CD-W4** If the site-specific Phase I ESA (Mitigation Measure CD-W3) indicates that an active or closed landfill (either municipal solid waste or inert construction waste) is located within 500 feet of the project site boundary, then a site-specific geotechnical study shall be conducted to: 1) characterize the extent and composition of landfill materials; 2) determine whether the landfill materials are releasing methane; 3) and estimate the potential mounding effect from the proposed stormwater infiltration. The results of the geotechnical study shall be incorporated into the project design to minimize the potential for project infiltration to result in interaction between infiltrated stormwater and landfill materials or to impact landfill gas releases, if any. Potential design modifications include siting the infiltration facilities away from the landfill and/or partially lining the facilities to direct infiltration away from the landfill. For sites with stormwater infiltration within 500 feet of an active or closed landfill, a groundwater monitoring program shall be developed and implemented to ensure that infiltration does not result in interaction between infiltrated stormwater and landfilled materials or impact landfill gas releases. Infiltration would cease at any site where groundwater levels rose to within 10 feet of landfilled materials to prevent interaction of infiltrated water with landfill materials.	LS

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Table 1-3 (Continued)
Summary of Concept Design Study Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
• Operational impacts on groundwater quality from stormwater infiltration (WF, LC, DC, and ED)	LS - PS	**CD-W5** For projects that involve stormwater infiltration, conduct vadose zone and groundwater quality monitoring. If monitoring results indicate substantial water quality degradation, pursue the following general strategy: • Provide additional treatment prior to infiltration, or • Redesign project to reduce or eliminate infiltration (e.g., lining), or • Identify an alternative water source (e.g., reclaimed water).	LS
• Water supply and water rights (all CDS)	LS - B	None	LS - B
• Impacts related to dam safety (WF, LC, DC, and ED)	LS	None	LS
Land Use			
• Land use impacts (physical division of an established community; conflicts with applicable land use plans, policies or regulations) (all CDS)	LS	None	LS
• Impacts on availability of mineral resources (all CDS)	LS	None	LS
Noise			
• Construction noise impact on sensitive receptors (all CDS)	PS	**CD-N1** Limit construction activities to the hours allowed by the applicable jurisdiction's noise ordinance (City of Azusa for San Gabriel Canyon Spreading Grounds; County of Los Angeles for Woodland Duck Farm, San Gabriel River Discovery Center, and Lario Creek; and City of Long Beach for El Dorado Regional Park). **CD-N2** Equip all mobile construction equipment with properly operating mufflers or other noise reduction devices.	LS

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Table 1-3 (Continued)
Summary of Concept Design Study Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
		CD-N3 Notify businesses and residences immediately adjacent to the construction site prior to the start of construction (e.g., via flyers). Include a telephone number for noise complaints in this notification. **CD-N4** Prior to the start of construction of the project, require the construction contractor to develop a site-specific noise mitigation plan based on an updated estimate of construction equipment and schedule. One or more of the following measures shall be implemented as applicable to reduce noise levels to meet the relevant jurisdiction's construction noise standards: • Install temporary sound walls, sound curtains, or other temporary sound barriers • Select quieter construction procedures and/or equipment	
• Operational noise impacts (operation of pumps, use of vehicles for facility maintenance, and increased traffic to parks) (all CDS)	LS	None	LS
• Impact of siting new parks in areas with high ambient noise levels (WF)	LS	None	LS
Public Services and Utilities			
• Construction impact on police and fire protection services from temporary lane and/or road closures during construction of storm drains, etc. (all CDS)	PS	**CD-P1** Prior to the start of construction, consult the fire station(s) serving the project area and review phasing, road/lane closure, and detour plans. The fire station(s) may then identify alternative fire and emergency medical response routes. **CD-P2** Prior to the start of construction, consult the police station(s) serving the project area, as appropriate, of project-related lane and/or road closures and detour plans. The police station(s) may then identify alternative police emergency response routes. **CD-P3** If determined to be necessary by the relevant police and/or fire service providers, implement one or more of the following applicable traffic control measures capable of reducing	LS

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Table 1-3 (Continued)
Summary of Concept Design Study Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
		the temporary adverse effects to police and emergency vehicle travel during project construction: • Use flagmen to direct traffic • Post "No Parking" signs along the affected area • Install temporary signals or signs to direct traffic • Other equivalent traffic control measures	
• Operational impact on police and fire protection services (all CDS)	LS	None	LS
• Construction impact on school access and student safety (DC and LC)	LS	**CD-P4** Prior to project construction, contact school administrators to provide sufficient notice to forewarn school bus operators, children, and parents when existing pedestrian and vehicular routes to school will be affected. As necessary to protect the safety of children, parents and employees accessing the school, one or more of the following measures shall be implemented in coordination with the school administrators: • Develop temporary alternative pedestrian and vehicular routes to the school that avoid construction areas • Install appropriate temporary traffic controls (signs, crossing guards, and/or signals) as needed to ensure pedestrian and vehicular safety • Minimize use of haul routes past the school when school is in session • Prohibit parking or staging of construction or worker vehicles on streets adjacent to the school. **CD-P5** Secure all construction areas adjacent to the school, including trench areas, operating equipment areas and equipment staging and stockpile areas, through fencing or other barriers to prevent trespassing and reduce hazards to children and other pedestrians.	LS

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Table 1-3 (Continued)
Summary of Concept Design Study Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
• Construction impacts on school commuting routes from temporary lane and/or road closures during construction of storm drains, etc. (all CDS)	PS	**CD-P6** Notify the applicable school district of the expected start and end dates for various portions of the project that may affect traffic in the area and any potential impact on existing school bus routes to facilitate identification of alternative routes and minimize unexpected delays in commuting to the school.	LS
• Potential interference with existing utilities within street rights-of-way from construction of storm drains, etc. (all five CDS)	PS	**CD-P7** During design of each project component, consult the applicable utility service provider(s) to identify existing and proposed buried facilities in affected roadways and to determine which utilities require relocation and which can be avoided. If results of the consultation indicate that project construction could affect buried facilities, one or more of the following measures shall be implemented as applicable: • If relocation is required, sequence construction activities to avoid or minimize interruptions in service. • If utility service disruption is necessary, notify residents and businesses in the project area a minimum of 2 to 4 days prior to service disruption through local newspapers, direct mailings to affected parties, or public posting of notices. • If project construction would occur near existing utilities, require the contractor to excavate around utilities, including hand excavation as necessary, to avoid damage and to minimize interference with safe operation and use. Hand tools must be used to expose the exact location of buried gas or electric utilities.	LS
• Operational impacts related to sewer and wastewater treatment systems, water supply systems, electricity consumption, and solid waste (all CDS)	LS	None	LS
• Impact on landfill capacity from generation of solid waste during construction (all CDS)	LS	**CD-P8** State in the plans and specifications for the proposed project that the construction contractor is required to identify and implement one or more of the following applicable programs for minimizing solid waste generated during construction:	LS

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Summary of Concept Design Study Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
		• Recycling of asphalt and concrete paving materials • Reuse and composting of green waste materials where there is limited potential for inadvertent spreading of invasive plants • Balance graded soil on site to the maximum extent feasible	
• Impact on solid waste collection routes from temporary lane and/or road closures during construction of storm drains, etc. (all CDS)	LS	**CD-P9** Prior to construction, notify the relevant municipality of the construction schedule and planned lane or road closures. The municipality or agency may then modify the solid waste collection routes and access in the area.	LS
• Operational impact on power line towers from stormwater infiltration (WF and ED)	PS	**CD-P10** During design of the facility, conduct a geotechnical investigation to assess the characteristics and stability of the soil around the power line towers. If results of the investigation indicate that stormwater infiltration may saturate the soil and affect the stability of the towers, one or more of the following changes shall be incorporated into the site design as applicable: • Site the proposed retention basins to avoid the towers, if possible, or construct a series of drywells so that water would be infiltrated deeper into the ground to avoid saturation of surface soils. • Install a liner along the sideslope of the basin closest to the power line towers to prevent infiltration. (The liner would cover only a small portion of the infiltration basin.)	LS
Recreation			
• Construction impact on existing parks (DC, LC, and ED)	LS	None	LS
• Increased acreage and quality of recreational facilities (all CDS)	B	None	B

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Table 1-3 (Continued)
Summary of Concept Design Study Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
Traffic and Transportation			
• Temporary impact on traffic in the project area from construction vehicles and equipment (all CDS) • Temporary impact on traffic in the project area from construction activities in the street rights-of-way (e.g., storm drains) (all CDS)	LS	**CD-T1** A construction traffic management plan shall be developed for each project site that shall include but not be limited to such measures as designated haul routes for construction-related traffic (e.g., construction equipment, pickup and dump trucks, and other material delivery trucks), travel time restrictions for construction-related traffic to avoid weekday peak periods on selected roadways, designated site access locations, driveway turning restrictions, temporary traffic controls and/or flaggers, and designated parking/staging locations for workers and equipment. **CD-T2** A construction area traffic control plan and/or detour plan shall be prepared for any location where construction activities would encroach into the right-of-way of a public roadway. The plan would include, but not be limited to such features as warning signs, lights, barricades, cones, lane closures, and restricted hours during which lane closures would not be allowed (e.g., 6:00 to 9:00 a.m. and 3:00 to 6:00 p.m., or as directed by the affected public agency). **CD-T3** Provide advance notification to affected property owners, businesses, residents, etc. of possible driveway blockages or other access obstructions and implement alternate access and parking provisions where necessary. **CD-T4** Provide alternative pedestrian and bicycle access/circulation routes if existing facilities such as sidewalks, crosswalks, and bike lanes would be obstructed to ensure safe pedestrian/bicycle travel. **CD-T5** Coordinate with emergency service providers (police, fire, and ambulance/paramedic agencies) prior to construction to provide information regarding lane closures, construction schedules, driveway blockages, etc., if any, and develop a plan to maintain or accommodate essential emergency access routes (e.g., plating over excavations and use of detours). **CD-T6** Coordinate with public transit agencies (e.g., MTA) to provide information regarding lane closures, bus stop disruptions, etc. so that MTA or relevant agency can designate alternate pick-up/drop-off locations, if appropriate, and provide for uninterrupted service.	LS

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Summary of Concept Design Study Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
		CD-T7 As necessary, obtain a transportation permit from Caltrans for transportation of heavy construction equipment and/or materials which requires the use of oversized-transport vehicles on State highways.	
• Operational impacts on traffic from increased visitors to proposed recreational facilities (all CDS)	LS	None	LS

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Section 2
Introduction

2.1 PROJECT BACKGROUND

The San Gabriel River extends from the Angeles National Forest through 19 cities and unincorporated areas of Los Angeles County and Orange County to the Pacific Ocean. Engineered modifications currently present along the San Gabriel River provide flood protection for surrounding urban development. These modifications have also allowed development almost to the San Gabriel River's edge, decreasing open space and altering natural habitats. In order to address conditions along the San Gabriel River, the County of Los Angeles Board of Supervisors passed a resolution in 1999 instructing the Department of Public Works (LADPW) to prepare a San Gabriel River Corridor Master Plan (Master Plan) for Board approval, with the assistance of the Department of Regional Planning, Department of Parks and Recreation, and the National Park Service (NPS) (Rivers, Trails, and Conservation Assistance Program). To develop the Master Plan, LADPW established a Steering Committee composed of a broad range of stakeholders, including: cities along the river; water and regulatory agencies; interested community, business, and environmental groups; and other interested individuals (see **Table 2-1**). The Steering Committee is open to the public, and members have met more than 40 times over the past 4 years. In addition to the Steering Committee, a Planning Committee consisting of Los Angeles County, San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy (RMC), and NPS staff meets monthly.

The Master Plan is a consensus-based document that will recognize and address a renewed interest in recreation, open space, and habitat, while also seeking to enhance and maintain flood protection, provide water conservation benefits, and preserve existing water rights. The Master Plan integrates over 130 projects along the San Gabriel River proposed by cities and other stakeholder organizations. The Steering Committee has selected five of these projects ("Concept Design Studies") to demonstrate how project planning can simultaneously address the Master Plan goals of habitat, recreation, and open space (see **Section 3)**.

In 2003, LADPW and RMC formed a Joint Powers Authority known as the Watershed Conservation Authority (WCA) – that will seek to fund projects of mutual interest and facilitate work. RMC is one of the seven conservancies of the California Resources Agency, and its legislated mandate is to preserve urban open space and habitat within the San Gabriel and Los Angeles River Watersheds. The WCA will consider acquisition and protection of lands for watershed protection, conservation, natural open space, and recreational purposes. LADPW will also pursue projects on its properties along the San Gabriel River, focusing on those related to flood management, water quality and conservation, and groundwater recharge.

Table 2-1
Organizations Involved in the San Gabriel River Corridor Master Plan Steering Committee to Date

Federal Government
National Park Service-Rivers, Trails, and Conservation Assistance Program
U.S. Army Corps of Engineers - Los Angeles District
U.S. Fish and Wildlife Service
U.S. Forest Service - Angeles National Forest

State Government
California Department of Fish and Game
California Department of Health Services
California Department of Parks and Recreation
California Department of Transportation
California Department of Water Resources
California Regional Water Quality Control Board, Los Angeles Region
California State Parks
San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy

County/Regional Governments
County of Los Angeles Department of Public Works
County of Los Angeles Department of Regional Planning
County of Los Angeles Department of Parks and Recreation
County of Los Angeles Department of Health Services
County of Los Angeles Sheriff's Department
County of Orange
County Sanitation Districts of Los Angeles County
Gateway Cities Council of Governments
Greater Los Angeles County Vector Control District
Los Angeles County Metropolitan Transportation Authority
Puente Hills Landfill Native Habitat Preservation Authority
San Gabriel Valley Council of Governments
San Gabriel Valley Mosquito & Vector Control District

Water Districts / Agencies
Central Basin Municipal Water District
Main San Gabriel Basin Watermaster
Metropolitan Water District of Southern California
San Gabriel Valley Municipal Water District
San Gabriel River Watermaster
Three Valleys Municipal Water District
Upper San Gabriel Valley Municipal Water District
Water Replenishment District of Southern California
West Basin Municipal Water District

Interested Businesses
Aera Energy
California American Water Company
Hanson Aggregates West
Southern California Edison Company
United Rock Products Corporation
Vulcan Materials

Board of Supervisors
County of Los Angeles Supervisor Michael Antonovich
County of Los Angeles Supervisor Don Knabe
County of Los Angeles Supervisor Gloria Molina
County of Orange Supervisor James Silva

Political Representatives
US Senator Barbara Boxer
US Senator Dianne Feinstein
California State Senator John Campbell
California State Senator Martha Escutia
California State Senator Alan Lowenthal
California State Senator Bob Margett
California State Senator Gloria Romero
Congressman David Dreier
Congresswoman Grace Napolitano
Congressman Dana Rohrabacher
Congresswoman Lucille Roybal-Allard
Congressman Edward Royce
Congresswoman Linda Sanchez
Congresswoman Hilda Solis
Assemblymember Rudy Bermudez
Assemblymember Ronald Calderon
Assemblymember Ed Chavez
Assemblymember Judy Chu
Assemblymember Hector De La Torre
Assemblymember Tom Harman
Assemblymember Bob Huff
Assemblymember Betty Karnette
Assemblymember Carol Liu
Assemblymember Dennis Mountjoy
Assemblymember Jenny Oropeza

Cities
City of Arcadia
City of Azusa
City of Baldwin Park
City of Bellflower
City of Cerritos
City of Downey
City of Duarte
City of El Monte
City of Industry
City of Irwindale
City of Lakewood
City of Long Beach
City of Los Alamitos
City of Monrovia
City of Norwalk
City of Pico Rivera
City of Rosemead
City of Santa Fe Springs
City of Seal Beach
City of South El Monte
City of Whittier

Organizations
Amigos de los Rios
American Society of Landscape Architects
Audubon Society
Azusa Canyon Off Roaders Association
California Exotic Pest Control
California Off-Road Vehicles Association
Downey Fly Fishers
Equestrian Trails Incorporated
Fisheries Resource Volunteer Corps
Fly Fishers Club of Orange County
Friends of Pio Pico State Historic Park
Friends of the San Gabriel River
Inland Valley Land Trust
Los Angeles and San Gabriel Rivers Watershed Council
Los Angeles City Bicycle Coalition
Los Angeles County Bicycle Coalition
Los Cerritos Wetlands Task Force
North East Trees
Public Lands for the People
Riverlands Preservation Trust of the Rio San Gabriel (RIO Trust)
San Gabriel Mountains Regional Conservancy
San Gabriel River Water Committee
San Gabriel Valley Conservation Corps
San Gabriel Valley Gun Club
San Gabriel Valley Protective Association
San Gabriel Valley Water Association
Sierra Club
South Coast Wildlands Project
Southeast Water Coalition
Surfrider Foundation
Trust for Public Land

2.2 PROJECT OBJECTIVES

The Steering Committee and LADPW developed a vision statement and a set of broad goals. As defined by the San Gabriel River Corridor Master Plan Steering Committee, the vision for the project is:

> *The San Gabriel River will be the corridor of an integrated watershed system while providing protection, benefit and enjoyment to the public.*

The following goals of the Master Plan support the vision for the San Gabriel River:

1. Habitat: Preserve and enhance habitat systems through public education, connectivity, and balance with other uses.

2. Recreation: Encourage and enhance safe and diverse recreation systems, while providing for expansion, equitable and sufficient access, balance, and multi-purpose uses.

3. Open Space: Enhance and protect open space systems through conservation, aesthetics, connectivity, stewardship, and multi-purpose uses.

4. Flood Protection: Maintain flood protection and existing water and other rights while enhancing flood management activities through the integration with recreation, open space, and habitat systems.

5. Water Supply and Water Quality: Maintain existing water and other rights while enhancing water quality, water supply, groundwater recharge, and water conservation through the integration with recreation, open space, and habitat systems.

6. Economic Development: Pursue economic development opportunities derived from and compatible with the natural aesthetic and environmental qualities of the river.

Pursuant to State CEQA Guidelines Section 15124, these goals also serve as the CEQA project objectives for the Master Plan.

2.3 PURPOSE OF THE EIR

2.3.1 CEQA Requirements

Pursuant to the California Environmental Quality Act (CEQA), discretionary decisions by public agencies regarding certain public and private projects are subject to environmental review. The proposed Master Plan must comply with CEQA because it is a "project" as defined by Section 15378 of the State CEQA Guidelines.

This Program Environmental Impact Report (Program EIR) has been prepared by LADPW in compliance with the CEQA Statutes (Public Resources Code Section 21000 *et. seq.*) and the State CEQA Guidelines (Title 14, California Code of Regulations Section 15000 *et. seq.*) as amended.

The purpose of this Program EIR is: 1) to fully disclose to the project's decision-makers, responsible agencies, interested parties, and the general public the significant or potentially significant environmental effects of implementing the proposed project; 2) to identify possible ways to avoid or reduce those impacts; and 3) to describe reasonable alternatives to the proposed project.

2.3.2 Program EIR Approach

The Master Plan is a set of policies and actions to increase open space, habitat, and recreation opportunities in the San Gabriel River corridor. Pursuant to the State CEQA Guidelines Section 15168, this document has been prepared as a Program EIR to consider the environmental impacts, mitigation measures and alternatives of the proposed Master Plan as a whole. This approach avoids duplication, allows the lead agency to consider broad policy alternatives and mitigation measures at an earlier time when there may be more flexibility to address the issues, and addresses cumulative impacts that might be overlooked in a project-level EIR.

Because this document is a Program EIR, it generally contains less detail than typical development project EIRs. For the most part, specific sites and/or construction and operation plans have not been determined. The level of detail in the impact analysis reflects the level of detail in the project description. Based on the conceptual designs described in the Master Plan, more detailed description is provided for the two County sponsored Concept Design Studies (San Gabriel Canyon Spreading Grounds and Lario Creek) and three others (Woodland Duck Farm, El Dorado Regional Park, and San Gabriel River Discovery Center at Whittier Narrows).

However, since the project descriptions for the Concept Design Studies are conceptual and not approved plans, this EIR is not meant to be a project-level review of the Concept Design Studies, but instead analyzes their impacts (as best as can be determined at this preliminary stage in their design) as examples of Master Plan projects and the types of impacts expected. For each of these sites, the actual planning process by project sponsors still needs to be carried out or is ongoing, including appropriate public involvement and environmental review. As the Concept Design Studies or other future Master Plan projects are proposed for implementation, project proponents will prepare a second-tier CEQA document (a Negative Declaration or an EIR) for each project. The data on existing conditions, CEQA thresholds of significance, and the programmatic analyses and mitigation measures presented in this Program EIR will then serve as a source of background information and model to guide further project-level CEQA review for the Concept Design Studies, or other Master Plan projects. This document is intended to streamline the environmental review and documentation process for Steering Committee members proposing projects in the river corridor.

2.4 AGENCIES AND APPROVALS

2.4.1 Lead Agency

The County of Los Angeles is the lead agency pursuant to State CEQA Guidelines Section 15367 for this Program EIR. A lead agency is the public agency that has the principal responsibility for carrying out or approving a project subject to CEQA. The lead agency is

responsible for preparing the environmental documents on a project according to the full disclosure requirements of CEQA.

LADPW, a department of the County of Los Angeles and the department responsible for carrying out the Master Plan, is a public agency responsible for the design, construction, operation, maintenance, and repair of specific roads, bridges, airports, sewers, water supply, flood control, and water conservation facilities within Los Angeles County including San Gabriel River Watershed. In August 2000, a new Watershed Management Division was created within LADPW to integrate and coordinate activities that affect the natural resources and water quality of the watersheds within the County. Services that were brought together under the Watershed Management Division include flood protection, water conservation, preserving and creating open space for recreation and habitat, and reducing pollution of water resources.

2.4.2 Responsible Agencies and Approvals

Under CEQA, a responsible agency is a public agency, other than the lead agency, which has responsibility for implementing or approving a project. A responsible agency typically has permitting authority or approval over some aspect of a proposed project. The responsible agency relies on the lead agency's environmental document in acting on whatever aspect of the project requires its approval. The lead agency is required to consult with responsible agencies and solicit comments from them regarding the choice and content of the environmental document.

Table 2-2 presents the range of permits and approvals that may be required when implementing the individual projects proposed by cities and other stakeholder organizations participating in the Master Plan process. For any specific project, only a subset of these permits and approvals will likely apply. Responsible agencies expected to review the Program EIR and may issue permits or approvals for future projects in the Master Planning area are summarized in **Table 2-2**.

Table 2-2
List of Permits, Approvals, and Coordination Potentially Relevant to Future Projects in the Master Planning Area

Agency	Potential Permits or Approvals (Relevant Activities)
Federal Agencies	
U.S. Army Corps of Engineers	• Clean Water Act Section 404 permit (For river channel modifications or maintenance of created wetlands)
U.S. Fish and Wildlife Service	• Federal Endangered Species Act Section 10(a) coordination (If federal threatened or endangered species are found during future onsite biological surveys, or if created wetlands or other habitat features attract threatened or endangered species and coverage is necessary for routine maintenance activities) • Endangered Species Act Section 7 consultation for projects involving federal action (e.g., funding)
U.S. Forest Service	• Special Use Permit (For construction of projects on Forest Service lands proposed by other parties)
Federal Emergency Management Agency	• Modifications to Federal Emergency Management Agency (FEMA) floodplain maps (For flood channel enhancement projects that propose modifications to an existing flood control channel)
State Agencies	
California Department of Conservation Division of Oil, Gas, & Geothermal Resources	• Review of oil and gas well records • Implementation of construction site review and well abandonment procedures
California Department of Fish and Game	• State Endangered Species Act coordination (If state threatened or endangered species are found during future onsite biological surveys, or if created wetlands or other habitat features attract threatened or endangered species and coverage is necessary for routine maintenance activities) • Section 1602 Streambed Alteration Agreement (For river channel modifications and on-going maintenance activities in channels (e.g., Lario Creek)
California Department of Health Services	• Project review (For water features in parks or reuse of stormwater for irrigation)
California Department of Parks and Recreation, Los Angeles District	• Project review • Potential funding partner
California Department of Transportation, District 7 (Los Angeles County) or District 12 (Orange County)	• Encroachment permit (For projects located within the Department of Transportation rights-of-way, e.g., adjacent to freeways). Note – requires conformance to Caltrans' Standard Plans and Standard Specifications for water pollution control. • Transportation permit for transportation of heavy construction equipment and/or materials which requires the use of oversized-transport vehicles on State highways

Agency	Potential Permits or Approvals (Relevant Activities)
California Department of Water Resources, Division of Safety of Dams	• Approval of designs of bermed retention basins (For projects involving large stormwater retention basins or other water storage facilities)
California Regional Water Quality Control Board, Los Angeles Region	• Clean Water Act Section 401 Water Quality Certification or Waiver (For projects requiring a Clean Water Act Section 404 Permit from the U.S. Army Corps of Engineers) • NPDES permits or waste discharge requirements (For projects involving dewatering activities during construction) • NPDES Stormwater Program permit (For construction sites over 1 acre)
Coastal Commission	• Coastal Development Permits for projects that involve placement of structures or major vegetation removal in the Coastal Zone
Regional Agencies	
South Coast Air Quality Management District	• Permits for temporary electric generation at construction sites, if applicable • Rule 403 Fugitive Dust notification or plan (For construction sites greater than 100 acres)
Main San Gabriel Basin Watermaster Metropolitan Water District of Southern California San Gabriel River Watermaster San Gabriel Valley Municipal Water District Three Valleys Metropolitan Water District Upper San Gabriel Valley Municipal Water District Water Replenishment District of Southern California West Basin Municipal Water District Central Basin Municipal Water District	• Project review
Greater Los Angeles County Vector Control District Orange County Vector Control District San Gabriel Valley Mosquito and Vector Control District City of Long Beach Vector Control Program Los Angeles County Vector Management Program	• Project review (For projects that contain standing water features)
Puente Hills Landfill Native Habitat Preservation Authority	• Project review (For projects that are located within the Authority's jurisdiction)
School Districts	• Approval of projects involving public school sites
County and City Agencies	
Local municipalities	• Land use approvals including Conditional Use Permits, architectural reviews, building permits, and grading permits • Easements, encroachment permits, and/or construction permits • Coastal Development Permit or Coastal Exemption for construction projects within the Coastal Zone (cities of Long Beach and Seal Beach, California Coastal Commission (State Agency))
Los Angeles County Metropolitan Transportation Authority	• Encroachment permit (For projects located within MTA rights-of-way, e.g., adjacent to railroads)

Agency	Potential Permits or Approvals (Relevant Activities)
County of Orange	• Review of channel modifications proposed for District facilities • Encroachment permit
Los Angeles County, Orange County, or City of Long Beach	• Incorporation of stormwater BMPs into projects as outlined by SUSMP (LADPW, 2002b), DAMP (Orange County, 2003), or Long Beach Stormwater Management Program (City of Long Beach, 2001), as applicable
County Sanitation Districts of Los Angeles County	• Approval to construct within or over a Districts' sewer / sewer easement
Southern California Edison (SCE)	• Project review and approval for projects within SCE right-of-way

2.5 EIR PROCESS

2.5.1 Notice of Preparation

The Notice of Preparation (NOP) for this Program EIR was filed by LADPW with the State Clearinghouse in April 2003, and distributed to responsible agencies and interested parties for a 30-day review and comment period ending May 28, 2003. A copy of the NOP is included as **Appendix B**.

LADPW received 21 comment letters on the NOP. CEQA related comments were also received during the CEQA scoping meeting held at LADPW offices in Alhambra on May 12, 2003. The written comments submitted on the NOP and comments provided at the CEQA scoping meeting are presented in **Appendix B**. The comments received related to surface and ground water quality, flood control, water rights, mineral resources, construction impacts on utilities, traffic/transportation facilities, and recreational facilities (e.g., bike trails), and impact on public health (creation of habitat for mosquito and other vectors).

2.5.2 Draft and Final Program EIR

The Draft Program EIR for the Master Plan was issued for public review on March 7, 2005. The Notice of Availability (NOA) and the Draft Program EIR were mailed to a total of 72 agencies, organizations, and interested individuals. In addition, the NOA was sent to over 200 individuals by e-mail. The NOA was filed with the County Clerks of Los Angeles County and Orange County for public posting, and the Notice of Completion, NOA, and the Draft Program EIR were submitted to the State Clearinghouse. Copies of the Draft Program EIR were made available for public review at the LADPW office in Alhambra, 19 local and area libraries, and on the Master Plan website. The public review and comment period lasted for 60 days from March 7 through May 5, 2005.

This Final Program EIR presents agency and public comments received on the Draft Program EIR, as well as responses to these comments **(**see **Appendix F**). Following publication, the Final

Program EIR will be certified by the County of Los Angeles Board of Supervisors along with the adoption of the Master Plan and the Mitigation Monitoring and Reporting Program.

2.6 SCOPE OF THE EIR

Based on a preliminary analysis of environmental issues associated with the project and comments received on the NOP, LADPW concluded that the proposed project has the potential to have environmental impacts on the following environmental issues:

- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use
- Noise
- Public Services and Utilities
- Recreation
- Transportation and Traffic

Based on the preliminary analysis, LADPW determined that the proposed project would have no or negligible impact with respect to the environmental issues listed below. Therefore, these environmental issues have been excluded from analysis in this Program EIR.

- Agricultural Resources
- Population and Housing (note that growth-inducing impacts are addressed in **Section 6**.)

2.7 AREAS OF KNOWN CONTROVERSY

In the course of preparation of the Master Plan and the Program EIR, the following issues of concern have been identified:

- Potential impact on existing operation and maintenance of flood control facilities and capacities associated with actions involving modification of the river channel related to the integration of recreation and habitat elements.
- Potential impact on surface and ground water rights associated with actions involving groundwater recharge or surface diversions.
- Potential impact on public health from increase in mosquito- and other vector-breeding conditions associated with creation of constructed wetlands, surface or underground stormwater capture/treatment devices, other water features, and corridor enhancement projects in close vicinity to urban development.

These issues are addressed in this document.

2.8 ORGANIZATION OF THE PROGRAM EIR

The Program EIR is organized into the following major sections.

Table of Contents

Section 1 – Summary. A summary of the contents of the Program EIR.

Section 2 – Introduction. Background, project objectives, lead agency identification, the purpose and overview of the EIR process, scope of the Program EIR, responsible agencies and approvals, and areas of known controversy.

Section 3 – Project Description. Project location, description of the Concept Design Studies, and Master Plan elements, policies, and programs.

Section 4 – Environmental Setting, Impacts, and Mitigation Measures. Description of the environmental setting, criteria for determining impact significance, analysis of project-related impacts, description of mitigation measures for each environmental topic, and summary of future analyses.

Section 5 – Cumulative Impacts. A discussion of past, present and reasonably anticipated future activities that could have additive impacts with those of the proposed project.

Section 6 – Additional Analysis. Additional analyses required by CEQA, including a discussion of the impacts of project alternatives, irreversible environmental changes, unavoidable environmental impacts, growth inducing impacts, and consistency with regional and local planning.

Appendices. List of references, acronyms and abbreviations, glossary, organizations and persons consulted, and preparers of the Program EIR; Notice of Preparation and comments received; technical materials and data supporting the analysis or contents of this Program EIR; and responses to comments received on the Draft Program EIR.

2.9 RELATED DOCUMENTS

The Master Plan and other related documents prepared in the process of developing the Master Plan are available for public review during regular office hours at the County of Los Angeles Department of Public Works (900 South Fremont Avenue, Alhambra, California 91803; Mr. Marty Moreno; Phone: 626-458-4119).

Section 3
Project Description

3.1 INTRODUCTION

The San Gabriel River Corridor Master Plan (Master Plan) is an overall conceptual plan that focuses primarily on developing the river corridor as an integrated watershed system that enhances habitat, provides recreational benefits, and protects open space, while maintaining and enhancing flood protection and water resources. The Master Plan describes general guidelines for the development of specific projects in the planning area. The Steering Committee and the County of Los Angeles Department of Public Works (LADPW) representatives also collaborated to develop an extensive list of potential projects within the Master Plan corridor to include on a Project Action Grid (see Appendix A of the Master Plan). Using a collaborative process, five of these projects were considered further as Concept Design Studies - projects that were deemed to best meet the Master Plan objectives. As available, additional detail is provided on the Concept Design Studies.

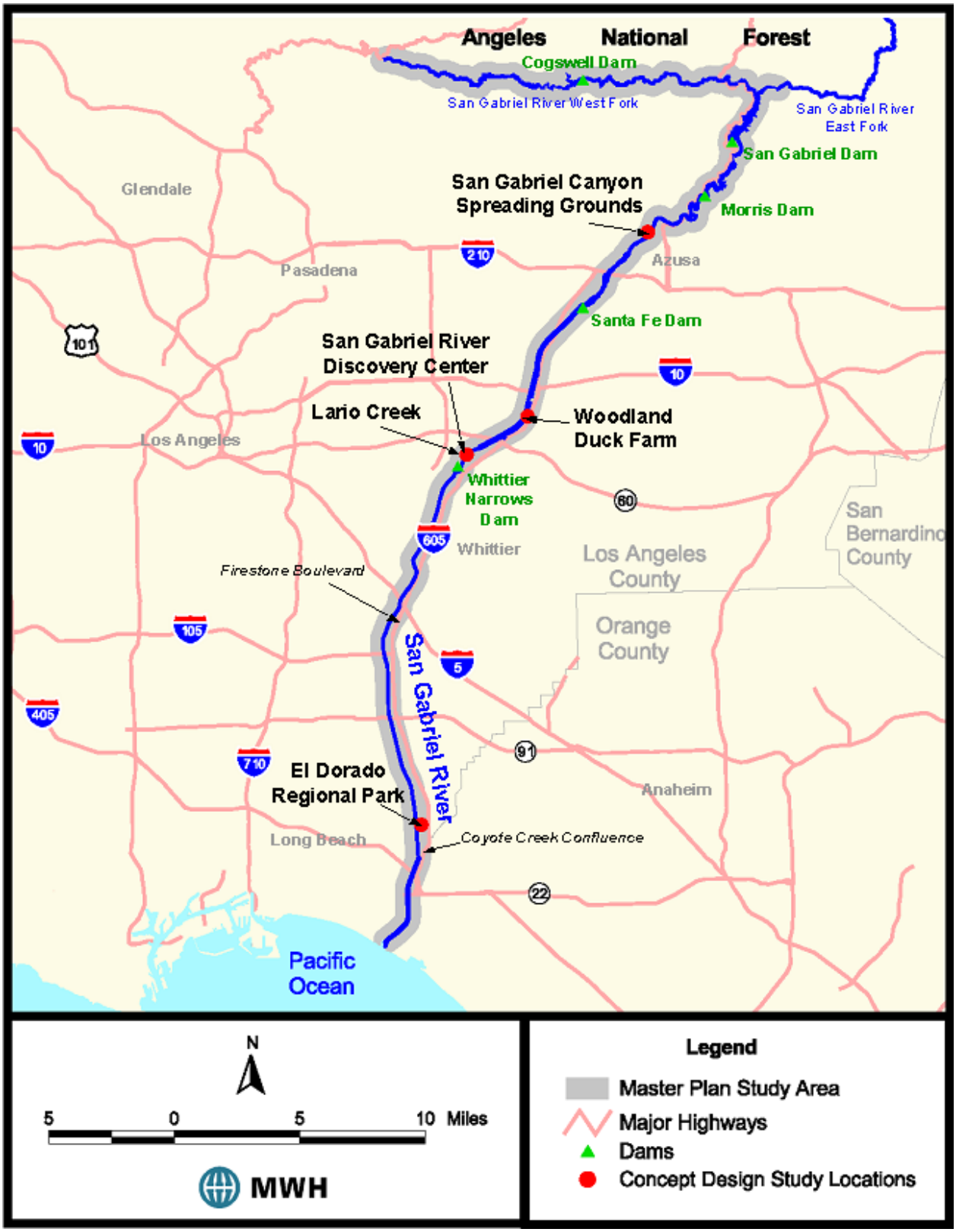
3.2 PROJECT LOCATION

3.2.1 River Corridor Plan Area

The Master Plan project area lies along 58 river miles of the San Gabriel River in southern California, from its headwaters in the Angeles National Forest to its terminus at the Pacific Ocean between Long Beach in Los Angeles County and Seal Beach in Orange County (**Figure 3-1**). The headwaters extend from the West Fork of the San Gabriel River upstream of Cogswell Dam, and include the portion of the river upstream of Morris Dam under Los Angeles County jurisdiction including Morris Dam, San Gabriel Dam and Cogswell Dam. The Master Plan area includes 19 cities and unincorporated areas of Los Angeles County and Orange County. The Master Plan area is almost entirely in Los Angeles County. The portion within Orange County is located along the reach where the river separates Orange County from Los Angeles County for approximately 3 miles at the river's southern end. Additional maps detailing the various reaches along the river corridor are included in the Master Plan.

For the Master Plan, a corridor width of 0.5 mile on either side of the river was chosen to bound the study area. Based on this corridor width, the project area encompasses approximately 58 square miles. This study area provides a necessary focus for the Master Plan but is not meant to be a totally exclusive boundary. Some projects and programs located nearby but outside the 1-mile wide study area are included if they are designed to contribute to the vision and goals of the Master Plan.

Figure 3-1
Regional Location Map



3.2.2 Master Plan Study Reaches

The Master Plan divides the San Gabriel River geographically into seven reaches:

1. Headwaters
2. San Gabriel Canyon
3. Upper San Gabriel Valley
4. Lower San Gabriel Valley
5. Upper Coastal Plain
6. Lower Coastal Plain
7. Zone of Tidal Influence

The system of dams and reservoirs and the increase in impervious surface area in the watershed has modified the natural pattern of flow in the river in many of the reaches. Only in its headwaters does the river remain largely unaltered.

1. Headwaters – The first reach of the river is the headwaters along the West Fork in the Angeles National Forest, on the south side of the San Gabriel Mountains. The San Gabriel Mountains are characterized by wide, deep canyons with steep slopes. The river runs through undisturbed riparian and woodland habitats in the San Gabriel Mountains, and passes through Cogswell Dam, a flood control facility. The reach along the West Fork is largely uninhabited. The East Fork and lower North Fork (not included in the Master Plan study area) of the San Gabriel River are subject to heavy recreational use. The lower one-quarter mile of the West Fork is also subject to heavy recreational use.

2. San Gabriel Canyon – The San Gabriel Canyon reach begins at the point where the West, North, and East Forks of the river join, and ends at Morris Dam. Land uses in this reach include open space/recreation (Angeles National Forest) and public facilities related to flood control and water resource management (e.g., San Gabriel Dam, Morris Dam, and pipelines for conveyance of imported water). Upstream of Morris Dam, the River remains mostly in its natural state, flowing through the deep, wide canyons of the San Gabriel Mountains.

3. Upper San Gabriel Valley – The Upper San Gabriel Valley reach extends from Morris Dam north of Glendora, passes through unincorporated Los Angeles County and Azusa, and ends at the Santa Fe Dam in Irwindale. Santa Fe Dam is located about 4 miles south of the mouth of San Gabriel Canyon. While it is primarily a U.S. Army Corps of Engineers (COE) flood control facility and part of the Los Angeles County Drainage Area (LACDA) flood control system, portion of the nearly 31,000 acre-feet capacity reservoir are leased by the County of Los Angeles Departments of Public Works (for water conservation) and Parks and Recreation ((for recreation). Recreational activities including sailing, swimming, and fishing. The Santa Fe Dam Recreation Area in Irwindale shares borders with Duarte and Monrovia, and includes park facilities for picnicking, trails for biking and hiking, and campsites.

Downstream of Morris Dam, the river descends into the San Gabriel Valley where the terrain flattens. In reaches below Morris Dam, the river has been modified from its natural shallow and wide state. The river has been deepened, narrowed, and straightened to allow increased

development up to the river's edge. The native vegetation has been replaced in some areas by channel walls reinforced with stone or concrete. Raised levees provide flood protection, but also obstruct the view of the water from the ground surface.

4. Lower San Gabriel Valley – The Lower San Gabriel Valley reach runs between the Santa Fe Dam and Whittier Narrows Dam in unincorporated Los Angeles County north of Pico Rivera, passing through Baldwin Park, Arcadia, El Monte, the City of Industry, South El Monte, and Bassett in unincorporated Los Angeles County. The dam is located at the geographic feature known as the "Whittier Narrows." The Whittier Narrows are a natural gap in the hills that form the southern boundary of the San Gabriel Valley, through which the Rio Hondo and San Gabriel Rivers pass and are impounded in the Whittier Narrows Reservoir. This dam is also a COE flood control facility in the LACDA system, and provides flood control and water conservation benefits. Whittier Narrows Recreation area in unincorporated Los Angeles County provides opportunities for biking, fishing, hiking, horseback riding, picnicking, and wildlife viewing. The channel in this reach is trapezoidal in shape, with grouted stone sidewalls and an earthen bottom.

5. Upper Coastal Plain – This reach begins at the outlet of the Whittier Narrows Dam and ends where the San Gabriel River crosses Firestone Boulevard in Norwalk, near the 605 Freeway. This reach includes portions of Pico Rivera, Whittier, West Whittier and Los Nietos in unincorporated Los Angeles County, Santa Fe Springs, Downey, and Norwalk. The channel in this reach is trapezoidal in shape, with grouted stone sidewalls and an earthen bottom.

6. Lower Coastal Plain – This reach begins at Firestone Boulevard and extends to the confluence of Coyote Creek and the San Gabriel River in Rossmoor, located in unincorporated Orange County. The San Gabriel River passes through Downey, Norwalk, Bellflower, Cerritos, Lakewood, and Long Beach in this reach. The 10-mile reach from just south of Firestone Boulevard to the confluence with Coyote Creek in Long Beach is a trapezoidal channel lined with concrete both on the sides and the bottom.

7. Zone of Tidal Influence – For the last 3.5 miles of the San Gabriel River from the confluence with Coyote Creek to the Pacific Ocean, the channel again has a soft bottom. The river flows between Long Beach in Los Angeles County and Seal Beach in Orange County, and borders portions of Los Alamitos and Rossmoor (unincorporated) in Orange County. In this reach, the river water mixes with ocean water in a natural estuary before its terminus at the Pacific Ocean.

For more information on the hydrology of the San Gabriel River, including descriptions of flood control dams and spreading basins, see Section 4 - Environmental Setting, Impacts, and Mitigation Measures.

3.3 PROJECT DESCRIPTION

This section serves as the general description of the project's technical, economic and environmental characteristics as required by CEQA Guidelines Section 15124(c).

The Master Plan includes:

- Vision statement and specific goals for the San Gabriel River Corridor developed by the Steering Committee over a three year period (vision, goals, objectives, and performance criteria).
- River corridor-wide efforts, policies, and guidelines intended to connect site-specific projects or address issues common to most Master Plan projects.
- A "design toolbox" or design guidelines to help projects integrate into the river corridor's natural environment.
- Eight categories of projects developed from a collective review of all the proposed or planned projects along the San Gabriel River.
- A list of projects suggested or proposed by Steering Committee members (Project Action Grid, see Appendix A of the Master Plan). Five of the projects suggested by Steering Committee members were chosen for further development as Concept Design Studies.
- The results of a spatial analysis. The spatial analysis reviews existing conditions for a number of factors to identify potential opportunities in addition to the stakeholder projects already in development.

3.3.1 Master Plan Framework

3.3.1.1 Vision, Goals, and Objectives

As described in Section 2, the vision and goals of the Master Plan are to develop the river corridor as an integrated watershed system that enhances habitat, provides recreational benefits, and protects open space while maintaining and enhancing flood protection and water resources. In order to support the goals and vision of the Master Plan, the Steering Committee and LADPW defined multiple objectives for each goal. Performance criteria were then developed to measure progress toward those objectives. The final goals of the Master Plan (also referred to as Master Plan elements) are:

- **Habitat** - Preserve and enhance habitat systems through public education, connectivity, and balance with other uses.
- **Recreation** - Encourage and enhance safe and diverse recreation systems, while providing for expansion, equitable and sufficient access, balance and multi-purpose uses.
- **Open Space** - Enhance and protect open space systems through conservation, aesthetics, connectivity, stewardship, and multi-purpose uses.
- **Flood Protection** - Maintain flood protection and existing water and other rights while enhancing flood management activities through the integration with recreation, open space and habitat systems.
- **Water Supply and Water Quality** - Maintain existing water and other rights while enhancing water quality, water supply, groundwater recharge, and water conservation through the integration with recreation, open space and habitat systems.

- **Economic Development** - Pursue economic development opportunities derived from and compatible with the natural aesthetic and environmental qualities of the river.

Each goal has multiple objectives and each objective contains multiple performance criteria. The objectives and performance criteria supporting the goals were developed during Steering Committee work sessions. The objectives and performance criteria for each Master Plan goal are presented in **Table 3-1** through **Table 3-6**. The performance of projects implemented for the Master Plan is to be assessed using the performance criteria. The projects can then be improved to better meet the performance criteria.

Table 3-1
Objectives and Performance Criteria for the Habitat Goal

Objectives	Performance Criteria
H1 – Protect existing high quality habitat and ecologically significant areas	H1.1 Supports Habitat conservation
	H1.2 Protects threatened and endangered species' habitats, significant ecological areas and significant natural areas
	H1.3 Enhances specific species that have experienced decline
	H1.4 Protects habitats from in-compatible adjacent uses
	H1.5 Identifies indicator species, develops standards & monitoring systems
	H1.6 Balances wildlife and human uses/recreation
	H1.7 Controls litter and dumping
H2 – Restore/enhance aquatic and terrestrial riparian and upland habitat	H2.1 Ensures sufficient flow conditions to support riparian river habitats, aquatic species/fisheries
	H2.2 Uses reclaimed water for irrigation
	H2.3 Incorporates habitat areas into development on private and public lands and requires mitigation efforts for impacts to existing habitats
	H2.4 Protects native vegetation & encourage native plant restoration
	H2.5 Restores and enhances habitats without compromising flood protection, groundwater recharge, or public health
	H2.6 Reconciles habitat enhancement with water quality issues (i.e. some enhancement may cause increased coliform levels)
	H2.7 Increases acreage of coastal wetland habitats
	H2.8 Incorporates monitoring and maintenance procedures into restoration plans
	H2.9 Supports planting levees with native riparian vegetation wherever possible without compromising operation and maintenance of flood control capabilities and that vector breeding is not encouraged
	H2.10 Encourages development of new habitats without compromising essential public services including groundwater recharge, flood protection, or electrical power transmission by offering legal and operational safeguards such as memoranda of understanding that allow access for regular maintenance and emergency operations

Table 3-1 (Continued)
Objectives and Performance Criteria for the Habitat Goal

Objectives	Performance Criteria
H3 – Coordinate efforts to remove invasive species	H3.1 Prohibits planting of listed invasive/exotic plant species in parks, recreation, open space or habitat areas H3.2 Encourages use of native plants in parklands or river corridor and adjacent areas H3.3 Removes invasive species and prevents their spread or migration upstream H3.4 Utilizes Best Management Practices for management of habitat areas H3.5 Mediates issues between stock versus native fish
H4 – Maintain and enhance wildlife corridors as continuous linkages	H4.1 Reduces habitat fragmentation by establishing wildlife corridors and nodes H4.2 Minimizes the effects of barriers and choke points that create impediments to wildlife movement H4.3 Utilizes ecologically responsible techniques to maintain or reduce populations of wildlife meso-predators (raccoon, feral cats, opossum, skunk) and rodents that may transmit vector-borne diseases and discourages wildlife encroachment into surrounding urban areas H4.4 Maintains or increases the population of prey species (amphibians, reptiles, small mammals and birds) H4.5 Establishes habitat area design standards to meet the tolerances of the most sensitive species that might possibly use a corridor H4.6 Discourages urban development in floodplain & habitat areas H4.7 Enhances connections between remaining wildlife populations so genetic exchange between populations can resume (between Puente Hills, San Jose Hills, Santa Fe Dam floodplain, Whittier Narrows Recreational Area, Cleveland National Forest)
H5 – Educate private and public land owners about the use of appropriate plants to use for landscaping	H5.1 Forms business partnerships to encourage residents to use native plants and materials that reflect the river/watershed identity and provide some habitat value H5.2 Provides guidelines to coordinate habitat preservation efforts between agencies, jurisdictions, and private lands

Table 3-2
Objectives and Performance Criteria for the Recreation Goal

Objectives	Performance Criteria
RC1 – Improve access to recreation for all communities.	RC1.1 Provides active and passive recreation opportunities RC1.2 Serves to improve the aesthetic quality of the corridor, the viewshed, and the adjacent communities RC1.3 Establishes interpretive centers at key nodes along the river system to provide a link between environmental education, recreation, habitat and open space RC1.4 Provides educational and interpretative elements that combine art and science for fun, expressive and meaningful exhibits about habitats and landscape processes
RC2 – Connect open space and recreation areas with a network of trails.	RC2.1 Provides continuous bike trail, equestrian and public access system along riverfronts RC2.2 Establishes design standards for trails to safely accommodate multiple users of all ages and abilities RC2.3 Includes shade, river access, rest areas, maps/signs, mile markers, landmarks, lighting, emergency call boxes and other amenities for trail users RC2.4 Provides for public safety and security along waterways and trails. RC2.5 Allows trail users to experience a positive sense of the adjacent community's identity as they travel along the river corridor RC2.6 Provides a comprehensive network that connects river trails to mountain trails, urban trails, local dams, and beaches RC2.7 Connects recreation areas to transit access points RC2.8 Provides trails that are designed for low maintenance RC2.9 Provides access for routine maintenance and emergency use
RC3 – Clearly identify recreation destinations adjacent to the corridor as part of the riparian system.	RC3.1 Provides site signage and design details to orient visitors throughout the river corridor RC3.2 Provides interpretive opportunities, including informative signage (explaining topics such as natural history, historic landscapes, fire, habitat, stewardship, pollution, hydrology, water supply, etc.) are integrated with recreational facilities
RC4 – Coordinate recreational programming to reinforce other goals and objectives	RC4.1 Provides diverse recreational opportunities (horseback riding, environmental education, fishing, nature walks, clean-up activities, etc.) and engages individuals, interest groups, school groups and families with the River RC4.2 Provides programming, site design and signage to increase public awareness about riparian systems and engender stewardship of the land. RC4.3 Encourages Parks and Recreation Departments to incorporate community gardens and pocket parks, demonstration and restoration projects RC4.4 Educates public about catch and release fishing

Table 3-2 (Continued)
Objectives and Performance Criteria for the Recreation Goal

Objectives	Performance Criteria
RC5 – Plan facilities to meet multiple objectives	RC5.1 Provides habitat where possible and minimizes impacts to adjacent sensitive areas; also serves as a wildlife corridor where appropriate
	RC5.2 Optimizes water flow and sediment removal activities for fish habitat to support fishing activities
	RC5.3 Optimizes water flow and maintenance activities for wildlife habitat to support environmental education activities
	RC5.4 Provides for groundwater infiltration where possible to meet water quality goals
	RC5.5 Provides site design, planting, lighting and maintenance support habitat goals/objectives
	RC5.6 Provides a corridor-wide perspective to minimize use conflicts and mitigate impacts

Table 3-3
Objectives and Performance Criteria for the Open Space Goal

Objectives	Performance Criteria
O1 – Create, expand and improve public open space throughout the region	O1.1 Establishes priorities for land acquisition, coordinating targeted land acquisitions with land use planning
	O1.2 Recycles brownfields with agency collaboration
	O1.3 Coordinates land management policies and procedures among jurisdictions
	O1.4 Includes restored native habitats within open space
O2 – Improve access to open space and recreation for all communities	O2.1 Provides for active and passive recreational uses
	O2.2 Incorporates passive/low impact recreational uses and storm water re-capture
	O2.3 Evaluates access by population density, distance and time for each type of open space.
	O2.4 Meets site design standards for special user needs
	O2.5 Improves the aesthetic quality of the corridor, the viewshed, and the adjacent communities
	O2.6 Includes in all site programming adequate parking, access via public transportation, and facilities for buses
O3 – Promote stewardship of the landscape	O3.1 Utilizes drought tolerant and native plant materials
	O3.2 Supplies best Management Practices that support habitat and water quality goals
	O3.3 Identifies historical sites and cultural landscapes
	O3.4 Supports community gardens and water-wise and native plant gardens.
	O3.5 Uses conservation easements to provide incentives to expand open space

Table 3-3 (Continued)
Objectives and Performance Criteria for the Open Space Goal

Objectives	Performance Criteria
O4 – Develop a cross-jurisdictional safety and maintenance program	O4.1 Establishes public safety measures to prevent crime in river corridor
	O4.2 Encourages connections with groups that sponsor volunteer cleanup activities
	O4.3 Promotes fire safety and awareness
	O4.4 Reduces debris flows
	O4.5 Reduces habitat and recreational conflicts
	O4.6 Reduce vector breeding potential and encourage public education of vector-borne diseases and precautions

Table 3-4
Objectives and Performance Criteria for the Flood Protection Goal

Objectives	Performance Criteria
FP1 – Maintain and improve flood protection	FP1.1 Maintains existing flood protection at all times
	FP1.2 Reduces volume and velocity of storm water runoff where feasible
	FP1.3 Maintain current or lower Water Surface Elevation (WSE) design standards
	FP1.4 Maintain or reduce floodwater velocity
	FP1.5 Develops networks of storm water detention areas
	FP1.6 Ensures liability is not increased
FP2 – Improve flood protection using natural processes	FP2.1 Utilizes non-structural flood control where feasible
	FP2.2 Identifies opportunities for use of naturalized low-flow streambeds
	FP2.3 Restores local streams
	FP2.4 Coordinates maintenance of the flood protection system with habitat needs
	FP2.5 Recycles sediments from sluicing and maintenance operations
	FP2.6 Reduces the amount of precipitation that is converted to urban runoff (decreases the acreage of impermeable surfaces)
FP3 – Improve the visual aesthetics of flood control elements	FP3.1 Fosters multi-purpose flood control infrastructure to accommodate recreation, trails and habitat
	FP3.2 Establishes visual design standards for flood control devices

Table 3-5
Objectives and Performance Criteria for the Water Supply and Water Quality Goal

Objectives	Performance Criteria
WQ1 – Improve quality of surface water & groundwater.	WQ1.1 Reduces dry weather urban runoff discharge into waterways. WQ1.2 Expands and enhances groundwater infiltration and recharge. WQ1.3 Utilizes on-site opportunities to reduce impermeable surfaces and increase infiltration. WQ1.4 Assists cities to meet water quality requirements for TMDLs and NPDES. WQ1.5 Employs phytoremediation to treat water.
WQ2 – Optimize water resources to reduce dependence on imported water.	WQ2.1 Expands groundwater recharge facilities to increase water supplies. WQ2.2 Extends the distribution and range of uses of reclaimed water. WQ2.3 Encourages onsite collection of stormwater for irrigation and percolation, where consistent with water rights. WQ2.4 Maintains conservation of local water.
WQ3 – Establish riverfront greenways to cleanse water, hold floodwaters, and extend open space.	WQ3.1 Utilizes open spaces and landscaped areas to filter and cleanse runoff. WQ3.2 Prevents reduction of water conservation facilities.

Table 3-6
Objectives and Performance Criteria for the Economic Development Goal

Objectives	Performance Criteria
ED1 – Connect communities to the waterways by extended greenways	ED 2.1 Creates new access points ED 2.2 Develops trails to and along the waterways ED 2.3 Promotes development of public spaces
ED2 – Implement design and development standards consistent with Master Plan goals.	ED 2.4 Provides incentives to participating adjacent landowners ED 2.5 Educates participating landowners about potential liability and protective measures

3.3.1.2 River Corridor Policies and Programs

In addition to the Master Plan goals, objectives and performance criteria described above, the Master Plan also outlines the need for development of river corridor policies and programs. Further reference to these river corridor policies and programs is not made in the environmental impact sections of this Program EIR since the policies and programs are to be defined in the future and would not have environmental impacts that are different from the Master Plan elements described above. The types of policies and programs to be developed as identified in the Master Plan are:

- Establish standard design guidelines
- Develop public access guidelines

- Develop policies regarding permitted and prohibited uses
- Ensure compliance with Americans with Disabilities Act for structures and trails
- Maintain access for operations and maintenance needs
- Consider durability and maintenance requirements
- Support coordinated systematic exotic plant removal efforts
- Develop programs and policies to ensure the safety and security of visitors
- Coordinate with local mosquito and vector control agency. Design to avoid vector breeding that might create a risk to public health
- Encourage water quality and water supply BMP implementation
- Create opportunities for stormwater infiltration without adding contamination
- Recognize existing water rights
- Encourage water conservation education programs and policies
- Encourage reclaimed water use in commercial and industrial settings
- Consider habitat integration
- Consider public education regarding respecting wildlife
- Implement public awareness and information programs
- Serve the economic interests of cities along the corridor while also helping to achieve the Master Plan vision
- Acquire land within or near the river corridor to adapt for public open space, habitat, water conservation, and/or flood control functions

3.3.1.3 Design Guidelines

The design toolbox is comprised of design guidelines for each of the seven reaches of the San Gabriel River. The elements are specific to the topography and culture of the specific reach. The design toolbox focuses on color, texture, form, and materials. The design guidelines heavily reference the Los Angeles River design guidelines from a functional point of view (e.g., trail width). However, the aesthetic guidelines are specific to the San Gabriel River (e.g., style of signage, color and texture of building materials, and gate appearance).

3.3.2 Master Plan Projects

3.3.2.1 Categories of Master Plan Projects

Projects to be developed within the Master Plan study area fall into one or more of the following eight main categories:

- Trail Enhancements

- Educational Centers
- Bridges, Gateways and Connections
- Parks and Open Space
- Redevelopment and Reclamation
- Habitat Enhancement
- Water Quality and Supply
- Studies

To assist with development of future project opportunities, a spatial analysis was conducted and is described in Chapter 4 of the Master Plan. The spatial analysis identifies opportunities for each Master Plan project category by evaluating the existing conditions in the river corridor. For example, factors such as soil permeability and availability of open space were considered to identify areas with opportunity for groundwater recharge projects.

3.3.2.2 Project Action Grid

Through meetings with cities and other stakeholders along the San Gabriel River corridor and the Steering Committee process, over 160 projects, ideas, and suggestions were gathered for inclusion in the Master Plan as part of the Project Action Grid. Another source of the project listing was RMC's project database. This list of 160 projects was modified by identifying projects that were repeated and eliminating those that were only broad concepts and were not associated with a specific site. The final Project Action Grid contains approximately 134 projects (see Appendix A of the Master Plan).

3.3.2.3 Selection Process for Concept Design Studies

Five Concept Design Studies were identified as part of the Master Plan process. The purpose of the Concept Design Studies is to illustrate, using concrete examples, how the Master Plan goals of habitat, recreation and open space can be simultaneously accomplished. The five Concept Design Studies were selected from projects in the Project Action Grid.

Initially, the planning team chose 24 candidate projects from the Project Action Grid using the following criteria:

- Project or program is well defined in terms of its proposed action, stated purpose, and expected outcomes.
- Project site can be located on a map of the San Gabriel River.
- Project or program has an agency or organizational sponsor.
- Program development is underway or planned in the next few years.

The proposed list of candidate projects was organized to facilitate a vote by the Steering Committee members that would narrow the projects down to a final list of ten. The candidate projects were divided by their geographic locations. In addition, Master Plan objectives and project categories that could be demonstrated by each candidate project were identified. Write-in candidate projects nominated by Steering Committee members were also added to the list.

The planning team suggested criteria that the Steering Committee members should consider when selecting projects. The planning team suggested that candidate projects be characterized by one or more of the following criteria, similar to criteria listed in "Common Ground, from the Mountains to the Sea" (California Resources Agency, et al., 2001), the watershed and open space plan for the Los Angeles and San Gabriel Rivers:

- Project is significant in terms of potential impact (regional or local), overall size, strategic location, high leverage, site features, or programmatic scope.
- Project addresses multiple Master Plan elements or strongly meets the goal, objectives, and performance criteria of at least one Master Plan element.
- Project is replicable, scalable, or addresses system wide needs.
- Project is one-of-a-kind.

The planning team also suggested that the overall list of candidate projects address the following needs:

- Projects are distributed along the river for geographic balance.
- All plan elements are represented.
- All project categories are represented.
- Projects represent a diversity of stakeholders, including cities, agencies and community organizations.

Ten candidate projects were then chosen by the Steering Committee members based on these criteria.

3.3.3 Concept Design Studies

From the top ten candidate projects that received the most votes from the Steering Committee members, the planning team then selected five projects to be highlighted in the Master Plan as Concept Design Studies. The top ten projects were evaluated on an individual basis. The five Concept Design Studies were selected since they had: a dedicated project sponsor, multiple plan elements, a sufficiently defined preliminary project description, and potential for substantial beneficial impacts.

Two of the Concept Design Studies, San Gabriel Canyon Spreading Grounds and Lario Creek, will be implemented by LADPW. The other projects will be implemented by their respective sponsors.

The final five Concept Design Studies described in the Master Plan and their project sponsors are shown in **Table 3-7**.

Table 3-7
Master Plan Concept Design Studies

Project Name and Project Lead(s)	Project Description Summary	CEQA Project Objectives*					
		Habitat	Recreation	Open Space	Flood Protection	Water Supply and Water Quality	Economic Development
San Gabriel Canyon Spreading Grounds – City of Azusa and LADPW (Reach 3)	Amenities, habitat, and aesthetic improvement along San Gabriel River Regional Bike Path.	●	●	●	○	○	
Woodland Duck Farm – WCA (Reach 4)	Habitat, recreation, and open space and equestrian uses on newly purchased parcel.	●	●	●	○	●	●
San Gabriel River Discovery Center at Whittier Narrows – Upper San Gabriel Valley Municipal Water District, County of Los Angeles Department of Parks and Recreation, and RMC (Reach 4)	New Discovery Center building and aesthetic and habitat improvements to the Whittier Narrows Nature Area.	●	●	●	○	●	●
Lario Creek – LADPW and North East Trees (Reach 4)	Habitat and conveyance improvement to critical water conservation channel.	●	○	○	●	●	
El Dorado Regional Park – City of Long Beach (Reach 7)	Native habitat enhancement, urban runoff treatment, and improving connection to San Gabriel River at existing 500-acre park.	●	●	●	●	●	

● Primary objectives / definite opportunities

○ Secondary objectives / potential opportunities

* Detailed in **Section 2.2**.

The Concept Design Studies were defined to illustrate the types of multi-purpose projects to be fostered by the Master Plan. The conceptual project descriptions detailed below are the result of a Steering Committee exercise to help provide tangible examples of how the Master Plan multi-objective approach might apply to projects in the San Gabriel River corridor. These studies are intended for illustration purposes only and do not necessarily reflect the intent of the project

sponsors. Environmental analysis in this Program EIR is based on the conceptual project descriptions in the Master Plan.

For each of these sites, the actual planning process by project sponsors still needs to be carried out or is ongoing, including appropriate public involvement and CEQA compliance. For several sites (e.g., Woodland Duck Farm and El Dorado Regional Park), potential project elements that are different from the concept designs described in the Master Plan have been identified during the planning process by project sponsors.

3.3.3.1 San Gabriel Canyon Spreading Grounds

Existing Setting. The San Gabriel Canyon Spreading Grounds are located in the City of Azusa below the mouth of San Gabriel Canyon (Reach 3). The project site is bound by the San Gabriel River on the west side (**Figure 3-2**; see also Map 3-10 in Chapter 3.8.1 of the Master Plan). The Azusa Greens Golf Course and a residential area surround the site on the south and east. San Gabriel Canyon Road is approximately 500 feet east of the project boundary. A new warehouse development is adjacent to the southwest.

The proposed project site is approximately 165 acres including the two spreading basins operated by LADPW for groundwater recharge (Basins I and II). A 14-acre parcel located between the two basins is owned by City of Azusa, and contains water storage tanks, wells, and pumps operated by Azusa Light and Power. Access to the spreading grounds and existing site is from San Gabriel Canyon Road at the north end of the site.

The two deep basins that comprise the spreading grounds were once gravel quarries, and have very steep side slopes. The spreading grounds are recharged with water from the San Gabriel River, imported water, and surplus flows from San Gabriel River Water Committee diversions upstream (LADPW, 2003c). An open channel conveys water from the north end of the site along the west side of Basin I to supply both Basin I and Basin II. The water added to the spreading basins mixes directly with groundwater in the Main San Gabriel Basin.

The site itself has many industrial features. A conveyor belt is located in the southern end of the site and runs on the east side of the San Gabriel River Bike Trail and crosses the river at the midpoint of the site to the Azusa Rock Quarry. Power poles run along the site between the spreading grounds and the river. The site is largely without vegetation. **Figure 3-3** shows the industrial nature of the site in its current condition. The figure is a picture of Basin II as viewed from the southwest corner. The bike trail and San Gabriel River are between the spreading basins and the mountains.

Surrounding Land Uses. The surrounding area to the northwest is largely industrial. The views from the site to the northwest are an industrial mining operation and the rugged San Gabriel Mountains. The Azusa Rock Quarry is located across the river. The surrounding area to the southeast is largely residential. The views to the southwest include homes and a golf course. Hodge Elementary School is located in the residential area south of the site.

Existing Conditions of the River. The river has a wide flood plain with an earthen bottom. The riverbed contains alluvial fan sage scrub and riparian habitat in some areas. The west bank

of the river is reinforced with grouted stone, but the east bank of the San Gabriel River is not well defined due to the mining operations. Drop structures are located in the channel approximately every 1,000 feet (COE, 1975). The drop structures were installed to decrease the slope of the river channel and reduce erosive forces.

Figure 3-2
Preliminary Concept Design – San Gabriel Canyon Spreading Grounds

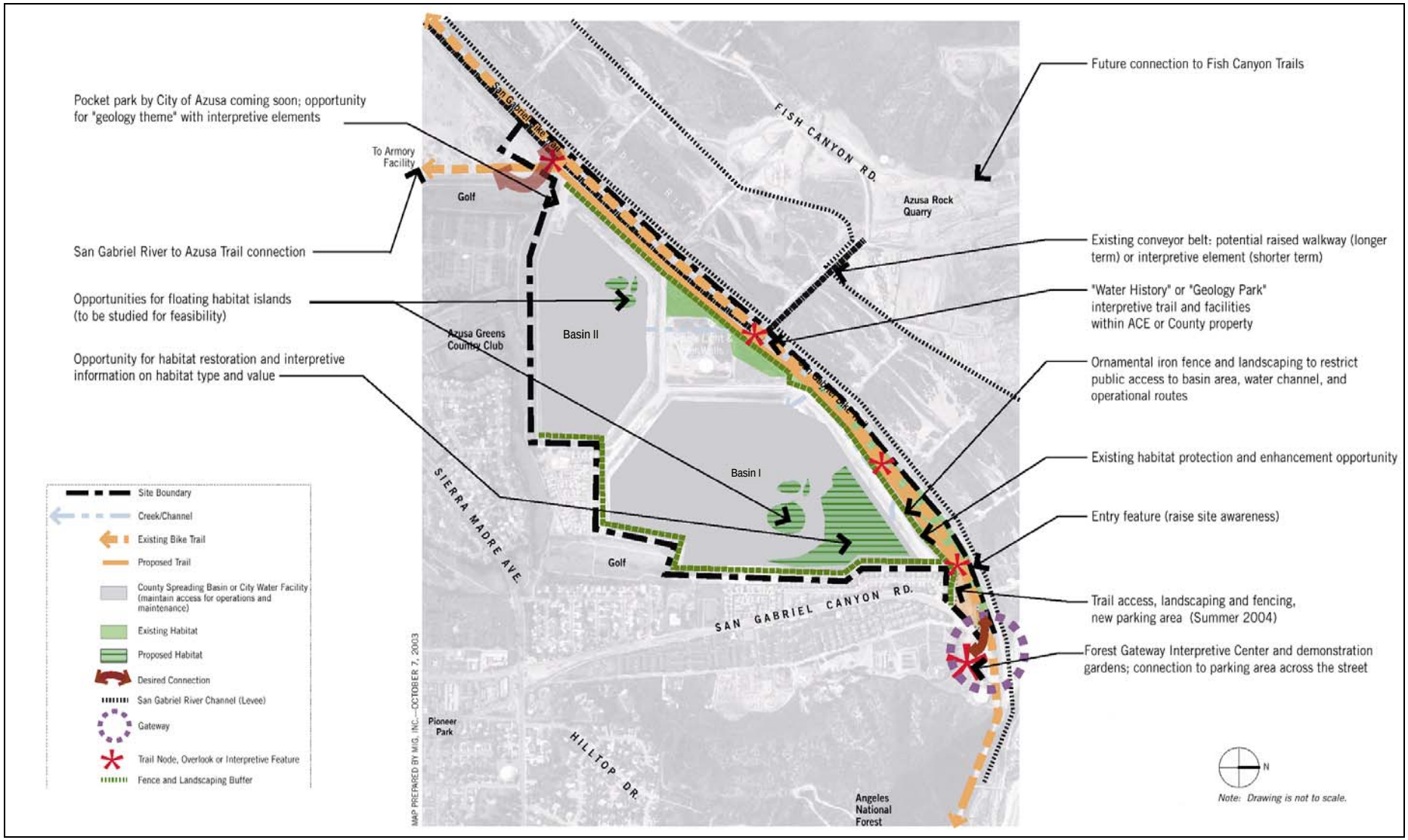


Figure 3-3
Existing Conditions of the San Gabriel Canyon Spreading Grounds

Source: MIG, July 2003.

Proposed Project. The San Gabriel Canyon Spreading Grounds project, proposed by the City of Azusa and LADPW, focuses on improving the aesthetics of the area between the river and the spreading basins and adding public amenities adjacent to the bike path (see **Figure 3-2**). No change to the existing spreading grounds operations is proposed. Public access will remain restricted near the basins and the City of Azusa parcel to maintain public safety and water quality.

The proposed project will complement improvements already planned near the San Gabriel Canyon Spreading Grounds. The spreading grounds are a part of North East Trees project for the City of Azusa, called "Rio San Gabriel: Vision Plan and Design Guidelines." A Gateway Interpretive Center for the Angeles National Forest is being constructed northeast of the spreading grounds on San Gabriel Canyon Road. A parking lot is proposed on the west side of the road between the Gateway Education Center and the spreading grounds. The project is part of the San Gabriel Mountains Regional Conservancy education corridor program. A geology-themed pocket park is proposed by the City of Azusa at the southern end of the site.

Proposed improvements at the site include public access trails, educational elements, landscaping and other aesthetic improvements, and habitat restoration. Entry features near the parking lot would improve awareness of the site. A meandering trail will be added between the bike path and the spreading grounds. Chain link fencing around the basins would be replaced by more decorative fencing. Interpretive elements and landscaping may be added. Possible topics for interpretive elements are water history and geology. This area has views of the spreading basins on three sides and Fish Canyon and the San Gabriel River to the northwest.

A new City of Azusa parking area at the north end of the site from San Gabriel Canyon Road is proposed to facilitate safe site access. The south end of the site provides bike trail connections to the rest of the San Gabriel River Bike Trail and the Puente Largo Bridge. The City of Azusa plans to connect the site with Sierra Madre Avenue and the City of Azusa. There will be no access to the site via the golf course or the residential area on the east side to maintain public safety.

As a potential element of this Concept Design Study, floating islands were proposed in the spreading basins for habitat and educational purposes. These islands could be connected by a cable and weight system connected to the bottom of the basin. The islands could be planted with wetland vegetation providing habitat for breeding and migrating bird species. Kiosks could provide information on wetland habitats and wildlife. However, if floating islands ultimately become part of this project, any potential conflicts between the existing operation and maintenance activities for groundwater recharge and the introduction and maintenance of habitat (including water quality, water supply, and regulatory issues) will be investigated in detail.

The existing native habitat (alluvial fan sage scrub) can be enhanced and supplemented near the spreading grounds. The area on the north side of Basin I and the triangle between the two basins are the largest areas at the site for potential habitat restoration (**Figure 3-2**). The shallow corners and edges of the spreading basins may be enhanced with riparian vegetation including willow trees, mule fat scrub, and baccharis scrub. The drier upper levels of the basins could be vegetated with coastal sage scrub.

3.3.3.2 Woodland Duck Farm

Project Site. The Woodland Duck Farm project area is located on a long narrow strip of land adjacent to the San Gabriel River just north of the confluence with San Jose Creek and south of the confluence with Walnut Creek (**Figure 3-4**; see also Map 3-12 in Chapter 3.8.2 of the Master Plan). The total project area is approximately 57 acres; 45 acres are located west of the 605 Freeway adjacent to the River, and 12 acres are on the east side of the freeway south of Valley Boulevard. The two areas are connected by an underpass below the 605 Freeway.

The Woodland Duck Farm is bounded on the west by the San Gabriel River, on the north by Valley Boulevard and on the east by the 605 Freeway and the California Country Club. The portion of the duck farm roughly south of Avocado Creek is in the City of Industry, as is the portion of the site north of Valley Boulevard. The remaining area of the site is in the Bassett community of unincorporated Los Angeles County.

The project site is not easily accessible from a major road. The northern access to the Duck Farm is from Temple Avenue north of Valley Boulevard and under the 605 Freeway to the northwestern part of the site. The western 12 acres are accessed through the residential area in Bassett east of the 605 Freeway. The Bassett side of the property is not well marked and entrance from this side requires driving through neighborhood streets. An underpass under the 605 Freeway connects the eastern and western portions of the Duck Farm. There is a pedestrian access to the south side of the Duck Farm site through an underpass under the 605 Freeway. This entrance connects the site to the San Jose Creek Trail.

Under a lease agreement with the Trust for Public Land, one of the tenants operates an equestrian facility on the eastern 12 acres. This site contains equestrian facilities including horse stalls, rings and other riding areas. The equestrian program includes therapeutic riding, lessons, and horse boarding. The equestrian facility is integrated with the adjacent community which is zoned for equestrian uses (Musick, pers. comm., 2003). **Figure 3-5** shows the existing conditions at the equestrian facility and the underpass from the equestrian facility to the Duck Farm site.

The Duck Farm site was operated as a duck farm from the 1950s until 2001 when it was purchased by the Trust for Public Land. The RMC is planning to purchase the site through the Watershed Conservation Authority (WCA), a joint powers authority between the RMC and the Los Angeles County Flood Control District. The former Duck Farm site (area west of the 605 Freeway) is mostly cleared vacant land with remnant structures of the duck farm. Several residences, currently abandoned, are located on the site. In addition, there is a barn that was once used for show horses. Two nurseries and a tree trimming company are currently leasing the northeastern and southwestern portions of the site. LADWP and Southern California Edison power lines run the length of the site. **Figure 3-6** shows the existing conditions at the site including power lines, site access, and abandoned farm structures.

Existing vegetation on the site is dominated by non-native ruderal (weedy) vegetation. Some native species including Mexican elderberry are present. In the river channel adjacent to but outside of the project site, some riparian vegetation is present due to the outflow from the San Jose Creek Water Reclamation Plant. There is little protection from the noise of the 605 Freeway at the site.

Surrounding Land Uses. The surrounding land uses to the east in the communities of Bassett, Avocado Heights and El Monte are mainly residential. Andrews Elementary and Don Julian Elementary are east of the site in Avocado Heights. A mobile home park is located on the west side of the river across from the site in City of El Monte. North of the mobile home park and on the western bank of the river are Mountain View High School and Madrid Middle School. The area just north of the site in Baldwin Park and the City of Industry is highly industrial. San Jose Creek Water Reclamation Plant is adjacent to the south on the east side of the river.

Existing Conditions of the River. The river adjacent to the project site is over 200 feet wide with an earth bottom and stone side slopes. The channel bottom is 15 to 18.5 feet below the top of the berm (COE, 1975). There is a rubber dam across the river south of Valley Boulevard. The rubber dam, when inflated, is used to capture stormwater runoff to recharge the groundwater basin. Two additional rubber dams are planned between the existing dam and the confluence with San Jose Creek (**Figure 3-4**).

Flows in this reach of the San Gabriel River tend to be low through most of the year. At the stream gauge north of Santa Fe Dam, regular flows between May and January are between 25 and 75 cfs. Much of this flow can infiltrate before reaching the portion of the river adjacent to the Woodland Farms site. No water quality impairments have been identified for the reach of the river adjacent to the site (SWRCB, 2003b).

Another water feature on the site is Avocado Creek. Avocado Creek is a concrete box channel situated approximately 15 feet below grade. It flows to the west near the southern margin of the eastern 12 acres and through the middle of the Duck Farm site, and empties into the San Gabriel River. During dry weather, there is little flow in Avocado Creek (Musick, pers. comm., July 2003).

Figure 3-4
Preliminary Concept Design – Woodland Duck Farm

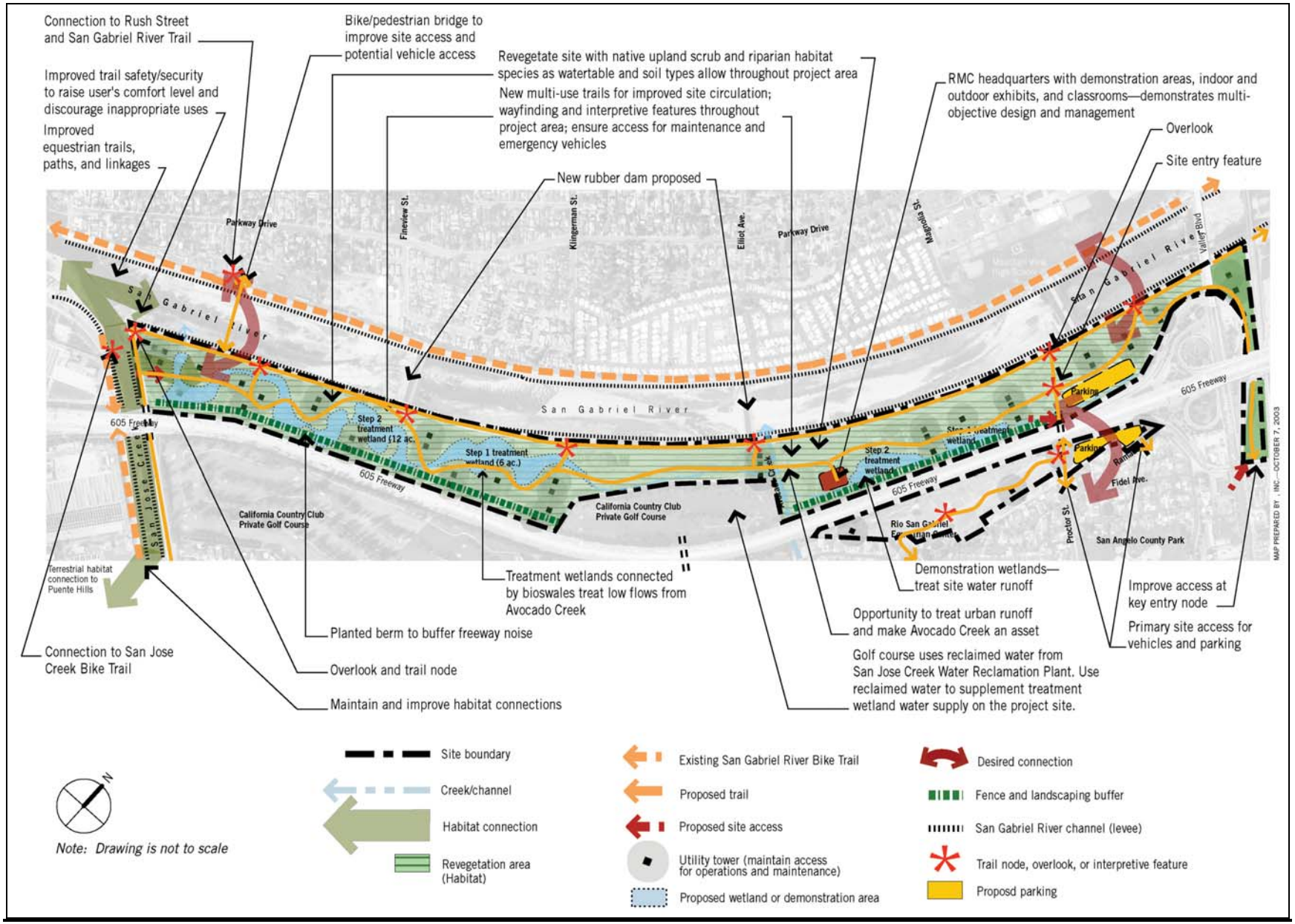


Figure 3-5
Equestrian Facility Existing Conditions

Source: MIG, July 2003.

Figure 3-6
Woodland Duck Farm Existing Conditions

Source: MIG, July 2003.

Proposed Project. The project, which the RMC has initiated and is planning to pursue through the WCA, proposes to transform the abandoned duck farm site into an open space area with

passive recreation and native habitat enhancements (see **Figure 3-4**). RMC's goals for the site are to provide facilities for passive recreation, improve the natural habitat, improve water quality, improve flood management, and connect the community to more open space (Simpson, pers. comm., July 2003). Potential project elements include trails, habitat, improved site access and parking, an educational center and watershed planning center, overlook points, and treatment wetlands. Potential sources of water for the treatment wetlands include Avocado Creek and San Jose Creek Water Reclamation Plant. In addition, WCA plans to modify one of the abandoned residential structures on the site for use as an RMC office.

The project would include improved access and circulation for the site. A pedestrian and bike bridge across the San Gabriel River is proposed near the confluence with San Jose Creek. This would provide a connection with the San Gabriel River Bike Trail on the west side of the river. The proposed project would also improve vehicular access to the site. A meandering trail with educational kiosks and connections to the San Gabriel River Bike Trail at key overlook points may be added.

The site is located within a potential habitat corridor that would connect the Puente Hills with Whittier Narrows. The weedy vegetation at the Duck Farm site could be replaced with native species. If the soils and groundwater levels are conducive to riparian habitat, a mosaic of willow, sycamore and cottonwood could be established. If riparian habitat is not feasible, a mosaic of upland scrub vegetation, including sage scrub, mule fat and elderberry woodland could be established.

The description of the proposed improvements provided above represents an initial concept for the project not an approved plan. WCA is undertaking a master plan for the site involving all stakeholders. This planning effort will examine all potential uses of the site, and will include a CEQA process.

3.3.3.3 San Gabriel River Discovery Center at Whittier Narrows

Project Site. The project site for the San Gabriel River Discovery Center encompasses the northeastern portion of the Nature Area within Whittier Narrows Dam Recreation Area (**Figure 3-7**; see also Map 3-14 in Chapter 3.8.3 of the Master Plan). The project site covers approximately 65 acres, and is bordered by Durfee Avenue to the north, Peck Road to the west, and the San Gabriel River to the south. This project site overlaps with the Lario Creek project site, described in **Section 3.3.3.4**.

The Nature Area is an open space area owned by COE for flood control purposes, and is leased to the County for multiple uses. It includes a total of 320 acres of natural woodland and lakes used by migrating waterfowl. An existing Nature Center is located on the northeastern portion of the Nature Area. The Nature Center is located on a 0.5-acre parcel owned by County of Los Angeles Department of Parks and Recreation (LACDPR), and has a museum with displays of animal and plant life, a small gift shop and a library. The Nature Center staff conduct recreational and educational programs such as hay rides, lectures, ranger tours, and school field trips (LACDPR, 2003). An existing parking area provides space for approximately 40 cars and two buses (COE, 1996). Water to supply the four lakes on the property for wildlife habitat is

provided by wells on the property. Lario Creek passes through the Nature Area (see **Section 3.3.3.4**). **Figure 3-8** shows the Nature Center and vicinity.

The primary purpose of Whittier Narrows Dam as authorized in the Flood Control Act of 1941 is flood control. The secondary purpose as authorized in the Flood Control Act of 1944 is recreation. A third purpose of the dam is water conservation as set forth by the Chief of Engineers in 1956 (COE, 1996). The COE maintains the dam and all flood control facilities. Local agencies with leases in the basin are required to operate and maintain their own recreation facilities (COE, 1996). Any development within the recreation area cannot impede the primary purpose of flood control.

Surrounding Land Uses. The primary surrounding land uses of the project site are open space and recreation (Whittier Narrows Dam Recreation Area, Pico Rivera Park, and Pico Rivera Golf Course). South El Monte High School is located to the north across Durfee Avenue. The Pomona Freeway (State Highway 60), Interstate 605, and Rosemead Boulevard (State Highway 19) provide primary vehicular access to the site.

Figure 3-7
Preliminary Concept Design – San Gabriel River Discovery Center

Figure 3-8
Existing Conditions of Whittier Narrows Nature Center

Source: MIG, July 2003.

Proposed Project. Under the proposed project, the existing Nature Center will be replaced with a new San Gabriel River Discovery Center. The project was initiated by Sierra Club, whose efforts generated a partnership between LACDPR, RMC, and the Upper San Gabriel Valley Municipal Water District (USGVMWD). In April 2003, the three agencies entered into a cooperative agreement to advance the design and planning of the Discovery Center.

The new San Gabriel River Discovery Center will be a regional indoor/outdoor museum and conference center. The project includes a new Discovery Center building (approximately 16,000 square feet), modifications to the site entrance and parking area, and improvements to the surrounding Nature Area including a constructed stormwater treatment wetland. Discovery Center programs will focus on watershed and water-related topics. The Discovery Center will include indoor and outdoor exhibits and a museum, a reception area, orientation center, sales/retail area, auditorium, restrooms, meeting room, library, kitchen, offices, and a theater. The parking lot will be expanded to accommodate staff and visitors (see **Figure 3-7**).

The Nature Area surrounding the Discovery Center will be enhanced to provide native habitat. A constructed treatment wetland could replace areas currently dominated by ruderal (low-value) vegetation. The treatment wetland could treat urban runoff from upstream areas. Removal of invasive species and streamlining of the trail system will provide enhanced opportunities for wildlife foraging and nesting. Removal of redundant trails and improved trail signage would further improve the native habitat. Facilities proposed at this Concept Design Study site would need to be designed to accommodate the possibility that the project site may be inundated during large storms since it is located in a flood control basin.

The Whittier Narrows Dam Master Plan prepared by COE (1996) lays out a number of recreation and environmental resource objectives for the Whittier Narrows Recreation Area (**Table 3-8**). The Discovery Center project should reinforce these recreation and environmental resource objectives.

Table 3-8
Whittier Narrows Dam Recreation and Environmental Resource Objectives

Recreation Resource Objectives	Environmental Resource Objectives
• To provide affordable water-oriented recreational opportunities. • To provide open space for sports activities. • To provide non-motorized circulation opportunities, including hiking, bicycling, and equestrian paths. • To provide opportunities for special-use recreational facilities, including spectator-oriented activities. • To provide recreational uses that promote revenue generation to offset the costs of maintaining, replacing, and developing park facilities. • To provide passive recreation areas. • To contribute to recreational diversity within the region.	• To provide wildlife resource management, including preservation and enhancement, with particular attention to federal or state listed endangered and threatened species or other sensitive species and/or their habitats. • To provide vegetation management which preserves and enhances wildlife habitat, and protects valuable plant communities. • To enhance or re-establish native vegetation as a mitigation measure for increased recreational or other resource use. • To provide and maintain plant materials within the public use areas that are compatible with public safety.

Source: COE, 1996.

3.3.3.4 Lario Creek

Project Site. Lario Creek (originally named the Zone 1 Ditch) is a man-made conveyance structure operated by LADPW to divert water from the San Gabriel River to the Rio Hondo through the Whittier Narrows Flood Control Basin. The project site includes the entire length of Lario Creek and the surrounding area referred to as the Nature Area, encompassing approximately 328 acres (**Figure 3-9**; see also Map 3-16 in Chapter 3.8.4 of the Master Plan). The site is bordered by Durfee Avenue to the north, the San Gabriel River to the east, the Crossover Channel to the south and Rosemead Boulevard to the west. The project site is owned by COE but is operated by LADPW. LADPW has a 100 foot wide easement along Lario Creek.

Lario Creek stretches approximately 0.85 mile from the intake on the San Gabriel River to Rosemead Boulevard. The Lario Creek intake is located near the Whittier Narrows Nature Center on the west side of the San Gabriel River just south of Peck Road and the Pomona Freeway (Interstate 60). Lario Creek heads southwest paralleling Durfee Road toward the Rio Hondo, and empties into the Rio Hondo on the west side of Rosemead Boulevard.

Currently, Lario Creek is used solely for water conveyance. **Figure 3-10** shows the existing conditions of the channel. The slope of the channel is gradual and the water is slow moving (Gomez, 2003). The channel has steep sides with highly compacted and barren stream banks, which are reinforced with rip rap in some locations. Flows in Lario Creek are critical to the water conservation operations and goals of LADPW and the Water Replenishment District of Southern California (WRD). Water that flows through Lario Creek is eventually spread in the Rio Hondo Spreading Grounds south of the Whittier Narrows Dam on the Rio Hondo. LADPW operates the spreading grounds. LADPW works with COE to retain stormwater in excess of the spreading grounds capacity in the Rio Hondo Conservation Pool behind the Whittier Narrows Dam.

The current capacity of Lario Creek is approximately 250 cfs (Gomez, 2003). Records from the last six years indicate that the mean daily flow is approximately 40 cfs (LADPW, 2003c), although flows can vary at different times from close to zero to over 100 cfs. The maximum recorded flow at F313B-R was 227 cfs (recorded on 12/28/2002). The water conveyed through Lario Creek includes imported water, reclaimed water, stormwater, and a temporary EPA groundwater treatment discharge. There is no clear seasonal pattern to flows. During dry weather, flows in Lario Creek are predominantly reclaimed water (Gomez, 2003). Water from the San Jose Creek Water Reclamation Plant (WRP) can be discharged to the west side of the San Gabriel River upstream of Lario Creek. Water from the Whittier Narrows WRP can be discharged directly to Lario Creek south of Legg Lake (LACSD, 2001). A temporary EPA outfall into Lario Creek is located near Siphon Road. The outfall discharges treated water from the Whittier Narrows Operating Unit, which treats groundwater contaminated with volatile organic compounds.

Figure 3-9
Preliminary Concept Design – Lario Creek

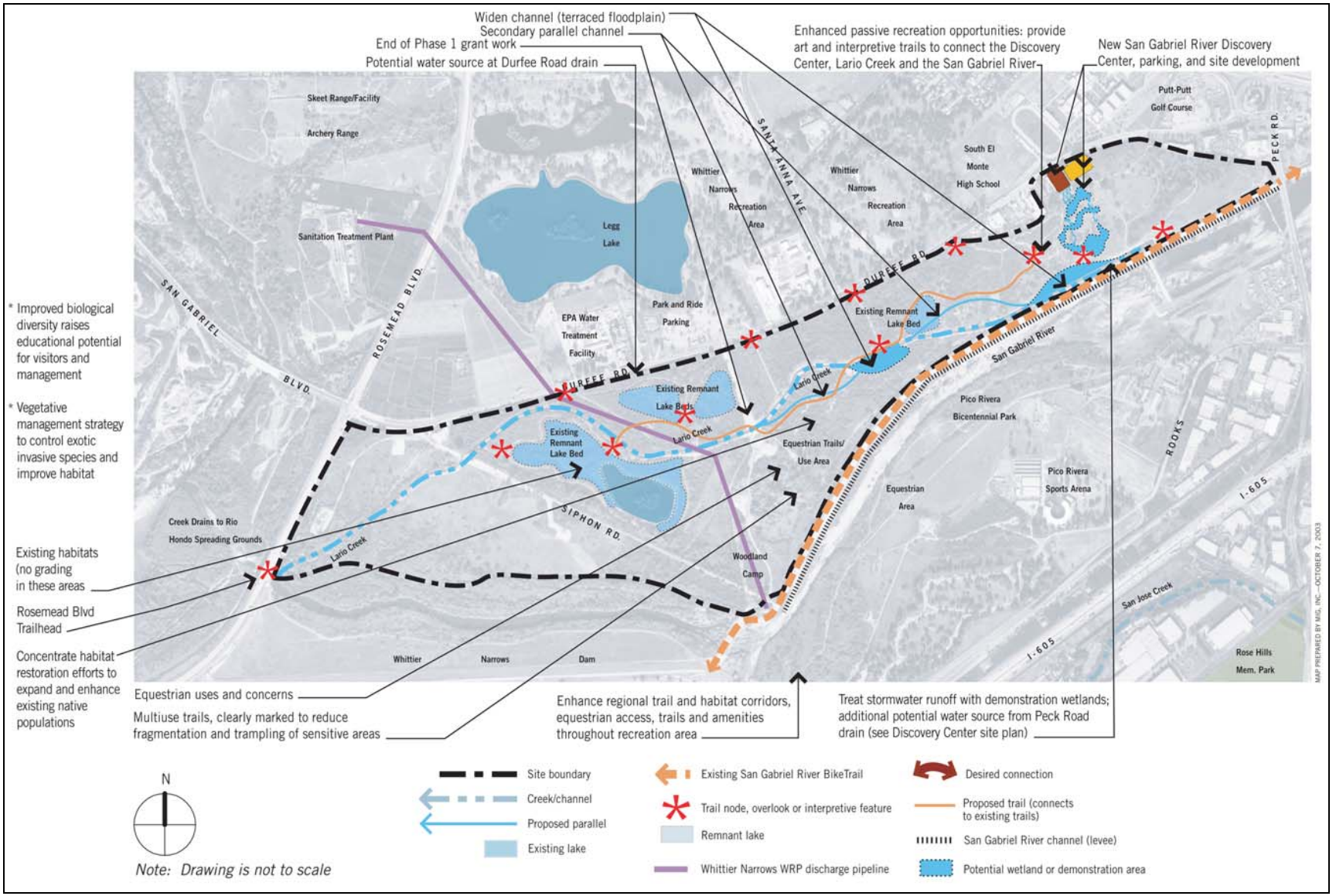


Figure 3-10
Lario Creek Existing Conditions

Source: MIG, July 2003.

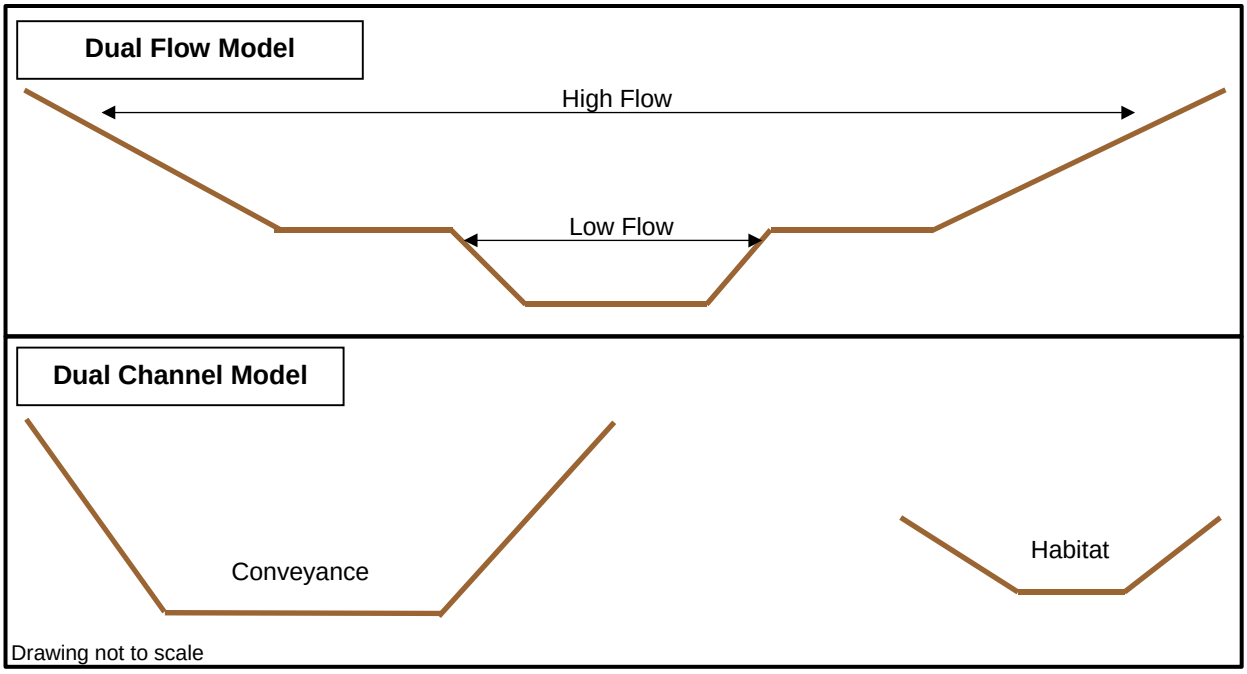
Proposed Project. North East Trees, a non-profit organization and LADPW are the project proponents. The objectives of the project is to increase the capacity of Lario Creek while enhancing the habitat value of the channel. In addition, the proposed improvements would include trails, signage, channel modification, stormwater treatment wetlands, and removal of exotic species along the channel (see **Figure 3-9**). Facilities proposed at this Concept Design Study site would need to be designed to accommodate the possibility that the project site may be inundated during large storms since it is located in a flood control basin.

An upstream rubber dam on the San Gabriel River at Valley Boulevard can release up to 400 cfs (Gomez, 2003). Increasing the capacity of Lario Creek from the existing 250 cfs up to 400 cfs would allow more flexibility for LADPW in its groundwater recharge operations. A minimum increase to 350 cfs is currently envisioned by LADPW.

The Master Plan Concept Design Study describes two alternatives for modifying Lario Creek -- a dual flow model and a dual channel model (**Figure 3-11**). The dual flow model is a stepped channel design with a deep and narrow low flow channel and a wider high flow channel. The

high flow channel would be designed to meet the capacity requirements of LADPW with vegetation in the channel. The dual channel model utilizes two parallel channels, one for conveyance, and one for habitat and aesthetic enhancements. The conveyance channel would not be vegetated. The habitat channel would be vegetated and meandering to resemble a natural creek. The habitat channel could potentially provide a water source for the dry lake beds shown in **Figure 3-9** and treatment wetlands to be located near the proposed San Gabriel River Discovery Center. The dry lake beds will be lined to prevent infiltration. Use of water in Lario Creek for any use other than groundwater recharge would require an agreement from the water right holders.

Figure 3-11
Lario Creek Channel Modification Options



Southeast of the existing Nature Center is an area dominated by weedy vegetation that could be replaced with a constructed wetland designed to treat urban runoff. The wetland may be supplied by water from Lario Creek during periods of dry weather. Another potential year-round water source is Whittier Narrows WRP effluent. The wetland would be a continuous flow-through system that delivers water for downstream uses.

The project could remove exotic and invasive non-native species from areas directly adjacent to Lario Creek and within the project area. The area at the north end of Lario Creek west of the San Gabriel River is significantly degraded, and could be improved with plantings of native species. The removal of exotics and extension of the natural habitats would provide enhanced opportunities for wildlife foraging and nesting, and potentially attract species such as the willow flycatcher and the yellow-billed cuckoo.

Proposed trail improvements aim to improve the experience for trail users (bike riders, horses, and pedestrians) as well as to protect high quality habitats.

3.3.3.5 El Dorado Regional Park

Project Site. El Dorado Regional Park is a 500-acre park owned and operated by the City of Long Beach (**Figure 3-12**; see also Map 3-18 in Chapter 3.8.5 of the Master Plan). The park is bordered by the San Gabriel River on the west, Coyote Creek on the south, the 605 Freeway on the east, and Long Beach Town Center on the north. The Long Beach Town Center is a shopping center located south of Carson Street.

The park is divided into four sections by three major streets: Willow Street, Spring Street, and Wardlow Road. The sections from south to north are referred to as "South of Willow", Area 1, Area 2, and Area 3. Areas 1, 2, and 3 are characterized by trails and artificial lakes, which are supplied with potable water. Swimming in the lakes is not allowed. The top photographs in **Figure 3-13** show that some of the lakes are rimmed in concrete while some are rimmed in earth with boulder reinforcement. **Table 3-9** describes the characteristics, amenities and activities in each area.

Table 3-9
Characteristics of El Dorado Regional Park Areas

South of Willow	Area 1	Area 2	Area 3
• Undeveloped • Spreading basins	• Nature Center	• Archery range • Model boating • Youth campground	• Playgrounds • Glider hill • Railroad • Paddle boats • Lake stocked with carp, catfish, & trout for fishing

Surrounding Land Uses. Surrounding land uses to the north include the Long Beach Police Academy, the Long Beach Town Center and additional commercial uses, the Lakewood Equestrian Center and Charter Community Hospital north of Carson Street. Directly on the west side of the river is a residential area, a nursery, and the El Dorado Regional Park Golf Course. Across the 605 freeway to the east is a residential area. A maintenance yard, Society for the Prevention of Cruelty to Animals (SPCA) facility, and community gardens are located adjacent to the southeast portion of the park. The Long Beach WRP, which discharges its effluent into Coyote Creek, is located south of Willow Street, adjacent to the southeast corner of the site. Landscaped areas of the park are irrigated by reclaimed water from the Long Beach WRP. Adjacent to the Long Beach WRP is a WRD facility that injects water into the coastal groundwater basin to prevent saltwater intrusion (Mendiola, pers. comm., 2003).

Existing Conditions of the River. The park borders the San Gabriel River for approximately 2 miles. However, there is little connection between activities in the park and the river. There are two access points to the San Gabriel River Trail along the river, at Wardlow Road and Spring

Street. The berms along the river preclude views of the river from the park. Power lines run along the park's western side 200-300 feet from the riverbank.

The reach of the San Gabriel River adjacent to the park is concrete lined. The width of the San Gabriel River is approximately 100 feet and the depth is 12.5 to 18 feet. There is a low flow channel in the center approximately 10 feet wide and 2 feet deep. There are roadway berms on both sides of the river where the San Gabriel River Trail is located (COE, 1975). Flow in this reach of the river is consistently between 100 and 150 cfs. The primary source of this water is effluent from the Los Coyotes WRP. The channel capacity is 58,800 cfs, greater than the 100-year discharge of 55,900 cfs (LADPW, 1991).

The reach of the San Gabriel River adjacent to El Dorado Regional Park is just upstream of the zone of tidal influence. The estuary begins just downstream of the confluence with Coyote Creek where the channel again returns to soft bottom. The reach of the river adjacent to the park is considered impaired for algae, abnormal fish histology, and high coliform count (SWRCB, 2003b).

Figure 3-12
Preliminary Concept Design – El Dorado Regional Park

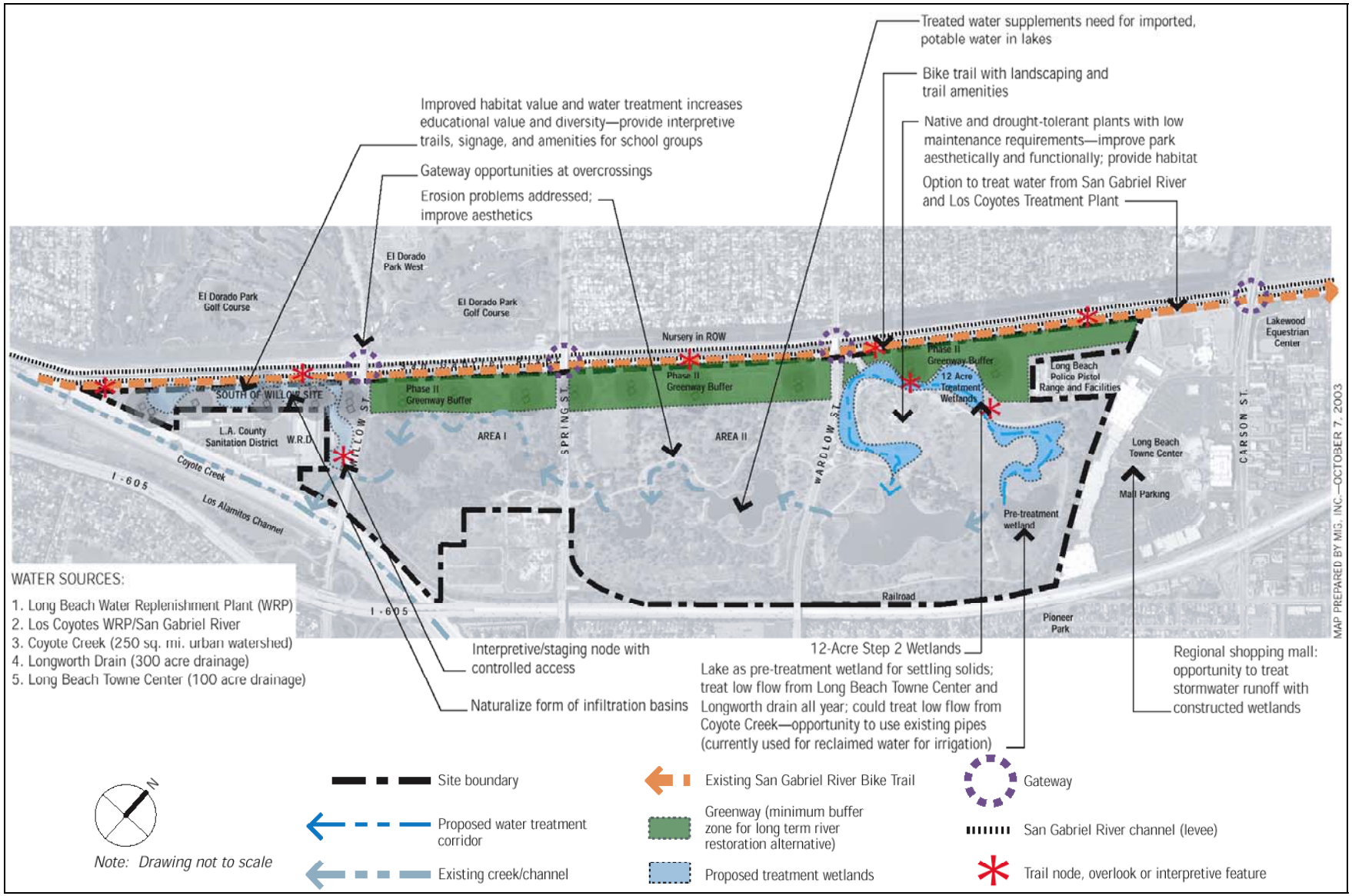


Figure 3-13
El Dorado Regional Park Existing Conditions

Source: MIG, July 2003.

Proposed Project. The project, proposed by the City of Long Beach, will provide an opportunity to connect users of El Dorado Regional Park with the San Gabriel River. Potential elements of the Master Plan's conceptual design include the following (see **Figure 3-12**):

- Constructed stormwater treatment wetlands at the north and south ends of the park and adjacent to power lines
- Replace the water supply for the lakes with a non-potable source

- Replace exotic plant species with native species
- Create wetland/riparian habitat
- Improve trail system with signage
- Explore the possibility of replacing concrete bottom with soft bottom in San Gabriel River adjacent to site

This project will create wetlands and/or riparian habitat adjacent to the San Gabriel River in the northern half of the park. The wetlands would be designed to create habitat and treat river water and stormwater runoff. Potential water sources are runoff from the Long Beach Town Center and the upstream urban areas of the City of Lakewood, San Gabriel River, and Coyote Creek. It may be necessary to pump water from these sources if current topography would not allow gravity flow. Reclaimed or potable water may be used to supplement these water sources during dry periods. The construction of wetlands in Area 3 can be an opportunity to redesign the existing lakes to improve their function.

Wetlands or riparian habitat are also proposed in the South of Willow area. The wetlands could be used to treat urban runoff from Coyote Creek. The habitat areas can be designed to meet the access requirements of Southern California Edison and promote the Master Plan objective of multiple uses of utility corridor rights of way.

The project also proposes to replace the current potable water source for the lakes with either San Gabriel River water or reclaimed water to in order to promote water conservation. Water quality will have to be sufficient to support the fish in the stocked lakes.

The project will also enhance passive recreation within the regional park and increase educational opportunities at the existing El Dorado Nature Center. (A master plan for the Nature Center and the South of Willow site was funded by WRD prior to the development of the San Gabriel River Corridor Master Plan.) Trail signage, artwork and shade trees will improve the trail experience and emphasize the connection to the San Gabriel River Trail. Overlook and vista points of the San Gabriel River can be highlighted. The water quality and water conservation aspects of the park can be used as additional educational opportunities. A debris boom on Coyote Creek is one of the proposed projects in the Project Action Grid. If the project is implemented adjacent to El Dorado Regional Park, it could be another topic for educational programs.

The project may include phasing out existing ornamental landscaping and replacing it with a native drought-tolerant plants. Potential habitat changes could involve revegetating the land directly adjacent to the eastern bank of the San Gabriel River by adding native trees and understory such as gooseberry and mule fat, which can attract numerous bird species. Proposed wetlands and mudflats could also attract bird species and provide more foraging habitat for shorebirds. Although the land on the western bank of the San Gabriel River is not owned by the City of Long Beach, stakeholders proposed replacing the current nursery land use with a mosaic of upland scrub vegetation.

The Master Plan design concept identifies removal of concrete from this reach of the river as a long-term goal that would require extensive modeling of the river corridor. Near-term improvements for this site, currently being planned by the project sponsors, are not anticipated to include a concrete removal element. However, El Dorado Regional Park is a unique opportunity where there is a long stretch of open space along a concrete lined section. Concrete removal, if specifically proposed in the future, would require a larger channel to have the same flood control capacity as the existing design.

Section 4 Environmental Setting, Impacts, and Mitigation Measures

The proposed project, the San Gabriel River Corridor Master Plan (Master Plan), is an overall conceptual plan for the San Gabriel River corridor that focuses primarily on recreation, open space, and habitat enhancement opportunities and also addresses flood protection, water conservation, water quality, and water rights (See **Section 3 – Project Description**).

The following topics are discussed in this section:

4.1 Air Quality
4.2 Biological Resources
4.3 Cultural Resources
4.4 Geology and Soils
4.5 Hazards and Hazardous Materials
4.6 Hydrology and Water Quality
4.7 Land Use
4.8 Noise
4.9 Public Services and Utilities
4.10 Recreation
4.11 Traffic and Transportation

Unless otherwise noted, the thresholds of significance have been developed from the State CEQA Guidelines, Appendix G.

4.1 AIR QUALITY

4.1.1 Existing Setting

California is divided geographically into air basins for the purpose of managing the air resources of the State on a regional basis. An air basin generally has similar meteorological and geographic conditions throughout. The project is located within the South Coast Air Basin (SCAB), which is bounded by the Pacific Ocean on the west and the San Gabriel, San Bernardino, and San Jacinto mountains to the north and east. It includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. This existing setting is geographically broader than most of the existing settings in the other sections of this Program EIR to take into account the physical environmental conditions regarding air quality.

4.1.1.1 Meteorology and Climate

The regional climate of the SCAB is classified as Mediterranean, characterized by warm summers and mild winters. The warmest month of the year is July, and the coldest is January. In downtown Los Angeles, the average daily minimum temperature for January is 48 degrees Fahrenheit (° F), and the average daily maximum temperature for July is 84° F. At Mount Wilson in the San Gabriel Mountains (5,850 feet above mean sea level), the average daily minimum temperature for January is 35° F, and the average daily maximum temperature for July is 80° F (LADPW, 2003a).

More than 90 percent of the rainfall in the SCAB occurs from November through April. The majority of precipitation is in the form of rain. Snowfall in the coastal plain and San Gabriel Valley is rare. Snowfall on the southern slopes of the San Gabriel Mountains occurs in winter but melts rapidly. Monthly and yearly precipitation are extremely variable. Average annual rainfall along the San Gabriel River corridor varies from approximately 28 inches in the San Gabriel Mountains, to 18 inches in the San Gabriel Valley, to approximately 14 inches on the coastal plain (LADPW, 2002).

Although the climate of the SCAB can be characterized as semi-arid, the air near the land surface is moist on most days because of the presence of a marine layer. Humidity restricts visibility in the SCAB, in part since the conversion of sulfur dioxide to sulfates is heightened in air with high relative humidity, such as the marine layer. The annual average relative humidity is 71 percent along the coast, and 59 percent inland (SCAQMD, 2002a).

Due to the generally clear weather, about three-quarters of available sunshine is received in the SCAB, and the remaining one-quarter is absorbed by clouds (SCAQMD, 2002a). The ultraviolet portion of this abundant radiation is a key factor in photochemical reactions that generate smog.

The direction and speed of the wind determine the horizontal dispersion and transport of air pollutants. During the late autumn to early spring rainy season, the SCAB is subjected to wind flows associated with traveling storms moving through the region from the northwest. During the dry season, which coincides with the months of maximum photochemical smog concentrations, the wind flow is typified by a daytime onshore sea breeze and a nighttime

offshore drainage wind. Winds in the project area blow primarily from southeast to northwest by day and from northwest to the southeast by night, in response to this regional diurnal pattern.

The Los Angeles region is characterized by persistent temperature inversion in the atmospheric layers near the earth's surface, which limit the vertical mixing of air pollution. Normally, the temperature of the atmosphere decreases with altitude. However, when the temperature of the atmosphere increases with altitude, the phenomenon is termed an inversion. In the SCAB, there are two distinct temperature inversion structures. During the summer, warm, high-pressure descending (subsiding) air is undercut by a shallow layer of cool marine air. The boundary between these two layers of air is a persistent marine subsidence/inversion. A second inversion-type forms on clear, winter nights when cold air off of the mountains sinks to the valley floor while the air aloft over the valley remains warm. This process forms radiation inversions, which trap pollutants such as automobile exhaust near their source, as the pool of cold air drifts seaward. Winter is therefore a period of high levels of primary pollutants along the coastline (SCAQMD, 2002a).

4.1.1.2 Regulatory Setting

Air quality is described by comparing contaminant levels in ambient air samples to national and state standards. These standards are set by the U.S. EPA and the California Air Resources Board (CARB) at levels to protect public heath and welfare with an adequate margin of safety. National Ambient Air Quality Standards (NAAQS) were first authorized by the federal Clean Air Act of 1970. California Ambient Air Quality Standards (CAAQS) were authorized by the state legislature in 1967. These standards are shown in **Table 4.1-1**.

NAAQS (federal) and CAAQS (state) have been established for the following pollutants which are termed "criteria air pollutants": ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), particulate matter 10 microns in diameter or smaller (PM10), particulate matter 2.5 microns in diameter or smaller (PM2.5), sulfur dioxide (SO_2), and lead (Pb). The CAAQS are more stringent than the federal standards for most criteria pollutants. California has also established standards for sulfate, visibility, hydrogen sulfide, and vinyl chloride. Hydrogen sulfide and vinyl chloride are not currently monitored in the SCAB because these contaminants are not seen as significant air quality problems.

Table 4.1-1
National and California Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Standard	California Standard
Ozone (O_3)	1 Hour	0.12 ppm	0.09 ppm
	8 Hour	0.08 ppm	—
Carbon Monoxide (CO)	8 Hour	9 ppm	9.0 ppm
	1 Hour	35 ppm	20 ppm
Nitrogen Dioxide (NO_2)	AAM	0.053 ppm	—
	1 Hour	—	0.25 ppm
Sulfur Dioxide (SO_2)	AAM	0.03 ppm	—
	24 Hour	0.14 ppm	0.04 ppm
	1 Hour	—	0.25 ppm
Particulate Matter less than 10 microns in diameter (PM10)	24 Hour	150 $\mu g/m^3$	50 $\mu g/m^3$
	AAM	50 $\mu g/m^3$	20 $\mu g/m^3$
Particulate Matter less than 2.5 microns in diameter (PM2.5)	24 Hour	65 $\mu g/m^3$	—
	AAM	15 $\mu g/m^3$	12 $\mu g/m^3$
Sulfates	24 Hour	—	25 $\mu g/m^3$
Lead (Pb)	30 Day	—	1.5 $\mu g/m^3$
	Quarter	1.5 $\mu g/m^3$	—

Source: Federal Standards: EPA, 2003a. State Standards: CARB, 2003a.
AAM – annual arithmetic mean

The SCAB, including the project area, is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). It is the responsibility of the SCAQMD to ensure that state and federal ambient air quality standards are achieved and maintained within its jurisdiction, which includes SCAB, and the Riverside County portions of the Salton Sea and Mojave Desert Air Basins.

The SCAQMD is required by law to produce plans that show how air quality will be improved. The 1997 revisions to the Air Quality Management Plan (AQMP) prepared by the SCAQMD are designed to satisfy the planning requirements of both the federal and California Clean Air Acts. The AQMP outlines policies and measures to achieve federal and state standards for healthful air quality for all areas under SCAQMD's jurisdiction.

Regarding dust emissions during construction, SCAQMD Rule 403(d)(1) prohibits construction activities from generating visible dust in the atmosphere beyond the property line of the emission source. Rule 403(d)(2) requires construction activities conducted in the SCAB to use the applicable best available control measures (BACM) listed in Table 1 of Rule 403 to minimize fugitive dust emissions from each fugitive dust source type. In addition, large construction operations must comply with Rule 403(e). Large operations are defined as activities involving

greater than 50 acres of disturbed area or daily earth-moving or throughput volume of 5,000 cubic yards three times during the most recent 365-day period. Rule 403(e) requires large operations to notify SCAQMD and implement applicable dust suppression measures specified in Table 2 of Rule 403 at all times. When the applicable performance standards cannot be met through use of Table 2 measures, the applicable contingency control measures specified in Table 3 of Rule 403 must be implemented. Rule 403(e) also includes requirements to identify a dust control supervisor and maintain daily records to document the specific dust control actions taken.

4.1.1.3 Existing Air Quality

Due to its meteorological and climate characteristics, including light winds, abundant sunlight, and low vertical mixing, the Los Angeles region is conducive to the accumulation of air pollutants. SCAB is a non-attainment area for ozone (extreme), PM10 (serious), and CO (serious) (EPA, 2003b).

Ozone, a photochemical oxidant, is formed when reactive organic compounds and nitrogen oxides, both byproducts of the internal combustion engine, react in the presence of ultraviolet sunlight. High levels of ozone can cause respiratory problems.

PM10 consists of extremely small particles (10 microns or less in diameter) that can lodge in the lungs, contributing to respiratory problems. PM10 arises from sources such as road dust, diesel soot, combustion products, abrasion of tires and brakes, construction operations, and wind storms. It is also formed in the atmosphere from NO_2 and SO_2 reactions with ammonia.

PM2.5 refers to particulate matter that is 2.5 micrometers or smaller in size. Its sources include fuel combustion from automobiles, power plants, wood burning, industrial processes, and diesel powered vehicles. PM2.5 is also formed by chemical reactions in the atmosphere from NO_2 and SO_2, and volatile organic compounds. The health effects of PM2.5 include premature death, respiratory disease, chronic bronchitis, and decreased lung function particularly in children and individuals with asthma. PM2.5 can also cause reduced visibility. The new EPA standards for PM2.5 were established in 1997, but were challenged in court until late 2001. EPA has not designated any attainment or non-attainment areas for PM2.5 at this time.

CO is a colorless and odorless gas which can, in high concentrations, cause physiological and pathological changes sometimes resulting in death by interfering with oxygen transport by the red blood cells. Primary sources of CO are the automobile and other types of motor vehicles.

SCAQMD monitors levels of various criteria pollutants at 33 monitoring stations. Of the 33 monitoring stations, the following stations are relevant to the air quality of the project area:

- South Coastal Los Angeles County – Long Beach (Station Number 72)
- South San Gabriel Valley – Pico Rivera (Station Number 85)
- East San Gabriel Valley 1 – Azusa (Station Number 60)

Table 4.1-2 summarizes air quality monitoring data obtained from the three relevant monitoring stations. Data are the most recent available - for the years 1998 through 2001 for ozone, CO, SO_2, NO_2, PM10, PM2.5, sulfate, and lead.

Table 4.1-2
Background Air Quality Data for the San Gabriel River Region (1998 - 2001)

Pollutant	Number of Days Federal/State Standards Were Exceeded (Federal/State)											
	South Coastal Los Angeles County Long Beach (72)				South San Gabriel Valley Pico Rivera (85)				East San Gabriel Valley 1 Azusa (60)			
	1998	1999	2000	2001	1998	1999	2000	2001	1998	1999	2000	2001
Carbon Monoxide (CO)	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
Ozone (O_3)[1]	0/2	1/3	0/3	0/0	10/31	0/6	2/11	1/7	19/43	2/24	11/32	9/36
Nitrogen Dioxide (NO_2)	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
Sulfur Dioxide (SO_2)	0/0	0/0	0/0	0/0	--	--	--	--	--	--	--	--
Particulate Matter less than 10 microns in diameter (PM10)[2]	0/6 (10.2)	0/13 (22)	0/12 (21)	0/10 (17)	--	--	--	--	0/16 (28.1)	0/35 (58)	0/24 (42)	0/22 (38)
Particulate Matter less than 2.5 microns in diameter (PM2.5)[3]	--	1 (1)/*	4 (1.3)/*	1 (0.3)/*	--	2 (2)/*	4 (3.4)/*	3 (3.2)/*	--	3 (2)/*	5 (1.5)/*	4 (1.3)/*
Sulfate	**/0	**/0	**/1	**/0	**/0	**/1 (2)	**/0	**/0	**/0	**/0	**/0	**/0
Lead (Pb)[4]	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	--	--	--	--

Source: 2000 and 2001 data from SCAQMD, 2000 and 2001, respectively. 1998 and 1999 data from SCAQMD, 2002b.

-- Pollutant not monitored.

* State standard for PM 2.5 did not exist during 1998-2001. The new state standard for PM 2.5 is expected to take effect in February 2003.

** No federal standard for sulfates exists.

1. Federal 1-hour standard considered.
2. PM10 samples were collected every 6 days; percentage of days exceeding standard shown in parenthesis.
3. PM2.5 samples collected every 3 days; percentage of days exceeding standard shown in parenthesis.
4. Lead federal standard is monthly average; state standard is quarterly average.

These data indicate that the region surrounding the project area, as represented by monitoring stations in Long Beach, Pico Rivera, and Azusa, is in compliance with both federal and state air quality standards for CO, NO_2, SO_2, and lead. The South Coastal Los Angeles County area exceeded state and federal standards for ozone on a limited basis, exceeded the state standard for PM10 several days each year, exceeded the federal standard for PM2.5 on a limited basis each year, and exceeded the state sulfates standard once in four years. The South San Gabriel Valley area exceeded the federal and state ozone standard multiple times each year, exceeded the federal PM2.5 standard a few times each year, and exceeded the state sulfates standard once in four years. The East San Gabriel Valley 1 area exceeded the federal and state ozone standard numerous times each year, exceeded the state PM10 standard numerous times each year, and exceeded the federal PM2.5 standard multiple times each year. Ozone and particulate matter exceedances occur more frequently in the inland areas than in the coastal areas.

4.1.2 Significance Criteria

The SCAQMD has developed CEQA significance criteria for project construction and operation. These criteria are published in the CEQA Air Quality Handbook (SCAQMD, 1993). The SCAQMD is preparing a new CEQA guidance document, the Air Quality Analysis Guidance Handbook, but it is not yet available for use. Therefore, the significance criteria for the proposed project are based on the existing CEQA Air Quality Handbook.

Table 4.1-3 and **Table 4.1-4** show the thresholds of significance for pollutant emissions for construction and operation, respectively, within SCAB as determined by SCAQMD (1993). If above these threshold levels, project emissions are deemed significant by SCAQMD.

Table 4.1-3
Construction Emission Thresholds for SCAB

Pollutant	Threshold Level of Emissions	
	Quarterly Basis (tons per quarter)	Daily Basis (pounds per day)
Nitrogen oxides (NO_x)	2.50	100
Reactive organic compounds (ROC)	2.50	75
PM10	6.75	150
Sulfur oxides (SO_x)	6.75	150
CO	24.75	550

Source: SCAQMD, 1993.

Table 4.1-4
Operation Emission Thresholds for SCAB

Pollutant	Threshold Level of Emissions (pounds per day)
Nitrogen oxides (NO_x)	55
Reactive organic compounds (ROC)	55
PM10	150
Sulfur oxides (SO_x)	150
CO	550

Source: SCAQMD, 1993.

The SCAQMD has also defined additional indicators of secondary air quality impacts (per Chapter 6 of 1993 SCAQMD CEQA Air Quality Handbook). These focus on projects that could:

- Interfere with attainment of the federal or state AAQS by either violating or contributing to an existing or projected air quality violation
- Result in population increases in excess of AQMP projections and in other than planned locations for the project's build-out-year
- Generate vehicle trips that cause a CO hotspot
- Create or be subjected to an objectionable odor that could impact sensitive receptors
- Accidentally release air toxics or acutely hazardous materials posing a threat to public health and safety
- Emit an air toxic contaminant regulated by SCAQMD rules or that is on a federal or state air toxics list
- Involve the burning of hazardous, medical, or municipal waste as waste-to-energy facilities
- Be occupied by sensitive receptors within a quarter mile of an existing facility that emits air toxics identified in SCAQMD Rule 1401 or near CO hot spots
- Emit carcinogenic or toxic air contaminants that individually or cumulatively exceed the maximum individual cancer risk of 10 in 1 million

4.1.3 Impacts of Adopting the Master Plan Elements

The Master Plan includes six plan elements (also called Master Plan goals), set forth as the CEQA project objectives for the Master Plan. The plan elements are supported by objectives and performance criteria (see **Section 3.3.1**). The adoption of the Master Plan by the County of Los Angeles (and other municipalities in the study area) will promote implementation of projects that are consistent with these Master Plan goals. This section describes the overall Master Plan

impacts based on a qualitative assessment of reasonably foreseeable effects of the adoption of the Master Plan. As described below in **Table 4.1-5**, adoption of the Master Plan could result in both beneficial and potentially adverse impacts related to air quality. Since projects similar to the Concept Design Studies are proposed throughout the river corridor, the Concept Design Study impacts (**Section 4.1.4**) further illustrate the types of potential impacts expected from implementation of the overall Master Plan.

SCAQMD has established significance thresholds for both construction and operational air emissions (see **Section 4.1.2**). Variables that affect air emissions include: site acreage, type of facilities proposed and associated construction equipment needs, construction phasing, operation and maintenance needs of the proposed facilities, and the number of visitors (e.g., to proposed parks). These variables cannot be specified at this time for each of the projects that may be approved pursuant to the Master Plan. However, it is anticipated that future projects developed in a manner consistent with the Master Plan would involve the construction of relatively minor facilities similar to those proposed for the Concept Design Studies (e.g., stormwater retention basins or constructed wetlands, trails, signage, etc.). Therefore, it is anticipated that implementation of most future projects developed in a manner consistent with the Master Plan would result in less-than-significant construction and operational air emissions, similar to the Concept Design Studies (see **Table 4.1-5)**. As described in **Section 4.1.4**, each of the Concept Design Studies has a less than significant impact on air quality. Therefore, the overall impacts on air quality from adopting the Master Plan are considered less than significant. If significant air quality impacts are identified during second-tier CEQA analysis for each project undertaken pursuant to the Master Plan, site-specific analysis will be conducted, and mitigation measures will be defined and implemented by the specific lead agencies for each future project in the Master Plan study area. (See **Section 4.1.6** for mitigation measures that have been defined for the Concept Design Studies.)

Table 4.1-5
Impacts on Air Quality from Adopting the Master Plan Elements

Master Plan Elements	Impacts on Air Quality	Impact Summary
Habitat Element: Preserve and enhance habitat systems through public education, connectivity and balance with other uses	**Beneficial:** Preservation of existing habitat areas would result in protection of currently undisturbed open space areas, which would have a beneficial impact on air quality by preventing pollutant emissions that would result from construction or operation of new residential, commercial, or industrial development. **Neutral:** This element also includes objectives and performance criteria that are neutral with respect to impacts on air resources (e.g., establishment of habitat area design standards and identification of indicator species). **Potentially Adverse:** Habitat enhancement that involves active restoration in undeveloped areas (e.g., extensive removal of existing vegetation and replanting with high-value, native vegetation) would result in air emissions, potentially from use of heavy equipment for earthwork. The Master Plan mitigation measures described in **Section 4.1.5**	Potentially significant for construction-related air emissions (especially dust); less than significant with mitigation Less than significant for operations-related air emissions

Master Plan Elements	Impacts on Air Quality	Impact Summary
	outline an approach to evaluation of construction air emissions and implementation of measures to reduce fugitive dust (via wetting exposed surfaces, cleaning construction vehicle tires, and street sweeping) and tail pipe emissions (via selection of low emission equipment, prohibition of excessive idling, and maintenance of equipment in proper tune). Operational activities associated with habitat enhancement (e.g., monitoring and maintenance activities or exotic species removal) could also result in less than significant tailpipe emissions from infrequent use of worker vehicles and equipment. Regarding dust emissions during maintenance activities, the Master Plan mitigation measure described in **Section 4.1.5** requires implementation of dust control for operations and maintenance activities.	
Recreation Element: Encourage and enhance safe and diverse recreation systems, while providing for expansion, equitable and sufficient access, balance and multi-purpose uses	**Beneficial:** Preservation of existing undisturbed open space areas for passive recreational uses would result in protection of currently undisturbed open space areas, which would have a beneficial impact on air quality by preventing pollutant emissions that would result from construction or operation of new residential, commercial, or industrial development. **Neutral:** This element also includes objectives and performance criteria that are neutral with respect to impacts on air quality (e.g., educating the public about catch and release fishing). **Potentially Adverse:** Construction of recreation related facilities (e.g., interpretive centers, trails and trail amenities, signs, and kiosks) would result in air pollutant emissions from use of heavy equipment for earthwork and worker vehicle trips for installation of facilities. The Master Plan mitigation measures described in **Section 4.1.5** outline an approach to evaluation of construction air emissions and implementation of measures to reduce fugitive dust (via wetting exposed surfaces, cleaning construction vehicle tires, and street sweeping) and tail pipe emissions (via selection of low emission equipment, prohibition of excessive idling, and maintenance of equipment in proper tune). Operation of recreational facilities would result in less than significant tailpipe air pollutant emissions from vehicle trips (new park visitors and workers for operation and maintenance of facilities). With respect to air pollutant emissions associated with energy use for lighting in park buildings, the Master Plan mitigation measure described in **Section 4.1.5** requires selection of energy efficient lighting features to reduce off-site power plant emissions. Regarding dust emissions during maintenance activities, the Master Plan mitigation measure described in **Section 4.1.5** requires implementation of dust control for operations and maintenance activities.	Potentially significant for construction-related air emissions (especially dust); less than significant with mitigation Less than significant for operations-related air emissions

Master Plan Elements	Impacts on Air Quality	Impact Summary
Open Space Element: Enhance and protect open space systems through conservation, aesthetics, connectivity, stewardship, and multi-purpose uses.	**Beneficial:** Preservation of existing open space areas (e.g., through land acquisition or conservation easements) could result in protection of currently undisturbed open space areas, which would have a beneficial impact on air quality by preventing pollutant emissions that would result from construction or operation of new residential, commercial, or industrial development. Promoting fire safety and awareness as part of the cross-jurisdictional safety and maintenance program could prevent fires and therefore result in beneficial air quality impacts. **Neutral:** This element also includes objectives and performance criteria that are neutral with respect to impacts on air quality (e.g., public safety measures to prevent crime, identification of historical sites and cultural landscapes). **Potentially Adverse:** Use of existing open space areas for active recreational facilities and activities would result in air emissions from construction of facilities (e.g., parking and sports fields). The Master Plan mitigation measures described in **Section 4.1.5** outline an approach to evaluation of construction air emissions and implementation of measures to reduce fugitive dust (via wetting exposed surfaces, cleaning construction vehicle tires, and street sweeping) and tail pipe emissions (via selection of low emission equipment, prohibition of excessive idling, and maintenance of equipment in proper tune). Operation of recreational facilities would result in less than significant tailpipe air pollutant emissions from vehicle trips (new park visitors and workers for operation and maintenance of facilities).	Potentially significant for construction-related air emissions (especially dust); less than significant with mitigation Less than significant for operations-related air emissions
Flood Protection Element: Maintain flood protection and existing water and other rights while enhancing flood management activities through the integration with recreation, open space and habitat systems.	**Beneficial:** Improving flood protection using natural processes (e.g., use of non-structural flood control) could have beneficial air quality impacts by minimizing the need for development of new structural flood control facilities (which would have greater air emissions during construction). **Neutral:** This element also includes objectives and performance criteria that are neutral with respect to impacts on air quality (e.g., ensures liability is not increased, coordination of maintenance of flood protection system with habitat needs). **Potentially Adverse:** Construction of new flood control facilities (e.g., stormwater detention areas) would result in air emissions from use of heavy equipment and worker vehicles. The Master Plan mitigation measures described in **Section 4.1.5** outline an approach to evaluation of construction air emissions and implementation of measures to reduce fugitive dust (via wetting exposed surfaces, cleaning construction vehicle tires, and street sweeping) and tail pipe emissions (via selection of low emission equipment,	Potentially significant for construction-related air emissions (especially dust); less than significant with mitigation Less than significant for operations-related air emissions

Master Plan Elements	Impacts on Air Quality	Impact Summary
	prohibition of excessive idling, and maintenance of equipment in proper tune). Operation of flood control facilities would result in less than significant air emissions (vehicle trips and equipment use by operations and maintenance crews and energy consumption for operation of pumps, etc.).	
Water Quality Element: Maintain existing water and other rights while enhancing water quality, water supply, groundwater recharge, and water conservation through the integration with recreation, open space and habitat systems.	**Neutral:** This element includes objectives and performance criteria that are neutral with respect to impacts on air quality (e.g., maintains conservation of local water). **Potentially Adverse:** Construction of new facilities for enhancing water quality and/or water supply (e.g., stormwater infiltration facilities, constructed wetlands, pipelines for reclaimed water distribution) would result in air pollutant emissions from use of heavy equipment and worker vehicles. The Master Plan mitigation measures described in **Section 4.1.5** outline an approach to evaluation of construction air emissions and implementation of measures to reduce fugitive dust (via wetting exposed surfaces, cleaning construction vehicle tires, and street sweeping) and tail pipe emissions (via selection of low emission equipment, prohibition of excessive idling, and maintenance of equipment in proper tune). Operation of such facilities would result in less than significant air emissions (vehicle trips and equipment use by operations and maintenance crews and energy consumption for operation of pumps, etc.).	Potentially significant for construction-related air emissions (especially dust); less than significant with mitigation Less than significant for operations-related air emissions
Economic Development Element: Pursue economic development opportunities derived from and compatible with the natural aesthetic and environmental qualities of the river.	**Neutral:** This element includes objectives and performance criteria that are neutral with respect to impacts on air quality (e.g., educates participating landowners about potential liability and protective measures). **Potentially Adverse:** This element promotes the pursuit of economic development opportunities which consider connectivity to the river corridor and establishment of development standards. Minor modifications of existing or new business development in the river corridor needed for consistency with Master Plan elements (e.g., trail connections and aesthetic features and compliance with design guidelines) are anticipated to have minimal or no impacts on air quality.	Less than significant

4.1.4 Impacts of Implementing the Concept Design Studies

4.1.4.1 Construction Impacts

Implementation of the Master Plan components would require construction at various sites within the corridor. Development of specific components of the Master Plan would result in air

pollutant emissions from construction equipment, earth moving activities, construction workers' commutes and materials deliveries.

Air pollutant emissions from construction activities have been estimated for each Concept Design Study by MWH, EIR consultant to LADPW. Based on the descriptions and sizes of the proposed facilities, MWH staff experienced with construction management have estimated the parameters required for the calculation, including the amount of earthwork, types and number of construction equipment, duration of each phase of construction, and number of construction personnel required (see **Appendix C)**. Since detailed construction plans have not been developed, the estimates were made assuming a "worst case" scenario in terms of air emissions (e.g., compressed construction schedule and maximum acreage of potential site disturbance). Sources of emission factors and equations used in the calculation are the CEQA Handbook (SCAQMD, 1993) for construction equipment tailpipe emissions and PM10 emissions from earth moving activities and EMFAC 2002 Emission Factors for on-road vehicles (SCAQMD, 2004a). (EMFAC, short for emission factor, is a computer model used to estimate pollutant emission rates of on-road vehicles.)

The results of the emissions calculations for the proposed Concept Design Studies are summarized in **Table 4.1-6**. For those project components with construction periods lasting longer than one quarter (i.e., three months or 65 work days), the results for the worst-case quarter are shown. For PM10, the emissions from the following construction-related activities have been added: earth moving (grading, excavation, and filling), construction workers' commutes, use of delivery and work trucks, and use of diesel-fueled construction equipment. For CO, ROC, NO_x, and SO_x, the emissions from the following construction activities were added: construction workers' commutes, use of delivery and work trucks, and construction equipment use. **Appendix C** contains the detailed data and assumptions used in preparing Table 4.1-6. **Tables C-1** through **C-5** in Appendix C present the calculated emissions for each Concept Design Study. **Tables C-6** through **C-9** present the emission factors and detailed assumptions (e.g., types and number of construction equipment/vehicles and duration of activity) used with the calculated emissions for the four categories of construction activities (earth moving, construction workers' commutes, use of delivery and work trucks, and construction equipment, respectively).

Table 4.1-6
Estimated Air Pollutant Emissions from Construction of Concept Design Studies

Concept Design Study	Pollutants														
	CO			ROC			NOx			SOx			PM10		
	tons/quarter	avg lbs/day	peak day (lbs/day)	tons/quarter	avg lbs/day	peak day (lbs/day)	tons/quarter	avg lbs/day	peak day (lbs/day)	tons/quarter	avg lbs/day	peak day (lbs/day)	tons/quarter	avg lbs/day	peak day (lbs/day)
SCAQMD Construction Emissions Thresholds for SCAB (from Table 4.1-3)	**24.75**	**550**		**2.5**	**75**		**2.5**	**100**		**6.75**	**150**		**6.75**	**150**	
San Gabriel Canyon Spreading Grounds	0.18	18	21	0.1	5	7	0.3	27	37	0.02	2	3	0.22	22	23
Woodland Duck Farm	1.53	77	68	0.6	31	33	1.1	55	78	0.13	6	7	0.47	23	26
San Gabriel River Discovery Center*	0.83	25	26	0.3	8	10	2.3	72	94	0.04	1	3	0.32	10	10
Lario Creek	0.32	20	26	0.1	7	10	0.4	23	38	0.03	2	3	0.23	14	15
El Dorado Regional Park	0.43	19	26	0.1	6	10	0.5	23	38	0.04	2	3	0.19	9	10

avg lbs/day: Average pounds per day
tons/quarter: Tons per quarter (one quarter = three months = 65 work days)
* Does not include SOx emissions from construction of the Discovery Center building (see Appendix C).

As shown in **Table 4.1-6**, construction of the Concept Design Studies would result in less-than-significant air emissions on a site-by-site basis. The construction periods of the proposed Concept Design Studies are not likely to overlap due to the relatively short duration involved at each site, varying project financing mechanisms and their effect on the planning and implementation schedules, and different time horizons for obtaining various permits and approvals.

4.1.4.2 Operation Impacts

Visitors to Recreational Facilities

All five Concept Design Studies include operation of recreational facilities, such as parks, which would result in air emissions from vehicle trips generated by visitors. Traffic generated by visitors to the proposed recreational facilities was estimated based on trip rates from the Institute of Transportation Engineers *Trip Generation* manual (1997) for the County Park land use category. For a project site that currently is not operated as a recreational facility (i.e., San Gabriel Canyon Spreading Grounds and Woodland Duck Farm), the average rate from the manual was used (2.28 vehicle trips per acre). For a project site where an existing park is already in place (i.e., El Dorado Park, Lario Creek, and San Gabriel River Discovery Center), it is assumed that the additional activities associated with the Concept Design Studies would generate traffic at 25 percent of the average rate for the County Park category (0.57 vehicle trips per acre).

Based on the above assumptions, the estimated daily vehicle trips generated as a result of operation of the proposed recreational facilities are:

- San Gabriel Canyon Spreading Grounds – 100 trips

- Woodland Duck Farm – 130 trips
- Lario Creek and San Gabriel River Discovery Center – 190 trips
- El Dorado Regional Park – 300 trips

Air emissions from the estimated vehicle trips by visitors to the proposed recreational facilities were calculated using the EMFAC 2002 Emission Factors for passenger vehicles (SCAQMD, 2004a; see Table C-7 in Appendix C for values). It was assumed that the length of each vehicle trip is 14 miles (round trip) on average (based on Table A9-5-D; SCAQMD, 1993). The results of the calculations (**Table 4.1-6**) show that the vehicle trips generated by visitors to the proposed recreational facilities would result in less-than-significant air emissions, both on a site-by-site basis and cumulatively for all five Concept Design Studies.

Table 4.1-7
Estimated Air Pollutant Emissions from Recreational Visitors to the Concept Design Studies

Concept Design Study	Pollutants (pounds per day)				
	CO	ROC	NO_x	SO_x	PM10
SCAQMD Operation Emissions Thresholds for SCAB (from Table 4.1-4)	**550**	**55**	**55**	**150**	**150**
San Gabriel Canyon Spreading Grounds	25	3	3	0.01	0.11
Woodland Duck Farm	33	4	4	0.02	0.14
San Gabriel River Discovery Center / Lario Creek	48	5	5	0.03	0.21
El Dorado Regional Park	76	8	8	0.04	0.33
Total	**183**	**20**	**20**	**0.10**	**0.79**

Facility Operation and Maintenance

Maintenance requirements of proposed facilities include: sediment removal from stormwater management facilities; vegetation management at wetlands or other water features (for vector control); trail maintenance; maintenance of landscaped areas; painting or repairing fences, maintenance of equipment such as pumps; and inspections. Each of these maintenance activities would require several personnel several times a year at each site, requiring minor vehicle and employee travel. Sediment removal from retention basins may require minor earthwork. Several projects require operation of pumps, which are expected to be electric-powered. These activities would result in minor vehicle and equipment tailpipe emissions. Dust emissions related to earthwork may occur, but sediment removal from project facilities would likely occur under moist conditions. Air emissions associated with maintenance of facilities and equipment operation for the Concept Design Studies are expected to be minimal, and would be less than significant even when cumulatively considered with the emissions from visitor vehicle trips described above.

4.1.4.3 Other Air Quality Impact Considerations

Consistency with an Air Quality Management Plan

The applicable air quality plan for the Master Plan area is the AQMP developed by SCAQMD. A project is deemed inconsistent with the applicable air quality plan if it would result in population and/or employment growth that exceeds growth estimated in the applicable air quality plan. The project does not include development of housing or employment centers, and would not induce population or significant employment growth. Construction and operation of the project will provide a limited number of both temporary and permanent jobs. Therefore, the project would not conflict with or obstruct the implementation of the applicable air quality plan.

Diesel Particulate Matter

In 1998, CARB identified diesel particulate matter, a component of diesel exhaust, as a toxic air contaminant. Diesel particulate matter typically consists of a carbon core with a coating of organic carbon compounds, or as sulfuric acid and ash, sulfuric acid aerosols, or sulfate particles associated with organic carbon (CARB, 2003b). Almost all of the diesel particle mass is in the range of 10 microns or less in diameter (i.e., PM10), with approximately 94 percent being less than 2.5 microns in diameter (i.e., PM2.5) (CARB, 2003b). Because of their small size, the particles are readily respirable and can effectively reach the lowest airways of the lung (CARB, 2003b). Exposure to diesel particulate matter has been found to result in an increased risk of cancer and non-cancer respiratory health effects (CARB, 2003b).

Significant impacts associated with exposure to diesel particulate emissions are not expected because construction is estimated to last on the order of months at each site. Additionally, future projects developed in a manner consistent with the Master Plan would be spread out geographically along the river corridor thereby reducing any potential additive effect from diesel emissions at multiple sites. Quantitative cancer risk analyses are based on exposure of 70 years for residential exposures and 46 years for occupational exposures; exposure to project-related emissions would be for a much shorter period of time (i.e. during the construction phase). Based on the short exposure period and small amount of emissions, toxic air contaminant emissions are expected to be less than significant during the construction phase.

Odor

The Master Plan Concept Design Studies for the Woodland Duck Farm, Lario Creek, San Gabriel River Discovery Center, and El Dorado Regional Park include collection and treatment of stormwater runoff. Surface retention basins and other stormwater management facilities that have standing water for a period of time may create odors if improperly operated and maintained. Algae blooms and their eventual die-off can create objectionable odors. **Table 4.1-8** identifies types of facilities designed to temporarily or permanently retain stormwater, and describes their potential to create odor. It is anticipated that lakes and other water features at proposed parks would be managed (e.g., by aeration and circulation) to maintain the aesthetics and to control odor/algae. Since all types of stormwater management facilities have very low to low potential for creating odors, impacts are considered less than significant.

Table 4.1-8
Potential for Creating Odor by Type of Facility

Type of Facility	Potential for Creating Odor
Permanent lakes	Low Lakes proposed as part of new parks would be managed (by providing circulation, aeration, etc.) as necessary to maintain the aesthetics of the park.
Surface retention/infiltration basins	Low to Very Low Standing water may be present for several months after large storms; however, the potential for algae blooms is limited since water would be present mostly during the colder months. Recharge of reclaimed water could result in standing water year-round. Basins would be managed to minimize algae blooms as needed.
Wetlands	Very Low Water in the wetlands will not be stagnant because it will be continuously circulated (and therefore aerated) using pumps.
Shallow depressions for infiltrating stormwater (e.g., swales)	Very Low Stormwater is expected to completely infiltrate into the ground within several days of any storm event.

Emission of Toxic Air Contaminants. Aside from construction equipment and vehicle fuels, the Concept Design Studies do not involve use of hazardous materials that could result in release of carcinogenic or toxic air contaminants. No significant impacts would occur.

4.1.5 Master Plan Program Mitigation Measures

Future projects that involve use of heavy equipment and vehicles during construction will require an evaluation of the impacts of proposed actions on air quality as described in program Mitigation Measure MP-A1:

MP-A1 Evaluations of air quality impacts during project construction will be conducted as follows during site-specific environmental review of each future Master Plan project:

1. Based on the site-specific project description, the following should be determined:
   - Acreage of site disturbance that would occur during excavation, grading, and/or filling
   - List of necessary construction equipment (number, type, hours of operation per day, and number of days in operation for each phase of construction)
   - Length of construction period
   - Number of construction workers and vehicles
2. Based on the above information, and using the latest version of the SCAQMD CEQA Handbook, construction emissions will then be estimated and compared to the thresholds of significance (**Section 4.1.2**).

3. If the estimated construction emissions exceed the SCAQMD threshold of significance for fugitive dust, then one or more of the following dust control measures will be implemented as applicable:

   - Clean dirt from construction vehicle tires and undercarriages when leaving the construction site and before entering local roadways.
   - During earth-moving activities, water the construction area as necessary, but at least twice per day.
   - Water temporary open storage piles once per hour or install temporary covers.
   - Water unpaved roadways three times per day or apply non-toxic soil stabilizers. (Note: Use of soil stabilizers near wetlands, streams, or other water features may be limited by regulatory agencies such as the U.S. Army Corps of Engineers and the California Department of Fish and Game.)
   - Limit construction vehicle speed on the project site to 15 miles per hour (mph) or less.
   - Cover dirt in trucks during on-road hauling.
   - Cease earth-moving activities on days when wind gusts exceed 25 mph or apply water to soil not more than 15 minutes prior to moving such soil.
   - Sweep streets near the construction area at the end of the day if visible soil material is present.
   - For applicable construction areas, establish a vegetative groundcover as soon as feasible after active operations have ceased. Groundcover will be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting.
   - Per SCAQMD Rule 403(e), large construction operations (greater than 50 acres of disturbed area or daily earth-moving or throughput volume of 5,000 cubic yards three times during the most recent 365-day period) will implement applicable dust suppression measures specified in Table 2 of Rule 403 at all times. When the applicable performance standards cannot be met through use of Table 2 measures, the applicable contingency control measures specified in Table 3 of Rule 403 will be implemented.

4. If the estimated construction emissions exceed the SCAQMD threshold of significance for CO, ROC, NO_x, SO_x, then one or more of the following measures will be implemented:

   - Prohibit all vehicles from idling in excess of 10 minutes, both on and off-site.
   - Maintain construction equipment in proper tune.
   - Encourage contractors to establish trip reduction plans. The goal of these plans will be to achieve a 1.5 average vehicle ridership (AVR) for construction employees.

   To further reduce tailpipe emissions from construction equipment, implementation of the following optional measure will be considered at the time of construction of individual

projects. Aside from fugitive dust, the majority of construction emissions, particularly for NO_x, are generally associated with tailpipe emissions from diesel-fueled construction equipment. Using construction equipment with alternative fuel(s) can achieve high reduction efficiency for tailpipe emissions. The approximate NO_x emissions reduction rates of various alternative fuels are: 60 percent for compressed natural gas (CNG), 10 percent for emulsified diesel fuel, and 2 to 10 percent for biodiesel fuel (EPA, 2003c). However, use of construction equipment with alternative fuel(s), while effective, may not be applicable to all projects (i.e., limited equipment availability and high costs may make it infeasible to use a large fleet of construction equipment with alternative fuel(s)).

- Select construction equipment with low pollutant emissions and high energy efficiency. Factors to consider include model year and alternative fuels (e.g., compressed natural gas, biodiesel, emulsified diesel, methanol, propane, butane, and low sulfur diesel).

Future projects that involve vehicle trips or equipment operation during operation of the proposed facilities will require an evaluation of the impacts of proposed actions on air quality as described in program Mitigation Measure MP-A2:

MP-A2 Evaluations of air quality impacts during project operation will be conducted as follows during site-specific environmental review of each future Master Plan project:

1. Based on the site-specific project description, the number of vehicle trips that would be generated by operation of proposed facilities (e.g., ongoing maintenance activities and/or visitors to recreational or educational facilities) will be estimated, and air emissions associated with those vehicle trips will be determined. If project operation involves use of electricity (e.g., lighting for parks, education center or park buildings, pumps, etc.), air emissions associated with electricity consumption will be estimated.
2. Based on the above information, and using the latest version of the SCAQMD CEQA Handbook, operational emissions will be compared to the thresholds of significance (**Section 4.1.2**).
3. One or more of the following measures will be implemented as applicable to reduce air emissions:
   - Implement dust control if dry conditions and substantial area is disturbed for operations and maintenance activities that involve ground disturbance.
   - Select energy efficient lighting features or other building design considerations for proposed facilities (e.g., park buildings or interpretive centers) to minimize emissions associated with power generation.
   - Select low-emissions equipment and vehicles for operations and maintenance to reduce tailpipe emissions.
   - Implement an employee ride-share plan to reduce vehicle trips to the facility and associated tailpipe emissions.

4.1.6 Mitigation Measures for Concept Design Studies

Construction Impacts

Mitigation Measures CD-A1 through CD-A10 shall be implemented during construction of **all five Concept Design Studies** to further reduce PM10 emissions associated with earth moving activities. Typical fugitive-dust suppression techniques, such as those contained in these mitigation measures, can reduce dust generation by 60 to 90 percent if implemented consistently (Midwest Research Institute 1996, as cited in City of Glendale, 2002).

CD-A1 Clean dirt from construction vehicle tires and undercarriages when leaving the construction site and before entering local roadways.

CD-A2 During earth-moving activities, water the construction area as necessary, but at least twice per day.

CD-A3 Water temporary open storage piles once per hour or install temporary covers.

CD-A4 Water unpaved roadways three times per day or apply non-toxic soil stabilizers. (Note: Use of soil stabilizers near wetlands, streams, or other water features may be limited by regulatory agencies such as the U.S. Army Corps of Engineers and the California Department of Fish and Game.)

CD-A5 Limit construction vehicle speed on the project site to 15 miles per hour (mph) or less.

CD-A6 Cover dirt in trucks during on-road hauling.

CD-A7 Cease earth-moving activities on days when wind gusts exceed 25 mph or apply water to soil not more than 15 minutes prior to moving such soil.

CD-A8 Sweep streets near the construction area at the end of the day if visible soil material is present.

CD-A9 For applicable construction areas, establish a vegetative groundcover as soon as feasible after active operations have ceased. Groundcover shall be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting.

CD-A10 Per SCAQMD Rule 403(e), large construction operations (greater than 50 acres of disturbed area or daily earth-moving or throughput volume of 5,000 cubic yards three times during the most recent 365-day period) shall implement applicable dust suppression measures specified in Table 2 of Rule 403 at all times. When the applicable performance standards cannot be met through use of Table 2 measures, the applicable contingency control measures specified in Table 3 of Rule 403 shall be implemented.

Mitigation Measures CD-A11, CD-A12, and CD-A13 shall be implemented during construction of **all five Concept Design Studies** to reduce tailpipe emissions (including CO, ROC, NO_x, SO_x, and PM10) from worker commutes, use of delivery and work trucks, and use of construction equipment.

CD-A11 Prohibit all vehicles from idling in excess of 10 minutes, both on and off-site.

CD-A12 Maintain construction equipment in proper tune.

CD-A13 Encourage contractors to establish trip reduction plans. The goal of these plans will be to achieve a 1.5 average vehicle ridership (AVR) for construction employees.

To further reduce tailpipe emissions from construction equipment, implementation of optional Mitigation Measure CD-A14 shall be considered at the time of construction of individual projects. The majority of the construction emissions, particularly for NO_x, are associated with tailpipe emissions from diesel-fueled construction equipment. Using construction equipment with alternative fuel(s) can achieve high reduction efficiency for tailpipe emissions. The approximate NO_x emissions reduction rates of various alternative fuels are: 60 percent for compressed natural gas (CNG), 10 percent for emulsified diesel fuel, and 2 to 10 percent for biodiesel fuel (EPA, 2003c). However, use of construction equipment with alternative fuel(s), while effective, may not be applicable to all projects (i.e., limited equipment availability and high costs may make it infeasible to use a large fleet of construction equipment with alternative fuel(s)).

CD-A14 Select construction equipment with low pollutant emissions and high energy efficiency. Factors to consider include model year and alternative fuels (e.g., compressed natural gas, biodiesel, emulsified diesel, methanol, propane, butane, and low sulfur diesel).

Operation Impacts

The following measures shall be implemented to further reduce air emissions from operation of proposed facilities for **all five Concept Design Studies**:

CD-A15 Implement dust control if dry conditions and substantial area is disturbed for operations and maintenance activities that involve ground disturbance

CD-A16 Select energy efficient lighting features or other building design considerations for proposed facilities (e.g., park buildings or interpretive centers) to minimize emissions associated with power generation.

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4.2 BIOLOGICAL RESOURCES

4.2.1 Methodology and Approach

Biological resources in the project area were evaluated by BonTerra Consulting, Costa Mesa, California. Relevant literature was reviewed prior to the initiation of field surveys to determine the special status plants, wildlife, and habitats known or with the potential to occur in the vicinity of the Concept Design Study sites. The following literature sources were reviewed:

- Special status species lists published by the U.S. Fish and Wildlife Service (USFWS, 1999) and California Department of Fish and Game (CDFG, 2003a and 2003b).
- CDFG Natural Diversity Database (CNDDB) (CDFG, 2002 and 2003) for Mount Wilson, Azusa, Glendora, Baldwin Park, El Monte, Whittier, Los Alamitos, and Seal Beach U.S. Geological Survey (USGS) 7.5 minute quadrangles.
- California Native Plant Society's (CNPS) Inventory of Rare and Endangered Vascular Plants of California (CNPS, 2002 and 2003) for the Mount Wilson, Azusa, Glendora, Baldwin Park, El Monte, Whittier, Los Alamitos, and Seal Beach USGS quad maps.
- County of Los Angeles, Department of Regional Planning. *Los Angeles County Significant Ecological Areas Study.* 1976.
- County of Los Angeles, Department of Public Works. *1998/1999 Biological Resources Assessment and Monitoring Report for the San Gabriel River Sediment Management Plan Project.* Chambers Group. 1999.
- County of Los Angeles, Department of Public Works. Biological Resources Monitoring, Earth Bottom Channel Program, Pre- and Post-Clearing Channel Maintenance Monitoring Reports. BonTerra Consulting. Unpublished file documentation addressing earth bottom channels within the San Gabriel, Santa Clara and Los Angeles Rivers. 1999, 2000, 2001, 2002, 2003, 2004.
- County of Los Angeles, Department of Public Works. *San Gabriel River Valley Boulevard Rubber Dams No. 2 and No. 3 Project, Biological Technical Report.* BonTerra Consulting. August 2002.
- County of Los Angeles, Department of Public Works. *Los Angeles County Channels, Focused Survey Results*. BonTerra Consulting. September 2002.
- County of Los Angeles, Department of Public Works. *Los Angeles County Channels, 2003 Focused Survey Results*. BonTerra Consulting. September 2003.
- County of Los Angeles, Department of Public Works. *Zone 1 Ditch, Biological Technical Report*. BonTerra Consulting. May 2003.
- County of Los Angeles, Department of Public Works. *Biological Assessment for San Gabriel River Valley Boulevard Rubber Dams No. 2 and No. 3 Project.* BonTerra Consulting. December 2003.

- County of Los Angeles, Department of Public Works. *Riparian Habitat Mitigation Program, San Gabriel River Rubber Dams No. 2 and No. 3.* BonTerra Consulting. *April* 2004.
- Haglund, T. R. and J. N. Baskin. Fish Population and Gravel Studies during Cogswell Reservoir Sediment Removal - Phase 2, 1994 Status Report. Report to Los Angeles County Department of Public Works. pp. 1-28 plus appendices 1-4. 1995.
- U.S. Army Corps of Engineers, Los Angeles District and Los Angeles County Department of Public Works. *Final Environmental Impact Statement and Environmental Impact Report, San Gabriel Canyon Sediment Management Plan*, Los Angeles County, California. 1997.
- U.S. Army Corps of Engineers, Los Angeles District and Los Angeles County Department of Public Works. *Final Environmental Impact Statement and Environmental Impact Report, Santa Fe and Whittier Narrows Dams Water Conservation and Supply Study*, Los Angeles County, California. 1998.

Each of these studies is incorporated by reference into the Program EIR, and was used to develop the existing conditions description provided in **Section 4.2.2** below. In addition, reconnaissance level field surveys of each Concept Design Study site were conducted on June 20 and 23, 2003. Plant species were identified in the field or collected for later identification. During the surveys, each habitat type was evaluated for its potential to support common species known or expected to occur in the region. Active searches for reptiles and amphibians were accomplished by systematic surveys through appropriate habitat, including lifting, overturning, and carefully replacing rocks and debris. Birds were identified by visual and auditory recognition. Surveys for mammals were conducted during the day and included searching for and identifying diagnostic signs (e.g., scat, footprints, scratch-outs, dust bowls, burrows, and trails). During the surveys, the project sites were also evaluated for their potential to support special status plant and wildlife species that are known or are expected to occur in the region. No focused plant or wildlife surveys were conducted during these site visits.

4.2.2 Existing Conditions

The Master Plan geographically spans 58 river miles of the San Gabriel River in southern California. The project area extends from the headwaters of the West Fork San Gabriel River in the Angeles National Forest south to its terminus at the Pacific Ocean between Long Beach in Los Angeles County and Seal Beach in Orange County. The project area is located within the Mount Wilson, Azusa, Glendora, Baldwin Park, El Monte, Whittier, Los Alamitos, and Seal Beach USGS quadrangles.

The descriptions of existing conditions provided below are based upon review of published and unpublished literature and data and the results of reconnaissance-level field surveys of each of the Concept Design Study sites noted in Section 4.2.1 above. Included in this review were data collected by BonTerra Consulting during its annual field surveys of San Gabriel River reaches from 1999 to 2004 extending from areas just above Santa Fe Dam to Telegraph Road, encompassing the Upper San Gabriel Valley and Lower San Gabriel Valley reaches described in

the Master Plan. These surveys are conducted annually in these areas in August (pre-clearing) and in October and November (post-clearing) prior to vegetation clearing.

4.2.2.1 Master Plan Study Area

The Master Plan divides the San Gabriel River into seven reaches: Headwaters, San Gabriel Canyon, Upper San Gabriel Valley, Lower San Gabriel Valley, Upper Coastal Plain, Lower Coastal Plain, and Zone of Tidal Influence (see Section 3.2.2).

Headwaters

Data sources that were used to describe the biological resources in this entire reach are listed below:

- Special status species lists published by the U.S. Fish and Wildlife Service (USFWS, 1999) and California Department of Fish and Game (CDFG, 2003a and 2003b);
- CDFG Natural Diversity Database (CNDDB) (CDFG, 2002 and 2003) for Mount Wilson, Azusa, Glendora, Baldwin Park, El Monte, Whittier, Los Alamitos, and Seal Beach U.S. Geological Survey (USGS) 7.5 minute quadrangles;
- California Native Plant Society's (CNPS) Inventory of Rare and Endangered Vascular Plants of California (CNPS, 2002 and 2003) for the Mount Wilson, Azusa, Glendora, Baldwin Park, El Monte, Whittier, Los Alamitos, and Seal Beach USGS quad maps;
- County of Los Angeles, Department of Public Works. 1998/1999 Biological Resources Assessment and Monitoring Report for the San Gabriel River Sediment Management Plan Project. Chambers Group. 1999;
- Haglund, T. R. and J. N. Baskin. Fish Population and Gravel Studies during Cogswell Reservoir Sediment Removal - Phase 2, 1994 Status Report. Report to Los Angeles County Department of Public Works. pp. 1-28 plus appendices 1-4. 1995;
- U.S. Army Corps of Engineers, Los Angeles District and Los Angeles County Department of Public Works. *Final Environmental Impact Statement and Environmental Impact Report, San Gabriel Canyon Sediment Management Plan*, Los Angeles County, California. 1997

Of the seven reaches, the Headwaters is generally the least altered, as it is within Angeles National Forest property of the San Gabriel Mountains. The Headwaters reach extends from Cogswell Dam on the San Gabriel River West Fork downstream to its confluence with the San Gabriel River East Fork. The setting for this reach is undisturbed, high quality chaparral, riparian, and woodland habitats. General land uses along the Headwaters reach include flood control, recreation, and natural open space.

A great diversity in wildlife species is expected to occur in the vicinity of the Headwaters reach. Common reptiles expected to occur include, but are not limited to, the following species: side-blotched lizard (*Uta stansburiana*), western fence lizard (*Sceloporus occidentalis*), and western rattlesnake (*Crotalus viridis*). Resident bird species expected to occur in the vicinity include the

Anna's hummingbird (*Calypte anna*), black phoebe (*Sayornis nigricans*), western scrub-jay (*Aphelocoma californica*), bushtit (*Psaltriparus minimus*), northern mockingbird (*Mimus polyglottos*), and California towhee (*Pipilo crissalis*). Birds of prey (raptors) expected to occur in the Headwaters vicinity include the sharp-shinned hawk (*Accipiter striatus*), Cooper's hawk (*Accipiter cooperii*), red-shouldered hawk (*Buteo lineatus*), red-tailed hawk (*Buteo jamaicensis*), and turkey vulture (*Cathartes aura*). Mammals expected to occur in the vicinity include California desert cottontail (*Sylvilagus audubonii*), California ground squirrel (*Spermophilus beecheyi*), coyote (*Canis latrans*), common raccoon (*Procyon lotor*), and striped skunk (*Mephitis mephitis*).

Both native and non-native fish are expected to occur in the vicinity of the Headwaters reach. The native fish expected to occur include the arroyo chub (*Gila orcutti*), and Santa Ana sucker (*Catostomus santaanae),* all special status species; other native fish include the Santa Ana speckled dace (*Rhinichthys osculus*). Introduced freshwater fish may include the channel catfish (*Ictalurus punctatus*), common carp (*Cyprinus carpio*), red shiner (*Cyprinella lutrensis*), fathead minnow (*Pimephales promelas*), rainbow trout (*oncorhynchus mykiss*), rainwater killifish (*Lucania parva*), and western mosquitofish (*Gambusia affinis*).

Several amphibian species are expected to occur in the vicinity of the Headwaters reach. These species include the western toad (*Bufo boreas*), Pacific treefrog (*Hyla regilla*), black-bellied slender salamander (*Batrachoseps nigriventris*), California treefrog (*Hyla cadaverina*), and bullfrog (*Rana catesbeiana*).

Invertebrate species are not listed (for any reach) due to the great diversity of dominant species expected to occur throughout the study area.

Special status wildlife species in this reach would include wildlife associated with riparian or coastal sage scrub habitats.

San Gabriel Canyon

Data sources that were used to describe the biological resources in this entire reach are listed below:

- Special status species lists published by the U.S. Fish and Wildlife Service (USFWS, 1999) and California Department of Fish and Game (CDFG, 2003a and 2003b).
- CDFG Natural Diversity Database (CNDDB) (CDFG, 2002 and 2003) for Mount Wilson, Azusa, Glendora, Baldwin Park, El Monte, Whittier, Los Alamitos, and Seal Beach U.S. Geological Survey (USGS) 7.5 minute quadrangles.
- California Native Plant Society's (CNPS) Inventory of Rare and Endangered Vascular Plants of California (CNPS, 2002 and 2003) for the Mount Wilson, Azusa, Glendora, Baldwin Park, El Monte, Whittier, Los Alamitos, and Seal Beach USGS quad maps.
- County of Los Angeles, Department of Public Works. *1998/1999 Biological Resources Assessment and Monitoring Report for the San Gabriel River Sediment Management Plan Project*. Chambers Group. 1999.

- Haglund, T. R. and J. N. Baskin. Fish Population and Gravel Studies during Cogswell Reservoir Sediment Removal - Phase 2, 1994 Status Report. Report to Los Angeles County Department of Public Works. pp. 1-28 plus appendices 1-4. 1995.
- U.S. Army Corps of Engineers, Los Angeles District and Los Angeles County Department of Public Works. *Final Environmental Impact Statement and Environmental Impact Report, San Gabriel Canyon Sediment Management Plan*, Los Angeles County, California. 1997.
- United States Army Corps of Engineers, Los Angeles District and Los Angeles County *Department* of Public Works. *Final Environmental Impact Statement and Environmental Impact Report, Santa Fe and Whittier Narrows Dams Water Conservation and Supply Study*, Los Angeles County, California. 1998.
- United States Department of Agriculture, Forest Service, Angeles National Forest. *Southern California Land Management Plans, Draft Environmental Impact Statement (DEIS).* May 2004.

The San Gabriel Canyon reach is also within or surrounded by the Angeles National Forest property of the San Gabriel Mountains. This reach extends from the confluence of the San Gabriel River West Fork and the San Gabriel River East Fork downstream to Morris Dam. High quality chaparral, riparian, and woodland habitats are present in this reach, as is some development, which has diminished the quality of some of the habitats. Land uses include flood control, recreation, development, and natural open space.

Wildlife expected to occur in the vicinity of the San Gabriel Canyon reach include, but are not limited to, the following species: side-blotched lizard, western fence lizard, and western rattlesnake. Resident bird species expected to occur in the vicinity include Anna's hummingbird, black phoebe, western scrub-jay, bushtit, northern mockingbird, and California towhee. Birds of prey (raptors) expected to occur in the San Gabriel Canyon reach include the sharp-shinned hawk, Cooper's hawk, red-shouldered hawk, red-tailed hawk, and turkey vulture. Mammals expected to occur in the vicinity include California desert cottontail, California ground squirrel, coyote, common raccoon, and striped skunk.

Both native and non-native fish are expected to occur in the vicinity of the San Gabriel Canyon reach. The native fish expected to occur include the arroyo chub, which is a special status species; other native fish include the Santa Ana speckled dace. Introduced freshwater fish may include the channel catfish, common carp, red shiner, fathead minnow, rainbow trout, rainwater killifish, and western mosquitofish.

Several amphibian species are expected to occur in the vicinity of the San Gabriel Canyon reach. These species include the western toad, Pacific treefrog, black-bellied slender salamander, California treefrog, and bullfrog.

Special status wildlife species at this reach would include wildlife associated with riparian or coastal sage scrub habitats.

Upper San Gabriel Valley

Data sources that were used to describe the biological resources in this entire reach are listed below:

- Special status species lists published by the U.S. Fish and Wildlife Service (USFWS, 1999) and California Department of Fish and Game (CDFG, 2003a and 2003b).
- CDFG Natural Diversity Database (CNDDB) (CDFG, 2002 and 2003) for Mount Wilson, Azusa, Glendora, Baldwin Park, El Monte, Whittier, Los Alamitos, and Seal Beach U.S. Geological Survey (USGS) 7.5 minute quadrangles.
- California Native Plant Society's (CNPS) Inventory of Rare and Endangered Vascular Plants of California (CNPS, 2002 and 2003) for the Mount Wilson, Azusa, Glendora, Baldwin Park, El Monte, Whittier, Los Alamitos, and Seal Beach USGS quad maps.
- County of Los Angeles, Department of Public Works. Biological Resources Monitoring, Earth Bottom Channel Program, Pre- and Post-Clearing Channel Maintenance Monitoring Reports. 1999-2004. BonTerra Consulting. Unpublished file documentation.
- County of Los Angeles, Department of Public Works. 1998/1999 Biological Resources Assessment and Monitoring Report for the San Gabriel River Sediment Management Plan Project. 1999.
- County of Los Angeles, Department of Regional Planning. *Los Angeles County Significant Ecological Areas Study*. 1976.
- United States Army Corps of Engineers, Los Angeles District and Los Angeles County Department of Public Works. *Final Environmental Impact Statement and Environmental Impact Report, Santa Fe and Whittier Narrows Dams Water Conservation and Supply Study*, Los Angeles County, California. 1998.

The Upper San Gabriel Valley reach passes through unincorporated areas of Los Angeles County. Channelization of the San Gabriel River begins in this reach. This reach contains Santa Fe Dam and Reservoir and is designated as a Significant Ecological Area (San Gabriel Canyon SEA No. 22). The SEA designation is due to extensive alluvial fan sage scrub, lowland riparian, and freshwater marsh habitats in the flood control basin (County of Los Angeles, 1976). Development within SEAs is severely limited. Specific environmental studies must be performed to assess the potential for damage or destruction of an SEA prior to approval of any plans for development in an area identified with an SEA overlay. The intent of the SEA designation is to ensure the continued viability of the biota contained within the SEA. Vegetation in this reach is of moderate to high quality alluvial sage scrub and riparian habitats. General land uses in this reach include flood control, water conservation, recreation, and development.

Wildlife species expected to occur in the vicinity of the Upper San Gabriel Valley reach include western fence lizard, black phoebe, American crow (*Corvus brachyrhynchos*), bushtit, northern mockingbird, European starling (*Sturnus vulgaris*), red-tailed hawk, turkey vulture, California desert cottontail, California ground squirrel, common raccoon, and striped skunk.

Both native and non-native fish are expected to occur in the vicinity of the Upper San Gabriel Valley reach. The native fish expected to occur include the arroyo chub which is a special status species; other native fish include the Santa Ana speckled dace. Non-native fish expected to occur in the vicinity of the Upper San Gabriel Valley reach include the channel catfish, common carp, red shiner, fathead minnow, rainbow trout, rainwater killifish, and western mosquitofish.

Several amphibian species are expected to occur in the vicinity of the Upper San Gabriel Valley reach. These species include the western toad, Pacific treefrog, black-bellied slender salamander, California treefrog, and bullfrog.

Special status wildlife species in this reach would include wildlife associated with riparian or alluvial sage scrub habitats.

Lower San Gabriel Valley

Data sources that were used to describe the biological resources in this entire reach are listed below:

- Special status species lists published by the U.S. Fish and Wildlife Service (USFWS, 1999) and California Department of Fish and Game (CDFG, 2003a and 2003b).
- CDFG Natural Diversity Database (CNDDB) (CDFG, 2002 and 2003) for Mount Wilson, Azusa, Glendora, Baldwin Park, El Monte, Whittier, Los Alamitos, and Seal Beach U.S. Geological Survey (USGS) 7.5 minute quadrangles.
- California Native Plant Society's (CNPS) Inventory of Rare and Endangered Vascular Plants of California (CNPS, 2002 and 2003) for the Mount Wilson, Azusa, Glendora, Baldwin Park, El Monte, Whittier, Los Alamitos, and Seal Beach USGS quad maps.
- County of Los Angeles, Department of Public Works. Biological Resources Monitoring, Earth Bottom Channel Program, Pre- and Post-Clearing Channel Maintenance Monitoring Reports. BonTerra Consulting. Unpublished file documentation addressing earth bottom channels within the San Gabriel, Santa Clara and Los Angeles Rivers. 1999, 2000, 2001, 2002, 2003, 2004.
- County of Los Angeles, Department of Public Works. *San Gabriel River Valley Boulevard Rubber Dams No. 2 and No. 3 Project, Biological Technical Report.* BonTerra Consulting. August 2002.
- County of Los Angeles, Department of Public Works. *Los Angeles County Channels, Focused Survey Results*. BonTerra Consulting. September 2002.
- County of Los Angeles, Department of Public Works. *Los Angeles County Channels, 2003 Focused Survey Results*. BonTerra Consulting. September 2003.
- County of Los Angeles, Department of Public Works. *Zone 1 Ditch, Biological Technical Report*. BonTerra Consulting. May 2003.

- County of Los Angeles, Department of Public Works. *Biological Assessment for San Gabriel River Valley Boulevard Rubber Dams No. 2 and No. 3 Project*. BonTerra Consulting. December 2003.
- County of Los Angeles, Department of Public Works. *Riparian Habitat Mitigation Program, San Gabriel River Rubber Dams No. 2 and No. 3*. BonTerra Consulting. *April* 2004.
- United States Army Corps of Engineers, Los Angeles District and Los Angeles County Department of Public Works. *Final Environmental Impact Statement and Environmental Impact Report, Santa Fe and Whittier Narrows Dams Water Conservation and Supply Study*, Los Angeles County, California. 1998.

The Lower San Gabriel Valley reach contains the Whittier Narrows Dam and Reservoir at its downstream end and Santa Fe Dam at its upstream end. Although this reach is channelized throughout with concrete banks, it has a soft (mud) bottom. This reach is also designated as a Significant Ecological Area (Whittier Narrows Dam Recreation Area SEA No. 42). Vegetation in this reach is generally of moderate quality, but there are some areas of high quality riparian habitat. There is also some low to medium quality alluvial sage scrub habitat in this reach. General land uses in this reach include flood control, water conservation, recreation, and development.

Wildlife species expected to occur in the vicinity of the Lower San Gabriel Valley reach include side-blotched lizard, western fence lizard, Anna's hummingbird, black phoebe, bushtit, northern mockingbird, Cooper's hawk, red-shouldered hawk, red-tailed hawk, turkey vulture, California desert cottontail, California ground squirrel, coyote, common raccoon, and striped skunk.

Non-native fish are expected to occur in the vicinity of the Lower San Gabriel Valley reach. These species include the channel catfish, common carp, red shiner, fathead minnow, rainwater killifish, and western mosquitofish.

Several amphibian species are expected to occur in the vicinity of the Lower San Gabriel Valley reach. These species include the western toad, Pacific treefrog, black-bellied slender salamander, California treefrog, and bullfrog.

Special status wildlife species in this reach would include wildlife associated with riparian or alluvial sage scrub habitats.

Upper Coastal Plain

Data sources that were used to describe the biological resources in this entire reach are listed below:

- Special status species lists published by the U.S. Fish and Wildlife Service (USFWS, 1999) and California Department of Fish and Game (CDFG, 2003a and 2003b).

- CDFG Natural Diversity Database (CNDDB) (CDFG, 2002 and 2003) for Mount Wilson, Azusa, Glendora, Baldwin Park, El Monte, Whittier, Los Alamitos, and Seal Beach U.S. Geological Survey (USGS) 7.5 minute quadrangles.
- California Native Plant Society's (CNPS) Inventory of Rare and Endangered Vascular Plants of California (CNPS, 2002 and 2003) for the Mount Wilson, Azusa, Glendora, Baldwin Park, El Monte, Whittier, Los Alamitos, and Seal Beach USGS quad maps.
- County of Los Angeles, Department of Public Works. Biological Resources Monitoring, Earth Bottom Channel Program, Pre- and Post-Clearing Channel Maintenance Monitoring Reports. BonTerra Consulting. Unpublished file documentation addressing earth bottom channels within the San Gabriel, Santa Clara and Los Angeles Rivers. 1999, 2000, 2001, 2002, 2003, 2004.
- County of Los Angeles, Department of Public Works. *Los Angeles County Channels, Focused Survey Results*. BonTerra Consulting. September 2002.
- County of Los Angeles, Department of Public Works. *Los Angeles County Channels, 2003 Focused Survey Results*. BonTerra Consulting. September 2003.
- United States Army Corps of Engineers, Los Angeles District and Los Angeles County Department of Public Works. *Final Environmental Impact Statement and Environmental Impact Report, Santa Fe and Whittier Narrows Dams Water Conservation and Supply Study*, Los Angeles County, California. 1998.

The Upper Coastal Plain reach extends from Whittier Narrows Dam to where the San Gabriel River crosses Firestone Boulevard in Norwalk. The reach passes through urbanized areas of Los Angeles County. This reach is completely channelized, although it still has a soft bottom. The habitats are ruderal, riparian scrub and woodland, with the quality usually low to moderate, but there is some high quality habitat present just downstream of the Whittier Narrows Dam. Land uses in this reach are flood control, recreation, and development.

Wildlife species expected to occur in the vicinity of the Upper Coastal Plain reach include side-blotched lizard, western fence lizard, Anna's hummingbird, black phoebe, bushtit, northern mockingbird, Cooper's hawk, red-shouldered hawk, red-tailed hawk, turkey vulture, California desert cottontail, California ground squirrel, coyote, common raccoon, and striped skunk.

Non-native fish are expected to occur in the vicinity of the Upper Coastal Plain reach. These species include the channel catfish, common carp, red shiner, fathead minnow, rainwater killifish, and western mosquitofish.

Several amphibian species are expected to occur in the vicinity of the Upper Coastal Plain reach. These species include the western toad, Pacific treefrog, black-bellied slender salamander, California treefrog, and bullfrog.

Special status wildlife species in this reach would include wildlife associated with riparian scrub habitats.

Lower Coastal Plain

Data sources that were used to describe the biological resources in this entire reach are listed below:

- Special status species lists published by the U.S. Fish and Wildlife Service (USFWS, 1999) and California Department of Fish and Game (CDFG, 2003a and 2003b).
- CDFG Natural Diversity Database (CNDDB) (CDFG, 2002 and 2003) for Mount Wilson, Azusa, Glendora, Baldwin Park, El Monte, Whittier, Los Alamitos, and Seal Beach U.S. Geological Survey (USGS) 7.5 minute quadrangles.
- California Native Plant Society's (CNPS) Inventory of Rare and Endangered Vascular Plants of California (CNPS, 2002 and 2003) for the Mount Wilson, Azusa, Glendora, Baldwin Park, El Monte, Whittier, Los Alamitos, and Seal Beach USGS quad maps.
- United States Army Corps of Engineers, Los Angeles District and Los Angeles County Department of Public Works. *Final Environmental Impact Statement and Environmental Impact Report, Santa Fe and Whittier Narrows Dams Water Conservation and Supply Study*, Los Angeles County, California. 1998.

The Lower Coastal Plain reach is located in urbanized areas of Los Angeles and Orange counties. This reach is fully channelized with a concrete bottom and has little to no vegetation present; this urbanized condition limits its viability as habitat for wildlife resources. Vegetation present outside the river levee consists of ornamental and ruderal vegetation. General land uses in this reach are flood control, recreation, and development.

Wildlife species expected to occur in the vicinity of the Lower Coastal Plain reach include western fence lizard, black phoebe, American crow, bushtit, northern mockingbird, and European starling, red-tailed hawk, Virginia opossum (*Didelphis virginiana*), California ground squirrel, and common raccoon.

Non-native fish are expected to occur in the vicinity of the Lower Coastal Plain reach. These species include the common carp, red shiner, fathead minnow, rainwater killifish, and western mosquitofish.

Several amphibian species are expected to occur in the vicinity of the Lower Coastal Plain reach. These species include the western toad, California treefrog, and bullfrog.

No special status wildlife species are expected to occur in this reach.

Zone of Tidal Influence

Data sources that were used to describe the biological resources in this entire reach are listed below:

- Special status species lists published by the U.S. Fish and Wildlife Service (USFWS, 1999) and California Department of Fish and Game (CDFG, 2003a and 2003b).

- CDFG Natural Diversity Database (CNDDB) (CDFG, 2002 and 2003) for Mount Wilson, Azusa, Glendora, Baldwin Park, El Monte, Whittier, Los Alamitos, and Seal Beach U.S. Geological Survey (USGS) 7.5 minute quadrangles.
- California Native Plant Society's (CNPS) Inventory of Rare and Endangered Vascular Plants of California (CNPS, 2002 and 2003) for the Mount Wilson, Azusa, Glendora, Baldwin Park, El Monte, Whittier, Los Alamitos, and Seal Beach USGS quad maps.

The Zone of Tidal Influence reach is the last 3.5 miles of the San Gabriel River before its terminus at the Pacific Ocean. This reach once again has a soft bottom that begins at the confluence of the Coyote Creek Channel and the San Gabriel River and extends to the Pacific Ocean. Ocean water and river water mix in a natural estuary before the river meets the Pacific Ocean. Vegetation types in this reach are generally low to moderate in quality and consist of freshwater marsh, some riparian scrub, and salt marsh. General land uses in this reach are flood control, recreation and development

Wildlife expected to occur in the vicinity of the Zone of Tidal Influence reach include, but are not limited to, the following species: side-blotched lizard, western fence lizard, great blue heron (*Ardea herodias*), great egret (*Ardea albus*), snowy egret (*Egretta thula*), marbled godwit (*Limosa fedoa*), western gull (*Larus occidentalis*), American crow, bushtit, northern mockingbird, red-tailed hawk, California desert cottontail, California ground squirrel, common raccoon, and striped skunk.

Non-native fish are expected to occur in the vicinity of the Zone of Tidal Influence reach. These species include the channel catfish, common carp, red shiner, fathead minnow, rainwater killifish, and western mosquitofish.

One amphibian species expected to occur in the vicinity of the Zone of Tidal Influence reach includes the bullfrog.

Special status wildlife species in this reach would include wildlife associated with fresh water marsh, riparian scrub, and salt marsh.

4.2.2.2 Wildlife Movement

Wildlife corridors link together areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. The fragmentation of open space areas by urbanization creates isolated "islands" of wildlife habitat. In the absence of habitat linkages that allow movement to adjoining open space areas, various studies have concluded that some wildlife species, especially the larger and more mobile mammals, will not likely persist over time in fragmented or isolated habitat areas because they prohibit the infusion of new individuals and genetic information (MacArthur and Wilson, 1967; Soule, 1987; Harris and Gallagher, 1989; Bennett, 1990).

Corridors mitigate the effects of this fragmentation by: (1) allowing animals to move between remaining vegetation types, thereby permitting depleted populations to be replenished and promoting genetic exchange; (2) providing escape routes from fire, predators, and human

disturbances, thus reducing the risk that catastrophic events (such as fire or disease) will result in population or local species extinction; and (3) serving as travel routes for individual animals as they move in their home ranges in search of food, water, mates, and other needs (Noss, 1983; Farhig and Merriam, 1985; Simberloff and Cox, 1987; Harris and Gallagher, 1989).

Wildlife movement activities usually fall into one of three movement categories: (1) dispersal (e.g., juvenile animals from natal areas, or individuals extending range distributions); (2) seasonal migration; and (3) movements related to home range activities (foraging for food or water, defending territories, searching for mates, breeding areas, or cover). A number of terms have been used in various wildlife movement studies, such as "wildlife corridor", "travel route", "habitat linkage", and "wildlife crossing" to refer to areas in which wildlife move from one area to another. To clarify the meaning of these terms and facilitate the discussion on wildlife movement in this analysis, these terms are defined as follows:

- Travel Route–a landscape feature (such as a ridgeline, drainage, canyon, or riparian strip) within a larger natural habitat area that is used frequently by animals to facilitate movement and provide access to necessary resources (e.g., water, food, cover, den sites). The travel route is generally preferred because it provides the least amount of topographic resistance in moving from one area to another. It contains adequate food, water, and/or cover while moving between habitat areas and provides a relatively direct link between target habitat areas.
- Wildlife Corridor–a piece of habitat, usually linear in nature, that connects two or more habitat patches that would otherwise be fragmented or isolated from one another. Wildlife corridors are usually bound by urban land areas or other areas unsuitable for wildlife. The corridor generally contains suitable cover, food, and/or water to support species and facilitate movement while in the corridor. Larger, landscape-level corridors (often referred to as "habitat or landscape linkages") can provide both transitory and resident habitat for a variety of species.
- Wildlife Crossing–a small, narrow area, relatively short in length and generally constricted in nature, that allows wildlife to pass under or through an obstacle or barrier that otherwise hinders or prevents movement. Crossings typically are manmade and include culverts, underpasses, drainage pipes, and tunnels to provide access across or under roads, highways, pipelines, or other physical obstacles. These often represent "choke points" along a movement corridor.

It is important to note that, in a large open space area in which there are few or no man-made or naturally occurring physical constraints to wildlife movement, wildlife corridors as defined above may not yet exist. Given an open space area that is both large enough to maintain viable populations of species and provide a variety of travel routes (canyons, ridgelines, trails, riverbeds, and others), wildlife will use these "local" routes while searching for food, water, shelter, and mates, and will not need to cross into other large open space areas. Based on their size, location, vegetative composition, and availability of food, some of these movement areas (e.g., large drainages and canyons) are used for longer lengths of time and serve as source areas for food, water, and cover, particularly for small- and medium-sized animals. This is especially true if the travel route is within a larger open space area. However, once open space areas become constrained and/or fragmented as a result of urban development or construction of

physical obstacles such as roads and highways, the remaining landscape features or travel routes that connect the larger open space areas can "become" corridors as long as they provide adequate space, cover, food, and water, and do not contain obstacles or distractions (e.g., man-made noise, lighting) that would generally hinder wildlife movement.

In general, some portions of the Master Plan project area have been almost completely urbanized and/or developed for decades; therefore, virtually all of the viable wildlife movement that historically occurred through the area has been constrained by existing land uses and development. Other areas of the Master Plan project area support high quality habitat for wildlife, and would have viable wildlife movement. While land uses such as residential and commercial/retail have virtually eliminated the potential for wildlife movement to occur, land uses such as commercial/recreational (e.g., golf courses and parks) and industrial (e.g., gravel pits and utility/public works easements), and open space areas, may contain conditions or vegetation types with the potential to support wildlife movement in the Master Plan project area. Any such conditions could become more viable with enhancement or restoration of the habitat.

4.2.2.3 Concept Design Study Sites

The Master Plan describes five Concept Design Studies that are located in the project area: San Gabriel Canyon Spreading Grounds, Woodland Duck Farm, San Gabriel River Discovery Center at Whittier Narrows, Lario Creek, and El Dorado Regional Park. The following descriptions of the five Concept Design Study sites have been developed from field surveys and a review of existing literature completed by BonTerra Consulting in 2003 as part of the Master Plan formulation process.

San Gabriel Canyon Spreading Grounds

This Concept Design Study site primarily consists of two large recharge basins located on the south and east side of the San Gabriel River. The banks of the basins are steep and largely unvegetated; however, native vegetation is present in the north corner of Basin II (see **Figure 4.2-1**). A large windrow of non-native gum trees (*Eucalyptus sp*.) is present along the east and south sides of the recharge basins. Between the two recharge basins is a triangular area with some industrial uses, but it also supports some native vegetation that is basically contiguous with the native habitats of the San Gabriel River.

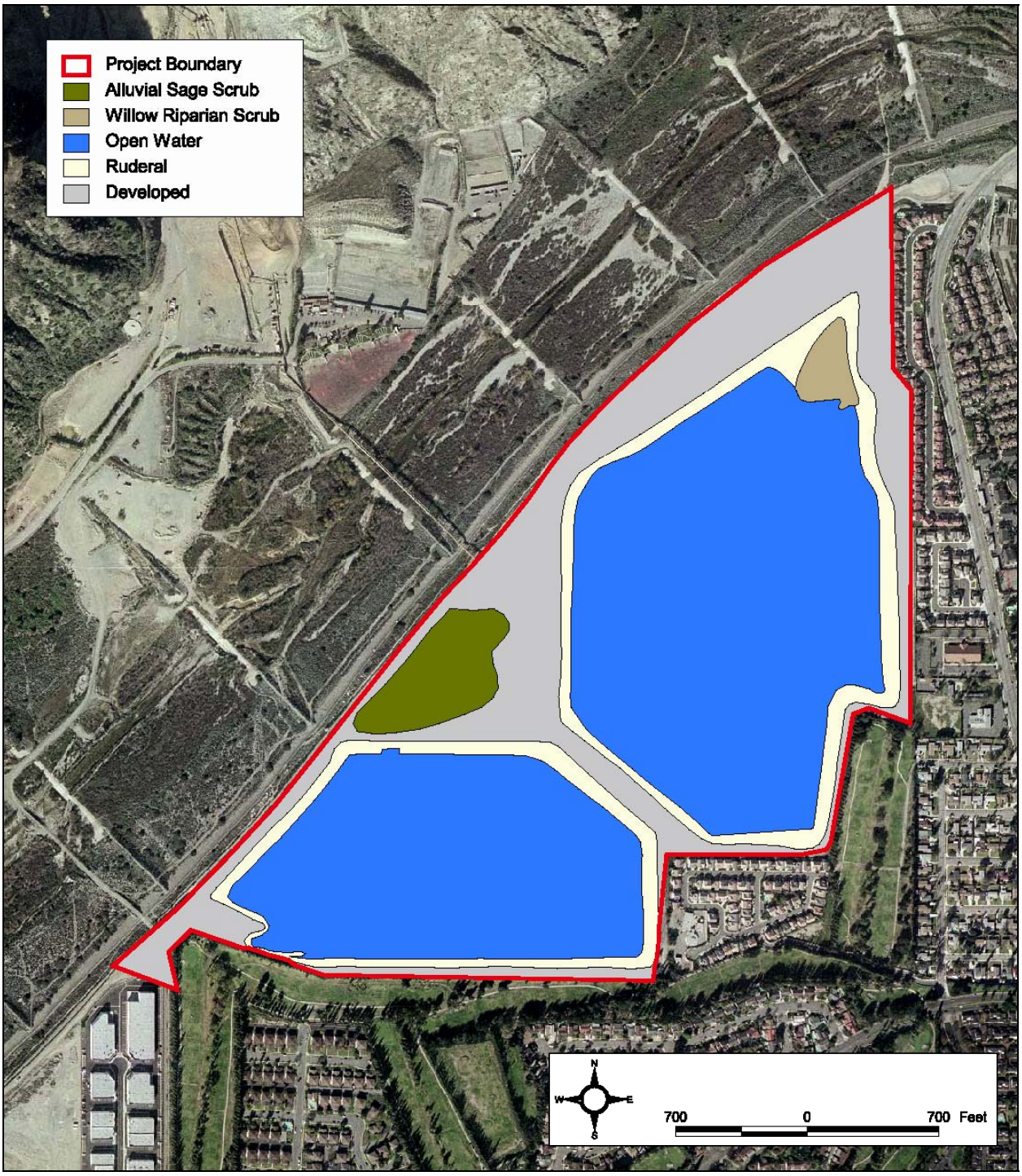
Vegetation Types. Four vegetation types were identified on the San Gabriel Canyon Spreading Grounds. These vegetation types include riparian scrub, alluvial sage scrub, ornamental, and ruderal. Riparian scrub contains willows (*Salix sp*.) and mule fat (*Baccharis salicifolia*). Alluvial sage scrub contains vegetation primarily restricted to floodplain areas. This vegetation type is typically dominated by scalebroom (*Lepidospartum squamatum*), California sagebrush (*Artemisia californica*), bush sunflower (*Encelia californica*) and California buckwheat (*Eriogonum fasciculatum*). Ornamental vegetation includes gum trees. Ruderal vegetation is present within this Concept Design Study site along with access and maintenance roads, and other areas of bare ground. Ruderal vegetation typically contains non-native grasses and other invasive herbaceous species.

Wildlife. A variety of avian species was observed in association with the riparian scrub and herb vegetation in the north corner of Basin II during the survey. These species included western grebe (*Aechmophorus occidentalis)*, ruddy duck (*Oxyura jamaicensis)*, common yellowthroat (*Geothlypis trichas)*, and great-tailed grackle (*Quiscalus mexicanus)*, and this area provides suitable nesting habitat for these species. The gum tree windrow on the east and south side of the recharge basins provides suitable nesting habitat for raptor species, such as the red-shouldered hawk and red-tailed hawk. The sage scrub habitat next to the San Gabriel River provides nesting opportunities for Costa's hummingbird (*Calypte costae)*, Bewick's wren (*Thryomanes bewickii)*, California towhee, and lesser goldfinch (*Carduelis psaltria)*.

Special Status Species. Several special status plant and wildlife species are known from the vicinity of this site. Due to the highly disturbed nature of the site, no special status plant species are expected to be present. Sensitive wildlife species that may occur on site include the coastal western whiptail (*Cnemidophorus tigris multiscutatus)*, Cooper's hawk, loggerhead shrike (*Lanius ludovicianus)*, and San Diego black-tailed jackrabbit (*Lepus californicus bennettii*).

Special Status Habitat Types. Special status habitat types on this site are riparian scrub and alluvial sage scrub. These two vegetation types support a moderate to high quality habitat for wildlife in the vicinity.

Figure 4.2-1
San Gabriel Canyon Spreading Grounds Vegetation Types



Prepared by BonTerra Consulting. Aerial photograph from 2000.

Woodland Duck Farm

This Concept Design Study Site consists of several contiguous parcels located between the I-605 Freeway and the east side of the San Gabriel River. There is little vegetation, as recent and current land uses have been a duck farm, plant nursery, and equestrian use. The vegetation that is present is dominated by non-native ruderal and ornamental species (see **Figure 4.2-2**). However, mixed in with the non-native plant species are a few native species such as Mexican elderberry (*Sambucus mexicana*).

Vegetation Types. Vegetation types identified on the Woodland Duck Farm include elderberry woodland, ornamental, and ruderal. Elderberry woodland is an open woodland dominated by Mexican elderberry. Ornamental vegetation consists of non-native species planted around buildings. The ruderal vegetation type has limited vegetation that is mostly non-native.

Wildlife. Little wildlife activity was observed on this site during the survey and included only those species adapted to highly urbanized habitats such as the rock pigeon, mourning dove (*Zenaida macroura)*, European starling, house finch (*Carpodacus mexicanus)*, and house sparrow (*Passer domesticus)*. Other avian species present that are typical of open habitats included killdeer (*Charadrius vociferus*) and black phoebe. The site provides limited resources for other wildlife groups such as reptiles and mammals, but common species such as western fence lizard and California ground squirrel are expected to be present.

Special Status Species. Although a variety of special status species are known to occur in the vicinity of the site, including the Endangered least Bell's vireo (*Vireo bellii pusillus*), few have potential to occur on this site due to its highly disturbed condition. No special status plant species are expected to be present on this site. Special status wildlife species that may occur are limited to birds that may occasionally forage on or over the site, such as white-tailed kite (*Elanus leucurus),* northern harrier (*Circus cyaneus),* and loggerhead shrike.

Special Status Habitat Types. No special status habitat types are known to occur at this study site due to its disturbed condition.

Figure 4.2-2
Woodland Duck Farm – Vegetation Types

Prepared by BonTerra Consulting. Aerial photograph from 2000.

San Gabriel River Discovery Center at Whittier Narrows

This Concept Design Study site includes the Whittier Narrows Nature Center Headquarters and its surrounding habitats located west of the San Gabriel River. The habitats are heavily vegetated and mostly consist of native vegetation; however, there is some non-native vegetation present, including ruderal and ornamental species mixed in with the native species (see **Figure 4.2-3**). Many of the ornamental species include native species such as sycamores and cottonwoods that have been planted.

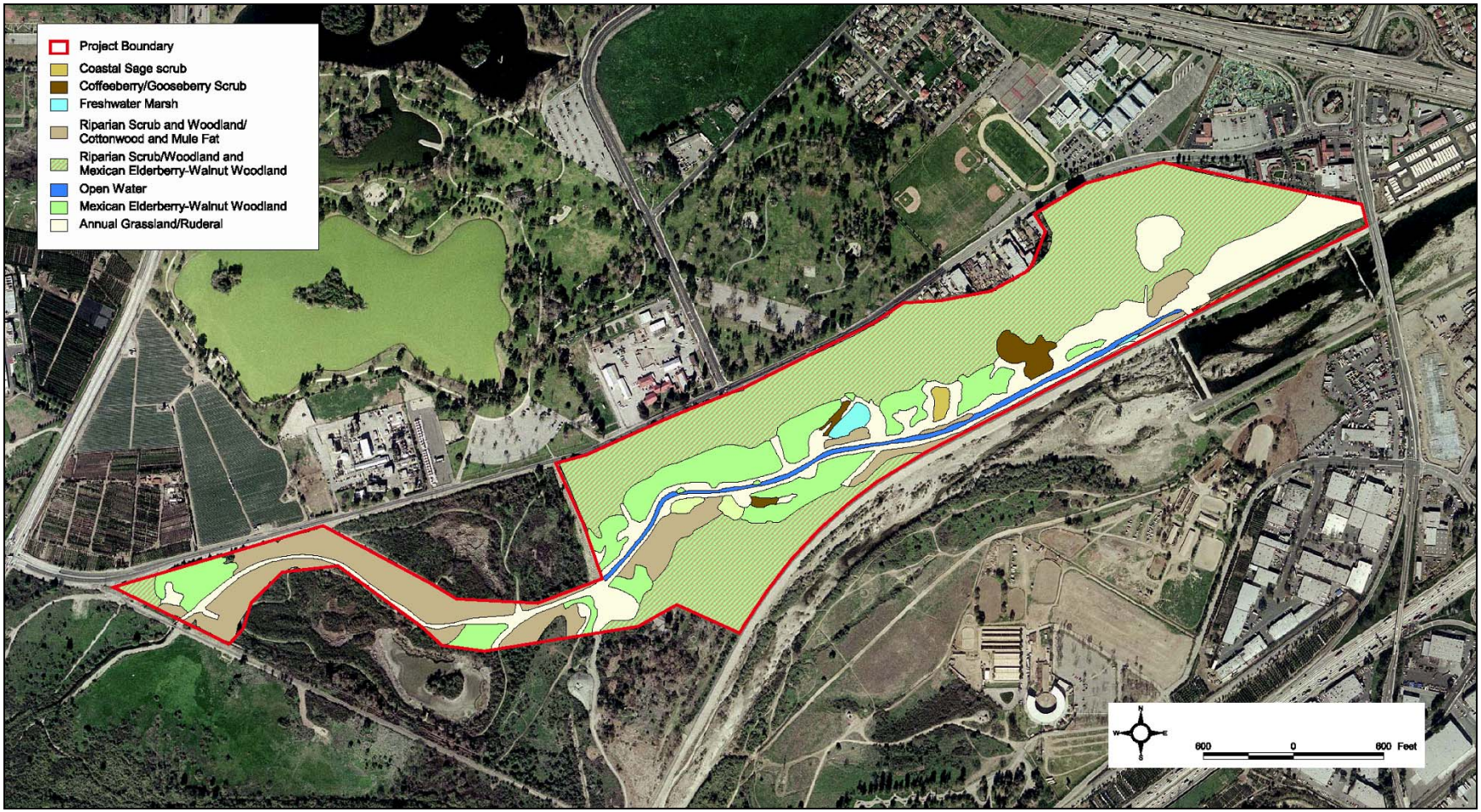
Vegetation Types. Five vegetation types occur at the San Gabriel River Discovery Center at Whittier Narrows: Mexican elderberry-walnut woodland, riparian scrub, ornamental, non-native grassland, and ruderal. Mexican elderberry-walnut woodland is dominated by Mexican elderberry and southern California black walnut (*Juglans californica*). Riparian scrub contains willow, mule fat, and coyote brush (*Baccharis Pilularis)*. Ornamental vegetation includes a variety of species, but at this site, consists primarily of trees, including gum trees, that have been planted around buildings. Non-native grassland and ruderal vegetation types are mostly dominated by non-native grasses.

Wildlife. A variety of wildlife species are expected to use this site including amphibians, reptiles, birds, and mammals. The Pacific slender salamander (*Batrachoseps pacificus major*) and Pacific tree frog (*Hyla regilla*) are two amphibians that are expected to occur. Reptiles expected to occur include lizards, such as the western fence lizard and alligator lizard (*Gerrhonotus coerulus principis*), and snakes, such as the gopher snake (*Pituophis melanoleucus*) and California kingsnake (*Lampropeltis getula californiae*). Many bird species potentially nest at this site, including California quail (*Callipepla californica*), Anna's hummingbird, Nuttall's woodpecker (*Picoides nuttailli*), black phoebe, Bewick's wren, American robin (*Turdus migratorius*), orange-crowned warbler (*Vermivora celata*), and American goldfinch (*Carduelis tristis)*. Mammals expected to occur include Virginia opossum, striped skunk, long-tailed weasel (*Mustela frenata*), coyote, and raccoon.

Special Status Species. Several special status plant and wildlife species are known from the vicinity of this site including the Endangered least Bell's vireo. Most of the special status wildlife species with potential to occur on this site are birds and include white-tailed kite, northern harrier, Cooper's hawk, loggerhead shrike, yellow warbler (*Dendroica petechia*), and yellow-breasted chat (*Icteria virens*).

Special Status Habitat Types. Special status habitat types on this study site, include Mexican elderberry-walnut woodland and riparian scrub. Mexican elderberry-walnut woodland contains southern California black walnut, which is a CNPS List 4 plant species. Riparian scrub supports moderate to high quality habitat for wildlife in the vicinity and may also be within the COE and/or CDFG jurisdiction associated with wetlands, waters of the U.S., or streambeds.

Figure 4.2-3
San Gabriel River Center at Whittier Narrows and Lario Creek – Vegetation Types



Prepared by BonTerra Consulting. Aerial photograph from 2000.

Lario Creek

This Concept Design Study site is adjacent to the Whittier Narrows Nature Center and includes the channel and surrounding area. Lario Creek is used to convey water from the San Gabriel River south and west to the Rio Hondo spreading grounds. The habitats are heavily vegetated and mostly consist of native vegetation; however, there is non-native vegetation present, including ruderal and ornamental species mixed in with the native species (see **Figure 4.2-3**). There are large areas here where giant reed (*Arundo donax*) is dominant.

Vegetation Types. Vegetation types at Lario Creek include freshwater marsh, riparian herb, riparian forest, riparian scrub, Mexican elderberry woodland and walnut woodlands, coastal sage scrub, annual grassland, ornamental, and ruderal. Fresh water marsh includes small stands of broad-leaved cat-tail (*Typha latifolia*), tall umbrella sedge (*Cyperus eragrostis*), and California bulrush (*Scirpus californicus*). Riparian herb is dominated by herbaceous wetlands species, including dense flowered sprangletop (*Leptochloa uninervia*), rabbit's foot grass (*Polypogon monspeliensis*), and greater water speedwell (*Veronica anagallis-aquatica*). The riparian forest vegetation type is dominated by willows and cottonwood trees. Riparian scrub is not as dense as a riparian forest and is dominated by willow mule fat (*Baccharis glutinosa*), and Mexican elderberry. Mexican elderberry woodland and walnut woodland are each dominated by Mexican elderberry and southern California black walnut trees. Coastal sage scrub occurring on this Concept Design Study site is a small revegetation site located in the eastern portion of this site. It is dominated by California sagebrush (*Artemisia californica*), white sage (*Salvia apiana*), and black sage (*Salvia mellifera*). Annual grasslands on this site contain ripgut brome (*Bromus diandrus*), red brome (*Bromus rubens*), slender wild oat (*Avena barbata*), foxtail fescue (*Festuca megalura*), black mustard (*Brassica nigra*), summer mustard (*Hirschfeldia incana*), and tocalote (*Centaurea melitensis*). Ornamental vegetation is dominated by gum trees. Ruderal vegetation is dominated by invasives such as giant reed.

Wildlife. A variety of wildlife species are expected to use this site, including amphibians, reptiles, birds, and mammals. The Pacific slender salamander and Pacific tree frog are two amphibians that are expected to occur. Reptiles expected to occur include lizards, such as the western fence lizard and alligator lizard, and snakes, such as the gopher snake and California kingsnake. Many bird species potentially nest at this site and include California quail, Anna's hummingbird, Nuttall's woodpecker, black phoebe, Bewick's wren, American robin, orange-crowned warbler, and American goldfinch. Mammals expected to occur include Virginia opossum, striped skunk, long-tailed weasel, coyote, and raccoon.

Special Status Species. Several special status plant and wildlife species are known from this site including the Endangered least Bell's vireo. At least one pair of least Bell's vireo has nested since the mid-1990s along Lario Creek in what is referred to as the New Lakes area of the Nature Center. Most of the special status wildlife species with potential to occur on this site are birds and include white-tailed kite, northern harrier, Cooper's hawk, loggerhead shrike, yellow warbler, and yellow-breasted chat. However, there is also potential for the western spadefoot (*Spea hammondii*) to occur.

Special Status Habitat Types. Special status habitat types on this study site include freshwater marsh, riparian herb, riparian forest, riparian scrub, walnut woodland, and coastal sage scrub.

These habitat types support a high quality habitat for wildlife in the vicinity. Riparian habitats including freshwater marsh, riparian herb, riparian forest, and riparian scrub may be within the COE and/or CDFG jurisdiction due to their association with wetlands, waters of the U.S., or streambeds. Walnut woodland is dominated by the southern California black walnut, which is a CNPS List 4 plant species. Coastal sage scrub is a special status habitat due to its potential to support coastal California gnatcatcher (*Polioptila c. californica*), a special status bird species.

El Dorado Regional Park

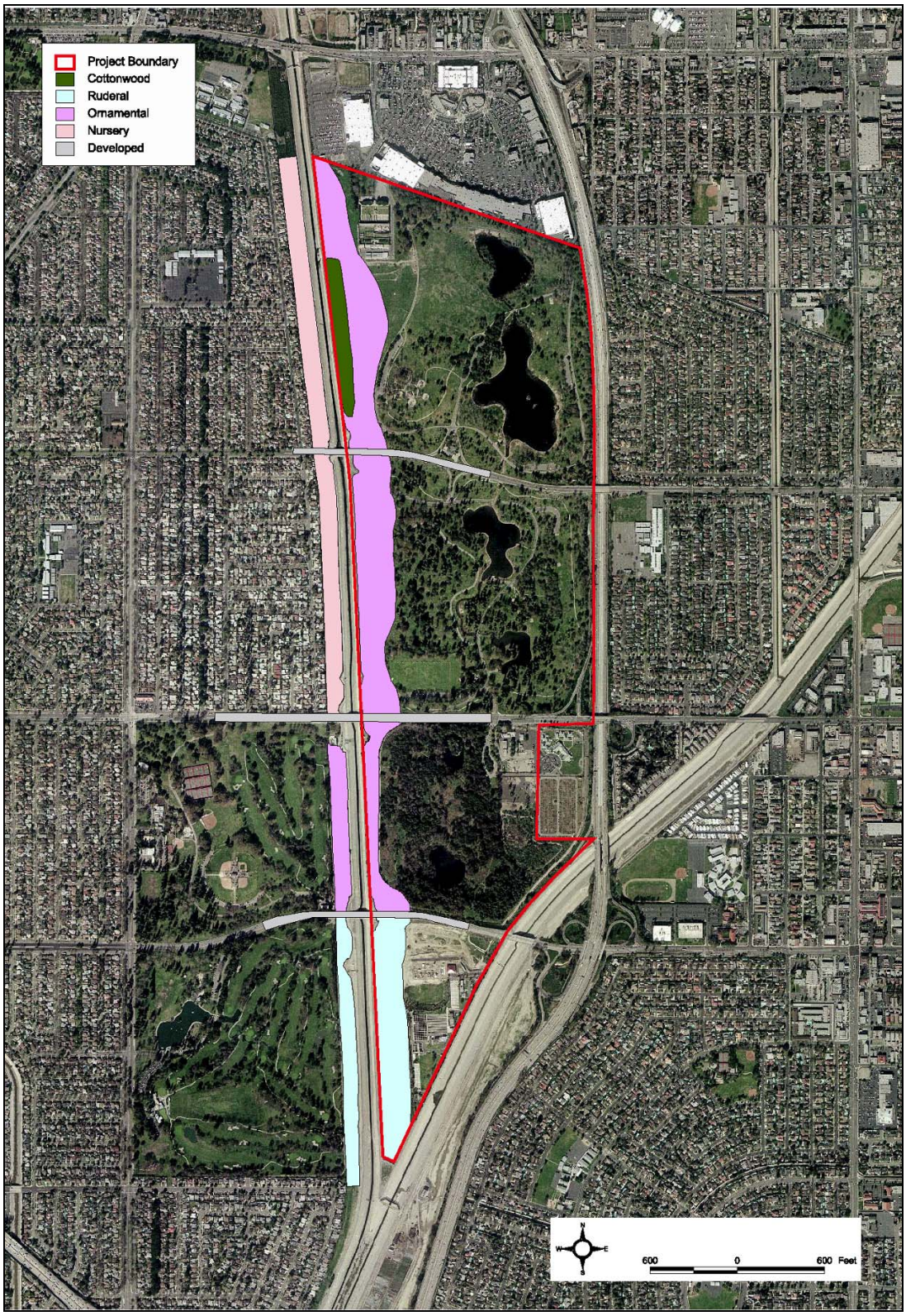
This Concept Design Study site includes portions of both sides of the San Gabriel River. The east side primarily consists of El Dorado Park, but it also includes some parcels south of the park just north of the confluence of San Gabriel River and Coyote Creek Channel. The Park supports ornamental vegetation that is mostly mowed grass with trees (see **Figure 4.2-4**). Some of the trees are planted native species such as the grove of cottonwoods north of Wardlow Road. The south end of the Park between Spring Street and Willow Street is the El Dorado Nature Center. The Nature Center supports dense vegetation that is a mix of native and non-native species. This site includes the west edge of the Nature Center, where overhead power transmission lines cross from north to south and vegetation is largely dominated by ruderal and ornamental species. South of Willow Street is a water reclamation plant that has surrounding open space that supports mostly non-native vegetation, although there is some native vegetation present, including riparian scrub species such as mule fat. Overhead power transmission lines also parallel the west side of the San Gabriel River. Under these transmission lines are a plant nursery and unused right-of-way spaces that support non-native vegetation, including ruderal and ornamental species.

Vegetation Types. Vegetation types identified at El Dorado Regional Park include mule fat scrub, non-native grassland, ornamental, and ruderal. A small amount of mule fat scrub on this site includes mule fat and Mexican elderberry. Non-native grassland is dominated by invasives such as pampas grass (*Cortaderia jubata*). Ornamental vegetation includes gum, Peruvian peppertree (*Schinus polygamus*), and planted native cottonwood trees. Ruderal vegetation is dominated by non-native grasses and other herbaceous species.

Wildlife. There is abundant wildlife activity at this site, although it is primarily bird activity. The western fence lizard is present, but other common reptile species are not expected to occur. Although many bird species are expected to occur here as migrants during the winter season, the site provides relatively limited nesting opportunities. Mammals expected to occur include Virginia opossum, striped skunk, long-tailed weasel, and raccoon.

Special Status Species. Although a variety of special status wildlife species are known from the vicinity of this site, it provides limited potential for most special status plant species. Special status wildlife species that occur in the area are primarily limited to avian species, although there may be potential for the western spadefoot in the basins south of Willow Street. Special status birds with potential to occur in the study site include white-tailed kite, northern harrier, Cooper's hawk, sharp-shinned hawk, and loggerhead shrike.

Figure 4.2-4
El Dorado Regional Park – Vegetation Types



Prepared by BonTerra Consulting. Aerial photograph from 2000.

Special Status Habitat Types. Special status habitat types on this study site include mule fat scrub. This habitat type can provide a quality habitat for wildlife in the vicinity. Mule fat scrub is a riparian habitat and may be within the COE and/or CDFG jurisdiction if associated with wetlands, waters of the U.S., or streambeds.

Summary of Sensitive Species at Concept Design Study Sites

Tables 4.2-1 and **4.2-2** summarize special status species with potential to occur within the Concept Design Study sites. **Table 4.2-2** does not include birds protected by the Migratory Bird Treaty Act (see **Section 4.2.3.1**).

Table 4.2-1
Special Status Plant Species with Potential to Occur within Concept Design Study Sites

Species	Status		Concept Design Study Sites with Potential Occurrence
	Federal/ State	CNPS	
Braunton's milk vetch *Astragalus brauntonii*	FE/CE	1B	None
Parish's brittlescale *Atriplex parishii*	--/--	1B	Potential to occur at San Gabriel River Discovery Center at Whittier Narrows, Lario Creek, and El Dorado Regional Park.
Nevin's barberry *Berberis nevinii*	FE/CE	1B	None
Plummer's mariposa lily *Calochortus plummerae*	--/--	1B	Potential to occur at San Gabriel River Discovery Center at Whittier Narrows, Lario Creek, and El Dorado Regional Park.
Lewis's evening primrose *Camissonia lewisii*	--/--	3	
Southern tarplant *Centromadia parryi* ssp. *australis*	--/--	1B	
San Fernando Valley spineflower *Chorizanthe parryi* var. *fernandina*	FC/CE	1B	None
Slender-horned spineflower *Dodecahema leptocerus*	FE/CE	1B	None
Many-stemmed dudleya *Dudleya multicaulis*	--/--	1B	Potential to occur at San Gabriel River Discovery Center at Whittier Narrows.
Los Angeles sunflower *Helianthus nuttallii* ssp. *parishii*	--/SC	1B	None
San Gabriel linanthus *Linanthus concinnus*	--/--	1B	Potential to occur at San Gabriel River Discovery Center at Whittier Narrows, Lario Creek, and El Dorado Regional Park.
Davidson's bush mallow *Malacothamnus davidsonii*	--/--	1B	
California orcutt grass *Ocuttia californica*	FE/CE	1B	

Federal (USFWS)

FE	Endangered
FT	Threatened
PE	Proposed Endangered
PT	Proposed Threatened
SOC	Species of Concern[1]
FC	Federal Candidate

State (CDFG)

CE	Endangered
CT	Threatened
PE	Proposed Endangered
PT	Proposed Threatened
SSC	Species of Special Concern[1]
SC	State Candidate

[1] This designation, although no longer a formal status, is still used by USFWS for informational purposes.

California Native Plant Society (CNPS)

1A	Plants Presume Extinct in California
1B	Plants Rare, Threatened, or Endangered in California and Elsewhere
2	Plants Rare, Threatened, or Endangered in California but More Common Elsewhere
3	Plants About Which We Need More Information – A Review List
4	Plants of Limited Distribution – A Watch List

Table 4.2-2
Special Status wildlife Species with Potential to Occur within Concept Design Study Sites

Species	Status		Concept Design Study Sites with Potential Occurrence
	Federal	State	
Fish			
Arroyo chub *Gila orcutii*	SOC	SSC	None
Santa Ana speckled dace *Rhinichthys osculus ssp*	--	SSC	
Santa Ana sucker *Catostomus santaanae*	FT	SSC	
Amphibians			
Arroyo toad *Bufo californicus*	FE	SSC	None
Western spadefoot toad *Spea hammondi*	SOC	SSC	Potential to occur on Lario Creek and San Gabriel River Discovery Center at Whittier Narrows.
Mountain yellow-legged frog *Rana muscosa*	FE[1]	SSC	None
Reptiles			
Silvery legless lizard *Anniella pulchra pulchra*	SOC	SSC	None
Orange-throated whiptail *Cnemidophorus hyperythrus beldingi*	None	SSC	
San Diego coast horned lizard *Phrynosoma coronatum blainvillei*	SOC	SSC	
Western pond turtle *Clemmys marmorata*	SOC	SSC	Potential to occur on Lario Creek and San Gabriel River Discovery Center at Whittier Narrows.
Birds			
Yellow-billed cuckoo *Coccyzus americanus occidentalis*	None	SE	None
Coastal California gnatcatcher *Polioptila californica californica*	FT	SSC	
Least Bell's vireo *Vireo bellii pusillus*	FE	SE	Potential to occur at San Gabriel River Discovery Center at Whittier Narrows and Lario Creek.
Mammals			
Pale big-eared bat *Corynorhinus townsendii pallescens*	SOC	SSC	Potential to occur on Woodland Duck Farm, San Gabriel River Discovery Center at Whittier Narrows, Lario Creek, and El Dorado Regional Park; for foraging only; potentially suitable foraging but no suitable roosting habitat.
Spotted bat *Euderma maculatum*	SOC	SSC	
California mastiff bat *Eumops perotis californicus*	SOC	SSC	
Yuma myotis *Myotis yumanensis*	SOC	--	Potential to occur on Woodland Duck Farm, San Gabriel River Discovery Center at Whittier Narrows, Lario Creek, and El Dorado Regional Park; potentially suitable foraging and roosting habitat.
Long-eared myotis *Myotis evotis*	SOC	--	
Pallid bat *Antrozus pallidus*	--	SSC	

Federal (USFWS)		**State (CDFG)**	
FE	Endangered	SE	Endangered
FT	Threatened	ST	Threatened
PE	Proposed Endangered	PE	Proposed Endangered
PT	Proposed Threatened	PT	Proposed Threatened
C	Candidate Species	SSC	Species of Special Concern
SOC	Species of Concern[2]	FP	Fully Protected

[1] Southern California populations only

[2] This designation, although no longer a formal status, is still used by USFWS for informational purposes.

4.2.3 Regulatory Framework

Biological resources within the Master Plan study area are governed by several regulatory agencies and the applicable statutes and guidelines for which they are responsible, including, but not limited to: the USFWS and the Federal Endangered Species Act (FESA); the CDFG and the California Endangered Species Act (CESA) and Fish and Game Code Section 1602; Regional Water Quality Control Board (RWQCB) Section 401 of the federal Clean Water Act; the U.S. Army Corps of Engineers (COE) Section 404 of the Federal Clean Water Act; and the federal Migratory Bird Treaty Act administered by the USFWS. The applicable agencies, regulations, and terminology associated with biological resource protection and management are described below.

4.2.3.1 Federal Status

A federal Endangered species is a species facing extinction throughout all or a significant portion of its geographic range. A federal Threatened species is a species likely to become Endangered within the foreseeable future throughout all or a significant portion of its range. The presence of any federal Threatened or Endangered species on an area proposed for development may lead to a CEQA finding of "significance" and requires consultation with the USFWS, particularly if development would result in "take" of the species or its habitat.

Section 7 of the FESA applies to federal agency actions (permits/funding, etc.) for private/public activities, such as Section 404 permits issued by the COE for construction work in jurisdictional waters, including wetlands. Specifically, Section 7 imposes an affirmative duty on federal agencies to ensure that their actions (including permitting) are not likely to jeopardize the continued existence of a listed species (plant or animal) or result in the destruction or modification of critical habitat (50 C.F.R. § 402.01[a]). Both Sections 7 and 9 of the FESA allow or authorize "incidental" takes in accordance with the provisions of the FESA as described below, but only with a permit which may be obtained through consultation with the USFWS.

Proposed Threatened and proposed Endangered species are those officially proposed by the USFWS for addition to the federal Threatened and Endangered species list. Because proposed species may become listed as Threatened or Endangered prior to or during implementation of a proposed development project, they are treated here as though they are listed species. However, USFWS will not engage in a formal consultation until the species is actually listed. Section 7 does not allow for "pre-emptive consultation."

Federal Species of Concern is an informal designation by the USFWS for those species that the USFWS has determined might be declining or are in need of concentrated conservation actions to prevent decline.

Federal Endangered Species Act

The FESA of 1973 protects plants and animals that are listed by the federal government as "Endangered" or "Threatened." The FESA is implemented by enforcement of Sections 7 and 9 of the Act. A federally-listed species is protected from unauthorized "take" pursuant to Section 9 of the FESA. "Take," as defined by the FESA, means to harass, harm, pursue, hunt, shoot,

wound, kill, trap, capture, or to attempt to engage in any such conduct. All "persons" are presently prohibited from taking a federally-listed species unless and until: 1) the appropriate Section 10a permit has been issued by the USFWS; or 2) an incidental take statement is obtained as a result of formal consultation between a federal agency and the USFWS pursuant to Section 7 of the FESA and implementing regulations pertaining thereto (50 CFR 402). "Person" is defined in the FESA as an individual, corporation, partnership, trust, association, or any private entity; or any officer, employee, agent, department or instrument of the federal government, or any state, municipality or political subdivision of the state, or any other entity subject to the jurisdiction of the United States.

"Take" may be permitted pursuant to Section 10a of the FESA if a Habitat Conservation Plan (HCP), which is prepared pursuant to regulations at 50 CFR 17.22(b) (2) and 50 CFR 17.32 (b) (2), is approved by the USFWS. These regulations require, in part, that the "take" can be permitted only when the taking is incidental to, but not the purpose of, an otherwise lawful activity and that the permit applicant shall, to the maximum extent practicable, minimize and mitigate the impacts of such taking.

Clean Water Act – Section 404

Section 404 of the Clean Water Act (CWA) regulates the placement of dredged and fill material into waters of the United States, including wetlands. The CWA authorizes the issuance of permits for such discharges as long as the proposed activity complies with environmental requirements specified in Section 404(b)(1) of the CWA. Section 404 is the primary federal program regulating activities in wetlands. The Section 404 program is administered by both the COE and the U.S. Environmental Protection Agency (USEPA), while the USFWS, National Marine Fisheries Service (NMFS), and several state agencies play important advisory roles.

The COE has primary responsibility for the permit program and is authorized, after notice and opportunity for a public hearing, to issue Section 404 permits. In evaluating individual Section 404 permit applications, the COE determines compliance with Section 404(b)(1) guidelines and carries out a public-interest review. This review involves balancing such public-interest factors as conservation, economics, aesthetics, wetlands protection, cultural values, navigation, fish and wildlife values, water supply, and water quality. The COE also considers comments received from the USEPA, USFWS, NMFS, and state resource agencies. The COE is obligated to permit the "least environmentally damaging practicable alternative", provided one exists. Also, the COE may not issue a permit before the State Water Resources Control Board, via the local Regional Water Quality Control Board (RWCQB), has issued a water quality "certification" or "waiver" of compliance with Section 401 of the federal CWA.

Section 404 regulates only the discharge of dredged or fill material into "waters of the United States." Discharges of dredged and fill material are commonly associated with activities such as channel construction and maintenance, fills to create development sites, transportation improvements, and water resource projects (such as dams, jetties, and levees). Excavation activities (e.g. mechanized land clearing, ditching, channelization, runoff from disposal areas and others) also result in at least some discharge of dredged materials, and are thus regulated.

Discharges can be authorized by either individual or general permits under Section 404. If an individual permit is required, an application form describing the proposed activity is submitted to the COE. Once a complete application is received, the permitting agency issues a public notice containing the information needed to evaluate the likely impact of the proposed activity. Notice is sent to all interested parties, including appropriate government agencies at the federal, state, and local level, and others as requested. Any person may request that a public hearing be held to consider the application.

The COE is authorized to issue general permits on a nationwide, state, or regional basis for categories of activities that have minimal individual and cumulative impacts. General permits are issued for five-year periods. They allow certain activities to occur without individual federal permit approval as long as the discharger complies with standard conditions issued by the COE. General permits allow certain activities to occur with little, if any, delay or paperwork. Once issued, a general permit may be modified or revoked if the permitted activities are found to have had adverse environmental impacts. On a case-by-case basis, the permitting agency may invoke discretionary authority and require a discharger that would otherwise be covered by a general permit to apply for an individual permit.

The most significant general permits are called Nationwide Permits (NWPs), because they apply throughout the country. Forty NWPs exist. Some activities included under NWPs include minor discharges and dredging, wetland and riparian restoration and creation activities, and temporary construction.

Migratory Bird Treaty Act

The original Migratory Bird Treaty Act of 1918 (MBTA) implemented the 1916 Convention between the United States and Great Britain (for Canada) for the protection of migratory birds. Specific provisions of the statute include the establishment of a federal prohibition, unless permitted, to "pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird, included in the terms of the Convention … for the protection of migratory birds … or any part, nest, or egg of any such bird." Bird species protected under the provisions of the Migratory Bird Treaty Act are identified in the List of Migratory Birds provided by USFWS (2004).

4.2.3.2 State Status

The State of California defines an Endangered species as a species whose prospects of survival and reproduction are in immediate jeopardy. A Threatened species is a species in such small numbers throughout its range that it is likely to become an Endangered species in the near future in the absence of special protection or management. A Rare species is one present in such small numbers throughout its range that it may become Endangered if its present environment worsens. Rare status applies to California native plants listed prior to the CESA. State Threatened and Endangered species are protected against take unless an incidental take permit is obtained from the CDFG.

California Species of Special Concern is an informal designation used by the CDFG for some declining wildlife species that are not state candidates. This designation does not provide protection under the CESA, but signifies that these species are recognized as special status by the CDFG. Species that are California Fully Protected may not be taken or possessed at any time.

California Endangered Species Act

The CESA (Fish and Game Code Sections 2050 to 2097) is administered by the CDFG and prohibits the take of plant and animal species designated by the Fish and Game Commission as either Threatened or Endangered in the state of California. "Take" in the context of the CESA means to hunt, pursue, kill, or capture a listed species, as well as any other actions that may result in adverse impacts when attempting to take individuals of a listed species.

CESA allows for take that is incidental to otherwise lawful development projects. CESA emphasizes early consultation to avoid potential impacts on rare, Endangered, and Threatened species and to develop appropriate mitigation planning to offset project induced losses of listed species populations and their essential habitats.

Through permits or memorandums of understanding, the CDFG may authorize individuals, public agencies, or educational institutions, to import, export, take, or possess any Endangered species, Threatened species, or candidate species of plants and animals. Take is authorized only after it has been demonstrated by the applicant that the impacts of a project shall be minimized and fully mitigated. The measures required to meet this obligation are roughly proportional in extent to the impact of the authorized taking on the species and must be capable of successful implementation.

California Fish and Game Code Section 1602

The CDFG has jurisdictional authority over riparian resources associated with rivers, streams, and lakes under California Fish and Game Code Sections 1600-1616. Activities of state and local agencies and public utilities that are project proponents are regulated by the CDFG under Section 1602 of the code. This Section regulates work that will: substantially divert, obstruct, or change the natural flow of a river, stream, or lake; substantially change the bed, channel, or bank of a river, stream, or lake; or use material from a streambed. CDFG enters into a Streambed Alteration Agreement with a project proponent and can impose conditions on the agreement to ensure no net loss of riparian values or acreage.

Since the CDFG includes under its jurisdiction streamside habitats that under the federal definition may not qualify as jurisdictional waters and/or wetlands of the U.S. on a particular project site, CDFG jurisdiction may be broader than that of the COE. As an example, riparian forests in California often lie outside the plain of ordinary high water regulated under Section 404 of the CWA, and often do not have all three parameters (wetland hydrology, hydrophytic vegetation, and hydric soils) sufficiently present to be regulated as a wetland. However, riparian forests are frequently within CDFG regulatory jurisdiction under Section 1602.

4.2.3.3 Other Statutes

Special status habitats are vegetation types, associations, or subassociations that support concentrations of special status plant or wildlife species, are of relatively limited distribution, or are of particular value to wildlife. Although special status habitats are not afforded legal protection unless they support protected species, potential impacts on habitat may increase concerns for impacts to species, as well as mitigation suggestions by resources agencies.

The CNPS is a private non-profit organization that has developed an inventory of California's special status plant species (CNPS 2001). This inventory summarizes the distribution, rarity, and endangerment of California's vascular plants. This rare plant inventory is comprised of four lists. CNPS presumes that List 1A plant species are extinct in California because they have not been seen in the wild for many years. CNPS considers List 1B plants as Rare, Threatened, or Endangered throughout their range. List 2 plant species are considered Rare, Threatened, or Endangered in California but more common elsewhere. Plant species for which CNPS needs additional information are included on List 3. List 4 plant species are those of limited distribution in California, but whose susceptibility to threat appears low at this time.

In addition to providing an inventory of special status plant and animal species, the CNDDB also provides an inventory of vegetation types that are considered special status by the state and federal resource agencies, academic institutions, and various conservation groups.

A species that is considered a Special Animal is a species that is tracked by the CNDDB. Species of Local Concern are those that have no official status with the resource agencies, but are being watched by local conservation organizations because either there is a unique population in the region or the species is declining in the region.

4.2.4 Significance Criteria

The potential significance of environmental impacts on biological resources has been assessed using impact significance criteria that mirror the policy contained in CEQA, Section 21001(c) of the California Public Resources Code. Accordingly, the State Legislature has established it to be the policy of the state to:

> "Prevent the elimination of fish or wildlife species due to man's activities, ensure that fish and wildlife populations do not drop below self-perpetuating levels, and preserve for future generations representations of all plant and animal communities…"

In the development of thresholds of significance for impacts on biological resources, CEQA provides guidance primarily in Section 15065–Mandatory Findings of Significance, and the CEQA Guidelines, Appendix G, Environmental Checklist Form. Section 15065(a) states that a project may have a significant effect where:

> "The project has the potential to substantially 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 wildlife

community, reduce the number or restrict the range of an Endangered, rare, or Threatened species…"

It should be noted that the definition of endangered or threatened species under Section 15380 of CEQA is much broader than the definitions of these terms under either FESA or CESA.

Appendix G of the CEQA Guidelines is more specific in addressing biological resources and encompasses a broader range of resources to be considered, including: candidate, sensitive, or special status species; riparian habitat or other sensitive natural communities; federally protected wetlands; fish and wildlife movement corridors; local policies or ordinances protecting biological resources; and adopted habitat conservation plans. For the purpose of this analysis, impacts on biological resources are considered significant (before considering offsetting mitigation measures) if one or more of the following conditions would result from implementation of the proposed project:

- If the project has a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFG or USFWS (CEQA Guidelines, Appendix G, IV [a])
- If the project has a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFG or USFWS (CEQA Guidelines, Appendix G, IV [b])
- If the project has a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means (CEQA Guidelines, Appendix G, IV [c])
- If the project interferes substantially with the movement of any native or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impedes the use of native wildlife nursery sites (CEQA Guidelines, Appendix G, IV [d])
- If the project conflicts with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (CEQA Guidelines, Appendix G, IV [e])
- If the project conflicts with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan (CEQA Guidelines, Appendix G, IV. [f])

An evaluation of whether an impact on biological resources would result in a "substantial adverse effect" must consider both the resource itself and how that resource fits into a regional context. For the proposed Master Plan, the regional setting of the project includes the following USGS quads that cover the San Gabriel River Watershed and that were queried in the records search: Mount Wilson, Azusa, Glendora, Baldwin Park, El Monte, Whittier, Los Alamitos, and Seal Beach.

For the purposes of this impact analysis, "substantial adverse effect" is defined as the loss or harm of a magnitude which, based on current scientific data and knowledge, would: 1) substantially diminish population numbers of a species or distribution of a habitat type within the region; or 2) eliminate the functions and values of a biological resource in the region.

4.2.5 Impacts of Adopting the Master Plan Elements

The Master Plan includes six plan elements (also called Master Plan goals), set forth as the CEQA project objectives for the Master Plan. The plan elements are supported by objectives and performance criteria (see **Section 3.3.1**). The adoption of the Master Plan by the County of Los Angeles (and other municipalities in the study area) will promote implementation of projects that are consistent with these Master Plan goals. This section describes the overall Master Plan impacts based on a qualitative assessment of reasonably foreseeable effects of the adoption of the Master Plan. Since projects similar to the Concept Design Studies are proposed throughout the river corridor, the Concept Design Study impacts (**Section 4.2.6**) further illustrate the types of potential impacts expected from implementation of the overall Master Plan.

As described in **Table 4.2-3**, implementation of future projects developed in a manner consistent with the Master Plan could involve ground disturbance in areas of existing habitat. For the most part, existing habitats in the Master Plan study area are disturbed and/or low-value. However, if ground disturbance or flow alterations are proposed in areas with existing high-value habitat, this would be a potentially significant impact on biological resources. As described in **Section 4.2.7**, site-specific impacts to biological resources would be addressed in second-tier CEQA documentation for future projects developed in a manner consistent with the Master Plan. As described in **Table 4.2-3** and **Section 4.2.7**, site-specific mitigation measures will be identified and implemented by the specific lead agencies for each future project in the Master Plan study area. With mitigation, site-specific impacts to existing biological resources, if any, would be less than significant. Overall, adoption of the Master Plan would result in beneficial biological impacts by promoting projects that include revegetation, enhancement of vegetation, and creation of habitat that would support wildlife.

Table 4.2-3
Impacts on Biological Resources from Adopting the Master Plan Elements

Master Plan Elements	Impacts on Biological Resources	Impact Summary
Habitat Element: Preserve and enhance habitat systems through public education, connectivity and balance with other uses	**Beneficial:** Preservation and enhancement/restoration of habitat would result in beneficial impacts on biological resources. In addition to onsite habitat improvements, projects that involve exotics removal would result in offsite benefits to native plants by reducing seed sources of exotics. **Potentially Adverse:** Habitat enhancement that involves active restoration in undeveloped areas (e.g., extensive removal of existing vegetation and replanting with high-value, native vegetation) would result in ground disturbance, which could have temporary adverse impacts on existing biological	Potentially significant for construction-related disturbances; less than significant with mitigation Less than significant to beneficial for operations-

Master Plan Elements	Impacts on Biological Resources	Impact Summary
	resources, if any are present. The Master Plan mitigation measures described in **Section 4.2.7** outline an approach to evaluation of biological resources prior to completion of detailed design plans and implementation of measures to reduce impacts by avoiding sensitive species nesting periods during construction, avoiding high value vegetation types or special status species, and/or rehabilitating habitat where avoidance is not feasible). Other activities associated with habitat enhancement (e.g., monitoring and maintenance activities or exotic species removal) could also result in incidental trampling of biological resources. However, the overall biological impact of adopting this element would be beneficial. For sites with habitat enhancements that support wildlife, maintenance operations may adversely affect biological resources. It is anticipated that maintenance activities would be managed in accordance with wildlife agency agreements or consultations.	related impacts
Recreation Element: Encourage and enhance safe and diverse recreation systems, while providing for expansion, equitable and sufficient access, balance and multi-purpose uses	**Beneficial:** Preservation of existing undisturbed open space areas for passive recreational uses would result in protection of biological resources from development or other disturbances. For example, trails within a passive recreation area could be designed to direct visitors away from sensitive biological resources, or biological resources could be incorporated into the park design as an interpretive or educational element for the visitors. **Neutral:** This element also includes objectives and performance criteria that are neutral with respect to impacts on biological resources (e.g., public security along waterways). **Potentially Adverse:** Construction of recreation related facilities (e.g., interpretive centers, trails and trail amenities, signs, kiosks) on an undeveloped site would result in ground disturbance, which could have an adverse impact on existing biological resources, if any are present at those locations. The Master Plan mitigation measures described in **Section 4.2.7** outline an approach to evaluation of biological resources prior to completion of detailed design plans and implementation of measures to reduce impacts by avoiding sensitive species nesting periods during construction, avoiding high value vegetation types or special status species, and/or rehabilitating habitat where avoidance is not feasible. Operation of facilities for active recreation could result in increased visitors and human activities,	Potentially significant for construction-related disturbances; less than significant with mitigation Potentially significant for operations-related disturbances; less than significant with mitigation

Master Plan Elements	Impacts on Biological Resources	Impact Summary
	which could result in adverse impacts to adjacent or onsite habitat areas (e.g., trampling of vegetation, disturbance of nesting behavior through increased noise and lighting), if any. The Master Plan mitigation measures described in **Section 4.2.7** outline an approach to evaluation of biological resources prior to completion of detailed design plans and implementation of measures to reduce impacts by preparing a management plan to reduce impacts from human uses and/or limiting use of night lighting.	
Open Space Element: Enhance and protect open space systems through conservation, aesthetics, connectivity, stewardship, and multi-purpose uses.	**Beneficial:** Preservation of existing open space areas (e.g., through land acquisition or conservation easements) could result in protection of biological resources from development or other disturbances. Utilizing drought tolerant and native plant materials would be have beneficial impacts on biological resources. **Neutral:** This element also includes objectives and performance criteria that are neutral with respect to impacts on biological resources (e.g., preventing crime). **Potentially Adverse:** Use of existing open space areas for active recreational facilities and activities may result in disturbance of adjacent or onsite habitat areas, if any (e.g., construction of parking facilities, incidental trampling of vegetation). The Master Plan mitigation measures described in **Section 4.2.7** outline an approach to evaluation of biological resources prior to completion of detailed design plans and implementation of measures to reduce impacts by preparing a management plan to reduce impacts from human uses and/or limiting use of night lighting.	Potentially significant for construction-related disturbances; less than significant with mitigation Potentially significant for operations-related disturbances; less than significant with mitigation
Flood Protection Element: Maintain flood protection and existing water and other rights while enhancing flood management activities through the integration with recreation, open space and habitat systems.	**Beneficial:** Use of naturalized low-flow streambeds and restoration of local streams would result in beneficial impacts on aquatic and riparian habitats. **Neutral:** This element also includes objectives and performance criteria that are neutral with respect to impacts on biological resources (e.g., visual design standards for flood control devices). **Potentially Adverse:** Construction of new flood control facilities (e.g., stormwater detention areas) on an undeveloped site would result in ground disturbance (possibly including inundation), which could have an adverse impact on biological resources, if any are present at those locations. The Master Plan mitigation measures described in **Section 4.2.7** outline an approach to evaluation of	Potentially significant for construction-related disturbances; less than significant with mitigation Less than significant to beneficial for operations-related impacts

Master Plan Elements	Impacts on Biological Resources	Impact Summary
	biological resources prior to completion of detailed design plans and implementation of measures to reduce impacts by avoiding sensitive species nesting periods during construction, avoiding high value vegetation types or special status species, and/or rehabilitating habitat where avoidance is not feasible.	
Water Supply and Water Quality Element: Maintain existing water and other rights while enhancing water quality, water supply, groundwater recharge, and water conservation through the integration with recreation, open space and habitat systems.	**Beneficial:** Development of constructed wetlands for stormwater treatment would increase habitat for wildlife that depend on wetlands, a beneficial impact on biological resources. In addition, reduction of polluted stormwater runoff would be beneficial to aquatic habitats in the river. **Neutral:** This element also includes objectives and performance criteria that are neutral with respect to impacts on biological resources (e.g., extension of reclaimed water distribution, since new pipelines would most likely be constructed in urban areas within existing roadways where biological resources are absent). **Potentially Adverse:** Construction of new facilities for enhancing water quality and/or water supply (e.g., stormwater infiltration facilities, constructed wetlands, pipelines for reclaimed water distribution) on an undeveloped site would result in ground disturbance (possibly including inundation), which could have an adverse impact on biological resources, if any are present at those locations. The Master Plan mitigation measures described in **Section 4.2.7** outline an approach to evaluation of biological resources prior to completion of detailed design plans and implementation of measures to reduce impacts by avoiding sensitive species nesting periods during construction, avoiding high value vegetation types or special status species, and/or rehabilitating habitat where avoidance is not feasible.	Potentially significant for construction-related disturbances; less than significant with mitigation Less than significant to beneficial for operations-related impacts
Economic Development Element: Pursue economic development opportunities derived from and compatible with the natural aesthetic and environmental qualities of the river.	**Beneficial:** Acquisition of land within or near the river corridor could result in protection of biological resources from development or other disturbances. **Neutral:** This element includes objectives and performance criteria that are neutral with respect to impacts on biological resources (e.g., providing incentives to participating adjacent land owners). **Potentially Adverse:** Reclamation of inactive gravel mines could possibly result in disturbance to existing remnant habitats, if any are present at those locations. The Master Plan mitigation measures described in **Section 4.2.7** outline an approach to evaluation of biological resources prior to completion of detailed design plans and	Potentially significant for construction-related disturbances; less than significant with mitigation Less than significant to beneficial for operations-related impacts

Master Plan Elements	Impacts on Biological Resources	Impact Summary
	implementation of measures to reduce impacts by avoiding sensitive species nesting periods during construction, avoiding high value vegetation types or special status species, and/or rehabilitating habitat where avoidance is not feasible.	

4.2.6 Impacts of Implementing the Concept Design Studies

Impacts that could result from implementation of each of the Concept Design Studies are described below.

4.2.6.1 San Gabriel Canyon Spreading Grounds

The San Gabriel Canyon Spreading Grounds Concept Design Study could include public access trails, landscaping, and potentially floating habitat islands. These project components would either avoid or replace existing habitats that are generally of lower quality than the proposed replacement. For example, if implemented, the floating islands would replace open water habitat that has some value, but the value of the islands as nesting and roosting habitat for a wide variety of birds far outweighs the value of the lost open water habitat. As described in **Section 3.3.3.1**, if floating islands ultimately become part of this project, any potential conflicts between the existing operation and maintenance activities for groundwater recharge and the introduction and maintenance of habitat (including water quality, water supply, and regulatory issues) will be investigated in detail.

Special Status Species

No special status plant species are expected to occur on the site; therefore no impacts on special status plants are expected. Impacts on special status wildlife species on the site, if any are present, would be short-term and would result from equipment used during construction. Any such impacts would not be expected to reduce populations of special status wildlife species substantially in the region because any such wildlife species that were present would avoid the construction activity area for its duration. Impacts would be temporary, and even over the short duration they exist, they would be less than significant. In addition, enhancement and restoration of native habitats on the site would have an overall beneficial impact on both special status plants and wildlife. An increase in habitat quality and the proposed islands would benefit a variety of wildlife species and would be a beneficial impact. Implementation of **Mitigation Measures CD-B1** and **CD-B2** would reduce construction-related impacts on sensitive plants and wildlife to less than significant levels.

Special Status Habitat Types

No impacts are expected to occur on the riparian scrub and alluvial sage scrub existing on the site because the proposed activities in the San Gabriel Canyon Spreading Basins Concept Design Study were designed to avoid these habitats. Restoration of special status habitat types such as wetland vegetation and coastal sage scrub habitat (see Map 3-11 of the Master Plan) would be a

beneficial impact and expand the viability of existing fragmented vegetation on the project site. Implementation of **Mitigation Measures CD-B1** and **CD-B2** would reduce construction-related impacts on special status habitat types to a less than significant level.

Noise

Noise levels at the site would increase substantially during project construction over present, relatively low noise levels. During construction, temporary noise impacts have the potential to disrupt foraging, nesting, roosting, and denning activities for a variety of wildlife species. Although these temporary impacts would be adverse during the construction period, they would not be significant because they would not result in permanent abandonment of suitable habitats by wildlife in the adjacent open spaces. Wildlife typically avoids areas where human activity is occurring and returns when conditions return to previous levels. Implementation of **Mitigation Measures CD-B1** and **CD-B2** would reduce construction-related impacts on sensitive wildlife species to less than significant levels.

4.2.6.2 Woodland Duck Farm

The Woodland Duck Farm Concept Design Study could include trails, vehicle site access and parking, landscaping, and an educational center. Except for the equestrian center, the proposed project components would either avoid or replace existing habitats that are generally of lower quality (e.g., dominated by non-native plants and ornamental species) than the proposed replacement. The equestrian center and its concomitant access and parking requirements may result in a net loss of natural open space that has some limited foraging value. However, this proposed facility would occur at an existing facility and any expansion into surrounding natural habitats is expected to be minimal and would not be considered significant.

Special Status Species

Because this Concept Design Study site had been used as a duck farm for many years, the habitats onsite have been degraded or modified with planting of ornamental plant species. Therefore, no special status plant species are expected to occur on the site, and no impacts on special status plants are expected. Impacts on special status wildlife species on the site due to construction activities are not expected to reduce populations substantially in the region. These impacts would be adverse but not significant because any such wildlife species would avoid the construction area for its duration. Impacts would be temporary, and even over the short duration they exist, they would be less than significant. In addition, enhancement and restoration of native habitats on the site would have an overall beneficial impact on both special status plants and wildlife. An increase in habitat quality would benefit a variety of wildlife species and would be a beneficial impact. The habitat that is present, as noted above, consists of some patches of elderberry woodland dominated largely by non-native and ornamental plants around the existing buildings. The Concept Design (see Map 3-13 in the Master Plan) proposes revegetation of the site with native upland scrub and riparian species to recreate the historical habitat that probably existed prior to the Duck Farm use. In addition, the Concept Design also proposes a system of constructed treatment wetlands to treat low flow and urban runoff. The emergent marsh habitat that would be used in the treatment process would also create additional habitat for wildlife, predominantly avian species. Implementation of **Mitigation Measures CD-B1** and **CD-B2**

would reduce construction-related impacts on special status species to less than significant levels.

Special Status Habitat Types

As noted above, the site had been used as a duck farm for many years, and the habitats onsite have been degraded or modified with planting of ornamental plant species. Therefore, special status habitat types do not occur at this site, and no impacts on special status habitat types are expected. Restoration of special status habitat types throughout the site and particularly along the boundary with the San Gabriel River, such as riparian and sage scrub habitat, would be a beneficial impact and restore biological values to a site that for many years has had little natural habitat value. Implementation of **Mitigation Measures CD-B1** and **CD-B2** would reduce construction-related impacts on special status habitat types to less than significant levels.

4.2.6.3 San Gabriel River Discovery Center at Whittier Narrows

The Concept Design Study for the San Gabriel River Discovery Center at Whittier Narrows could include a new Discovery Center building, modifications to the site entrance and parking area, and a stormwater treatment wetland. Except for the Discovery Center, the proposed project components would either avoid or replace existing habitats that are generally of lower quality than the proposed replacement. The education facility and its concomitant access and parking requirements may result in a net loss of natural open space that has some limited forage value. However, this proposed facility would occur at an existing facility and any expansion into surrounding natural habitats is expected to be minimal and not considered significant.

Special Status Species

Several special status plant species are known to occur in the vicinity of the site. Impacts from construction of the proposed Discovery Center would be significant for any special status plants that may occur on the site. Implementation of **Mitigation Measures CD-B1** and **CD-B2** would reduce construction-related impacts on sensitive plants to a less than significant level by either confirming the non-existence of special status plants and if special status plants are present, by avoiding these areas or mitigating any construction impacts by collecting and replanting these species in areas of permanent open space on the project site.

The state- and federally-listed Endangered least Bell's vireo and several other special status bird species are known from the vicinity and have potential to occur on the site. Impacts on these bird species would be significant. Implementation of **Mitigation Measures CD-B3 and CD-B4** would reduce construction-related impacts on least Bell's vireo and nesting raptors to a less than significant level. Such impact reduction would either occur through avoidance of construction during the nesting season (March 15 to September 1), or if construction must occur during the nesting season, by having a qualified biologist survey the site for least Bell's vireo, and if present, by avoiding construction within 1,000 feet of the nest until after the nesting season is over (**Mitigation Measure CD-B3**). Construction impacts to nesting raptors would be avoided by ensuring that construction within the raptor nesting season does not occur within 500 feet of an active raptor nest, as determined by a pre-construction survey by a qualified biologist (**Mitigation Measure CD-B4**).

Special Status Habitat Types

No impacts are expected to occur on the Mexican elderberry-walnut woodland and riparian scrub existing on the site. Direct impacts on vegetation occupied by nesting sensitive bird species (e.g., least Bell's vireo), even if the disturbance was a result of restoration efforts, would require consultation with the wildlife agencies prior to initiation of any construction activities in the vicinity of an active nest, as determined by a qualified biologist. Implementation of **Mitigation Measures CD-B3 and CD-B4** would also reduce potential impacts to vegetation occupied by nesting sensitive bird species. Overall, restoration of special status habitat types such as wetland vegetation and coastal sage scrub habitat would be a beneficial impact.

Overall, the Concept Design Study would have a beneficial impact on special status plants, wildlife, and habitat types. An increase in habitat quality from habitat enhancement and restoration would benefit a variety of wildlife species and would be a beneficial impact.

Noise

Noise levels at the site would increase substantially during project construction over present, relatively low noise levels. During construction, temporary noise impacts have the potential to disrupt foraging, nesting, roosting, and denning activities for a variety of wildlife species. Although these temporary impacts would be adverse during the construction period, they would not be significant because they would not result in permanent abandonment of suitable habitats by wildlife in the adjacent open spaces. Wildlife typically avoids areas where human activity is occurring and returns when conditions return to previous levels.

Increased noise levels would be a significant impact on the least Bell's vireo if construction occurred during the nesting season (March 15 to September 1). Implementation of **Mitigation Measure CD-B3** would reduce construction-related impacts on least Bell's vireo to a less than significant level. Such impact reduction would either occur through avoidance of construction during the nesting season (March 15 to September 1), or if construction must occur during the nesting season, by having a qualified biologist survey the site for least Bell's vireo, and if present, by avoiding construction within 1,000 feet of the nest until after the nesting season is over (Mitigation Measure CD-B3).

4.2.6.4 Lario Creek

Concept Design Study improvements to Lario Creek could include construction of a dual flow channel to convey water and to create wetland habitat. These project components would either avoid or replace existing habitats that are generally of lower quality than the proposed replacement. For example, the dual flow channel would follow an existing channel. Proposed habitat enhancements for this Concept Design Study would need to be designed to accommodate the possibility that the project site may be inundated during large storms since it is located in a flood control basin.

Special Status Species

Several special status plant species are known to occur in the vicinity of the site. Impacts from construction of the proposed channel modifications would be significant for any special status plants that might occur on the site. Implementation of **Mitigation Measures CD-B1 and CD-B2** would reduce construction-related impacts on sensitive plants to a less than significant level by either confirming the non-existence of special status plants (Mitigation Measure CD-B1) or if special status plants are present, by avoiding these areas or mitigating any construction impacts by collecting and replanting these species in areas of permanent open space on the project site.

The state- and federally-listed Endangered least Bell's vireo and several other special status bird species are known from the vicinity and have potential to occur on the site. Impacts on these bird species would be significant. Implementation of **Mitigation Measures CD-B3 and CD-B4** would reduce construction-related impacts on least Bell's vireo and nesting raptors to a less than significant level. Such impact reduction would either occur through avoidance of construction during the nesting season (March 15 to September 1), or if construction must occur during the nesting season, by having a qualified biologist survey the site for least Bell's vireo, and if present, by avoiding construction within 1,000 feet of the nest until after the nesting season is over (Mitigation Measure CD-B3). Construction impacts to nesting raptors would be avoided by ensuring that construction within the raptor nesting season does not occur within 500 feet of an active raptor nest, as determined by a pre-construction survey by a qualified biologist (Mitigation Measure CD-B4).

Special Status Habitat Types

Impacts on freshwater marsh, riparian herb, riparian forest, riparian scrub may occur from construction of the proposed channels. These habitats may also be within the jurisdiction of COE and/or CDFG and would be subject to permit conditions.

Impacts on habitats within the jurisdiction of COE and CDFG are subject to compensatory mitigation as a fundamental component of the permitting process. The objective of the mitigation is to ensure no net loss of habitat values from the project. Implementation of mitigation for impacts on riparian habitat as required by COE and/or CDFG would reduce significant impacts from construction to a less than significant level. Proposed restoration of riparian habitats onsite could incorporate compensatory COE/CDFG permitting mitigation.

Overall, the Concept Design Study would have a beneficial impact on special status plants, wildlife, and habitat types. An increase in habitat quality from proposed habitat enhancement and restoration would benefit a variety of wildlife species and would be a beneficial impact.

Noise

Noise levels at the site would increase substantially during project construction over present, relatively low noise levels. During construction, temporary noise impacts have the potential to disrupt foraging, nesting, roosting, and denning activities for a variety of wildlife species. Although these temporary impacts would be adverse during the construction period, they would not be significant because they would not result in widespread abandonment of suitable habitats

by wildlife in the adjacent open spaces. Wildlife typically avoids areas where human activity is occurring and returns when conditions return to previous levels.

Increased noise levels would be a significant impact on the least Bell's vireo if construction occurred during the nesting season (March 15 to September 1). Implementation of **Mitigation Measure CD-B3** would reduce construction-related impacts on least Bell's vireo to a less than significant level. Such impact reduction would either occur through avoidance of construction during the nesting season (March 15 to September 1), or if construction must occur during the nesting season, by having a qualified biologist survey the site for least Bell's vireo, and if present, by avoiding construction within 1,000 feet of the nest until after the nesting season is over (Mitigation Measure CD-B3).

4.2.6.5 El Dorado Regional Park

The El Dorado Regional Park Concept Design Study site could include a stormwater treatment wetland, exotic plant species removal, an increase in river width, and replacement of the concrete river bottom with a soft bottom. These project components would either avoid or replace existing habitats that are generally of lower quality than the proposed replacement.

Special Status Species

There is a limited potential for special status plant species to occur on the project site. Impacts from construction of the proposed channel modifications would be significant for any special status plants that might be present on the project site. Implementation of **Mitigation Measures CD-B1 and CD-B2** would reduce construction-related impacts on sensitive plants to a less than significant level by either confirming the non-existence of special status plants (Mitigation Measure CD-B1) and if special status plants are present, by avoiding these areas or mitigating any construction impacts by collecting and replanting these species in areas of permanent open space on the project site.

Special status wildlife species are known from the vicinity and have potential to occur on the site. Impacts on white-tailed kite, northern harrier, Cooper's hawk, loggerhead shrike and sharp-shinned hawk species would be significant. Implementation of **Mitigation Measure CD-B4** would reduce construction-related impacts on nesting raptors to a less than significant level. Construction impacts to nesting raptors would be avoided by ensuring that construction within the raptor nesting season does not occur within 500 feet of an active raptor nest, as determined by a pre-construction survey by a qualified biologist (Mitigation Measure CD-B4).

Special Status Habitat Types

Impacts to mule fat scrub may occur from modification of the river bottom. This habitat may also be within the jurisdiction of COE and/or CDFG and would be subject to permit conditions.

Impacts on habitats within the jurisdiction of COE and CDFG are subject to compensatory mitigation as a fundamental component of the permitting process. The objective of the mitigation is to ensure no net loss of habitat values from the project. Implementation of mitigation for impacts on riparian habitat, as required by COE and/or CDFG, would reduce

significant impacts associated with construction to a less than significant level. Proposed restoration of riparian habitats onsite could incorporate compensatory COE/CDFG permitting mitigation.

Overall, the Concept Design Study would have a beneficial impact on special status plants, wildlife, and habitat types. An increase in habitat quality from proposed habitat enhancement and restoration would benefit a variety of wildlife species and would be a beneficial impact.

Noise

Noise levels at the site would increase substantially during project construction over present, relatively low noise levels. During construction, temporary noise impacts have the potential to disrupt foraging, nesting, roosting, and denning activities for a variety of wildlife species. Although these temporary impacts would be adverse during the construction period, they would not be significant because they would not result in widespread abandonment of suitable habitats by wildlife in the adjacent open spaces. Wildlife typically avoids areas where human activity is occurring and returns when conditions return to previous levels.

Increased noise levels would be a significant impact on the nesting raptors if they occurred during the nesting season (March 15 to September 1). Implementation of **Mitigation Measure CD-B4** would reduce construction-related impacts on nesting raptors to a less than significant level. Construction impacts to nesting raptors would be avoided by ensuring that construction within the raptor nesting season does not occur within 500 feet of an active raptor nest, as determined by a pre-construction survey by a qualified biologist (Mitigation Measure CD-B4).

4.2.6.6 Impacts Common to all Concept Design Study Sites

Increased Dust and Urban Pollutants

Grading activities would disturb soils and result in the accumulation of dust on the surfaces of the leaves of trees, shrubs, and herbs. The respiratory function of the plants in the area would be impaired if dust accumulation is excessive. This indirect effect on the native vegetation in the immediate vicinity of the construction areas would be adverse but not significant because construction periods are expected to be relatively short (i.e., 2 to 3 months) and native vegetation that is present is typically not regarded as sensitive by regulatory agencies.

Lighting

Introduction of night lighting would affect the behavior patterns of nocturnal and crepuscular (active at dawn and dusk) wildlife at these areas. Of greatest concern is the effect on small ground-dwelling animals that use the darkness to hide from predators, and on owls that are specialized night foragers. These impacts, while adverse, would not be expected to reduce any current wildlife population below self-sustaining levels. However, lighting could inhibit wildlife from using the habitat adjacent to lighted areas. These impacts would be considered adverse, but less than significant. **Mitigation Measure CD-B6** has been identified to further reduce impacts from new lighting sources by requiring the use of low intensity lighting that is directed away from open space areas.

Human Activity

Individuals using the sites for passive recreation (e.g., hiking, biking) would increase noise and disturbance of habitat areas. Unchecked human disturbance could disrupt normal foraging and breeding behavior of wildlife on the site and substantially limit the potential enhancement and restoration of proposed native habitat areas. These project impacts on wildlife are significant. Implementation of **Mitigation Measure CD-B7** would reduce impacts associated with human activity to a less than significant level. Such reduction would occur through the preparation and approval of a management plan for native habitats at each Concept Design Study site prior to initiation of site development. The plan shall be prepared by a qualified biologist.

Invasive Plant Species

The proposed projects may include removal of invasive exotic plant species. This impact would be beneficial because it would increase the value of the riparian habitat. In addition, as per **Mitigation Measure CD-B5**, landscaping of surrounding vegetation shall not include any invasive plant species as listed on the California Invasive Plant Council Pest Plant List.

Native Plant Species

As noted in Chapter 3.7.2 of the Master Plan, individual habitat-enhancement projects are anticipated to adopt the Los Angeles River Landscape Guidelines and use the suggested native plant palettes as appropriate to each habitat zone. This will achieve corridor-wide habitat improvement.

4.2.7 Master Plan Program Mitigation Measures

Future projects involving site disturbance in areas with potential biological resources will require an evaluation of the impacts of proposed actions as described in program Mitigation Measure MP-B1:

> **MP-B1** Site-specific evaluations for biological resources will be conducted prior to completion of detailed design plans for each of the future projects to determine the presence of high-value vegetation types and the potential for special status plant and wildlife species to occur. The following tasks will be completed by these evaluations:
>
> 1. Identify and determine the extent of site disturbance proposed by the project. For sites where biological resources have any potential to be sensitive, continue evaluation as outlined below.
>
> 2. General plant and wildlife surveys will be performed by a qualified biologist to determine if any focused surveys for special status species are necessary. If the general surveys indicate that there is potential for sensitive plant or wildlife species to occur on the project site, focused surveys will be conducted for those species in accordance with relevant protocols at the appropriate time of the year.

3. If any special status species or high-value vegetation types are identified, the proposed facilities will be designed and/or sited to avoid disturbance and loss of the sensitive resources. If nesting habitat of special status bird species will be impacted, project construction will be scheduled outside of the breeding season if feasible. If scheduling construction outside of the breeding season is not feasible, then a pre-construction survey will be conducted to identify nests and to establish a buffer zone between the construction area and the nests to avoid construction impacts.

4. In some instances, depending on the location of sensitive resources and/or construction schedule requirements, project redesign and/or construction phasing that avoids biological resources while still meeting the project objective may be infeasible. Therefore, if avoidance is not feasible, the following measures will be detailed and disclosed in second tier CEQA documentation and implemented under the direction of a qualified biologist:

   - Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment; and/or
   - Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the project; and/or
   - Compensating for the impact by replacing or providing substitute resources or environments.

5. If avoidance of impacts to listed species is not feasible, then consultation with the USFWS shall be required for federally-listed species, and consultation with the CDFG shall be required for state-listed species. If special status plants are identified, a mitigation program shall be developed following focused surveys and submitted to the appropriate agencies for review.

In addition, the following mitigation measures will be implemented for future projects to reduce impacts on biological resources:

MP-B2 Landscaping of vegetation will not include any invasive plant species as listed on the California Invasive Plant Council Pest Plant List.

MP-B3 For projects that involve use of night lighting in public areas (e.g., parks) for health and/or safety reasons, lighting will be designed to minimize effects on the behavior patterns of nocturnal and crepuscular (active at dawn and dusk) wildlife (e.g., small ground-dwelling animals that use the darkness to hide from predators, and on owls that are specialized night foragers). To reduce light impacts on nocturnal and crepuscular wildlife, night lighting will be low intensity directional lighting focused away from open space areas.

MP-B4 For projects that involve recreational uses near habitat areas, a management plan to reduce impacts from human uses (e.g., riding, hiking, biking) on native habitats will be incorporated into detailed design plans. As relevant, the management plan will include access points including parking and restrooms, signage for

trails and restricted uses, appropriate fencing, and restrictions on domestic animals. This plan will be written by a qualified biologist and approved by the sponsoring agency prior to initiation of site development.

4.2.8 Mitigation Measures for Concept Design Studies

The following mitigation measures shall be implemented for **all five Concept Design Studies**:

CD-B1 Prior to completion of detailed design plans for each of the five Concept Design Study sites, a qualified biologist shall conduct general plant and wildlife surveys to determine if any focused surveys for special status species are necessary. If the surveys confirm the potential for one or more special status species to occur, focused surveys for those species shall be conducted as described in Mitigation Measure CD-B2.

CD-B2 If the general biological survey (Mitigation Measure CD-B1) indicates that there is potential for sensitive plant species to occur on the project site, a spring survey shall be conducted prior to finalizing the project designs. The special status plant species surveys shall follow guidelines developed by the CNPS (CNPS, 2001). These surveys, as outlined in the guidelines, shall be conducted during the appropriate time of year for each species as determined by a qualified botanist. Collection of special status plant species, if any, shall follow the guidelines of CDFG and USFWS collection permits. If any special status plant species are located, their rarity and abundance shall be evaluated. If the general biological survey indicates that there is potential for special status wildlife species to occur on the project site, protocol surveys for those species shall be conducted in accordance with appropriate survey protocols at the appropriate time of the year. The results of these investigations and the appropriate mitigation measures to reduce any potentially significant environmental impacts to a level that is less than significant shall be disclosed in second tier CEQA documentation.

If any special status wildlife species are identified, the proposed facilities shall be designed and/or sited to avoid or reduce potentially significant impacts to the species during construction to levels that are less than significant. If nesting habitat of special status bird species will be impacted, project construction shall be scheduled outside of the breeding season, or a pre-construction survey shall be conducted to identify nests and to establish a buffer zone between the construction area and identified nests to avoid construction impacts.

However, depending on the location of sensitive resources and/or construction schedule requirements, project redesign and/or construction phasing that avoids biological resources while still meeting the project objective may be infeasible. Therefore, if avoidance is not feasible, the following measures shall be detailed and disclosed in second tier CEQA document and implemented under the direction of a qualified biologist:

- Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment; or

- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the project; or
- Compensating for the impact by replacing or providing substitute resources or environments.

If avoidance of impacts to listed species is not feasible, then consultation with the USFWS shall be required for federally-listed species and consultation with the CDFG shall be required for state-listed species. As relevant, a special status plant mitigation program shall be developed following focused surveys and submitted to the appropriate agencies for review.

The following mitigation measure shall be implemented for the **San Gabriel River Discovery Center, Lario Creek and El Dorado Regional Park** Concept Design Studies:

CD-B3 Least Bell's Vireo - Since least Bell's vireos are known to occur in the vicinity of the San Gabriel River Discovery Center, Lario Creek, and El Dorado Regional Park, the following mitigation measure shall be implemented to reduce impacts on this Endangered species:

To the extent feasible, no construction shall occur within the project site during the nesting season for least Bell's vireo (March 15 to September 1). However, if construction work is necessary between March 15 and September 1, a qualified biologist shall survey suitable habitat within the impact area, plus 1,000 feet (300 meters) on either side of the impact area, to identify the presence of any least Bell's vireo. No construction activities shall occur within 1,000 feet of a least Bell's vireo territory until the end of the nesting season (September 1) or when the least Bell's vireo departs the area, as determined by the biologist and with confirmation from the USFWS. The biological monitor shall use their discretion to increase the distance from vireo territory that construction can occur (in excess of 1,000 feet) or to limit use of the noisiest equipment to outside the nesting season if deemed necessary based on the type of construction equipment to be used.

The following mitigation measure shall be implemented for the **San Gabriel River Discovery Center, Lario Creek, and El Dorado Regional Park** Concept Design Studies:

CD-B4 Nesting Raptors – The following mitigation measure shall be implemented to avoid raptor impacts:

One week prior to construction and clearing activities that would occur during the nesting/breeding season of native bird species potentially nesting on the site (typically February through August), a survey shall be conducted by a qualified biologist to determine if active nests of bird species protected by the Migratory Bird Treaty Act and/or the California Fish and Game Code are present within 300 feet (within 500 feet for raptors) of the construction zone. Construction can proceed if no active avian nests are located during this survey. If an active nest is found during the survey, a 500-foot (this distance may vary depending on the bird species and construction activity, as determined

by the biologist) fence barrier shall be erected around the nest site. Clearing and construction within the fenced area shall be postponed or halted, at the discretion of the biologist, until the nest is vacated and juveniles have fledged, as determined by the biologist, and there is no evidence of a second attempt at nesting. The biologist shall serve as a construction monitor during those periods when construction activities may occur near active nests to ensure that no inadvertent impacts on these nests occur. Results of the raptor survey and any subsequent monitoring shall be provided to the CDFG and any other appropriate agency.

The following mitigation measures shall be implemented for **all Concept Design Studies**:

CD-B5 Invasive Plant Species – Landscaping of surrounding vegetation shall not include any invasive plant species as listed on the California Invasive Plant Council Pest Plant List.

CD-B6 Night Lighting – Night lighting is expected to be used in public areas for health and safety reasons. Lighting would inadvertently affect the behavior patterns of nocturnal and crepuscular (active at dawn and dusk) wildlife at these areas. Of greatest concern is the effect on small ground-dwelling animals that use the darkness to hide from predators, and on owls that are specialized night foragers. To reduce light impacts on nocturnal and crepuscular wildlife, night lighting shall be low intensity directional lighting focused away from open space areas.

CD-B7 Human Activity – An appropriate plan for the management of native habitats shall accompany each Concept Design Study site to reduce impacts from human uses (e.g., riding, hiking, biking) on habitat areas. The management plan shall include access points including parking and restrooms, signage for trails and restricted uses, appropriate fencing, and restrictions on domestic animals. This plan shall be written by a qualified biologist and approved by the sponsoring agency prior to initiation of site development.

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4.3 CULTURAL RESOURCES

4.3.1 Existing Setting

4.3.1.1 Methodology and Approach

An evaluation of archaeological and historical resources in the project area was conducted by Greenwood and Associates, Pacific Palisades, California. The technical report prepared by Greenwood and Associates (2003) is included in **Appendix D**. Precise location of archaeological resources is considered sensitive information, and is therefore not included in this section or Appendix D.

The cultural resources evaluation conducted for the Woodland Duck Farm site as part of this Program EIR consisted of a review of recorded archaeological sites and cultural resource reports on file at the South Central Coastal Information Center, California State University, Fullerton (SCCIC) and a review of federal and state listings for designated cultural resources (**Appendix D**). The description of the proposed improvements for the Woodland Duck Farm provided in **Section 3.3.3.2** of this Program EIR represents an initial concept for the project and not an approved plan. WCA is undertaking a master plan for the site which involves all stakeholders. This planning effort will examine all potential uses of the site, and will include a CEQA process.

A review of available literature, archaeological site records, survey and excavation reports, historical maps, and landmark lists was conducted in September 2003 (for San Gabriel Canyon Spreading Grounds, San Gabriel River Discovery Center, Lario Creek, and El Dorado Regional Park) and September 2004 (Woodland Duck Farm) at the SCCIC. The SCCIC is the regional clearinghouse for the State Office of Historic Preservation (OHP), and is the repository of cultural resources records for Los Angeles, Orange, and Ventura Counties. Historical maps reviewed were United States Geological Survey (USGS) 6-minute (1972) and 7.5-minute (1939) quad maps for Azusa, 15-minute quad map for Pasadena (1900), 15-minute quad maps for Downey (1896, 1941, and 1943), and 15-minute quad map for El Monte (1948).

Field surveys were conducted in September 2003 and consisted of on-foot inspection of the four Concept Design Study sites, with the exception of areas covered by thick and overgrown vegetation. Two archaeologists walked the parcels in parallel transects spaced approximately 10 meters apart, examining all visible ground surface and subsurface.

4.3.1.2 Study Area Background

Ethnography

The Native American people known to have inhabited the region surrounding the project area are referred to as the Gabrieliño. The Gabrieliño were hunters and gatherers with permanent villages, specialized processing sites, formal cemeteries, and trade networks with local and non-local groups. It is believed that they initially practiced a seasonal strategy, moving from location to location exploiting various food resources, but with technological advances they were able to maintain permanent year round villages with reliance on acorns and marine resources. At the

time of European contact, they occupied an area that included portions of western San Bernardino, Los Angeles, and Orange Counties (Kroeber, 1953).

Prehistory

The archaeological record indicates that sedentary populations occupied the coastal and inland regions of California more than 9,000 years ago. Early periods were characterized by the processing of hard seeds with the mano and milling stone and the use of the atlatl (dart thrower) to bring down large game such as deer. Villages in the Los Angeles area were typically near permanent water sources that allowed exploitation of a variety of different habitats for food. In the later periods, prior to the arrival of Europeans, the bow and arrow was in use, beads were used as money, trade and social networks had evolved, and the mortar and pestle were used to process acorns.

History

Spanish Period (1769 - 1821). California was claimed by Spain during the sixteenth century as part of the empire it was establishing in the New World. Europeans arrived in Los Angeles in 1769 with the Gaspar de Portolá expedition. Portolá's objective was to locate potential mission sites and to establish an overland route between the first Franciscan mission, established by his party at San Diego, and Monterey Bay. To solidify their claims, the Spanish government fortified San Diego and Monterey and started to establish Mission outposts. The San Gabriel Mission was founded in 1771 and by the early 1800s, most of the Gabrieliño population, with the exception of those who had fled into the interior mountains and valleys, had come into the Mission system.

Mexican Period (1821-1846). Mexico declared independence from Spain in 1821. A city council was formed in 1822 for Los Angeles, and Alta California became a State with Monterey as the capital. During this period the Gabrieliño Indian population declined due to disease, disruption of ancient lifeways, and excessive toil.

With Mexican independence from Spain came conflict over the disposition of mission lands in Alta California. A series of laws, culminating with the Secularization Act of 1833, stripped the missions of their land and power. The Missions were secularized in 1834, and eventually the surviving Native Americans were forced out of the area and into a marginalized existence. The vast holdings of the Franciscans were opened for acquisition by private citizens. Grants were made to individuals willing to work to make the land productive, and were often used to stimulate settlement of under populated areas. The number of grants rose markedly in the mid-1840s as the Mexican government acted to place as much of its California territory into private ownership as possible prior to the imminent takeover by the United States. More than 600 rancho grants were made between 1833 and 1846.

American Period (1846-Present). The United States took control of California after the Mexican-American War of 1846. The discovery of gold in northern California created a boom in the cattle industry which fed the hordes of miners searching for gold. During the 1860s, the American population grew rapidly, partly because many of the old rancho families lost title to

their land, leaving a vacuum which was promptly filled by settlers from central and eastern United States.

History of Flood Control on the San Gabriel River. Historically, the waters of the Los Angeles, San Gabriel, and Santa Ana Rivers often mingled on the coastal plain in times of flood. Flood waters from these rivers deposited the rich soil that helped make Los Angeles County the most productive agricultural county in the United States until the 1950s (Gumprecht, 1999). The San Gabriel River once emptied into the ocean at San Pedro Bay, along a course later occupied by the Los Angeles River. The Los Angeles River joined the San Gabriel River 7 miles north of its ocean terminus; the combined flow of the two streams reached the ocean through the Wilmington Lagoon. Both the Santa Ana and the San Gabriel Rivers posed greater flood risks in their uncontrolled states than did the Los Angeles River because they spread over wide areas as soon as they left the mountains. Most of the irrigated farmland in Los Angeles County was located along the Los Angeles, San Gabriel, and Santa Ana Rivers (Gumprecht, 1999).

The floods of 1868 caused the San Gabriel River to cut a new course to the sea. Surging flood waters forced the San Gabriel River to leave its bed farther upstream, where its channel turned southwest after emerging between two hills south of El Monte, a gap known as Whittier Narrows. Flood waters washed away the town of Galatin, settled a few years earlier near the present site of Downey, and dug an entirely new channel south to Alamitos Bay, at the boundary between Los Angeles and Orange Counties. This new channel, initially known as New River, is approximately the course of the San Gabriel River today. Water continued to flow in the River's former channel, which became known as Rio Hondo. The last 7 miles of the old San Gabriel channel, downstream from its meeting with the Los Angeles River, meanwhile, gradually assumed the name of that river (Gumprecht, 1999).

The overflow of the San Gabriel River during a storm in March 1911 awakened fears of more flooding. All the flow of the San Gabriel River was forced back into its former channel, now the Rio Hondo, and had washed away bridges and destroyed valuable farmland. Studies conducted two years later showed that more than 90 percent of the water carried by the upper San Gabriel flowed west through the Rio Hondo and reached the ocean via the Los Angeles River at San Pedro Bay. Little water flowed in the main channel of the San Gabriel River below Whittier Narrows.

County Supervisors hired former Santa Fe railroad engineer Frank H. Olmstead to prepare a comprehensive plan to control the San Gabriel River. In 1913 he proposed that the banks of the San Gabriel be reinforced and that the stream channels be kept clear of brush and rubbish. During the first three decades of the twentieth century, more than 2 million people moved to Los Angeles County, transforming it from a largely agricultural region into a major metropolitan area (Gumprecht, 1999).

The disastrous flood of February 1914, which caused over $10 million in property damage, prompted the State Legislature to enact the Los Angeles County Flood Control Act in 1915. The Act authorized the formation of the Los Angeles County Flood Control District, which is now administered by LADPW (LADPW, 2004).

Successful bond issues in 1917 and 1924 financed construction of 14 dams which were built to impound San Gabriel Mountain storm waters until they could be released in a controlled manner. Two of these dams, now known as Cogswell and San Gabriel, were built in San Gabriel Canyon in 1934 and 1939, respectively. A third dam, known as Morris Dam was constructed in 1934 by the City of Pasadena.

After two additional bond measures were defeated in 1926 and 1934, the federal government then took action. In 1935, President Franklin D. Roosevelt allocated $13.9 million in Works Progress Administration funds to finance 14 of the most urgent projects in the comprehensive plan. In 1936, Congress passed its first flood control act, and authorized a preliminary examination of the Los Angeles and San Gabriel Rivers. This was the first step toward creating a more comprehensive federally funded flood control program. The United States Army Corps of Engineers (COE) became the agency delegated to study flood control issues and implement measures to prevent flood events. Flood control plans completed in 1938 for the San Gabriel River are still in place today. In addition, the Los Angeles County Flood Control District began implementing its Comprehensive Plan for the Control and Conservation of Flood Waters, evolving between 1927 and 1931 and revised in 1935 and 1938, the latter in the wake of the 1938 flood.

History of Cities and Communities in the Master Plan Study Area. Appendix D (the cultural resources technical report) contains brief descriptions of history of selected cities (Azusa, Irwindale, Arcadia, Baldwin Park, El Monte, Whittier, Pico Rivera, Downey, Norwalk, Bellflower, Cerritos, Lakewood, Los Alamitos, and Long Beach) and communities within the Master Plan study area.

Historical Landmarks

According to the National Park Service (NPS, 2003a), there are no National Historic Landmarks within the Master Plan study area. One California Historical Landmark, Casa de Governor Pío Pico and Pío Pico State Historic Park (6003 Pioneer Boulevard, Whittier), is located within the Master Plan Study area. The landmark is the site of an adobe home of Pío Pico, the last Mexican governor before the American takeover. The original home was destroyed by the floods of 1883-1884. His second adobe home, now known as the Pío Pico Mansion, is located within the 4-acre State Historic Park (OHP, 2003).

U.S. Highway 66 (commonly known as Route 66), the first all-weather highway linking Chicago to Los Angeles, passes through the Master Plan study area (in Azusa). While limited segments of Route 66 have been included in the National Register of Historic Places, most of the route (including the segment that passes the Master Plan study area) has no official designation as a historical resource (K. Barthuli, pers. comm., 2004). However, its importance to U.S. history and national heritage is recognized by the Congress in the Route 66 Study Act of 1990 (NPS, 2004a). The National Park Service manages the Route 66 Corridor Preservation Program, which provides technical and financial assistance for local communities in preparing plans for protecting the route itself and other historical properties located along the route (K. Barthuli, pers. comm., 2004).

Juan Bautista de Anza National Historic Trail corridor also passes through the Master Plan study area (in El Monte and Baldwin Park, north of the 10 Freeway). This national trail commemorates the route followed by a Spanish commander, Juan Bautista de Anza, in 1775-1776 when he led a contingent of 30 soldiers and their families to found a presidio and mission near the San Francisco Bay (NPS, 2004b). While limited segments of the trail have been included in the National Register of Historic Places, most of the trail (including the segment that passes the Master Plan study area) has no official designation as a historical resource (M. Kaplan, pers. comm., 2004). As defined in the National Trails System Act (NTSA), national historic trails are "extended trails which follow as closely as possible and practicable the original trails or routes of travel of national historical significance." The purpose of national historic trails is "the identification and protection of the historic route and its historic remnants and artifacts for public use and enjoyment" (NPS, 1996). Based on a Comprehensive Management and Use Plan for the Juan Bautista de Anza National Historic Trail (NPS, 1996), the National Park Service coordinates with local agencies to implement programs that protect the trail corridor and cultural/scenic resources along the corridor and foster public appreciation and understanding of the trail.

In addition, the Master Plan study area contains a number of local historic landmarks designated by cities located along the River. Interviews conducted by the San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy (RMC) in 2002 identified the following City Landmarks within the Master Plan study area (see Figure M2-20 of the Master Plan for locations of state and local landmarks):

- Puente Largo Railroad Bridge/Duarte Historical Society (Duarte)
- Walnut Creek Nature Center (Baldwin Park)
- Lakewood Equestrian Center (Lakewood)
- Mae Boyer Park (Lakewood)
- Monte Verde Park (Lakewood)
- Nye Library (Lakewood)
- Rynerson Park (Lakewood)
- West San Gabriel River Open Space Area (Lakewood)
- Caruther's Park House (Bellflower)
- Horse Country (Bellflower)
- Rancho Los Alamitos (Long Beach)
- Whittier Narrows Nature Center (El Monte)

4.3.1.3 Regulatory Framework

In 1992, the California legislature established the California Register of Historical Resources (California Register) based on the federal model, the National Register of Historic Places established by the National Historic Preservation Act of 1966. The California Register is used as a guide by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected from substantial adverse change.

The California Register, as instituted by the California Public Resources Code (PRC), includes all California properties already listed in the National Register and those formally determined to

be eligible, as well as specific listings of State Historical Landmarks and State Points of Historical Interest (PRC Section 5024.1[d]).

The criteria for listing a resource on the California Register are the following. The resource:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage

2. Is associated with the lives of persons important in our past

3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values, or

4. Has yielded, or may be likely to yield, information important in prehistory or history

For purposes of CEQA, resources that are listed, as well as those formally determined eligible for listing, in the California Register are considered significant historical resources (CEQA Guidelines Section 15064.5[a]). In addition, a historical resource under CEQA includes:

- A resource included in a local register of historical resources
- Any resource which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California

4.3.1.4 Results of Records Search and Field Surveys for the Concept Design Study Sites

The results of the records searches and field surveys for cultural resources at the Concept Design Study sites are described below and summarized in **Table 4.3-1**.

Records Search Findings. The records search identified 21 previous archaeological resource investigations whose survey areas overlapped with the Concept Design Study site boundaries (three at the San Gabriel Canyon Spreading Grounds, 12 at San Gabriel Discovery Center / Lario Creek, six at El Dorado Regional Park, and none at the Woodland Duck Farm). One previous investigation conducted in 1997 had found one archaeological site (Site Record No. 19-002583) within the Lario Creek project boundary.

Field Survey Findings. During the September 2003 field survey, no cultural resources were encountered within the Concept Design Study boundaries of the San Gabriel Canyon Spreading Grounds.

There is a possibility that the existing Nature Center building at the San Gabriel River Discovery Center site may have been constructed more than 50 years ago (Jallo, pers. comm., 2003) and therefore may be considered a potential historical resource.

Within the Lario Creek site boundary, a total of ten structures were identified. Four are remains of concrete building foundations. One structure is a gaging station and appears to be abandoned. An abandoned metal water tank was also found, which appeared to have been moved from its original location. The remaining four structures are former driveways, consisting of concrete and asphalt. The archaeological site previously recorded in 1997 (Site Record No. 19-002583; adobe remains) as identified in the records search was not found during the field survey because the site was covered with several feet of soil when the 1997 survey was completed.

Within the El Dorado Regional Park site boundary, eight shell beads were found in a picnic area on a patch of dirt that appeared to have been recently fertilized. While the beads appear Native American in manufacture, they could be modern copies and/or imported from fill or other means from outside the site.

Table 4.3-1
Summary of Records Search and Survey Findings
for the Concept Design Study Sites

Concept Design Study Site	Findings	
	Records Search	Field Survey
San Gabriel Canyon Spreading Grounds	None	None
San Gabriel River Discovery Center	None	▪ Nature Center building
Lario Creek	Site Record No. 19-002583 (adobe remains)	▪ Four building foundations ▪ One gaging station ▪ One metal water tank ▪ Four driveways
El Dorado Regional Park	None	▪ Eight shell beads
Woodland Duck Farm	None	N/A*

* No further archaeological work for the Woodland Duck Farm site was recommended by the SCCIC (2004; see **Appendix D**).

4.3.1.5 Paleontological Resources

Paleontological resources are remains of plants and animals, fossilized and predating human occupation. Fossils are found mostly in sedimentary rocks that have been uplifted, eroded or otherwise exposed.

The geology of the Master Plan study area consists primarily of recent, unconsolidated alluvial materials deposited by the San Gabriel River, which have low probability of containing paleontological resources (e.g., skeletal remains, fossils). Therefore, paleontological resources are unlikely to occur in the Master Plan study area.

4.3.2 Significance Criteria

Project impacts related to cultural resources would be considered significant if the project:

- Caused a substantial adverse change in the significance of an historical or archaeological resource

- Directly or indirectly destroyed a unique paleontological resource or site or unique geologic feature
- Disturbed any human remains, including those interred outside of formal cemeteries
- Eliminated important examples of the major periods of California history or prehistory

4.3.3 Impacts of Adopting the Master Plan Elements

The Master Plan includes six plan elements (also called Master Plan goals), set forth as the CEQA project objectives for the Master Plan. The plan elements are supported by objectives and performance criteria (see **Section 3.3.1**). The adoption of the Master Plan by the County of Los Angeles (and other municipalities in the study area) will promote implementation of projects that are consistent with these Master Plan goals. This section describes the overall Master Plan impacts based on a qualitative assessment of reasonably foreseeable effects of the adoption of the Master Plan. Since projects similar to the Concept Design Studies are proposed throughout the river corridor, the Concept Design Study impacts (**Section 4.3.4**) further illustrate the types of potential impacts expected from implementation of the overall Master Plan.

A review of the history of the Master Plan study area and surrounding communities suggests that there is potential for future Master Plan project sites to contain cultural resources including: elements of Spanish Period occupation (e.g., the Ontiveros Adobe in Santa Fe Springs), Mexican Period ranchos (e.g., Azusa and Long Beach), agricultural related buildings and structures during the early American Period, and residential and transit system development in later years (e.g., Pacific Electric light rail).

As described below in **Table 4.3-2**, adoption of the Master Plan could result in both beneficial and potentially adverse impacts on cultural resources. Adverse impacts on cultural resources associated with ground disturbance or modification of existing structures that would qualify as historic resources would be addressed in second-tier CEQA documentation for future projects developed in a manner consistent with the Master Plan (see **Section 4.3.5**). Since mitigation will reduce these impacts to less than significant levels (see **Table 4.3-2** and Master Plan program mitigation measures described in **Section 4.3.5**), the overall impacts on cultural resources from adopting the Master Plan are considered less than significant. Site-specific mitigation measures will be identified and implemented by the specific lead agencies for each future project in the Master Plan study area.

Table 4.3-2
Impacts on Cultural Resources from Adopting the Master Plan Elements

Master Plan Elements	Impacts on Cultural Resources	Impact Summary
Habitat Element: Preserve and enhance habitat systems through public education, connectivity and balance with other uses	**Beneficial:** Preservation of existing habitat areas would result in protection of currently undisturbed open space areas from development or other disturbances, a beneficial impact on cultural resources (e.g., archaeological artifacts) that may be present in those areas.	Potentially significant for construction-related disturbances; less than significant

Master Plan Elements	Impacts on Cultural Resources	Impact Summary
	Potentially Adverse: Habitat enhancement that involves active restoration in undeveloped areas (e.g., extensive removal of existing vegetation and replanting with high-value, native vegetation) would result in ground disturbance, which could have an adverse impact on cultural resources, if any are present at those locations. The Master Plan mitigation measures described in **Section 4.3.5** outline an approach to evaluation of cultural resources prior to completion of detailed design plans and implementation of measures to reduce impacts (i.e., incorporation of cultural resources into project design thereby eliminating disturbance to the resource or removal and relocation of resources thereby ensuring preservation and reporting of previously unknown resources encountered during construction thereby minimizing disturbance to these resources). Other activities associated with habitat enhancement (e.g., monitoring and maintenance activities or exotic species removal) could also result in less than significant incidental trampling of cultural resources, if any surface resources are present. **Neutral:** This element also includes objectives and performance criteria that are neutral with respect to impacts on cultural resources (e.g., establishment of habitat area design standards and identification of indicator species).	with mitigation Less than significant to beneficial for operations-related impacts
Recreation Element: Encourage and enhance safe and diverse recreation systems, while providing for expansion, equitable and sufficient access, balance and multi-purpose uses	**Beneficial:** Preservation of existing undisturbed open space areas for passive recreational uses could result in protection of cultural resources from development or other disturbances. For example, trails within a passive recreation area could be designed to direct visitors away from sensitive cultural resources, or cultural resources could be incorporated into the park design as an interpretive or educational element for the visitors. **Potentially Adverse:** Construction of recreation related facilities (e.g., interpretive centers, trails and trail amenities, signs, kiosks) on an undeveloped site would result in ground disturbance, which could have an adverse impact on cultural resources, if any are present at those locations. The Master Plan mitigation measures described in **Section**	Potentially significant for construction-related disturbances; less than significant with mitigation Less than significant to beneficial for operations-related impacts

Master Plan Elements	Impacts on Cultural Resources	Impact Summary
	4.3.5 outline an approach to evaluation of cultural resources prior to completion of detailed design plans and implementation of measures to reduce impacts (incorporation of cultural resources into project design thereby eliminating disturbance to the resource or removal and relocation of resources thereby ensuring preservation and reporting of previously unknown resources encountered during construction thereby minimizing disturbance to these resources). **Neutral:** This element also includes objectives and performance criteria that are neutral with respect to impacts on cultural resources (e.g., educating the public about catch and release fishing, establishing design standards for trails).	
Open Space Element: Enhance and protect open space systems through conservation, aesthetics, connectivity, stewardship, and multi-purpose uses.	**Beneficial:** Preservation of existing open space areas (e.g., through land acquisition or conservation easements) could result in protection of cultural resources from development or other disturbances. In addition, identification of historical sites and cultural landscapes as part of promoting stewardship of the open space landscape would help facilitate protection of such resources (e.g., opportunities for incorporating into park design or implementing other protective measures). Promoting fire safety and awareness as part of the cross-jurisdictional safety and maintenance program could also result in protection of cultural resources from fires. **Potentially Adverse: Use** of existing open space areas for active recreational facilities and activities may result in disturbance of cultural resources, if any are present at those locations (e.g., construction of parking facilities, less than significant incidental trampling of cultural resources by visitors). The Master Plan mitigation measures described in **Section 4.3.5** outline an approach to evaluation of cultural resources prior to completion of detailed design plans and implementation of measures to reduce impacts (i.e., incorporation of cultural resources into project design thereby eliminating disturbance to the resource or removal and relocation of resources thereby ensuring preservation and reporting of previously unknown resources encountered during construction thereby minimizing disturbance to these resources).	Potentially significant for construction-related disturbances; less than significant with mitigation Less than significant to beneficial for operations-related impacts

Master Plan Elements	Impacts on Cultural Resources	Impact Summary
	Neutral: This element also includes objectives and performance criteria that are neutral with respect to impacts on cultural resources (e.g., recycling of brownfields, use of drought tolerant and native plants).	
Flood Protection Element: Maintain flood protection and existing water and other rights while enhancing flood management activities through the integration with recreation, open space and habitat systems.	**Beneficial:** Maintenance of flood protection would have beneficial impacts on cultural resources (e.g., protection of historical structures from flood damage). **Potentially Adverse:** Construction of new flood control facilities (e.g., stormwater detention areas) on an undeveloped site would result in ground disturbance, which could have an adverse impact on cultural resources, if any are present at those locations. In addition, some existing flood control facilities may qualify as historic resources. Depending on the extent, modification of such facilities could result in adverse impacts. The Master Plan mitigation measures described in **Section 4.3.5** outline an approach to evaluation of cultural resources prior to completion of detailed design plans and implementation of measures to reduce impacts (i.e., incorporation of cultural resources into project design thereby eliminating disturbance to the resource or removal and relocation of resources thereby ensuring preservation and reporting of previously unknown resources encountered during construction thereby minimizing disturbance to these resources). **Neutral:** This element also includes objectives and performance criteria that are neutral with respect to impacts on cultural resources (e.g., ensures liability is not increased, coordination of maintenance of flood protection system with habitat needs).	Potentially significant for construction-related disturbances; less than significant with mitigation Less than significant to beneficial for operations-related impacts
Water Supply and Water Quality Element: Maintain existing water and other rights while enhancing water quality, water supply, groundwater recharge, and water conservation through the integration with recreation, open space and habitat systems.	**Potentially Adverse:** Construction of new facilities for enhancing water quality and/or water supply (e.g., stormwater infiltration facilities, constructed wetlands, pipelines for reclaimed water distribution) on an undeveloped site would result in ground disturbance, which could have an adverse impact on cultural resources, if any are present at those locations. The Master Plan mitigation measures described in **Section 4.3.5** outline an approach to evaluation of cultural resources prior to completion of detailed design plans and implementation of measures to reduce	Potentially significant for construction-related disturbances; less than significant with mitigation Less than significant for operations-

Master Plan Elements	Impacts on Cultural Resources	Impact Summary
	impacts (i.e., incorporation of cultural resources into project design thereby eliminating disturbance to the resource or removal and relocation of resources thereby ensuring preservation and reporting of previously unknown resources encountered during construction thereby minimizing disturbance to these resources). **Neutral:** This element includes objectives and performance criteria that are neutral with respect to impacts on cultural resources (e.g., maintains conservation of local water).	related impacts
Economic Development Element: Pursue economic development opportunities derived from and compatible with the natural aesthetic and environmental qualities of the river.	**Potentially Adverse:** Reclamation of inactive gravel mines could result in removal or destruction of machinery or equipment. If such machinery or equipment qualified as a historical resource, this could be an adverse impact on cultural resources. In addition, ground disturbance of any remaining undisturbed areas within the parcel boundaries of the gravel pits could result in adverse impacts to buried archaeological resources, if any are present at those locations. The Master Plan mitigation measures described in **Section 4.3.5** outline an approach to evaluation of cultural resources prior to completion of detailed design plans and implementation of measures to reduce impacts (i.e., incorporation of cultural resources into project design thereby eliminating disturbance to the resource or removal and relocation of resources thereby ensuring preservation and reporting of previously unknown resources encountered during construction thereby minimizing disturbance to these resources). **Neutral:** This element includes objectives and performance criteria that are neutral with respect to impacts on cultural resources (e.g., providing incentives to participating adjacent land owners).	Potentially significant for construction-related disturbances; less than significant with mitigation Less than significant to beneficial for operations-related impacts

4.3.4 Impacts of Implementing the Concept Design Studies

4.3.4.1 San Gabriel Canyon Spreading Grounds

No cultural resources were identified at the San Gabriel Canyon Spreading Grounds. Site disturbance associated with the implementation of the Concept Design Study would be limited to installation of fencing, landscaping, installation of irrigation lines, and other minor activities. However, since the examination of the project area was limited to surface observations, there is

potential for encountering buried resources during project construction at these sites. This is a potentially significant impact. However, implementation of **Mitigation Measures CD-C1, CD-C8, and CD-C9** (**Section 4.3.6**) would reduce potential impacts on buried cultural resources to a less-than-significant level through monitoring and reporting to limit the potential for inadvertent destruction of unknown cultural resources during construction activities.

4.3.4.2 Lario Creek

The Master Plan Concept Design for the Lario Creek includes: widening the Lario Creek channel to increase capacity and flow; creating a habitat channel with native vegetation; removing exotic, invasive species; consolidating multi-use trails; and adding interpretive signage. **Mitigation Measure CD-C4 (Section 4.3.6)** will be implemented to reduce project-related impacts on the structures identified as potential cultural resources during the records search and the field reconnaissance (**Section 4.3.1.4**) to a less-than-significant level by ensuring that significant cultural resources are avoided or preserved.

In addition, since there are known cultural resources at the Lario Creek project site (see Section 4.3.1.4) and the examination of the project area was limited to surface observations, there is potential for encountering buried resources during project construction. This is a potentially significant impact. However, implementation of **Mitigation Measures CD-C5, CD-C8, and CD-C9 (Section 4.3.6)** would reduce potential impacts on buried cultural resources to a less-than-significant level through monitoring and reporting to limit the potential for inadvertent destruction of unknown cultural resources during construction activities.

4.3.4.3 San Gabriel River Discovery Center

Since there are known cultural resources in the vicinity of the San Gabriel River Discovery Center project site (see **Section 4.3.1.4**) and the examination of the project area was limited to surface observations, there is potential for encountering buried resources during project construction. This is a potentially significant impact. However, implementation of **Mitigation Measures CD-C2, CD-C8, and CD-C9** (**Section 4.3.6**) would reduce potential impacts on buried cultural resources to a less-than-significant level through monitoring and reporting to limit the potential for inadvertent destruction of unknown cultural resources during construction activities.

The Master Plan Concept Design for the San Gabriel River Discovery Center proposes to replace the existing Nature Center building with a new Discovery Center building. During the design phase of the San Gabriel River Discovery Center, the project proponent or the CEQA lead agency will conduct additional research and on-site surface inventory to determine the historical significance of the Nature Center building. If it is determined to be a significant historical resource, project impacts would be significant. Implementation of **Mitigation Measure CD-C3** (**Section 4.3.6)** would reduce project-related impacts to a less-than-significant level by ensuring that significant cultural resources are avoided or preserved.

4.3.4.4 El Dorado Regional Park

The Master Plan Concept Design for the El Dorado Regional Park does not propose any activities that would disturb the area where the potential archaeological resource (shell beads; see **Section 4.3.1.4**) were found. However, as with the other Concept Design Study sites, there is potential for encountering buried resources during project construction, which would include earthwork for construction of wetlands. This is a potentially significant impact. However, implementation of **Mitigation Measures CD-C6, CD-C8, and CD-C9** (**Section 4.3.6)** would reduce potential impacts on buried cultural resources to a less-than-significant level.

4.3.4.5 Woodland Duck Farm

Based on the results of the records search, no further archaeological work for the Woodland Duck Farm site is recommended by the SCCIC (2004; see **Appendix D**). However, as with the other Concept Design Study sites, there is potential for encountering buried resources during project construction. This is a potentially significant impact. However, implementation of **Mitigation Measures CD-C8 and CD-C9** (**Section 4.3.6)** would reduce potential impacts on buried cultural resources to a less-than-significant level.

In addition, the SCCIC has recommended that if the Original Ranch House or any adjacent structure located on the site is 45 years and older, the building should be assessed and evaluated for potential historical significance by a professional architectural historian. The description of the proposed improvements for the Woodland Duck Farm provided in **Section 3.3.3.2** of this Program EIR represents an initial concept for the project not an approved plan. WCA is undertaking a master plan for the site involving all stakeholders. This planning effort will examine all potential uses of the site, and will include a CEQA process. As part of this planning effort, **Mitigation Measure CD-C7 (Section 4.3.6)** will be implemented to reduce project-related impacts on potential historic structures to a less-than-significant level by ensuring that significant cultural resources are avoided or preserved.

4.3.4.6 Paleontological Resources

Due to the alluvial geology in the Master Plan study area, the potential for encountering paleontological resources during project construction is considered low. Future projects are anticipated to have less than significant impacts on paleontological resources.

4.3.5 Master Plan Program Mitigation Measures

Future projects involving site disturbance or modifications to existing structures will require an evaluation of the impacts of proposed actions on known or potential cultural resources as described in program Mitigation Measure MP-C1:

MP-C1 Site-specific evaluations for cultural resources will be conducted as follows prior to completion of detailed design plans for each future Master Plan project:

1. Identify and determine the extent of site disturbance and/or structural modifications proposed by the project. For sites where ground will be newly disturbed (i.e., not fill

soils or previously completely disturbed sites) and/or for sites with potentially historic structures present, continue evaluation as outlined below.

2. Conduct background research to identify previous cultural resources investigations and known cultural resources relevant to the project site (review records at the South Central Coastal Information Center, contact local historical societies, the Native American Heritage Commission, etc.).

3. Conduct field reconnaissance if the project site has not been surveyed for cultural resources in the last five years.

4. If potential resources are identified in the field reconnaissance, determine if avoidance is feasible (e.g., design project to locate the proposed structures or site disturbance away from or around the area of the potential resource; a buffer of 100 meters is recommended in most cases). If feasible, the resource shall be avoided.

5. If avoidance is not feasible, evaluate the significance of the potential resource. The evaluation process may include excavation, additional review of records and literatures, interviews, field examination by a an architectural historian, and/or laboratory analysis. Based on the results of the evaluation, the significance of the potential resource should be determined using the criteria listed in **Section 4.3.1.3**.

6. If the resource is found to be significant, determine significance of project impacts on the resource. (Significant change to a resource includes demolition, replacement, substantial alteration, or relocation (California Code of Regulations [CCR] Section 15064.5)).

7. If project impacts are determined to be significant, the following measures (in order of preference) will be implemented to reduce impacts to below a level of significance:

    - Incorporating the resource into the project design (e.g., for projects involving park development or interpretive centers); or
    - Remove and relocate the resource to an appropriate location (e.g., museum, public library, or school)

The results of site-specific evaluations and detailed mitigation measures, if any, will be disclosed in subsequent CEQA documentation.

In addition, the following mitigation measures will be implemented for future projects to reduce any inadvertent disturbances to buried cultural resources during construction to below a level of significance:

MP-C2 If previously unknown cultural resources are discovered in the course of excavation for project construction, the construction inspector shall have the authority and responsibility to halt construction until a qualified archaeologist can evaluate the significance and distribution of the materials, and identify future activities needed. If the cultural material discovered is determined to be of potential archaeological significance, the investigation and future activities shall be conducted in consultation with a culturally affiliated Native American or other parties, as necessary.

MP-C3 If human remains are discovered in the course of excavation for project construction, the County Coroner shall be contacted and provisions of State CEQA Guidelines Section 15064.5 shall be followed.

4.3.6 Mitigation Measures for Concept Design Studies

The following mitigation measure shall be implemented for the **San Gabriel Canyon Spreading Grounds** Concept Design Study:

CD-C1 On the first day of subsurface work at the San Gabriel Canyon Spreading Grounds, a professional monitor qualified in historical archaeology shall be present to assess whether further monitoring might be warranted. Further monitoring may be required if subsurface cultural material was uncovered on the first day of earthwork and/or if the monitor determined that there was a high probability of additional subsurface cultural materials being encountered.

The following mitigation measures shall be implemented for the **San Gabriel River Discovery Center** Concept Design Study:

CD-C2 A professional monitor qualified in historical archaeology shall be present at the San Gabriel River Discovery Center for subsurface work between the surface and 5 feet (or more as determined by the monitor based on soil conditions) in depth. If potentially important cultural deposits are encountered in the course of construction, work shall be temporarily diverted from the vicinity of the discovery until the monitoring archaeologist can identify and evaluate the importance of the find and conduct any appropriate assessment and activities, as necessary.

CD-C3 During the design phase of the San Gabriel River Discovery Center, the project proponent shall evaluate whether the Nature Center building is a significant historical resource using the criteria described in Section 15064.5(a) of the State CEQA Guidelines. If it is determined to be a significant historical resource, the lead agency shall:

- Remove and relocate the building or historically significant portion of the building to an appropriate location, or
- Incorporate the historically significant elements of the existing building into the new Discovery Center.

The following mitigation measures shall be implemented for the **Lario Creek** Concept Design Study:

CD-C4 During the design phase of Lario Creek, LADPW shall evaluate if the project can be designed to avoid the structures identified in Section 4.3.1.4 (locate the proposed structures or site disturbance at least 100 meters away from or around the structures).

If avoidance is not feasible for one or more of the structures, the structure's significance shall be evaluated, using the criteria listed in CEQA Guidelines Section 15064.5[a]. Results of this evaluation would be disclosed in second-tier environmental documentation.

If the resource is found to be significant, the significance of project impacts on the resource shall be determined. (Significant change to a resource includes demolition, replacement, substantial alteration, or relocation (California Code of Regulations [CCR] Section 15064.5)). If feasible, the significant resource(s) shall be avoided.

If project impacts are determined to be significant, LADPW shall:

- Incorporate the resource into the project design, or
- Remove and relocate the resource to an appropriate location (e.g., museum, public library, or school)

CD-C5 A professional monitor qualified in historical archaeology shall be present at the Lario Creek project site for subsurface work between the surface and 5 feet (or more as determined by the monitor based on soil conditions) in depth. If potentially important cultural deposits are encountered in the course of construction, work shall be temporarily diverted from the vicinity of the discovery until the monitoring archaeologist can identify and evaluate the importance of the find and conduct any appropriate assessment and activities, as necessary.

The following mitigation measure shall be implemented for the **El Dorado Regional Park** Concept Design Study:

CD-C6 On the first day of subsurface work at El Dorado Regional Park, a professional monitor qualified in historical archaeology shall be present to assess whether further monitoring might be warranted.

The following mitigation measure shall be implemented for the **Woodland Duck Farm** Concept Design Study:

CD-C7 During the design phase of Woodland Duck Farm, WCA shall evaluate if any onsite structures that are 45 years and older may be affected by the project.

For each structure that is 45 years and older and shall be affected by the project, the structure's significance shall be evaluated by a professional architectural historian, using the criteria listed in CEQA Guidelines Section 15064.5[a]. Results of this evaluation would be disclosed in second-tier environmental documentation.

If the resource is found to be significant, the significance of project impacts on the resource shall be determined. (Significant change to a resource includes demolition, replacement, substantial alteration, or relocation (CCR Section 15064.5)).

If project impacts are determined to be significant, the relevant resources shall be:

- Incorporated into the project design, or

- Removed and relocated to an appropriate location (e.g., museum, public library, or school)

The following mitigation measures shall be implemented for all five Concept Design Studies:

CD-C8 If previously unknown cultural resources are discovered in the course of excavation for project construction, the construction inspector shall have the authority and responsibility to halt construction until a qualified archaeologist can evaluate the significance and distribution of the materials, and identify future activities needed. If the cultural material discovered is determined to be of potential archaeological significance, the investigation and future activities shall be conducted in consultation with a culturally affiliated Native American or other parties, as necessary.

CD-C9 If human remains are discovered in the course of excavation for project construction, the County Coroner shall be contacted and provisions of State CEQA Guidelines Section 15064.5 shall be followed.

4.4 GEOLOGY AND SOILS

4.4.1 Existing Setting

4.4.1.1 Regional Geology and Soils

The Master Plan study area is a 1-mile wide corridor along 58 river miles of the San Gabriel River in southern California, from its headwaters in the Angeles National Forest to its terminus at the Pacific Ocean between Long Beach in Los Angeles County and Seal Beach in Orange County. The project area travels through three regions with different geological characteristics (Upper San Gabriel River Watershed, San Gabriel Basin, and Los Angeles Coastal Plain), which are discussed below. Soil types in the Master Plan study area are shown in **Figure 4.4-1**.

The Concept Design Study site for the San Gabriel Canyon Spreading Grounds is located in the San Gabriel Basin region. The Woodland Duck Farm, San Gabriel River Discovery Center, and Lario Creek project sites are located on the border between the San Gabriel Basin and Los Angeles Coastal Plain regions. The Concept Design Study site for El Dorado Regional Park is located in the Los Angeles Coastal Plain region.

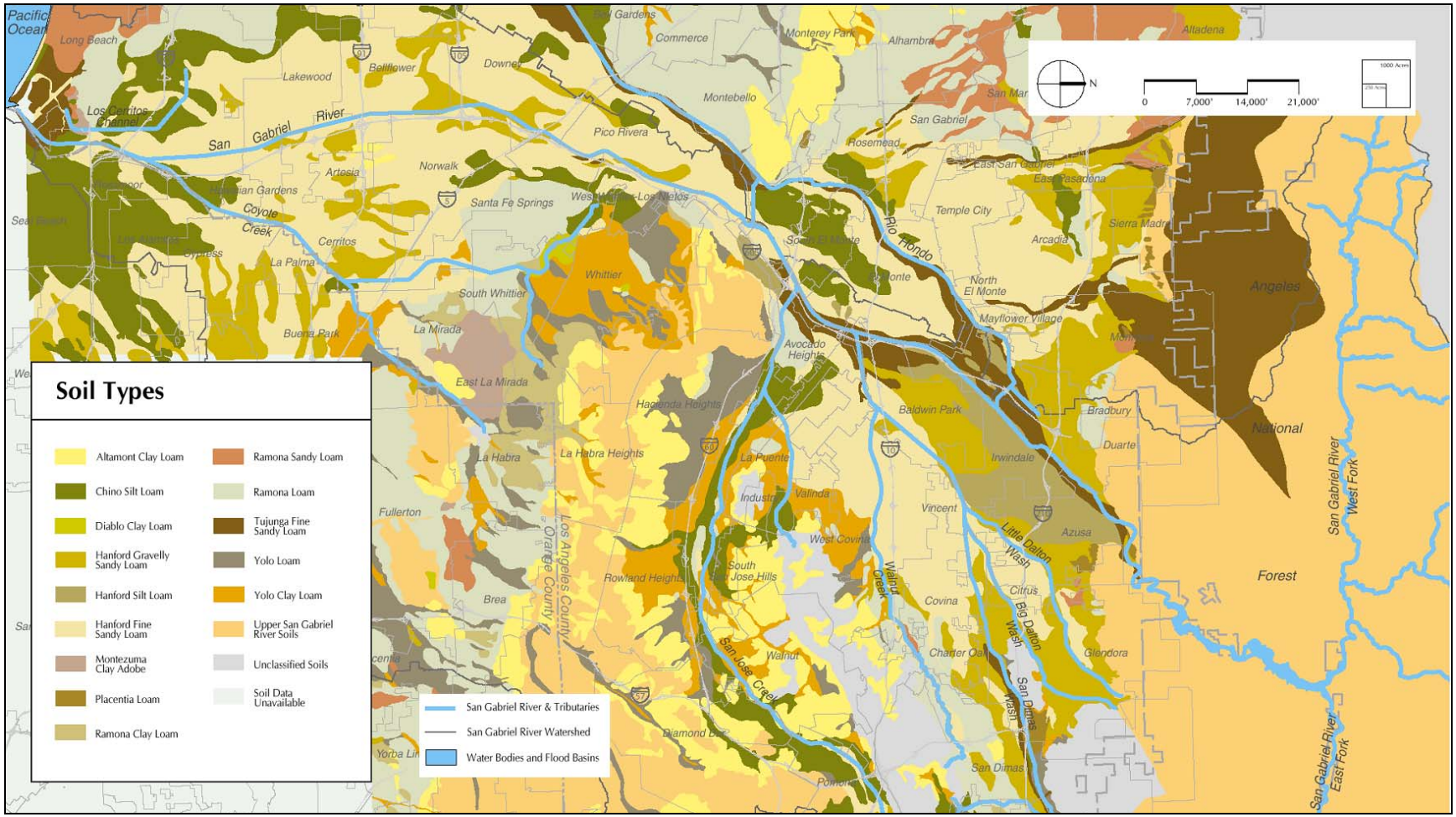
Upper San Gabriel River Watershed

The Upper San Gabriel River Watershed, located within the Angeles National Forest in the San Gabriel Mountains, begins at the headwaters of the San Gabriel River and ends approximately at San Gabriel Canyon Road in Azusa. The San Gabriel Mountains are part of the Transverse Ranges, which are steep mountain slopes formed by rapid tectonic uplift resulting from the collision of two tectonic plates estimated to have started over 6 million years ago. Elevations in the San Gabriel Mountains range from 900 feet above mean sea level (msl) along their base to over 10,000 feet above msl.

Geology of the San Gabriel Mountains is mostly Mesozoic (65 to 245 million years ago) granitic rocks, but there are also Precambrian (544 to 4,600 million years ago) igneous and metamorphic rock complexes. There are also occasional Pleistocene (57.8 to 65 million years ago) non-marine sedimentary deposits adjacent to the riverbed.

The primary native soil types in the San Gabriel Mountains are silt loam and sand (SCAG, 2004).

Figure 4.4-1
Master Plan Study Area Soils Map



Source: LADPW and RMC.

San Gabriel Basin

The San Gabriel Basin region begins approximately at the San Gabriel Canyon Road in Azusa and extends south to Whittier Narrows, which is a low point between the Puente Hills and Merced Hills, which forms the southern boundary of the San Gabriel Valley.

The geology in the San Gabriel Basin is dominated by unconsolidated to semi-consolidated alluvium deposited by streams flowing out of the San Gabriel Mountains. These deposits include Pleistocene and Holocene (10,000 years ago to the present) alluvium and the lower Pleistocene San Pedro Formation (CDWR, 1966). The Upper Pleistocene alluvium deposits form alluvial fans along the San Gabriel Mountains. The San Pedro Formation is characterized by its interbedded marine sand, gravel, and silt (CDWR, 1966).

The San Gabriel Basin is an unconfined aquifer (i.e., the groundwater is not separated from the ground surface by an impermeable geological boundary) (CSPUP, 2000). The porous alluvium, which can be hundreds of feet in depth, provides a highly permeable connection between the surface and the aquifer. The result is that much of the river flows underground southward from the mountains below the valley and forms the San Gabriel Valley Groundwater Basin (CSPUP, 2002). The alluvium forms most of the productive water-bearing zones, but the San Pedro Formation also bears fresh water.

The primary native soil types in the San Gabriel Basin area are sandy loam, silt loam, and clay loam (SCAG, 2004).

Los Angeles Coastal Plain

The Los Angeles Coastal Plain region extends from the Whittier Narrows to the Pacific Ocean. The geology of the Los Angeles Coastal Plain ranges from Pleistocene- to Holocene-aged alluvium deposited from the San Gabriel River to marine sediments deposited during periodic encroachment of the sea. These sediments are grouped in four different formations: recent alluvium, the Lakewood Formation, the San Pedro Formation, and the Pico Formation.

The Los Angeles Coastal Plain is divided into two groundwater basins, the Central Basin and the West Basin. The Newport-Inglewood Uplift and a confining unit of clay and silt divide these two basins. The basins were formed by folding of consolidated sedimentary, igneous, and metamorphic rocks that underlie the basins at great depths. These groundwater basins consist of permeable sands and gravels separated by semi-permeable to impermeable sandy clay to clay soils that extend to about 2,200 feet below ground surface (CDWR, 1961).

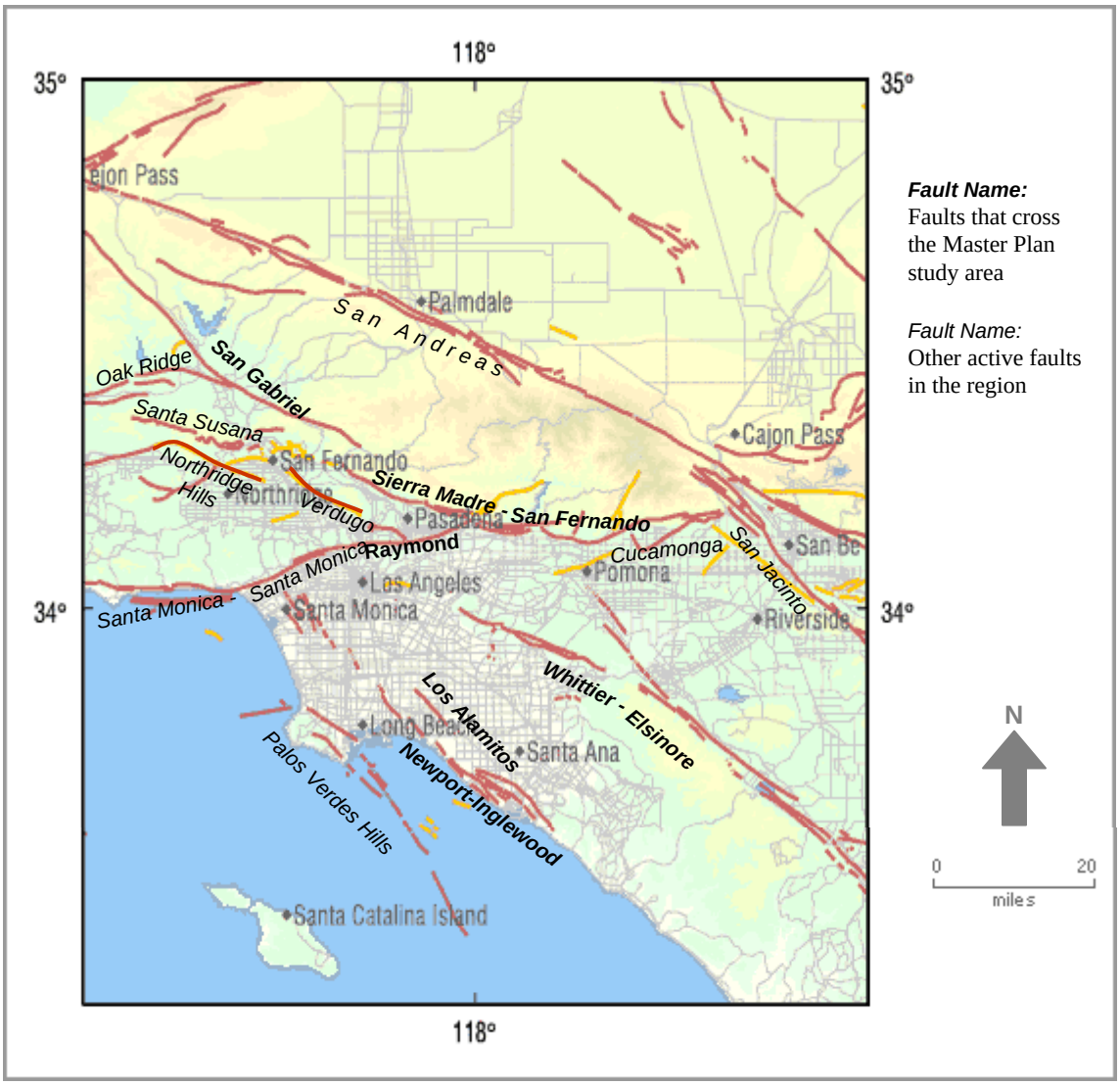
The primary native soil type in the Los Angeles Coastal Plain is sandy loam (SCAG, 2004).

4.4.1.2 Faults

The Master Plan study area is penetrated by several faults, including the Newport-Inglewood, Los Alamitos, Whittier-Elsinore, Raymond, Sierra Madre-San Fernando, and San Gabriel (See **Figure 4.4-2**). Fault lines gave rise to the formation of the east and west forks of the San Gabriel River. The surface flow of the river cut its course to the ocean before the uplift occurred

that resulted in the formation of the Puente and Montebello Hills. Geologists believe that the river then eroded these formations to form the Whittier Narrows before continuing its course to the ocean again. Fault information is taken primarily from the Southern California Earthquake Data Center (SCEDC, 2004).

Figure 4.4-2
Regional Fault Map



Source: USGS, 2003.

San Gabriel Fault

The San Gabriel fault trends northwest-southeast through the San Gabriel Mountains and is approximately 87 miles in length. The fault is comprised of a series east-west trending faults with a right-lateral strike-slip and with a dip steep to the north. The most recent surface rupture was in the Holocene Epoch. Estimated slip rate is 1 to 5 millimeters per year (mm/yr). There are no estimations on the maximum credible magnitude of future earthquakes, but the recurrence

interval varies per fault section and is likely to be more active on the western portions of the fault.

Sierra Madre-San Fernando Fault

The Sierra Madre-San Fernando fault trends along the front of the San Gabriel Mountains. The fault is made of five separate reverse faults measuring approximately 9 miles per section and 47 miles total. It has recently been suggested that a large event on the San Andreas fault to the north could cause simultaneous ruptures on reverse faults south of the San Gabriel Mountains. The most recent surface rupture was in the Holocene Epoch. Estimated slip rate is between 0.36 and 4 mm/yr. Interval between surface ruptures is estimated to be several thousand years. Its estimated probable Magnitude is between 6 and 7.

Raymond Fault

The Raymond fault is an east-northeast trending, left-lateral fault with minor reverse slip. The structure forms the western boundary of the San Gabriel Basin with the Raymond Groundwater Basin. The fault has a slip rate between 0.10 and 0.22 mm/yr. This fault extends a total of 16.2 miles. The most recent surface rupture was during the Holocene Epoch. The most recent major earthquake associated with this fault was the Pasadena Earthquake of 1988, which occurred at a depth 9.6 miles below ground with a 5.0 magnitude. The interval between major ruptures is estimated to be 4,500 years.

Whittier-Elsinore Fault

The Whittier-Elsinore fault is a right-lateral strike-slip fault with a northeastern dip and an estimated slip rate between 2.5 and 3.0 mm/yr. Its estimated length is 25 miles. The most recent surface rupture occurred in the Holocene Epoch. Historical activity has been limited to microseismicity and several Magnitude 4 or less events. The Whittier-Elsinore fault is considered capable of producing an earthquake with a magnitude between 6.0 and 7.2.

Los Alamitos Fault

The Los Alamitos fault is indistinct and considered by some as part of another fault system, possibly the Compton-Los Alamitos fault. The fault is located near the Lakewood, Bellflower, and Los Alamitos communities and extends 6.8 miles. The most recent surface rupture occurred in the Late Quaternary Period.

Newport-Inglewood Fault

The Newport-Inglewood Fault is a right-lateral strike-slip fault with a slip rate of 0.6 mm/yr. The total length of the fault is approximately 47 miles. This fault is associated with the Long Beach Earthquake of 1933, which had a magnitude of 6.4. Its probable magnitude is between 6.0 and 7.4.

4.4.1.3 Seismic Ground Shaking and Surface Rupture

Seismic Ground Shaking. The greatest concentration of historical, local seismic events has resulted from activity on the Newport-Inglewood Fault (related to recent activity), the Whittier Fault (1987 Whittier Narrows earthquake), the Sierra Madre Fault (1971 San Fernando earthquake), and the Raymond Fault (1988 Pasadena earthquake).

Ground motion or shaking caused by an earthquake is commonly measured as a percentage of the force of gravity, or %g. The force of gravity (g) is equivalent to an acceleration of 9.78 meters per second^2. The peak acceleration is the largest acceleration recorded by a particular station during an earthquake. The maximum credible peak acceleration (the percent probability of ground motion hazard in the area) with a 10 percent probability of exceedance in 50 years is between 60 and 80 %g for the Master Plan study area (USGS, 1996).

Surface Rupture. Surface rupture occurs when movement on a fault deep within the earth breaks through to the surface. Fault rupture usually follows preexisting faults, which are zones of weakness. Rupture may occur suddenly during an earthquake or slowly in the form of fault creep. Sudden displacements are more damaging to structures because they are accompanied by shaking.

The Alquist-Priolo Earthquake Fault Zoning Act is a California law passed in 1972 to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The Alquist-Priolo Act only addresses the hazard of surface fault ruptures and is not directed toward other earthquake hazards. The law requires the State Geologist to establish regulatory zones (known as Earthquake Fault Zones) around the surface traces of active faults and to issue appropriate maps. The maps are distributed to all affected cities, counties, and state agencies for their use in planning and controlling new or renewed construction (California Geological Survey, 2002a). According to the California Geological Survey (2002b), all five Concept Design Study sites are located outside of the Alquist-Priolo Earthquake Fault Zones. Within the overall Master Plan study area, the coastal area along the Newport-Inglewood Fault is the only area that could potentially contain active fault traces within an Alquist-Priolo Earthquake Fault Zone.

4.4.1.4 Landslides / Slope Instability

Landslides involve the downslope movement of masses of soil and rock material under gravity. There is a broad range of landslide morphology, rates, patterns of movement, and scale. Landslides can be caused by ground shaking, such as earthquakes, or heavy precipitation events. Surface ground failure could also be associated with subsurface slope failure adjacent to a river or wash, as the stream undercuts the adjacent bank. The risk of this type of failure increases during seismic events. Unstable conditions are also increased by a lack of vegetation cover.

Since the San Gabriel Mountains are essentially shattered from extensive faulting, the mountains and hillsides in the northern portion of the Master Plan study area are vulnerable to landslides, undercutting by streams and heavy debris flows. According to the State of California Department of Conservation Seismic Hazard Mapping Program (CDOC, 1999), the following areas within the Master Plan study area are considered to be landslide hazard zones: the San

Gabriel Mountains, the Puente Hills area east of the Whittier Narrows and south of State Route 60, and the sideslopes of several gravel mines located in Irwindale. None of the Concept Design Study sites are located within landslide hazard zones.

4.4.1.5 Liquefaction

Liquefaction is a process by which sediments below the water table temporarily lose strength and behave as a liquid rather than a solid. In the liquefied condition, soil may deform enough to cause damage to buildings and other structures. Seismic shaking is the most common cause of liquefaction. Liquefaction occurs in sands and silts in areas with high groundwater levels.

Liquefaction has been most abundant in areas where groundwater occurs within 30 feet of the ground surface. Few instances of liquefaction have occurred in areas with groundwater deeper than 60 feet (EERI, 1994). Dense soils, including well-compacted fills, have low susceptibility to liquefaction (EERI, 1994). According to the CDOC (1999), the San Gabriel Canyon area and the area along the San Gabriel River from Baldwin Park to the ocean are considered susceptible to liquefaction based on historical occurrence of liquefaction or local geological and groundwater conditions. All five Concept Design Study sites are located in areas identified to be susceptible to liquefaction.

4.4.1.6 Expansive Soils

Expansive soils are soils that swell when they absorb water and shrink as they dry. Pure clay soils and claystone are good examples of expansive soils. Typically, soils that exhibit expansive characteristics comprise the upper 5 feet of the surface (SCAG, 2004). The hazard associated with expansive soils is that structural damage may occur when buildings are placed on these soils. Foundations rise during the wet periods and fall during the dry periods. Different parts of a building may rise and fall at varying rates and cause foundation cracking. Various structural portions of a building may become distorted so that doors and windows do not function properly. Locations of expansive soils are site-specific. Potential impacts due to presence of expansive soils can generally be remedied through standard engineering practices (SCAG, 2004).

4.4.1.7 Subsidence

Land subsidence is the loss of surface elevation due to the removal of subsurface support. Land subsidence is caused by a variety of activities that contribute to the loss of support materials within a geologic formation. For example, agricultural practices can cause oxidation and subsequent compaction and settlement of organic clay soils or hydro-compaction allowing land elevations to lower or sink. Land subsidence can also result from overdraft of an aquifer (i.e., groundwater pumping in exceedance of the rate of aquifer replenishment). The extraction of mineral or oil resources can also cause subsidence. Adverse effects associated with subsidence include lowering of the land surfaces, increased potential for flooding, disturbance or damage to buried pipelines and associated structures, and damage to structures.

Within the Master Plan study area, subsidence is known to occur in the following areas: along the coast (Long Beach area), the area northeast of the intersection of Interstate 5 and 605 freeways, and the Whittier Narrows area (SCAG, 2004).

4.4.1.8 Soil Erosion

Soil erosion is the process whereby soil materials are worn away and transported to another area by either wind or water. Rates of erosion can vary depending on the soil material, structure, and placement by human activity. The erosion potential for soils is variable throughout the project area. Soil containing high amounts of silt can be easily erodible while sandy soils are less susceptible. Excessive soil erosion can eventually lead to damage of building foundations, roadways and dam embankments. Erosion is most likely on sloped areas with exposed soil, especially where unnatural slopes are created by cut and fill activities.

4.4.2 Significance Criteria

Project impacts related to geology and soils would be considered significant if the project:

- Exposes people or structures to risk of substantial damage, loss, injury, or death involving:
    - Rupture of a known earthquake fault
    - Strong seismic ground shaking
    - Seismic-related ground failure, including liquefaction
    - Landslides / slope instability
    - Expansive soils
    - Subsidence
- Results in substantial soil erosion or the loss of topsoil

4.4.3 Impacts of Adopting the Master Plan Elements

The Master Plan includes six plan elements (also called Master Plan goals), set forth as the CEQA project objectives for the Master Plan. The plan elements are supported by objectives and performance criteria (see **Section 3.3.1**). The adoption of the Master Plan by the County of Los Angeles (and other municipalities in the study area) will promote implementation of projects that are consistent with these Master Plan goals. This section describes the overall Master Plan impacts based on a qualitative assessment of reasonably foreseeable effects of the adoption of the Master Plan. Since projects similar to the Concept Design Studies are proposed throughout the river corridor, the Concept Design Study impacts (**Section 4.4.4**) further illustrate the types of potential impacts expected from implementation of the overall Master Plan.

As described below in **Table 4.4-1**, adoption of the Master Plan could result in both beneficial and potentially adverse impacts. Primary adverse impacts related to geology and soils are temporary increases in soil erosion potential during construction of facilities and potential increases in liquefaction risk from stormwater infiltration. These impacts would be addressed in second-tier CEQA documentation for future projects developed in a manner consistent with the Master Plan (see **Section 4.4.5**). Since mitigation will reduce these impacts to less than

significant levels (see **Table 4.4-1** and **Section 4.4.5**), the overall impacts related to geology and soils from adopting the Master Plan are considered less than significant. Site-specific mitigation measures will be identified and implemented by the specific lead agencies for each future project in the Master Plan study area.

Table 4.4-1
Impacts on Geology and Soils from Adopting the Master Plan Elements

Master Plan Elements	Impacts on Geology and Soils	Impact Summary
Habitat Element: Preserve and enhance habitat systems through public education, connectivity and balance with other uses	**Beneficial:** Preservation of existing habitat areas would prevent development of habitable structures on open space areas subject to seismic related hazards. Habitat restoration efforts that include planting vegetation would serve to stabilize project site soils and reduce erosion. **Neutral:** This element also includes objectives and performance criteria that are neutral with respect to impacts on geology and soils (e.g., establishment of habitat area design standards and identification of indicator species). **Potentially Adverse:** Habitat enhancement that involves active restoration in undeveloped areas (e.g., extensive removal of existing vegetation and replanting with high-value, native vegetation) could result in ground disturbance, which would result in temporary increase in soil erosion potential. Preparation of SWPPPs including implementation of standard erosion control measures that would contain sediment on-site and minimize sedimentation to adjacent waterways would reduce impacts to less than significant levels (**Section 4.6.5**).	Potentially significant for construction-related soil disturbance; less than significant with mitigation Less than significant for project operation
Recreation Element: Encourage and enhance safe and diverse recreation systems, while providing for expansion, equitable and sufficient access, balance and multi-purpose uses	**Beneficial:** Preservation of existing open space areas for passive recreational uses would prevent development of habitable structures in areas subject to seismic related hazards. Development of park space that includes planting vegetation would serve to stabilize project site soils and reduce erosion. **Neutral:** This element also includes objectives and performance criteria that are neutral with respect to impacts related to geology and soils (e.g., educating the public about catch and release fishing, establishing design standards for trails). **Potentially Adverse:** Adoption of this element may result in projects that involve construction of recreation related habitable structures (e.g., interpretive centers and park buildings). The design of such structures would be required by law to conform to the latest versions of the uniform building code and possibly relevant municipal codes. Building codes include minimum design standards for structural seismic resistance to reduce the risk of life loss or injury in the event of an earthquake. Adherence to these regulations would minimize potential seismic impacts to the proposed structures. This impact would be less than significant.	Potentially significant for construction-related soil disturbance; less than significant with mitigation Less than significant for project operation

Master Plan Elements	Impacts on Geology and Soils	Impact Summary
	Construction of recreation related facilities (e.g., interpretive centers, trails and trail amenities, signs, kiosks) on an undeveloped site would result in ground disturbance, which would result in temporary increase in soil erosion potential. Preparation of SWPPPs including implementation of standard erosion control measures that would contain sediment on-site and minimize sedimentation to adjacent waterways would reduce impacts to less than significant levels (**Section 4.6.5**).	
Open Space Element: Enhance and protect open space systems through conservation, aesthetics, connectivity, stewardship, and multi-purpose uses.	**Beneficial:** Preservation of existing open space areas would prevent development of habitable structures on open space areas subject to seismic related hazards. Enhancement of open space that includes planting vegetation would serve to stabilize project site soils and reduce erosion. **Neutral:** This element also includes objectives and performance criteria that are neutral with respect to impacts on geology and soils (e.g., use of drought tolerant and native plants).	Beneficial (no adverse impact)
Flood Protection Element: Maintain flood protection and existing water and other rights while enhancing flood management activities through the integration with recreation, open space and habitat systems.	**Neutral:** This element includes objectives and performance criteria that are neutral with respect to impacts on geology and soils (e.g., coordination of maintenance of flood protection system with habitat needs). **Potentially Adverse:** Flood control related facilities (e.g., storm drains) could be damaged during an earthquake and may need to be repaired. Failure of storm drains and underground tanks could result in release of water to the immediate vicinity, but would not create dangerous conditions to nearby residences since the structures would be buried. Since failure of these structures would not result in substantial risk to people or properties, this impact is less than significant. Construction of new flood control facilities (e.g., stormwater detention areas) on an undeveloped site would result in ground disturbance, which would result in temporary increase in soil erosion potential. Preparation of SWPPPs including implementation of standard erosion control measures that would contain sediment on-site and minimize sedimentation to adjacent waterways would reduce impacts to less than significant levels (**Section 4.6.5**).	Potentially significant for construction -related soil disturbance; less than significant with mitigation Less than significant for project operation
Water Supply and Water Quality Element: Maintain existing water and other rights while enhancing water quality, water supply, groundwater recharge, and water conservation through the integration with recreation, open space and habitat systems.	**Potentially Adverse:** Adoption of this element would encourage construction of stormwater treatment wetlands and other facilities that are designed to allow infiltration to the groundwater. As described in further detail in **Section 4.4.4.3**, if groundwater levels rise within 30 feet of the surface from project infiltration, this could result in increased risk of liquefaction. Prior to construction of facilities that involve infiltration, a geotechnical investigation will be conducted to define site-specific subsurface conditions and evaluate the potential for increase in liquefaction risk. If the project is determined to have the potential to cause groundwater levels to rise within 30 feet of the surface, monitoring and	Potentially significant for construction -related soil disturbance; less than significant with mitigation Less than

Master Plan Elements	Impacts on Geology and Soils	Impact Summary
	contingency measures would be required as described in Mitigation Measure MP-G1 to reduce liquefaction-related impacts to a less-than-significant level. Ground disturbance during construction of facilities designed to increase water supply or improve water quality could result in temporary increase in soil erosion potential. Preparation of SWPPPs including implementation of standard erosion control measures that would contain sediment on-site and minimize sedimentation to adjacent waterways would reduce impacts to less than significant levels (**Section 4.6.5**).	significant for project operation
Economic Development Element: Pursue economic development opportunities derived from and compatible with the natural aesthetic and environmental qualities of the river.	**Neutral:** This element includes objectives and performance criteria that are neutral with respect to impacts on geology and soils (e.g., providing incentives to participating adjacent landowners). **Potentially Adverse:** This element promotes the pursuit of economic development opportunities which consider connectivity to the river corridor and establishment of development standards. Adoption of this element could encourage reclamation of gravel mines. Sideslopes of gravel mines are potentially susceptible to landslides in the event of an earthquake or heavy precipitation. An evaluation of slope stability conducted as part of the geotechnical analyses during design of gravel mine reclamation projects would ensure that proposed modification does not result in unstable slope conditions (see also **Section 4.4.5.2**).	Potentially significant; less than significant with mitigation

4.4.4 Impacts of Implementing the Concept Design Studies

4.4.4.1 Seismic Ground Shaking and Surface Rupture

As with the rest of southern California, the Master Plan study area is located in a seismically active region. In general, future projects implemented in the Master Plan study area would be subject to ground shaking during a seismic event. As described in **Section 4.4.1.5**, many active faults occur within the area, and future Master Plan project sites could be affected by surface ruptures if movement occurred along a fault underlying the site.

Projects without Habitable Structures. The Concept Design Studies for the San Gabriel Canyon Spreading Grounds, Woodland Duck Farm, Lario Creek, and El Dorado Regional Park do not involve construction of habitable structures. However, these projects may include construction or installation of other structures/facilities such as trails, signage, gateways, constructed wetlands, and structures for storage or conveyance of stormwater or reclaimed water (e.g., retention basins, underground pipes, and pump stations). While these structures could be damaged during an earthquake and may need to be repaired, they would not pose substantial risks to people or properties. Failure of storm drains and underground tanks could result in release of water to the immediate vicinity, but would not create dangerous conditions to nearby residences since the structures would be buried. Since failure of these structures would not result in substantial risk to people or properties, this impact is less than significant.

Projects with Habitable Structures. The Concept Design Study for the San Gabriel River Discovery Center includes construction of a habitable structure (the Discovery Center building). Other future projects may also involve construction of habitable structures such as park buildings or education centers. The design of such structures would be required by law to conform to the latest versions of the uniform building code and possibly relevant municipal codes. Building codes include minimum design standards for structural seismic resistance to reduce the risk of life loss or injury in the event of an earthquake. Adherence to these regulations would minimize potential seismic impacts to the proposed structures. This impact would be less than significant.

4.4.4.2 Landslides / Slope Instability

As described in **Section 4.4.1.4**, there are three major areas within the Master Plan study area with potential for landslide hazards: the San Gabriel Mountains, the Puente Hills east of the Whittier Narrows and south of State Route 60, and the sideslopes of several gravel mines located in Irwindale. The five Concept Design Study sites are not located within landslide hazard zones or in hillside areas. It is anticipated that future projects located within these hazard areas would be designed with necessary slope stabilizing measures. Therefore, impacts related to landslides and slope stability are considered less than significant.

4.4.4.3 Liquefaction

Due to the presence of loose alluvium materials deposited by the San Gabriel River, most of the Master Plan study area falls within the liquefaction hazard zone (see **Section 4.4.1.5**). All five Concept Design Study sites are located in areas considered by the California Geological Survey to be susceptible to liquefaction based on historical occurrence of liquefaction or local geological and groundwater conditions.

The Master Plan Concept Design Studies for the Woodland Duck Farm, Lario Creek, San Gabriel River Discovery Center, and El Dorado Regional Park include constructed wetlands, which may be unlined and designed to allow infiltration to the groundwater. Additionally, other future projects may include groundwater recharge of stormwater (e.g., at former gravel pits). If project-related stormwater infiltration caused groundwater levels to rise within 30 feet of the surface, the project could result in an increased risk of liquefaction. In addition to the long-term effects of stormwater infiltration on groundwater levels, large volumes of stormwater infiltrated over a short period of time could have a temporary "mounding" effect, causing a localized increase in the groundwater level beneath the infiltration basins. If stormwater infiltration at the Concept Design Study sites resulted in a substantial increase in groundwater levels and consequently increased liquefaction risk for onsite or adjacent habitable or other structures (e.g., power line towers, bridges, and flood control facilities), the impact would be significant. Incorporation of **Mitigation Measure CD-G1** (conduct groundwater monitoring and cease infiltration if necessary to prevent groundwater levels from increasing to within 30 feet of the surface) would reduce project impacts related to liquefaction to a less-than-significant level.

The Lario Creek Concept Design Study would also facilitate transfer of additional water to existing spreading basins for groundwater recharge. Since the volume of water to be infiltrated

is within the existing capacity of the spreading basins, impacts related to this component of the Concept Design Study are considered less than significant.

4.4.4.4 Expansive Soils

Master Plan Concept Design Studies for the Woodland Duck Farm and El Dorado Regional Park and other future projects may involve construction of stormwater infiltration facilities near power line towers. Project-related infiltration would likely alter the moisture content of the soils in the immediate vicinity of the infiltration areas. If infiltration facilities were sited in close proximity to the power line towers and if these structures were located on expansive soils, the change in soil moisture content from the infiltration could result in damage to these structures, a potentially significant impact. Incorporation of **Mitigation Measure CD-P10** (see **Section 4.9.6 – Public Services and Utilities**) would reduce this impact to a less-than-significant level.

The Concept Design Study for the San Gabriel River Discovery Center includes construction of a habitable structure (the Discovery Center building). Other future projects may also involve construction of habitable structures such as park buildings or education centers. If habitable structures were constructed on expansive soils, the potential damage to these structures would be considered a significant impact. Incorporation of **Mitigation Measure CD-G2** (site-specific review of soil conditions and, if necessary, replacement or treatment of expansive soils to minimize risk of structural damage) would reduce this impact to a less-than-significant level.

4.4.4.5 Subsidence

The Master Plan Concept Design Studies for the Woodland Duck Farm, Lario Creek, the San Gabriel River Center, and El Dorado Regional Park include constructed wetlands, which may be unlined and designed to allow infiltration to the groundwater. Additionally, other future projects may include groundwater recharge of stormwater (e.g., at former gravel pits). These projects could involve minor groundwater withdrawal for groundwater quality monitoring. However, the amount required would be a negligible fraction of existing groundwater extractions in the area and would be offset by the proposed infiltration of stormwater, which would overall result in a beneficial impact with respect to subsidence. Therefore, the proposed project is not expected to result in subsidence. No impacts would occur.

4.4.4.6 Soil Erosion

Soil disturbance associated with project construction will increase the potential for wind and water erosion in the immediate vicinity of the facilities. As required by the Environmental Protection Agency and the Los Angeles Regional Water Quality Control Board, the construction contractor(s) will develop and implement a Stormwater Pollution Prevention Plan (SWPPP) during construction of various project components. This plan is required as part of the federal Clean Water Act National Pollution Discharge Elimination System (NPDES) Permit for discharge of stormwater associated with construction activities greater than 1 acre in area. Incorporation of stormwater best management practices in the SWPPP would reduce the potential for soil erosion during construction. Specific erosion control measures to be considered for inclusion in site-specific SWPPPs are listed in **Section 4.6 – Water Quality**. Therefore, with

the incorporation of control measures in the SWPPPs, construction impacts on soil erosion are expected to be less than significant.

Once construction is complete, disturbed surfaces at each project site would be stabilized (i.e., paved or revegetated). All five Concept Design Study sites currently include unimproved surfaces that are prone to soil erosion. Implementation of each of the Concept Design Studies would likely reduce the soil erosion potential at these sites by increasing the vegetative cover. Therefore, the project is expected to have a beneficial impact with respect to soil erosion once construction has been completed (no adverse impact).

4.4.5 Master Plan Program Mitigation Measures

4.4.5.1 Liquefaction

As described above in **Section 4.4.1.5**, most of the Master Plan study area falls within a liquefaction hazard zone. Future projects that would result in increased infiltration of stormwater will require an evaluation of the increase in liquefaction potential. Future projects that would result in increased infiltration (including but not limited to construction of stormwater retention/infiltration facilities, unlined wetlands, and structures designed to increase in-stream recharge (e.g., rubber dams)) will require an evaluation of the impacts of the proposed actions on liquefaction potential as described in program Mitigation Measure MP-G1:

> **MP-G1** During facility design, a site-specific geotechnical analysis will be conducted to determine soil types and groundwater levels. Based on the results of the geotechnical analysis, the potential increase in liquefaction potential from the proposed infiltration will be evaluated. Factors that will be considered include the capacity of the infiltration facility and the associated amount of water proposed for infiltration, infiltration rate, proximity and types of nearby structures (including pipelines) that could be damaged from liquefaction, and infiltration at adjacent spreading grounds, if any.
>
> If the project is determined to have the potential to cause groundwater levels to rise within 30 feet of the surface, new monitoring wells and/or existing wells in the project area will be used to detect any substantial increase in groundwater levels. If monitoring indicates a substantial rise in groundwater levels that could impact adjacent structures, stormwater would not be infiltrated and would be diverted into storm drains or onto street surfaces or routed to other stormwater management facilities as applicable. Re-diversion of storm flows will be in compliance with the applicable provisions of the relevant NPDES municipal stormwater permits.

4.4.5.2 Landslides / Slope Instability

Sideslopes of gravel mines are potentially susceptible to landslides in the event of an earthquake or heavy precipitation. Future projects that involve reclamation of gravel mines to create parks, open space and/or stormwater retention facilities will require an evaluation of the impacts of proposed actions related to landslides and slope instability as described in program Mitigation Measure MP-G2:

MP-G2 Site-specific evaluation of slope stability will be conducted as a part of the geotechnical analyses during design of each future Master Plan project that involves modification of a gravel mine. The recommendations of the geotechnical study will include optimum slope design for stability and safety, soil compaction or recompaction requirements, surface cover, and potentially other slope stabilizing measures. The recommendations of the geotechnical analysis will be incorporated into the detailed design of the project. The results of site-specific evaluations and detailed mitigation measures, if any, will be disclosed in subsequent CEQA documentation.

4.4.5.3 Habitable Structures

For future projects that include construction of habitable structures (e.g., recreation or interpretive centers), an evaluation of the impacts of proposed actions related to geologic hazards will be required as described in program Mitigation Measure MP-G3:

MP-G3 The site plan and building footprint will be reviewed by a registered professional to ensure that project siting and design provides adequate protection from geologic hazards such as fault rupture (including Alquist-Priolo Earthquake Fault Zones), expansive soils, liquefaction, and unstable slopes. If a project site is located in known high risk areas with respect to geological hazards, a site-specific geotechnical study will be performed during facility design to identify potential concerns and recommended measures to reduce hazards. Recommendations in the geotechnical study will be incorporated into the final design.

4.4.6 Mitigation Measures for Concept Design Studies

Liquefaction

The following mitigation measure shall be implemented for the **Woodland Duck Farm, San Gabriel River Discovery Center, Lario Creek, and El Dorado Regional Park** Concept Design Studies:

CD-G1 Prior to construction, conduct a geotechnical investigation to define site-specific subsurface conditions, including determination of site-specific groundwater levels and soil conditions to evaluate the potential for liquefaction onsite or at adjacent properties. Based on the results of the geotechnical analysis, the potential increase in liquefaction potential from the proposed infiltration shall be evaluated. Factors that should be considered include the capacity of the infiltration facility and the associated amount of water proposed for infiltration, infiltration rate, proximity and types of nearby structures that could be damaged from liquefaction, and infiltration at adjacent spreading grounds, if any.

If the project is determined to have the potential to cause groundwater levels to rise within 30 feet of the surface, new monitoring wells and/or existing wells in the project area shall be used to detect any substantial increase in groundwater levels. If monitoring indicates a substantial rise in groundwater levels that could impact adjacent structures, stormwater would not be infiltrated and would be diverted into storm drains or onto street surfaces with sufficient capacity. Re-diversion of storm

flows will be in compliance with the applicable provisions of the relevant NPDES municipal stormwater permits.

Soil Erosion

Section 4.6 – Hydrology and Water Quality lists possible erosion control measures to be incorporated into site-specific SWPPPs. Measures to reduce fugitive dust generated during construction (see **Section 4.1 – Air Quality**) will also minimize the potential for wind erosion of soils.

Expansive Soils

The following mitigation measure shall be implemented for the **San Gabriel River Discovery Center** Concept Design Study:

CD-G2 During facility design, evaluate site soils to determine the area and thickness of expansive soils. If expansive soils are found, one or more of the following measures shall be specified in the construction plans to minimize potential hazards associated with expansive soils:

- Replacement of expansive soils with granular non-expansive soils, or
- Treatment of expansive soils with lime to reduce expansivity, or
- Other appropriate geotechnical practices.

These measures that mitigate for expansive soils shall be incorporated into the construction documents.

4.5 HAZARDS AND HAZARDOUS MATERIALS

Hazards and hazardous materials issues discussed in this section are construction in areas of potential soil contamination, disposal of potentially contaminated sediments, use of potentially hazardous materials, potential for bird/wildlife aircraft strike hazard, public health hazards from insect vectors and other vector species, and public health hazards from use of recycled water/stormwater. Geologic hazards are addressed in Section 4.4.

4.5.1 Existing Setting

4.5.1.1 Existing Land Uses

Master Plan Study Area. The general land uses within each of the seven reaches of the Master Plan study area (1-mile wide corridor along the River) are described below.

1. Headwaters – The first reach of the river is the headwaters along the West Fork in the San Gabriel Mountains. Land use in this area is open space/recreation (Angeles National Forest).

2. San Gabriel Canyon – The San Gabriel Canyon reach begins at the point where the West, North, and East Forks of the river join, and ends at Morris Dam. Land uses in this reach include open space/recreation (Angeles National Forest) and public facilities related to flood control and water resource management (i.e., San Gabriel Dam, Morris Dam and associated maintenance facilities).

3. Upper San Gabriel Valley – The Upper San Gabriel Valley reach extends from Morris Dam, passes through unincorporated Los Angeles County and Azusa, and ends at the Santa Fe Dam in Irwindale. In the northern portion of this reach between Morris Dam and Azusa, the primary land uses are open space. While there are some residential areas in this reach within Azusa and Duarte, the southern portion between Azusa and Santa Fe Dam in Irwindale is occupied primarily by industrial land uses and open space/recreation (Santa Fe Dam Recreation Area).

4. Lower San Gabriel Valley – The Lower San Gabriel Valley reach runs between the Santa Fe Dam and Whittier Narrows Dam in unincorporated Los Angeles County north of Pico Rivera. The primary land uses in this reach are industrial in the northern portion and residential and open space/recreation (Whittier Narrows Recreation Area and California Country Club) in the middle and southern portions.

5. Upper Coastal Plain – This reach begins at the outlet of the Whittier Narrows Dam and ends where the San Gabriel River crosses Firestone Boulevard in Norwalk, near the 605 Freeway. The primary land use in this reach is residential.

6. Lower Coastal Plain – This reach begins at Firestone Boulevard and extends to the confluence of Coyote Creek and the San Gabriel River in Rossmoor, located in unincorporated Orange County. The primary land use in this reach is residential with some commercial and open space areas (e.g., El Dorado Regional Park).

7. Zone of Tidal Influence – This 3.5-mile reach extends from the confluence with Coyote Creek to the Pacific Ocean. The primary land uses in this reach are residential and industrial.

Concept Design Study Sites. The land use characteristics of the five Concept Design Study sites are as follows:

- San Gabriel Canyon Spreading Grounds
  - Public facilities (Spreading grounds operated by LADPW; water tanks, wells, and pumps operated by City of Azusa)
  - Recreation (bike trail along the River)
- Woodland Duck Farm
  - Vacant (former duck farm site containing remnant structures)
  - Recreation (Rio San Gabriel Equestrian Center maintained by RIO Trust)
- San Gabriel River Center at Whittier Narrows
  - Recreation/Open Space (Nature Area within Whittier Narrows Recreation Area, including Nature Center)
- Lario Creek
  - Recreation/Open Space (Nature Area within Whittier Narrows Recreation Area)
  - Public facilities (Lario Creek, a water conveyance feature operated by LADPW)
- El Dorado Regional Park
  - Open Space/Recreation

4.5.1.2 Hazardous Materials

Section 65962.5 of the California Government Code requires the California Environmental Protection Agency (Cal/EPA) to update a list of known hazardous materials sites, which is also called the "Cortese List." The Cortese List identifies public drinking water wells with detectable levels of contamination, hazardous substance sites selected for remedial action, sites with known toxic material identified through the abandoned site assessment program, reported leaking underground storage tanks (LUSTs), and solid waste disposal facilities from which there is known hazardous substance migration.

In accordance with the CEQA Statute (Section 21092.6 of the Public Resources Code), a records search was conducted by Environmental Data Resources, Inc. (EDR, 2003) to determine whether any of the proposed Concept Design Study project sites is included in the Cortese List. The results of the records search are presented in **Table 4.5-1**.

Table 4.5-1
Cortese List Sites located within 0.25-mile Radius of the Master Plan Concept Design Study Site Boundary

Concept Design Study	Cortese List Site	
	Name and Address	Reason For Listing
San Gabriel Canyon Spreading Grounds	None	
Lario Creek	COE-SPL District Baseyard 645 Durfee Avenue, South El Monte (located outside of the Concept Design Study site boundary)	Leaking Underground Storage Tank (Diesel) – Case Number: R-15494 (Status: Leak being confirmed; Review Date: 3/23/1996)
San Gabriel River Center at Whittier Narrows	None	
Woodland Duck Farm	None	
El Dorado Regional Park	Tree Farm 7600 E. Spring Street, Long Beach	Leaking Underground Storage Tank (Gasoline) – Case Number: 908150270 (Status: Pollution Characterization; Review Date: 1/30/2002)

Source: EDR, 2003.

4.5.1.3 Bird/Wildlife Aircraft Strike Hazard

Three airports are located within 5 miles of the Master Plan study area. El Monte Airport is owned by the County of Los Angeles, and is located approximately 2 miles west of the river in the City of El Monte. Long Beach airport is owned and operated by the City of Long Beach, and is located approximately 2 miles west of El Dorado Regional Park near the San Gabriel River confluence with Coyote Creek. The Los Alamitos Joint Forces Training Base is located approximately 1.5 miles east of the River confluence with Coyote Creek.

Aircraft collisions with birds and other wildlife can damage aircraft and pose a threat to human safety. According to the Federal Aviation Administration (FAA), reported wildlife strikes involving civil aircraft in the past few years have exceeded 5,000 cases annually (FAA, 2002). Over 97 percent involved birds, and less than 3 percent of the cases involved mammals or reptiles. Gulls, doves, raptors, and waterfowl were the most frequently struck bird groups among the reported cases. The majority of the reported strikes occurred at lower altitudes, such as during take-off, climb, approach, or landing-roll.

In 1997, the FAA issued an advisory circular (FAA, 1997) that provides guidance on locating land uses having the potential to attract hazardous wildlife (wildlife attractants) to or in the vicinity of public-use airports. Putrescible-waste (i.e., organic waste) disposal operations, wastewater treatment facilities, artificial marshes, and wetlands are considered potential wildlife attractants. The FAA recommends the following minimum distances between these land uses and an airport's aircraft movement areas, loading ramps, or aircraft parking areas:

- Airports serving piston-powered aircraft: 5,000 feet
- Airports serving turbine-powered aircraft: 10,000 feet

- Approach or departure airspace: 5 miles, if the wildlife attractant may cause hazardous wildlife movement into or across the approach or departure airspace

EPA requires any operator proposing a new or expanded waste disposal operation within 5 statute miles of a runway end to notify the appropriate FAA Regional Airports Division Office and the airport operator of the proposal (40 CFR 258, *Criteria for Municipal Solid Waste Landfills*, section 258.10, *Airport Safety*). Although not legally required for other land use changes that do not involve landfills, FAA requests that similar notices be provided if a land use change proposed within the distances listed above has the potential to attract hazardous wildlife.

4.5.1.4 Vectors of Public Health Concern

Section 4.5.1.4 incorporates the comments of the San Gabriel Valley Mosquito and Vector Control District, Greater Los Angeles County Vector Control District, and California Department of Health Services Vector-Borne Disease Section (the vector control authorities) (S. West, pers. comm., April 25, 2005; Appendix F).

Populations of vectors such as mosquitoes pose a public health hazard by transmitting viruses and other disease-causing agents. In addition, vectors can be a nuisance or source of substantial discomfort for humans.

Division 3, Chapter 1 of the California Health and Safety Code defines a vector as any animal capable of transmitting the causative agent of human disease or capable of producing human discomfort or injury, including, but not limited to, mosquitoes, flies, mites, ticks, other arthropods, and rodents and other vertebrates.

California Health and Safety Code Sections 2000 through 2067 gives mosquito and vector control districts broad authority and substantial powers aimed at protecting public health, including the power to require abatement of activities that support the development, attraction, or harborage of vectors, or that facilitate the introduction or spread of vectors. A responsible party's failure to control such activities as required by a district may lead to civil penalties up to $1,000 per day plus the cost of abatement by the district.

The Master Plan Concept Design Studies and other future projects may include new or modified water features, such as stormwater treatment wetlands. Mosquitoes are the vector of primary concern for the Master Plan, since they require aquatic habitats to complete their life cycle and are known to transmit agents that cause disease in humans and other animals. Wetlands attract mosquitoes as well as resident and migrant bird species perpetuating bird-mosquito disease transmission cycles. Infected mosquitoes can disperse up to 10 miles (depending on species) from these aquatic habitats into adjacent residential neighborhoods thereby increasing disease risks to surrounding communities and the visiting public.

Additional aquatic vectors of concern for the Master Plan are black flies and midges, which also require aquatic habitats for breeding and are a public nuisance. In the U.S. black flies do not generally carry disease-causing agents to humans; however, painful bites from some species can cause extensive swelling, allergic reaction, and secondary infection. Most midges do not bite;

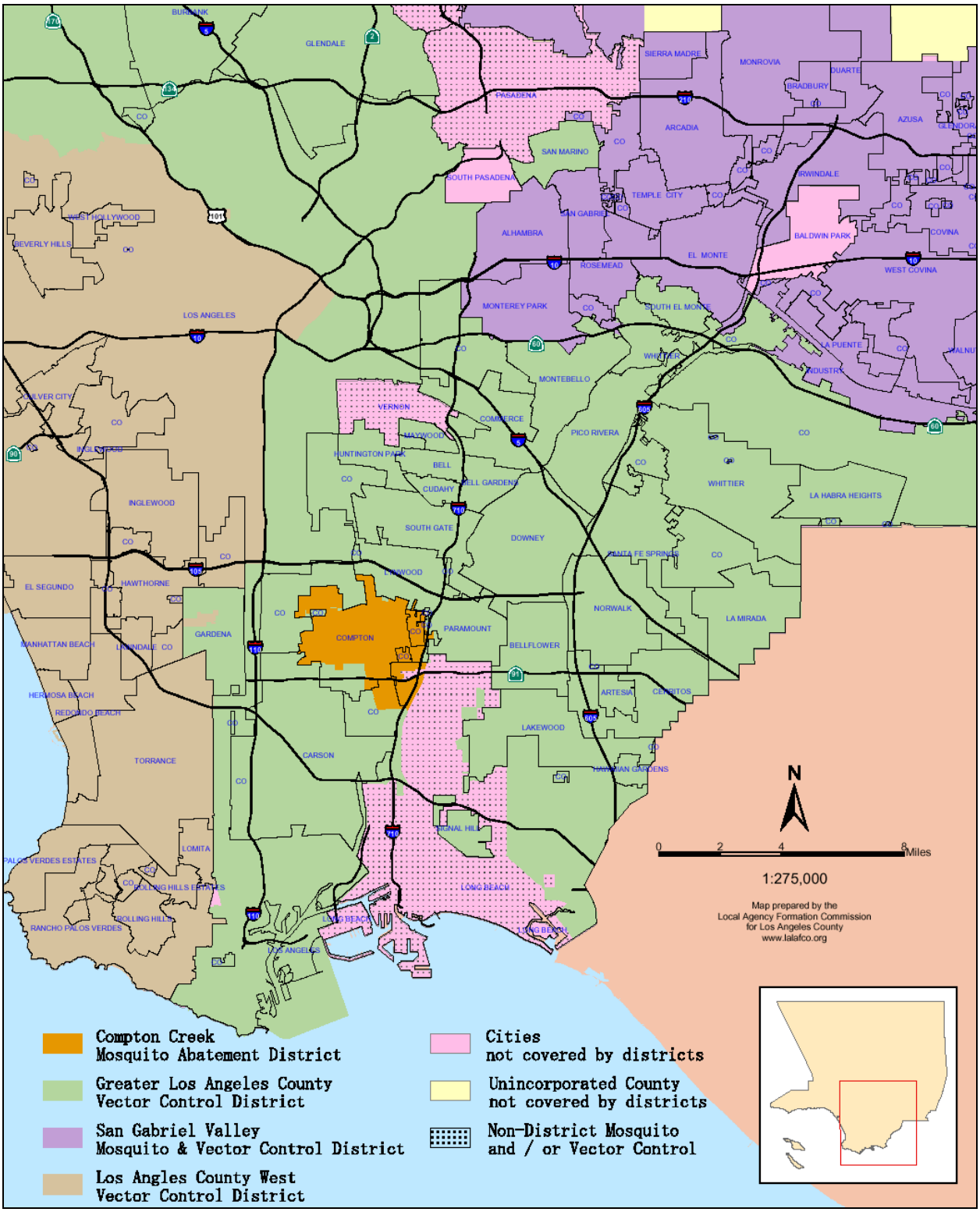
however, large populations are known to cause allergic reactions and have negative economic impacts on local residents and businesses.

Finally, various rodent and larger wildlife species and the parasites they harbor can cause disease in humans and other animals. In California, over 45 percent of human diseases reportable to the California Department of Health Services are diseases of animals transmissible to people (zoonoses) (County of Los Angeles Department of Health Services, 2005). Increasing corridor/habitat connections would, by design, increase movement and dispersion of wildlife adjacent to and into urban areas thereby increasing human-wildlife interactions and disease transmission risks to the public.

Vector control and disease surveillance in the Master Plan study area is carried out by three vector control districts, the City of Long Beach Vector Control Program, and the Los Angeles County Department of Health Services, Vector Management Program. The vector control districts and their respective service areas within the Master Plan study area are listed below and shown in **Figure 4.5-1**:

- San Gabriel Valley Mosquito and Vector Control District (SGVMVCD) – Arcadia, Azusa, Duarte, Irwindale, El Monte, and City of Industry
- Greater Los Angeles Vector Control District (GLAVCD) – Bellflower, Santa Fe Springs, Pico Rivera, Downey, Norwalk, Lakewood, Cerritos, northeastern portions of Long Beach, South El Monte, and Whittier
- Orange County Vector Control District (OCVCD) – Seal Beach and unincorporated areas of Orange County
- City of Long Beach Vector Control Program – Southwestern portions of Long Beach
- County of Los Angeles Vector Management Program – Entire Los Angeles County area

Figure 4.5-1
Vector Control Districts in Los Angeles County



Source: K. Middleton, San Gabriel Valley Mosquito and Vector Control District, 2004.

Mosquitoes. In California, there are several species of mosquitoes known to transmit agents that cause mosquito-borne diseases, such as West Nile virus, western equine encephalomyelitis, St. Louis encephalitis, and malaria. The primary mosquito species in urban Los Angeles County responsible for disease transmission to humans (*Culex spp.*) are also the most abundant and are considered 'bridge vectors' due to their predilection for biting both birds and humans thereby serving to vector avian encephalitis-casings viruses to humans.

Since the introduction of the West Nile virus into the Western Hemisphere in 1999, this mosquito-borne virus has spread throughout the continental United States, with human cases detected in 47 states and the District of Columbia (CDC, 2004). According to the California Department of Health Services (CDHS), 830 human cases were reported in California in 2004, including 331 cases in Los Angeles County and 64 cases in Orange County. In 2003, there were 28 West Nile virus-related fatalities in California (in Los Angeles, Orange, San Bernardino, Riverside, Glenn, Kern, and Tehama counties) (CDHS, 2004). According to the CDC (2004), most people who are bitten by a mosquito carrying the West Nile virus will not become ill. People who do may experience moderate to severe illness exhibiting symptoms like fever, headache and body ache with symptoms lasting a few days to several weeks. It is estimated that less than 1 percent of the people who are infected with the virus become severely ill and require hospitalization. Severe illness often results in long-term or permanent neurologic damage and can be fatal. The elderly and people with compromised immune systems are particularly susceptible to illness caused by the virus. West Nile virus and other encephalitis-causing viruses are endemic to California and will continue to be transmitted and cause disease in humans and other animals.

Mosquitoes require standing water to breed and complete the life cycle, which takes about 7 days during warm weather. Mosquito control methods include elimination of potential breeding sources through water and vegetation management, public education and source reduction, the use of biological controls and chemical insecticides, and legal abatement (California Health and Safety Code, Sections 2000 through 2067).

Water and Vegetation Management. Water and vegetation management to minimize areas of stagnant water and improve water quality area the first consideration for mosquito control in constructed wetlands and other water features. Overgrowth of emergent vegetation (e.g., cattails), which can create stagnant water around the margins of constructed wetlands and lakes, can be prevented by periodic removal of vegetation, the use of herbicides, and/or by managing water depth and flow patterns. In addition, water motion can be encouraged by allowing the water to be exposed to wind, altering water depth, and/or by controlling flow patterns.

For example, the 45-acre San Joaquin Marsh on San Diego Creek (Orange County) was designed so that portions of the marsh can be drained selectively, and a system of water pumps and weirs are used to manage the water levels for mosquito control (Denger and Brandt, pers. comm., 2003). At the Rio Hondo Coastal and San Gabriel Coastal Spreading Grounds, LADPW removes vegetation periodically to minimize areas of stagnant water and maintain percolation rates. While helpful, these solutions do not alleviate all mosquito problems, and routine mosquito surveillance and control is required. In addition, densely vegetated areas (such as the

San Joaquin Marsh) often require adult mosquito suppression due to the large numbers of mosquitoes produced (R. Meyer, OCVCD, pers. comm., 2005).

Mosquitofish. Mosquitofish (*Gambusia affinis*) are small, guppy-like fish that feed on mosquito larvae, and are stocked in ponds, lakes, and other water features as a safe and effective biological control method. However, mosquitofish may disrupt aquatic ecosystems if introduced into natural streams, lakes, or ponds; however, the alternative need for increased chemical control measures must be weighed against this potential disadvantage.

Enhancing populations of natural aquatic mosquito predators (e.g., dragonfly and damselfly larvae, aquatic beetles, and native fish) in lieu of mosquitofish, although beneficial, will not alleviate all mosquito problems. Although mosquitofish are present throughout the U.S. in natural bodies of water, many vector control districts advocate only placing mosquitofish in closed systems to alleviate potential concerns.

Bti. *Bacillus thuringiensis* var. *israelensis* (Bti) and *Bacillus sphaericus* (Bs) are naturally occurring soil-borne bacteria that affect the digestive systems of mosquito larvae, and are commonly used larvicides. Bti/Bs can be broadcast onto the water surface by a hand crew or from a vehicle or a boat, depending on environmental conditions and site access. Bti/Bs are highly specific and do not pose risks to wildlife, non-target species, or the environment (EPA, 2002a; S. West, pers. comm., April 25, 2005, Appendix F).

Methoprene. Methoprene is a mosquito juvenile growth hormone mimic that artificially extends the larval stage of mosquitoes and prevents normal maturation to adulthood. Methoprene is often used in larval mosquito control (sometimes in combination with Bti) and is a highly specific, targeted option for mosquito control. Methoprene has the added benefit of maintaining mosquito larvae as a food source for native fish and invertebrates while still fulfilling public health objectives.

Although other products are available for immature mosquito control, the above are the most environmentally sensitive and most likely to be used in naturalized systems in the Los Angeles basin.

Adult Mosquito Control. When the above control measures are infeasible or ineffective for reducing the adult mosquito population, adulticides (chemicals used to control adult mosquitoes) may be used. Chemical adulticides are applied by hand-held, truck-mounted or aircraft-mounted sprayers. Chemical adulticides are not species-specific and can have adverse effects on non-target insects. In addition, both larvicide and adulticide applications can lead to resistance in the vector population. A sometimes suggested biological control method for adult mosquitoes is installation of nesting or roosting houses to attract insectivorous bats or birds that feed on adult mosquitoes. According to the vector control districts, this option has very limited overall value and may artificially increase bat populations risking rabies transmission in Los Angeles and Orange counties.

Black flies. Black flies are common in the San Gabriel Valley, but are not known to transmit human disease locally. They can, however, be a nuisance by causing allergic reaction,

discomfort and irritation to humans due to their biting habits and/or presence in large numbers (i.e., flying into eyes, ears, and noses). In two of the three species that are locally present, females will bite mammals, including humans. Black flies breed in oxygenated, flowing water, such as dam spillways, rivers and streams with rocky beds, and pipe seepages. Black fly populations are present throughout the year, peaking in late spring and summer.

Black fly control is typically performed on immature stages rather than adults. The primary method is to interrupt the flow of water for 24 to 48 hours so that the larvae are deprived of oxygen and desiccate. If this is not feasible or ineffective, Bti may be applied. For example, at the San Gabriel Canyon Spreading Grounds, the SGVMVCD works with LADPW to periodically shut off the outflows from Morris Dam during weekends to dry out black fly larvae. This allows the vector control districts to minimize the need to apply Bti (Fujioka, pers. comm., 2003). Black fly adults tend to be difficult to control (SGVMCD, 2003a).

Midges. Midges are widespread in the San Gabriel Valley. Though they are often confused with mosquitoes, midges do not bite but may contribute to allergies and large populations can result in economic impacts. Midges can be found hovering in swarms on warm summer evenings. They breed in standing and flowing waters, and can often be found in watercourses and storm drain systems. Throughout the Master Plan area, control measures are undertaken when there are high numbers of adult insects. The larvicidal agents used for mosquito control are generally effective for midges (SGVMCD, 2003a).

Fleas, Ticks, and Other Vectors of Concern. This subsection in its entirety incorporates text provided by the vector control authorities (S. West, pers. comm., April 25, 2005; Appendix F).

In California, 45 percent of the 83 human diseases reportable to the California Department of Health Services are zoonoses (animal diseases transmittable to people). Many of these diseases are present in southern California, require diligent monitoring, and in many instances have resulted in human disease.

High raccoon densities in urban environments (a result of abundant anthropogenic food sources) increase the risk of transmission of raccoon roundworm (*Balyisascaris procyonis).* This is a density dependent disease and the cause of serious or fatal larval migrans in humans and animals.

Lyme disease is a serious vector-borne disease in California, and although rare in Los Angeles County, has been identified (LACDHS, 2004). Tick species responsible for its transmission is found in the local foothills. The predominant host of larval ticks (*Peromyscus spp.*) commonly inhabit disturbed or transitional coastal sage scrub habitat. Both larval and adult ticks are capable of traveling into urban areas via animal movements. Researchers in Maryland found a strong correlation between increased lyme disease risk and vegetated corridors through urban development (Frank, et al., 2002).

Probably of greater concern is the risk of plague and murine typhus in southern California. Plague is detected in Los Angeles County wildlife nearly every year, with ground squirrels (and their associated fleas) being the most important source of human exposure. Although rare, human plague cases do occur in this area (LACDHS, 2000). A suburban cycle of murine typhus

has been identified involving opossums, rate fleas, and cats that is readily transmittable to humans. Ten human cases were reported on average each year from 1993 to 2002 (Ramirez, 2003).

Increasing interactions (and disease transmission) between wildlife, domesticated animals, and humans is of growing concern in urban and suburban areas. Surveillance and control methods vary and are typically undertaken if disease activity is detected and the public's health is at risk. Reducing human-wildlife interactions are best accomplished by discouraging overpopulation due to abundant food and water resources and with extensive educational outreach geared towards "keeping wildlife wild."

4.5.2 Significance Criteria

Project impacts related to hazards and hazardous materials would be considered significant if the project:

- exposed the general public to hazardous situations through transport, use, storage, or disposal of hazardous materials
- created wildlife habitat in a manner and amount that result in a substantial increase in the potential for aircraft collisions with birds and other wildlife
- created vector breeding conditions in an amount that would require increased levels of mosquito and other vector abatement to control vector populations at pre-project levels

4.5.3 Impacts of Adopting the Master Plan Elements

The Master Plan includes six plan elements (also called Master Plan goals), set forth as the CEQA project objectives for the Master Plan. The plan elements are supported by objectives and performance criteria (see **Section 3.3.1**). The adoption of the Master Plan by the County of Los Angeles (and other municipalities in the study area) will promote implementation of projects that are consistent with these Master Plan goals. This section describes the overall Master Plan impacts based on a qualitative assessment of reasonably foreseeable effects of the adoption of the Master Plan. Since projects similar to the Concept Design Studies are proposed throughout the river corridor, the Concept Design Study impacts (**Section 4.5.4)** further illustrate the types of potential impacts expected from implementation of the overall Master Plan.

As described below in **Table 4.5-2**, adoption of the Master Plan could result in both beneficial and potentially adverse impacts related to hazards and hazardous materials. Adverse impacts are primarily related to: 1) potential ground disturbance in areas of soil contamination during construction of proposed facilities, and 2) increase in potential mosquito and other vector breeding habitats and creation of ecological habitats conducive to mosquito-borne disease propagation from development of facilities that retain water (e.g., for flood control, groundwater recharge, and/or stormwater treatment) or increase in animal movements into urban areas. Site-specific impacts related to hazards and hazardous materials would be addressed in second-tier CEQA documentation for future projects developed in a manner consistent with the Master Plan (see **Section 4.5.5)**. Since mitigation will reduce these impacts to less than significant levels (see

Table 4.5-2 and **Section 4.5.5**), the overall impacts related to hazards and hazardous materials from adopting the Master Plan are considered less than significant. Site-specific mitigation measures will be identified and implemented by the specific lead agencies for each future project in the Master Plan study area.

Table 4.5-2
Impacts related to Hazards and Hazardous Materials from Adopting the Master Plan Elements

Master Plan Elements	Impacts related to Hazards and Hazardous Materials	Impact Summary
Habitat Element: Preserve and enhance habitat systems through public education, connectivity and balance with other uses	**Neutral:** This element includes objectives and performance criteria that are neutral with respect to impacts related to hazards and hazardous materials (e.g., establishment of habitat area design standards and identification of indicator species). **Potentially Adverse:** Habitat enhancement that involves active restoration (e.g., extensive removal of existing vegetation and replanting with high-value, native vegetation) would involve ground disturbance. If contaminated soils are encountered during project construction and are not recognized and not disposed of properly, this would be a potentially adverse impact. The Master Plan mitigation measure described in **Section 4.6.5.6** outlines an approach to evaluation of potential for soil contamination and implementation of measures to reduce impacts by removing and disposing of contaminated soils in compliance with applicable regulations at approved disposal sites. If conducted in accordance with manufacturer's recommendations and general standards of use e.g., restricted application before and during rain storms, application of herbicides/pesticides for removal of invasive plants will not have significant impacts with respect to hazardous materials. Habitat restoration or enhancement involving wetlands or other water-features could result in an increased potential in bird/wildlife air strike hazard by attracting waterfowl and other wildlife, if the proposed project is located in the vicinity of an airport (see Sections 4.5.4.2 and 4.5.5.3). The Master Plan mitigation measure described in **Section 4.5.5.3** requires consultation with relevant airports and the FAA, which would ensure that any potentially significant Master Plan impacts related to bird/wildlife air strikes would be recognized early in the planning process and avoided or minimized. Habitats with wetlands or other water-features could increase mosquito or other vector breeding areas, an adverse impact on public health. In addition, habitat enhancements could result in increased animal movements into urban areas and increased interactions between vectors and humans, which could also have an adverse impact on public health. The Master Plan mitigation measure described in **Section 4.5.5.2** requires consultation with the vector control district and implementation	Potentially significant; less than significant with mitigation

Master Plan Elements	Impacts related to Hazards and Hazardous Materials	Impact Summary
	of vector management measures to reduce vector breeding habitat, which would ensure that any potentially significant Master Plan impacts related to vector control would be recognized early in the planning process and avoided or minimized.	
Recreation Element: Encourage and enhance safe and diverse recreation systems, while providing for expansion, equitable and sufficient access, balance and multi-purpose uses	**Beneficial:** This element includes establishment of design standards to safely accommodate various users, which would promote public safety and reduce hazards to recreational users. **Neutral:** This element includes objectives and performance criteria that are neutral with respect to impacts related to hazards and hazardous materials (e.g., public education on catch and release fishing). **Potentially Adverse:** Construction of recreation related facilities (e.g., interpretive centers, trails and trail amenities, signs, kiosks) would involve ground disturbance. If contaminated soils are encountered during project construction and are not recognized and not disposed of properly, this would be a potentially adverse impact. The Master Plan mitigation measure described in **Section 4.6.5.6** outlines an approach to evaluation of potential for soil contamination and implementation of measures to reduce impacts by removing and disposing of contaminated soils in compliance with applicable regulations at approved disposal sites.	Potentially significant; less than significant with mitigation
Open Space Element: Enhance and protect open space systems through conservation, aesthetics, connectivity, stewardship, and multi-purpose uses.	**Beneficial:** Adoption of this element would encourage reduction of vector breeding potential and public education of vector issues, which would have a beneficial impact by reducing public health hazards associated with vector-borne diseases. Additionally, use of native species for landscaped areas would reduce irrigation demand, potentially reducing vector breeding conditions (areas of stagnant water). **Neutral:** This element includes objectives and performance criteria that are neutral with respect to impacts related to hazards and hazardous materials (e.g., coordination of land management policies). **Potentially Adverse:** Adoption of this element may encourage recycling of brownfields. Hazardous materials issues associated with brownfields recycling projects would need to be addressed on a site-by-site basis. However, any impact from brownfields development is too speculative at this time to be able to be analyzed. Increasing open space elements within the urban matrix has the potential to increase vector populations and human-wildlife interactions within and surrounding these projects, which could also have an adverse impact on public health.	Less than significant
Flood Protection Element: Maintain flood protection and	**Neutral:** This element also includes objectives and performance criteria that are neutral with respect to impacts on	Potentially significant;

Master Plan Elements	Impacts related to Hazards and Hazardous Materials	Impact Summary
existing water and other rights while enhancing flood management activities through the integration with recreation, open space and habitat systems.	hazards and hazardous materials (e.g., coordination of maintenance of flood protection system with habitat needs). **Potentially Adverse:** Construction of new flood control facilities (e.g., stormwater detention areas) on an undeveloped site would involve ground disturbance. If contaminated soils are encountered during project construction and are not recognized and not disposed of properly, this would be a potentially adverse impact. The Master Plan mitigation measure described in **Section 4.6.5.6** outlines an approach to evaluation of potential for soil contamination and implementation of measures to reduce impacts by removing and disposing of contaminated soils in compliance with applicable regulations at approved disposal sites. Adoption of this element would encourage recycling of sediments from sluicing and maintenance operations. In some instances, sediments may contain pollutants from urban runoff. Transport or disposal of stormwater sediments, when conducted properly (i.e., in accordance with applicable hazardous waste regulations including the federal Resource Conservation and Recovery Act and California Hazardous Waste Control Law (Title 22 of California Code of Regulations)), would not create a significant hazard to the public or the environment. Projects with constructed wetlands, stormwater retention basins, and other above- or below-ground facilities designed to collect stormwater could increase mosquito breeding areas, an adverse impact on public health. The Master Plan mitigation measure described in **Section 4.5.5.2** requires consultation with the vector control district and implementation of vector management measures to reduce mosquito breeding habitat.	less than significant with mitigation
Water Supply and Water Quality Element: Maintain existing water and other rights while enhancing water quality, water supply, groundwater recharge, and water conservation through the integration with recreation, open space and habitat systems.	**Neutral:** This element includes objectives and performance criteria that are neutral with respect to impacts on hazards and hazardous materials (e.g., prevention of reduction of water conservation facilities). **Potentially Adverse:** Construction of new facilities for enhancing water quality and/or water supply (e.g., stormwater infiltration facilities, constructed wetlands, pipelines for reclaimed water distribution) would involve ground disturbance. If contaminated soils are encountered during project construction and are not recognized and not disposed of properly, this would be a potentially adverse impact. The Master Plan mitigation measure described in **Section 4.6.5.6** outlines an approach to evaluation of potential for soil contamination and implementation of measures to reduce impacts by removing and disposing of contaminated soils in compliance with applicable regulations at approved disposal sites). Adoption of this element would encourage projects with constructed wetlands, stormwater retention basins, and other	Potentially significant; less than significant with mitigation

Master Plan Elements	Impacts related to Hazards and Hazardous Materials	Impact Summary
	facilities designed to collect and remove sediments and other pollutants from stormwater. Maintenance activities for these stormwater treatment facilities include periodic removal of sediments and potentially large amounts of aquatic vegetation, which can contain pollutants from urban runoff. Transport or disposal of stormwater sediments, when conducted properly (i.e., in accordance with applicable hazardous waste regulations including the federal Resource Conservation and Recovery Act and California Hazardous Waste Control Law (Title 22 of California Code of Regulations)), would not create a significant hazard to the public or the environment. Projects with constructed wetlands, stormwater retention basins, and other facilities designed to collect stormwater could increase mosquito breeding areas, an adverse impact on public health. The Master Plan mitigation measure described in **Section 4.5.5.2** requires consultation with the vector control district and implementation of vector management measures to reduce mosquito breeding habitat.	
Economic Development Element: Pursue economic development opportunities derived from and compatible with the natural aesthetic and environmental qualities of the river.	**Neutral:** This element includes objectives and performance criteria that are neutral with respect to impacts related to hazards and hazardous materials (e.g., providing incentives to participating adjacent land owners). **Potentially Adverse:** This element promotes the pursuit of economic development opportunities which consider connectivity to the river corridor and establishment of development standards. Adoption of this element could encourage projects that involve reclamation of idle industrial properties, which could contain contaminated soils or other hazardous materials. Hazardous materials issues associated with such projects would need to be addressed on a site-by-site basis. The Master Plan mitigation measure described in **Section 4.6.5.6** outlines an approach to evaluation of potential for soil contamination and implementation of measures to reduce impacts by removing and disposing of contaminated soils in compliance with applicable regulations at approved disposal sites.	Potentially significant; less than significant with mitigation

4.5.4 Impacts of Implementing the Concept Design Studies

4.5.4.1 Hazardous Materials

Construction in Areas of Potential Soil Contamination. As described in **Section 4.5.1.2**, two Concept Design Studies, Lario Creek and El Dorado Regional Park, are located on or near sites that with documented leaking underground storage tanks. Since the remediation status of these sites is not fully known, it is possible that contaminated soils may still be present near the areas of proposed construction activities for the Concept Design Studies. In addition, due to the highly urbanized environment and the presence of industrial land uses in the Master Plan study area, there is potential for contaminated soils to be present at these and other future project sites. If

contaminated soils are encountered during project construction and are not recognized and not disposed of properly, this would be a potentially significant impact. However, incorporation of **Mitigation Measure CD-W3** (see **Section 4.6.6**; site-specific investigation of soil contamination and proper disposal of contaminated soil, if any) would ensure that if contaminated soils are found in areas that would be disturbed by project construction, they would be disposed of in compliance with applicable regulations at approved disposal sites. The impact would then be less than significant.

Stormwater Disinfection. The Master Plan Concept Design Studies for the Woodland Duck Farm, Lario Creek, the San Gabriel River Center at Whittier Narrows, and El Dorado Regional Park propose constructed wetlands for stormwater treatment. Additionally, other future projects may involve wetlands, stormwater retention basins, and other facilities designed to collect and treat stormwater. Depending on the final project design, portions of the collected stormwater may be reused for irrigation or other uses with the potential for public contact, and may require disinfection. Potential methods of disinfection include Ultraviolet (UV) irradiation or sodium hypochlorite. UV disinfection does not involve use of hazardous materials and would have a beneficial impact on public health and safety. Liquid sodium hypochlorite, a concentrated form of household bleach, can be generated onsite using salt, water, and electricity or may be delivered periodically. Sodium hypochlorite is a commonly used chemical and does not pose substantial risks to public health and safety if handled and stored properly. Impacts associated with handling and use of sodium hypochlorite would be less than significant.

Disposal of Sediments Removed for Maintenance of Stormwater Treatment Facilities. The Master Plan Concept Design Studies for the Woodland Duck Farm, Lario Creek, the San Gabriel River Center at Whittier Narrows, and El Dorado Regional Park include constructed wetlands for stormwater treatment. Additionally, other future projects may involve wetlands, stormwater retention basins, and other facilities designed to collect and remove sediments and other pollutants from stormwater. Maintenance activities for these stormwater treatment facilities include periodic removal of sediments and aquatic vegetation, which can contain hazardous contaminants, such as heavy metals and organics that might be present in the influent runoff. Sediments removed from these facilities will be disposed of properly in accordance with applicable hazardous waste regulations (e.g., federal Resource Conservation and Recovery Act and California Hazardous Waste Control Law (Title 22 of California Code of Regulations)). at approved disposal sites. Transport or disposal of stormwater sediments, when conducted properly, would not create a significant hazard to the public or the environment. This impact is less than significant.

Use of Pesticides or Herbicides in Landscaped Areas or for Exotic Species Removal. All five Master Plan Concept Design Studies as well as many other future projects could include landscaping/habitat restoration as potential project elements. In addition, the Concept Design Studies for San Gabriel River Discovery Center, Lario Creek, and El Dorado Regional Park propose removal of exotic plant species. With incorporation of **Mitigation Measure CD-W2** (see **Section 4.6.6**; preferentially select biological or non-chemical controls and select compounds that are less persistent in the environment), use of chemical pesticides/herbicides would be minimized. If any, use of chemicals for control of weeds, pests, or exotic plants will be limited to approved herbicides and pesticides. Application of herbicides/pesticides will be

conducted in accordance with manufacturers' recommendations and general standards of use, e.g., restricted application before and during rain storms. Additionally, applications of aquatic pesticides/herbicides to waters of the U.S. may require coverage under a general permit under the National Pollutant Discharge Elimination System (NPDES). This impact is less than significant.

4.5.4.2 Bird/Wildlife Aircraft Strike Hazard

The Master Plan Concept Design Studies for the Woodland Duck Farm, Lario Creek, the San Gabriel River Center at Whittier Narrows, and El Dorado Regional Park include constructed wetlands. Additionally, other future projects may involve wetlands, stormwater retention basins, and other surface water features. These surface water features have the potential to attract wildlife, particularly waterfowl. This is considered a beneficial impact on biological resources (see **Section 4.2**).

However, if these features attracted a large number of birds and other wildlife and substantially increased the potential for collisions between wildlife and aircraft, the project would have an adverse effect on airport safety. El Monte Airport and Long Beach Airports are the only airports located within 5 miles of the Master Plan study area. Woodland Duck Farm (approximately 2 miles from El Monte Airport) and El Dorado Regional Park (approximately 2 miles from the Long Beach Airport) are the only Concept Design Study sites located within 5 miles of an airport. Since there are no airports located adjacent to the Master Plan study area, non-avian wildlife species are not a safety concern for the project. With respect to birds, the water features proposed at Woodland Duck Farm and El Dorado Regional Park may attract waterfowl and other birds, potentially increasing the diversity of bird species in the project area. At Woodland Duck Farm, the development of the stormwater treatment wetlands would result in creation of waterfowl habitat (potentially up to 30 acres). At El Dorado Regional Park, the development of the proposed wetlands (6 acres) would increase the amount of potential waterfowl habitat by approximately 17 percent over existing conditions (approximately 35 acres of existing lakes at the park). However, due to the highly urbanized nature of the project area and the continuing influence of human activity thus reducing the attractiveness of the created habitat to wildlife, a substantial increase in waterfowl population is not anticipated. Additionally, for the period 1990 to 2001, there were no cases of bird air strike reported to the FAA for the El Monte or Long Beach airports (FAA, 2002). Therefore, implementation of the Woodland Duck Farm and El Dorado Regional Park Concept Design Studies would not result in a substantial increase in the potential for bird/wildlife aircraft strike hazard. This would be a less than significant impact on airport safety.

Implementation of **Mitigation Measure CD-H2** (notification of FAA and airport operators) would further reduce this impact in accordance with FAA recommendations. Note, notification is not legally required but recommended for the types of land use changes proposed under the project (see **Section 4.5.1.3** above).

4.5.4.3 Vectors of Public Health Concern

The Master Plan Concept Design Studies for the Woodland Duck Farm, Lario Creek, the San Gabriel River Discovery Center at Whittier Narrows, and El Dorado Regional Park include collection and treatment of stormwater runoff. Additionally, other future projects may involve

wetlands, stormwater retention basins, and other above- or below-ground facilities designed to collect and treat stormwater. While the detailed design has not been determined, these projects would involve construction of stormwater retention facilities that vary in size and operating conditions. Below is a description of each type of facility and its potential for creating mosquito-breeding conditions. In addition, underground utility vaults (for cable, telephone, and electricity) mandated by current Federal Communications Commission regulations often retain standing water and breed mosquitoes (C. Myers, California Department of Health Services, pers. comm., 2005; see Appendix F).

Catch Basins. Catch basins may need to be constructed in streets surrounding the project sites to collect and convey runoff from street surfaces to the stormwater treatment facilities. Catch basins are typically designed so that runoff would flow into the downstream facilities without ponding. As part of regular maintenance, catch basins will be cleaned to remove leaves, sediments, and other debris. However, during the storm season, catch basins may temporarily contain stagnant water if they become clogged and are not cleaned out prior to the next rainfall event. Therefore, catch basins have some potential to create mosquito-breeding conditions.

Shallow depressions for infiltrating stormwater. A potential stormwater treatment method is creation of shallow depressions for infiltrating stormwater. This type of facility consists of a grassy surface (several acres in area) that is excavated and graded to create a shallow depression of several feet. During large storms, water would temporarily pond in the depressed area, but would likely infiltrate into the ground within a few days of most storm events. Additionally, improper irrigation in the vicinity of these facilities (over-irrigation) would also have the potential to maintain standing water in these depressions. Stormwater would be present primarily in winter, when most species of mosquitoes are less active. Therefore, the mosquito breeding potential at this type of facility is low, unless improperly constructed or poorly managed.

Retention Basins. Stormwater runoff collected in retention basins is generally infiltrated or transferred to a reuse location. Therefore, retention basins are dry most of the time. In addition, stormwater would be present primarily in winter, when most species of mosquitoes are less active. However, in the event of a large storm, water may remain in the basins for extended periods, depending on the basin capacity and percolation rates. Additionally, retention basins designed and managed to allow emergent vegetation along the perimeter would increase vector breeding potential. Therefore, retention basins have the potential for mosquito breeding.

Stormwater Wetlands. Stormwater treatment wetlands are generally designed to continuously circulate the water using a pump. However, water may become stagnant for extended periods due to the presence of wetland vegetation. Maintenance issues, such as pump failure, could further contribute to increases in vector breeding potential. Therefore, stormwater wetlands have the potential to create mosquito-breeding conditions. In addition, wetlands can attract wild birds and increase interactions between mosquitoes and wild birds, which are hosts for mosquito-borne viruses that can be transmitted to humans (SGVMVCD, 2003b).

Permanent Lakes. Some stormwater treatment facilities may be designed as lakes that hold water year-round. Mosquitoes generally prefer shallow water for breeding since it tends to be

more stagnant. Although wind action on the water surface will discourage egg-laying to some extent, lakes are potential mosquito-breeding sites, particularly in the perimeter area where shallow and more stagnant water is expected to occur. Additionally, lakes and ponds designed and managed to allow emergent vegetation along the perimeter would increase vector breeding potential and could impede vector control.

As described above, stormwater treatment facilities have the potential to create mosquito breeding conditions. Allowing public access to wetlands or other water features for recreational purposes could also increase interactions between mosquitoes and humans, thereby increasing the risk of disease transmission to the public (SGVMVCD, 2003b). In addition, increasing vegetation in existing water features for habitat restoration or as aesthetic amenities can also increase potential mosquito breeding habitat (e.g., floating islands proposed as a potential opportunity for habitat restoration at San Gabriel Canyon Spreading Grounds). Considering the urban setting in most of the Master Plan study area and the arrival of the West Nile virus to the Southern California region in 2003, this is a potentially significant impact on public health. However, with incorporation of **Mitigation Measure CD-H1** (incorporation of vector control into project design and operation and maintenance in consultation with vector control districts), project impacts on public health due to mosquitoes and mosquito-borne diseases would be less than significant.

Stormwater treatment facilities may also create breeding areas for black flies and midges. The increase in nuisance due to the potential increase in black flies and midges is a less than significant impact since they do not transmit disease-causing agents. Implementation of **Mitigation Measure CD-H1** (incorporation of vector control into project design and operation and maintenance in consultation with vector control districts) would further reduce impacts associated with black flies and midges.

Future visitors to parks or other outdoor recreational areas at project sites could be exposed to other insect vectors and wildlife that could be hazardous to human health (e.g., bees, fleas, ticks, snakes, yellow jackets, wild rodents, etc.). In areas where the potential for such hazards are known to be high, warning signs may be incorporated into the project design. This impact would be less than significant.

4.5.4.4 Recycled Water and Stormwater Use

The Master Plan Concept Designs for Woodland Duck Farm, Lario Creek, and El Dorado Regional Park proposes using recycled water for irrigation, supplying man-made water features and other non-potable uses. Other future projects may also propose use of recycled water for irrigation or other non-potable uses and groundwater recharge. Similarly, Woodland Duck Farm, Lario Creek, the San Gabriel River Center at Whittier Narrows, El Dorado Regional Park and other future projects may involve reuse of treated stormwater for irrigation and other non-potable uses.

Title 22, Division 4, Chapter 3 of California Code of Regulations (CCR) regulates non-potable uses of recycled wastewater (i.e., water from sources that contain treated sewage). The objective of Title 22 standards is to protect public health from pathogens and other contaminants that may be present in recycled wastewater. Although they do not legally apply to stormwater reuse, Title

22 standards have been used as a treatment goal for previous stormwater reuse projects, such as the Santa Monica Urban Runoff Recycling Facility (City of Santa Monica, 2003).

Title 22 establishes required treatment levels for recycled water use based on the expected degree of public contact with the recycled water. For applications with a high potential for the public to come in contact with the recycled water (e.g., irrigation of food crops, residential landscaping, and parks and playgrounds), Title 22 requires tertiary treatment and disinfection. For applications with a lower potential for public contact (e.g., irrigation of areas with restricted access, crops for livestock, and freeway landscaping), Title 22 requires secondary treatment with varying degrees of disinfection depending on the proposed use (CCR Sections 60303-60307).

Title 22 does not specify water quality or treatment level standards for use of recycled wastewater for groundwater recharge. The regulations stipulate generally that "reclaimed water used for groundwater recharge of domestic water supply aquifers by surface spreading shall be at all times of a quality that fully protects public health." CDHS makes recommendations to the applicable Regional Water Quality Control Board on an individual case basis where there is a potential risk to public health (CCR Section 60320).

Future projects that directly use recycled water would be required to comply with Title 22 regulations, which would ensure protection of public health. Although not a legal requirement, stormwater collected by future projects implemented by LADPW would be disinfected to meet Title 22 standards for bacteria before being reused for irrigation or other uses with the potential for public contact. Therefore, the public health impact of recycled water and stormwater reuse would be less than significant.

4.5.5 Master Plan Program Mitigation Measures

4.5.5.1 Hazardous Materials

Future projects involving soil disturbance (e.g., excavation and grading) will require an evaluation of the impacts of proposed actions with respect to hazardous materials as described in program **Mitigation Measure MP-W8** (site-specific investigation of soil contamination and proper disposal of contaminated soil; see Section 4.6.5).

4.5.5.2 Vectors of Public Health Concern

Future projects that involve construction of stormwater treatment wetlands, other water features or underground utility vaults or propose increasing vegetation within existing water features will require an evaluation of the impacts of proposed actions with respect to vectors as described in program Mitigation Measure MP-H1:

> **MP-H1** Project plans and designs will be submitted to the applicable vector control district (see Section 4.5.1.4) for review and comment with respect to control of mosquitoes and other vectors. Upon consultation with the vector control district, appropriate vector management measures will be incorporated into the project design. Potential management measures include the following:

- Design to minimize and/or provide periodic removal of vegetation on bank slopes and periphery of water bodies to minimize areas of stagnant water.
- Design and/or manage to optimize water depths and flow pattern. For mosquito control, maintain water depths and encourage/provide water circulation. For black fly control, minimize aeration of flowing water. If necessary, design water features to allow for periodical drying to desiccate vector larvae.
- Work with the vector control district to stock ponds and other permanent water features with mosquito-eating fish as needed.
- Provide site access to vector control district specifications (e.g., dikes with access roads or trails) to potential breeding areas for maintenance (e.g., vegetation removal) and treatment (e.g., application of Bti or other larvicides).
- Design stormwater retention facilities/devices to drain completely within 72 hours, or design with the capability to be dewatered rapidly if needed for vector control.
- Incorporate measures into project designs that serve to educate the public about wildlife safety and vector-borne disease issues, prevent wildlife-human interactions, and prevent wildlife access to trash and unnatural food and water sources that are likely to result in unnatural population levels.
- Design underground utility vaults, if needed for project implementation, to prevent retention of standing water thereby reducing vector breeding habitat.
- Regularly consult with the vector control district to identify mosquito management problems, mosquito monitoring and abatement procedures, and opportunities to adjust water and vegetation management practices to reduce mosquito production.
- Incorporate funding for vector management activities into project funding or implement a secure and reliable funding source for vector management activities.

4.5.5.3 Bird/Wildlife Aircraft Strike Hazard

MP-H2 For projects located within 5 miles of El Monte Airport or Long Beach Airport, the potential for the proposed facilities to attract waterfowl and other birds will be evaluated. If the evaluation indicates that the project would attract birds, the FAA Western Pacific Regional Office, Long Beach Airport, El Monte Airport and Los Alamitos Joint Forces Training Base will be notified of the proposed land use change to recognize potentially significant hazards early in the planning process and avoid or minimize the hazards.

4.5.6 Mitigation Measures for Concept Design Studies

The following mitigation measure will be implemented for **all five Concept Design Studies**:

CD-H1 Project plans and designs shall be submitted to the applicable vector control district (SGVMVCD for San Gabriel Canyon Spreading Grounds and Woodland Duck Farm and GLAVCD for San Gabriel River Discovery Center, Lario Creek, and El Dorado Regional Park) for review and comment with respect to control of mosquito and other

vectors. Upon consultation with the vector control district, appropriate vector management measures shall be incorporated into the project design. Potential management measures include the following:

- Design to minimize and/or provide periodic removal of vegetation on bank slopes and periphery of water bodies to minimize areas of stagnant water.
- Design and/or manage to optimize water depths and flow pattern. For mosquito control, maintain water depths and encourage/provide water circulation. For black fly control, minimize aeration of flowing water. If necessary, design water features to allow for periodical drying to desiccate vector larvae.
- Work with the vector control district to stock ponds and other permanent water features with mosquito-eating fish as needed.
- Provide site access to vector control district specifications (e.g., dikes with access roads or trails) to potential breeding areas for maintenance (e.g., vegetation removal) and treatment (e.g., application of Bti or other larvicides).
- Design stormwater retention facilities/devices to drain completely within 72 hours, or design with the capability to be dewatered rapidly if needed for vector control.
- Incorporate measures into project designs that serve to educate the public about wildlife safety and vector-borne disease issues, prevent wildlife-human interactions, and prevent wildlife access to trash and unnatural food and water sources that are likely to result in unnatural population levels.
- Design underground utility vaults, if needed for project implementation, to prevent retention of standing water thereby reducing vector breeding habitat.
- Regularly consult with the vector control district to identify mosquito management problems, mosquito monitoring and abatement procedures, and opportunities to adjust water and vegetation management practices to reduce mosquito production.
- Incorporate funding for vector management activities into project funding or implement a secure and reliable funding source for vector management activities.

The following mitigation measure shall be implemented for the Woodland Duck Farm and El Dorado Regional Park Concept Design Studies:

CD-H2 During the detailed design phase, FAA Western Pacific Regional Office and El Monte Airport (for Woodland Duck Farm) and Long Beach Airport (for El Dorado Regional Park) shall be notified of the proposed land use change to recognize potentially significant hazards early in the planning process and avoid or minimize the hazards.

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4.6 HYDROLOGY AND WATER QUALITY

4.6.1 Existing Setting

The Master Plan study area is the 1-mile wide corridor along 58 river miles of the San Gabriel River from its headwaters in the San Gabriel Mountains to its terminus at the Pacific Ocean between Long Beach and Seal Beach (**Figure 4.6-1**). The study area includes 19 cities as well as unincorporated areas of Los Angeles and Orange counties.

Local water supplies provide less than half of the total municipal water use in the San Gabriel River area (R.A. Rhone, pers. comm., April 19, 2005 (Appendix F)), but are a critical component to the overall water supply system. As noted below, there are numerous water rights holders, the majority of which provide municipal water service in the region.

4.6.1.1 Surface Water Features

The San Gabriel River flows from the San Gabriel Mountains in the north through the San Gabriel Valley and the Los Angeles Coastal Plain, and empties into the Los Angeles/Long Beach Harbor. The River runs parallel to Interstate 605 almost the entire length of the freeway from Azusa to Long Beach. The San Gabriel River Watershed (the area that drains into the River) encompasses 635 square miles (LASGRWC, 2001), and lies mostly within Los Angeles County with small portions in San Bernardino and Orange Counties.

The major tributaries to the San Gabriel River are Walnut Creek, San Jose Creek, and Coyote Creek. The Rio Hondo, a distributary of the San Gabriel River, branches from the River just below Santa Fe Dam and flows westward to the Whittier Narrows area. The Whittier Narrows area is a low point between the Puente Hills and Merced Hills, which forms the southern boundary of the San Gabriel Valley. At Whittier Narrows, portions of the flow from San Gabriel River are conveyed to the Rio Hondo by a manmade channel known as Lario Creek or Zone 1 Ditch.

Channel Conditions

Since the early 1900s, the San Gabriel River and its tributaries have been altered significantly through channelization and construction of dams primarily for flood control purposes (**Figure 4.6-2**). Upstream of Morris Dam, the River remains mostly in its natural state, flowing through the deep, wide canyons of the San Gabriel Mountains. Reaches of the River downstream of Morris Dam have been modified to make the channel straighter, deeper, and narrower. From San Gabriel Canyon Road in Azusa to Firestone Boulevard in Norwalk/Downey, the channel is trapezoidal in shape, with grouted stone sidewalls and an earthen bottom. The 10-mile reach from just south of Firestone Boulevard to the confluence with Coyote Creek in Long Beach is a trapezoidal channel lined with concrete both on the sides and the bottom. Within the 3-mile reach from the confluence with Coyote Creek to the mouth of the river (San Gabriel River estuary), the channel has an earthen bottom.

Figure 4.6-1
Surface Water Bodies and Flood Control Facilities
in the San Gabriel River Watershed

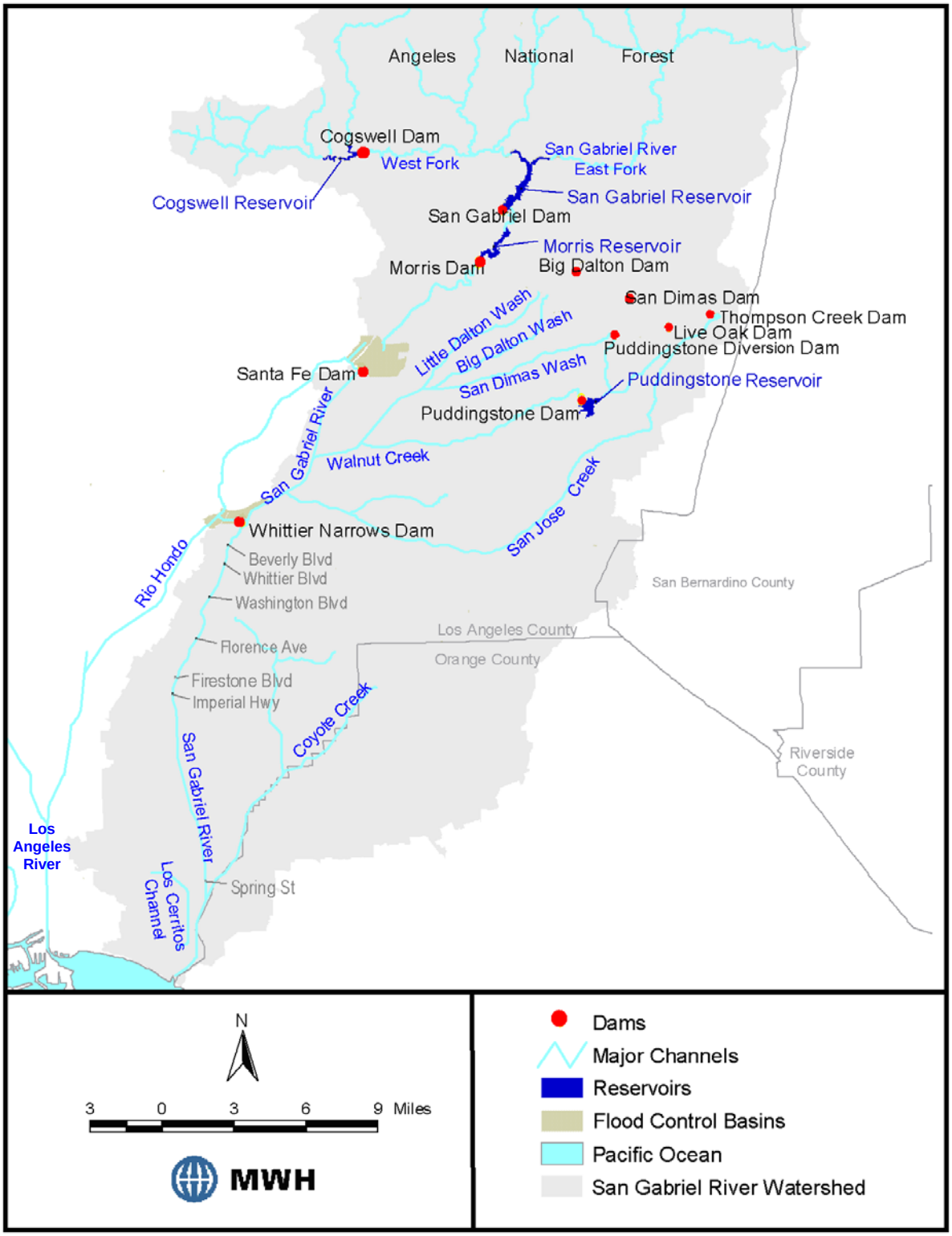
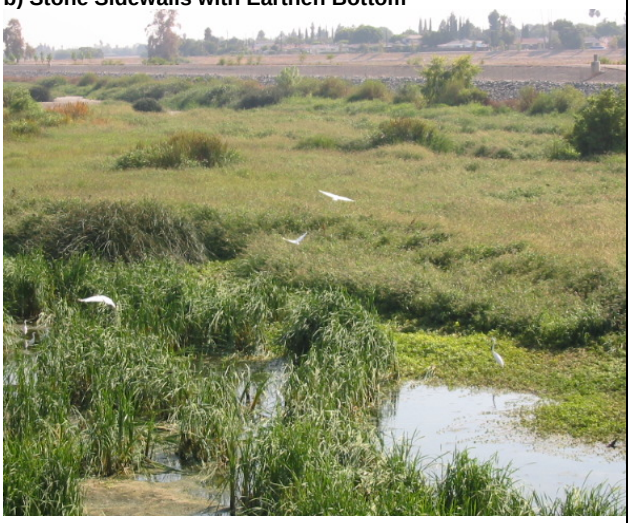


Figure 4.6-2
San Gabriel River Channel Conditions

a) Natural Channel in San Gabriel Canyon

b) Stone Sidewalls with Earthen Bottom



c) Concrete Channel Downstream of Whittier Narrows

d) Confluence with Coyote Creek – Transition to Earthen Bottom

Photographs by MIG, August 8, 2002.

Table 4.6-1 summarizes the channel widths, capacities, and 100-year flood discharges at different segments of the river. The channel accommodates 100-year flood discharges except in two segments (at Whittier Boulevard and between the San Diego Freeway and 7th Street). The reaches upstream and just downstream of the Whittier Narrows Dam have channel capacities substantially in excess of the 100-year flood discharge.

Table 4.6-1
Channel Widths, Capacities, and 100-year Flood Discharges

Channel Segment (From North to South)	Invert Width[1] (feet)	Channel Capacity[2] (cfs)	100-year Discharge[2] (cfs)
Santa Fe Dam - Walnut Creek	216-312	41,000	32,800
Walnut Creek - San Jose Creek	400-450	60,000	49,000
San Jose Creek - Whittier Narrows	N/A	98,000	70,700
Whittier Narrows - San Gabriel River Parkway	240-640	13,100	5,000
San Gabriel River Parkway - Beverly Boulevard	240-640	13,500	12,200
Beverly Boulevard - Whittier Boulevard	240-640	13,300	12,800
Whittier Boulevard	240-640	13,100	13,400
Washington Boulevard - Slauson Avenue	240	14,700	14,000
Slauson Avenue - Telegraph Road	240	16,700	14,600
Telegraph Road - Florence Avenue	240	18,800	15,200
Florence Avenue - Imperial Highway	160-240	19,000	15,800
Imperial Highway - Compton Boulevard	80-160	18,900	16,500
Compton Boulevard - Coyote Creek	80-90	20,000	17,200
Coyote Creek - San Diego Freeway	240	58,800	55,900
San Diego Freeway - 7th Street	240	51,100	55,500
7th Street - Ocean	240-164	55,600	55,000

Sources: 1 COE, 1975.
2 LADPW, 2003b.
Channel segments with capacities below the 100-year discharge
N/A – Not Available
Note: Invert width is the width of the channel bottom. The total width of the channel easement also includes the side slopes, typically sloped at 30 degrees, berms on either side of the channel, and the slope back to grade level.

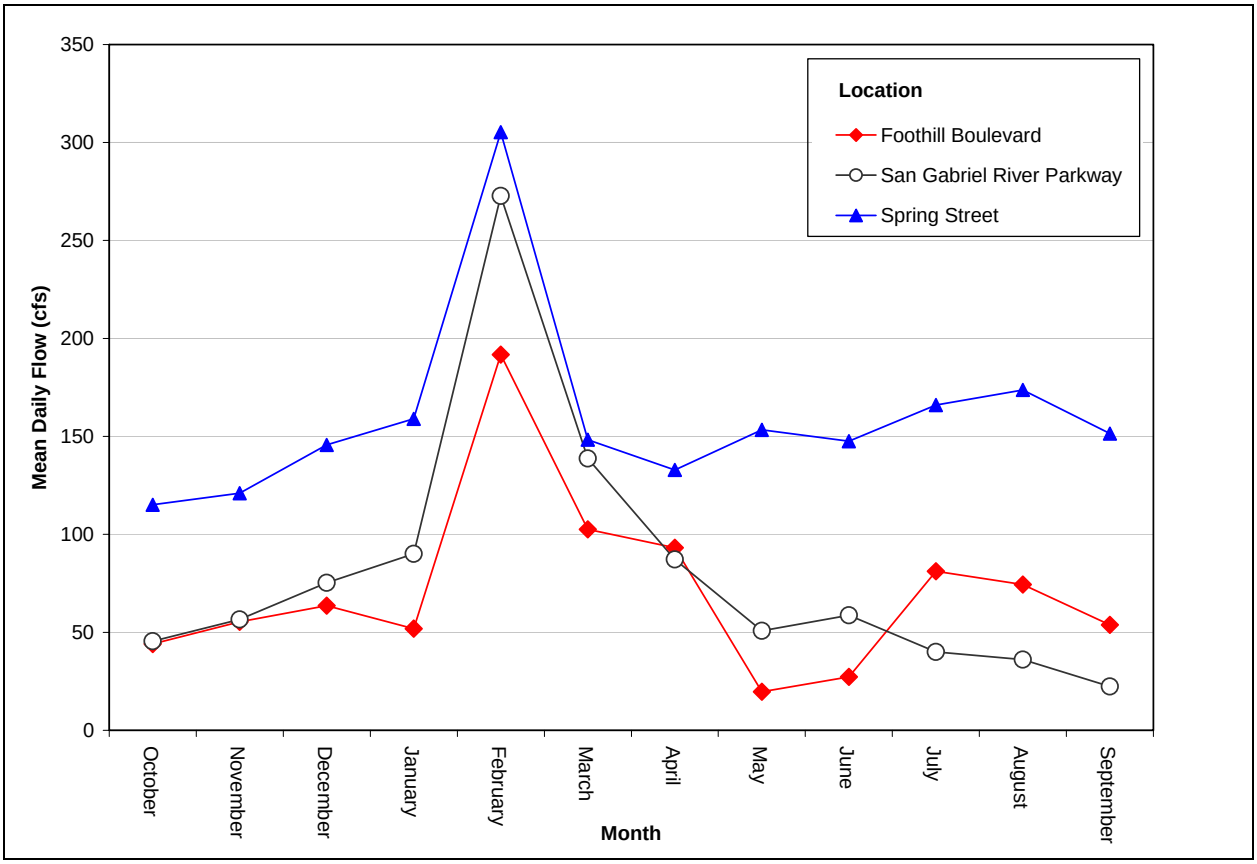
River Flows

The flow in the River and its tributaries consist of runoff, imported water, and recycled water. **Figure 4.6-3** depicts the mean daily flows by month at three locations along the river (listed from north to south):

- Foothill Boulevard in Azusa/Irwindale
- San Gabriel River Parkway in Pico Rivera
- Spring Street in Long Beach/Los Alamitos

Figure 4.6-3 represents average daily flows by month and does not represent the peak flows that can occur on a daily or hourly basis.

Figure 4.6-3
San Gabriel River Mean Daily Flows
(1996 – 2001 Water Years)



Source: LADPW Stream Gauges F190-R (at Foothill Boulevard), F263C-R (below San Gabriel River Parkway), and F42B-R (above Spring Street).
Note: Data shown exclude dam release of May 1998.

At Foothill Boulevard, upstream of most urban development, flows are regulated by the operation of Morris, San Gabriel, and Cogswell Dams. In addition to stormwater runoff, flows at this location can also contain imported water discharged from the outlet of Foothill Feeder-Service Connection USG-3, a pipeline owned by Metropolitan Water District of Southern California (Metropolitan); these flows vary depending on the availability of imported water and the water order placed by the various entities. Average flows range between 40 and 100 cfs throughout most of the year. Flows significantly above 100 cfs have also been recorded during storm events. The maximum recorded flow was 24,800 cfs (recorded on 1/26/1969 at station E322 at Peck Road). Highest flows (approximately 200 cfs) are observed in February, corresponding with the precipitation pattern. Flows at Foothill Boulevard are highly variable from year to year. In dry years, there can be weeks or months with almost no flow even during the winter.

Below San Gabriel River Parkway (just downstream of the Whittier Narrows Dam), flows between May and October are generally below 50 cfs. Flows increase in the winter with a peak

of approximately 330 cfs in February, and then gradually decrease throughout the spring. Between August and October there is generally very little flow at this location.

Above Spring Street (just upstream of the confluence with Coyote Creek), flows are fairly constant, ranging between 110 and 160 cfs for most of the year. The flow at this location contains approximately 26 cfs of effluent discharged by the Los Coyotes Water Reclamation Plant. Similar to the other two locations, highest flows are observed in February (approximately 300 cfs).

Dams and Spreading Facilities

The San Gabriel River is part of an extensive network of channels, dams, and spreading grounds used for flood control and water conservation. LADPW and the United States Army Corps of Engineers (COE) are the two primary agencies responsible for operating these facilities. **Figure 4.6-1** shows the locations of the dams and spreading facilities discussed below.

The five dams located on the San Gabriel River within the Master Plan study area (**Table 4.6-2**) are described in further detail below. An additional 11 dams are located on the tributaries (Big Dalton, Thompson Creek, Live Oak, San Dimas, Sawpit, Santa Anita, Puddingstone Diversion, Puddingstone, Eaton Wash, Fullerton, and Brea Dams). Originally constructed primarily for flood control, many of these dams are now also operated for water conservation (groundwater recharge) in conjunction with the spreading grounds located along the River. LADPW operates all spreading basins that receive water from the San Gabriel River (**Table 4.6-3**). In addition, the open space areas outside the reservoirs and dams are used for recreation in many cases (see **Section 4.10** regarding recreational facilities in the Master Plan study area).

Table 4.6-2
Dams on the San Gabriel River

Facility (From North to South)	Year Constructed	Maximum[(1)] Capacity (acre-feet)	Approx. Capacity (acre-feet)	Spillway Elevation (feet)	Purpose	Operator
Cogswell	1934	11,913	11,139[(2)]	2,385	Flood Control and Water Conservation	LADPW
San Gabriel	1939	53,344	43,655[(3)]	1,543	Flood Control and Water Conservation	LADPW
Morris	1935	32,300	22,540[(4)]	1,152	Water Conservation	LADPW
Santa Fe	1949	34,276	30,887[(5)]	496	Flood Control	COE
Whittier Narrows	1957	34,947	33,465[(6)]	229	Flood Control	COE

Source: LASGRWC, 2001; LADPW Water Resources Division.

(1) Maximum capacity is the original design capacity as modified by seismic, structural integrity and other requirements as determined by the California Department of Water Resources Division of Safety of Dams.
(2) As of last survey (1999)
(3) As of last survey (2002)
(4) As of last survey (1998)
(5) As of last survey (1996)
(6) As of last survey (1996)

Table 4.6-3
Spreading Facilities Receiving San Gabriel River Flows

Facility (From North to South)	Location	Size (acres)	Underlying Groundwater Basin*
San Gabriel Canyon	East side of San Gabriel River, below the mouth of San Gabriel Canyon in Azusa	165	San Gabriel Valley
Santa Fe	Within the Santa Fe Dam reservoir and spillway areas in Irwindale	338	San Gabriel Valley
Peck Road	Confluence of Sawpit and Santa Anita Washes (tributaries to the Rio Hondo) in Arcadia	157	San Gabriel Valley
San Gabriel River (San Gabriel Valley)	In-channel from Santa Fe Dam to Whittier Narrows Dam	196	San Gabriel Valley
Rio Hondo Coastal	On both sides of the Rio Hondo between Whittier Boulevard in Pico Rivera and Foster Bridge Boulevard in Bell Gardens	570	Central
San Gabriel Coastal	West side of the River between Whittier Boulevard and Washington Boulevard in Pico Rivera	128	Central
San Gabriel River (Montebello Forebay)	In-channel from Whittier Narrows Dam to Firestone Avenue	308	Central

Source: LADPW, 2003b.
* See Section 4.6.1.2.

Cogswell, San Gabriel, and Morris Dams, located in the San Gabriel Mountains, are operated by LADPW. These dams capture runoff and snow melt from the mountains and form large reservoirs. Water released from these dams is either diverted to the San Gabriel Canyon Spreading Grounds or conveyed to downstream facilities (Santa Fe Spreading Grounds and the Montebello Forebay via the San Gabriel River; Peck Road Spreading Basin via the Santa Fe Diversion Channel and the Sawpit Wash; and the Montebello Forebay via the Rio Hondo).

Santa Fe Dam, located approximately 4 miles downstream of the mouth of the San Gabriel Canyon, is operated by COE. Water collected behind Santa Fe Dam is used to recharge groundwater, either within the unlined channel of the River downstream of the dam or at the Peck Road Spreading Basin via Sawpit Wash (tributary to the Rio Hondo) (LADPW, 2003b), or is conveyed to the Montebello Forebay via the San Gabriel River or the Rio Hondo.

Whittier Narrows Dam, the largest flood control facility on the River, is operated by COE to regulate flows from the San Gabriel River to the Rio Hondo for flood control and water conservation. The two rivers are connected by two manmade channels – the Crossover Channel and Lario Creek. The Crossover Channel provides the main connection during large storms. Lario Creek (originally named the Zone 1 Ditch) conveys imported water and recycled water deliveries in addition to storm flows. Flood flows from the San Gabriel River are stored temporarily behind the dam, and controlled releases are made to the Rio Hondo and/or the San Gabriel River. Flows released to the Rio Hondo and the San Gabriel River are then diverted for groundwater recharge at the Rio Hondo Coastal Spreading Grounds and the San Gabriel Coastal

Spreading Grounds, respectively. Flows in excess of the capacity of the San Gabriel River that cannot be stored behind the dam are discharged to the ocean.

Rubber Dams. In addition to the permanent dam structures described above, a number of rubber dams are located on the River. When inflated, the rubber dams impound the River flow either to divert it into nearby spreading grounds or to facilitate in-channel recharge.

Discharges to the River and Tributaries

Water Reclamation Plants. Major discharges to the San Gabriel River include five Water Reclamation Plants (WRPs) and two power plants. All five WRPs located on the River or its tributaries (**Figure 4.6-4**) are operated by the County Sanitation Districts of Los Angeles County (LACSD), and provide primary, secondary and tertiary treatment and disinfection of municipal wastewater. **Table 4.6-4** shows the WRP capacities and the amount of water treated and the amount reused during fiscal year 2000-2001.

Other Discharges. There are two power plants that discharge cooling water into the San Gabriel River Estuary (LASGRWC, 2001). The Alamitos Generating Station, owned by AES Corporation, is permitted to discharge about 1,250 million gallons per day (mgd). The LADWP Haynes Generating Station is permitted to discharge about 1,000 mgd of water (LASGRWC, 2001; LARWQCB, 2003). In addition, there are numerous storm drains operated by LADPW and other municipalities that discharge urban runoff into the San Gabriel River. In addition, imported water is discharged to the River (or its tributaries) at several locations, including: downstream of Morris Dam ("USG-3" outlet owned by Metropolitan), the northern basin of the San Gabriel Canyon Spreading Grounds (outlet owned by San Gabriel Valley Municipal Water District (SGVMWD)), Thompson Creek ("CB-28" outlet owned by Metropolitan), and San Dimas Wash ("CB-48" outlet owned by Metropolitan and an outlet owned by SGVMWD).

Table 4.6-4
Water Reclamation Plants with Discharges to San Gabriel River and Tributaries

Plant (Receiving Water Body)	Capacity (mgd)	Amount Treated and Reused (Fiscal Year 2000 - 2001)			Primary Types of Reuse
		Type	mgd	AFY	
Pomona (South Fork San Jose Creek, which is tributary to San Jose Creek)	15	Treated	11	12,600	Irrigation and Industrial
		Reused	7	8,000	
		Discharged to RWB	4	4,600	
San Jose Creek[1] (San Jose Creek/San Gabriel River)	100	Treated	89	100,200	> 90% for groundwater recharge < 10 % Irrigation and Industrial
		Reused	35	39,000	
		Difference	54	61,200	
Whittier Narrows[2] (Rio Hondo/San Gabriel River)	15	Treated	7	7,900	> 90% for groundwater recharge < 10 % Irrigation and Industrial
		Reused	7	7,700	
		Difference	0	200	
Los Coyotes (San Gabriel River)	37.5	Treated	35	39,600	Irrigation and Industrial
		Reused	5	5,400	
		Discharged to RWB	30	34,200	
Long Beach (Coyote Creek)	25	Treated	20	22,900	Irrigation and Industrial
		Reused	4	4,300	
		Discharged to RWB	16	18,600	

Source: LACSD, 2001; C. Alarcon, pers. comm., May 5, 2005 (Appendix F)
RWB = receiving water body
mgd = million gallons per day
AFY = acre-feet per year

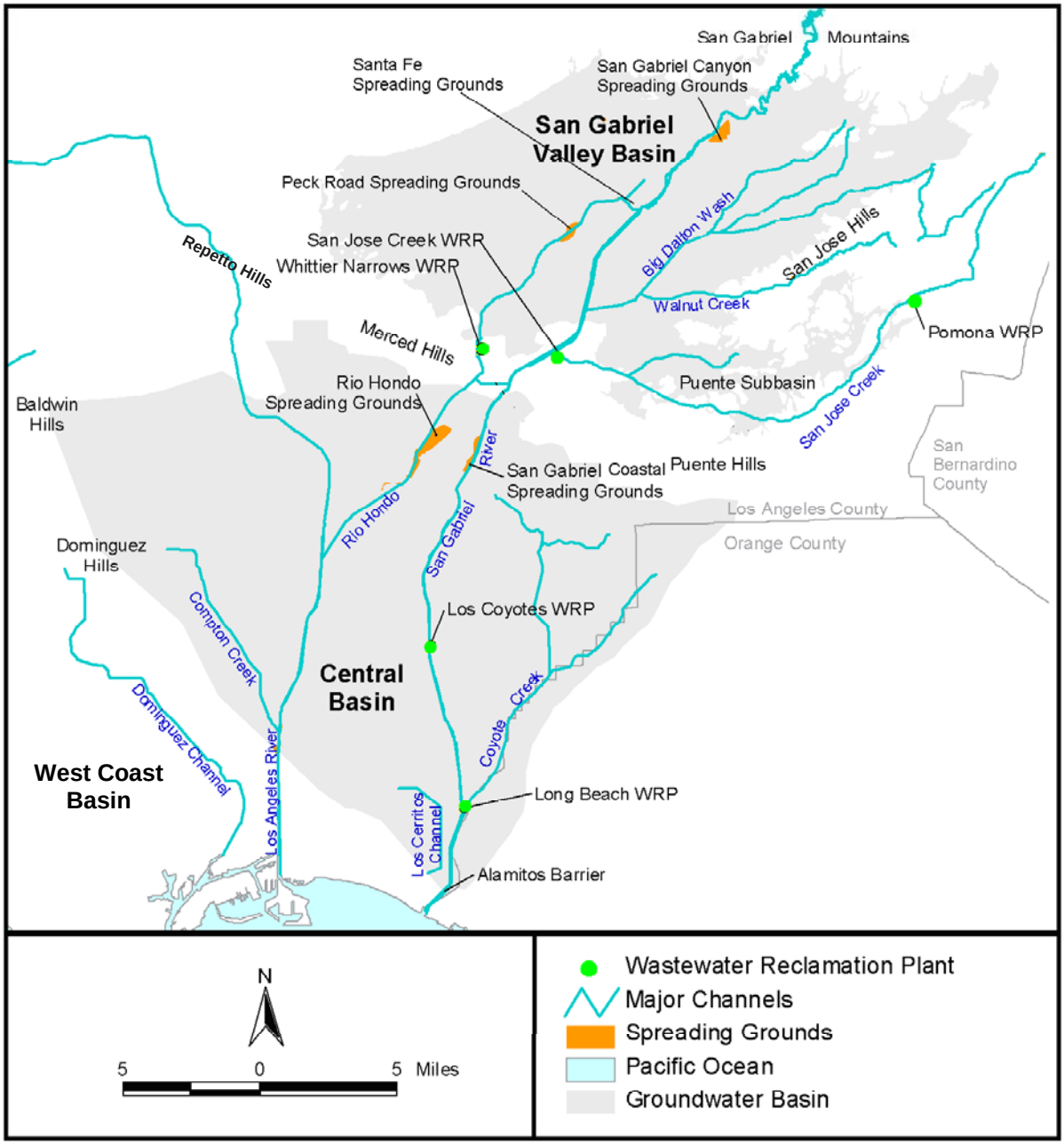
1 Reclaimed water from the San Jose Creek WRP is delivered to the San Gabriel Coastal Spreading Grounds by a direct pipeline or by first discharging into San Jose Creek (to San Gabriel River) then diverting flows from the San Gabriel River. Flows may also be diverted via Lario Creek to the Rio Hondo for recharge at the Rio Hondo Spreading Grounds. San Jose Creek WRP can also discharge to the San Gabriel River (downstream of the confluence with San Jose Creek).

2 The Whittier Narrows WRP discharges directly into either the Rio Hondo, the San Gabriel River, or Lario Creek.

4.6.1.2 Groundwater Basins

The Master Plan study area spans two groundwater basins: the San Gabriel Valley Basin and Central Basin (**Figure 4.6-4)**. The two basins are described in detail below.

Figure 4.6-4
Groundwater Basins



San Gabriel Valley Basin

The San Gabriel Valley Basin covers 255 square miles in northeastern Los Angeles County. The basin is bound to the north by the San Gabriel Mountains and the Raymond fault. The Repetto, Merced, and Puente Hills bound the basin to the south and west. The Chino fault and the San Jose fault form the eastern boundary (CDWR, 2003). The storage capacity of the basin is estimated to be approximately 10.7 million acre-feet (CDWR, 2003).

The water bearing materials of the basin are dominated by unconsolidated to semi-consolidated alluvium from the San Gabriel Mountains deposited by streams. The San Gabriel Valley Basin is an unconfined aquifer (i.e., the groundwater is not separated from the ground surface by an impermeable geological boundary). The general direction of the groundwater flow is from the edges of the basin boundary towards the center, then to the southwest to exit through Whittier Narrows (CDWR, 2003) to the Central Basin.

Data necessary to provide a complete accounting of inflows into and outflows from the San Gabriel Valley Basin were not available (CDWR, 2003). As an example of basin's water balance, **Table 4.6-5** presents the amount of known inflows and outflows for the basin for one year (Water Year 1998-1999). Water used to recharge the San Gabriel Valley Basin includes both imported water (from Northern California and the Colorado River) and local surface water.

Table 4.6-5
San Gabriel Valley Basin Inflow and Outflow (Water Year 1998-1999)

Inflow		Outflow	
Type	**Amount (acre-feet)**	**Type**	**Amount (acre-feet)**
Natural Recharge	186,268	--	--
Artificial Recharge	82,803	Extractions	269,782
Subsurface Inflow*	N/D	Subsurface Outflow to Central Basin	27,000

Source: CDWR, 2003.
* N/D – Not Determined. Subsurface inflow to the San Gabriel Valley Basin includes flows from the Raymond Basin, from the Chino Subbasin, and from fracture systems along the San Gabriel Mountain front.

Central Basin

The Central Basin underlies the southeastern part of the Los Angeles Coastal Plain, covering 277 square miles (CDWR, 2003). The Central Basin is bound on the north by the La Brea High and on the northeast and east by the Elysian, Repetto, Merced and Puente Hills. The southeast boundary between the Central and Orange County Groundwater Basins roughly follows the Coyote Creek. The southwest boundary, which separates the Central and West Coast Basins, is the Newport-Inglewood fault system and the Newport-Inglewood uplift (CDWR, 2003). The total storage capacity of the Central Basin is estimated to be approximately 13.8 million acre-feet.

Groundwater in the Central Basin occurs in Holocene and Pleistocene sediments at relatively shallow depths. Areas available for surface recharge of the Central Basin are limited due to the presence of the Bellflower Aquiclude, which is an impermeable layer of soil that prevents downward movement of water. The Bellflower Aquiclude creates semi-perched groundwater conditions in some areas (CDWR, 2003). The Montebello Forebay area, located just south of Whittier Narrows, consists of highly permeable soils and is the most significant area for surface recharge of the Central Basin and the adjacent West Coast Basin. The WRD and LADPW use local runoff, imported water, and recycled water for groundwater recharge at spreading facilities

located in the Montebello Forebay (see **Table 4.6-3**). The Los Angeles Forebay, another area of permeable soils, is not available for surface recharge due to urban development (CDWR, 2003). The general direction of the groundwater flow is from the northeast (San Gabriel Valley Basin and recharge areas) to the southwest (West Coast Basin and Pacific Ocean) (CDWR, 2003).

Data necessary to provide a complete accounting of inflows into and outflows from the Central Basin were not available (CDWR, 2003). As an example of basin's water balance, **Table 4.6-6** presents the amount of known inflows and outflows for the basin for one year (Water Year 1998-1999).

Table 4.6-6
Central Basin Inflow and Outflow (Water Year 1998-1999)

Inflow		Outflow	
Type	**Amount (acre-ft)**	**Type**	**Amount (acre-ft)**
Natural Recharge	31,950	--	--
Artificial Recharge	63,688	Extractions	204,335
Subsurface inflow from the San Gabriel Valley Basin	27,000	Subsurface Outflow (to West Coast Basin and Pacific Ocean)	N/D

Sources: CDWR, 2003.
N/D – Not Determined

West Coast Basin

The southern end of the Master Plan study area overlaps the West Coast Basin, which is located west of Central Basin. The West Coast Basin is bound on the north by the Ballona Escarpment, an abandoned erosional channel from the Los Angeles River. On the east it is bound by the Newport-Inglewood fault zone, and on the south and west by the Pacific Ocean and Palos Verdes Hills. The storage capacity of the basin is estimated to be approximately 6.5 million acre-feet (CDWR, 2003).

Groundwater in the West Coast Basin occurs in the unconsolidated and semi-consolidated marine and alluvial sediments of Holocene, Pleistocene, and Pliocene ages. Natural replenishment of the basin's groundwater supply is largely limited to underflow from the Central Basin through and over the Newport-Inglewood fault zone. In addition, freshwater is injected to prevent seawater intrusion near the coast. Minor replenishment to the West Coast Basin occurs from infiltration of surface inflow from both the Los Angeles and San Gabriel Rivers (CDWR, 2003). The general regional groundwater flow pattern is southward and westward from the Central Basin towards the ocean.

Data necessary to provide a complete accounting of inflows into and outflows from the West Coast Basin were not available (CDWR, 2003). As an example of basin's water balance, **Table 4.6-7** presents the amount of known inflows and outflows for the West Coast Basin for one year (Water Year 1998-1999).

Table 4.6-7
West Coast Basin Inflow and Outflow (Water Year 1998-1999)

Inflow		Outflow	
Type	**Amount (acre-ft)**	**Type**	**Amount (acre-ft)**
Natural Recharge	N/D	--	--
Artificial Recharge	95,638	Extractions	51,762
Subsurface inflow (primarily from the Central Basin)	68,473	Subsurface Outflow	N/D

Sources: CDWR, 2003.
N/D – Not Determined

4.6.1.3 Water Rights

The Water Commission Act, which took effect in 1914, established a system of state-issued permits and licenses to appropriate water. Amended over the years, the provisions for appropriating water now appear in Division 2 (commencing with Section 1000) of the California Water Code. The State Water Resources Control Board (SWRCB) is responsible for administering water rights (CDWR, 1998).

Water rights to the San Gabriel River and the groundwater basins underlying the Master Plan study area have been allocated to numerous users. SWRCB (2003a) has declared the San Gabriel River fully appropriated, i.e., no new users can file for a share of the river water. The two groundwater basins, the San Gabriel Valley Basin and the Central Basin, are both adjudicated basins, i.e., rights to extract groundwater have been allocated to various users by a court order. Agencies and organizations involved in administering water rights in the Master Plan study area are described below.

San Gabriel River Watermaster

In 1965, a court judgement settled a lawsuit filed by water users downstream of the Whittier Narrows on the San Gabriel River (Lower Area). The court judgement, known as the Long Beach Judgement, declared that the Lower Area is entitled to receive an annual average of 98,415 acre-feet of "usable water" from the Upper Area (upstream of Whittier Narrows) (SGRWM, 2003). The Judgement is administered by a three-person Watermaster (the San Gabriel River Watermaster) that accounts for all water (surface and subsurface) passing through Whittier Narrows each year and for credit and debit obligations (CRA et al., 2001). The Watermaster is composed of one representative from the Upper Area, one from the Lower Area, and one chosen by both areas (Blomquist, 1992).

Main San Gabriel Basin Watermaster

The San Gabriel Valley Basin is divided into two main parts, the Main San Gabriel Basin and the Puente Subbasin. The Puente Subbasin, lying in the southeast portion outside of the Master Plan Study area, is tributary and hydraulically connected to the Main San Gabriel Basin. However, it is considered a separate entity for management purpose (MSGBW, 2002).

The Main San Gabriel Basin was adjudicated in 1973 to 190 parties (MSGBW, 2003). The Main San Gabriel Basin Watermaster is responsible for administering the water rights allocations, including water spreading activities. The amount of groundwater that can be extracted from the basin (Operating Safe Yield, OSY) is determined by the Watermaster each year based on rainfall, groundwater levels, water held in storage, and various other considerations (CDWR, 2003; C.T. Williams, pers. comm., April 27, 2005 (**Appendix F**)). The long-term average OSY (1973 to 2002) is 199,545 acre-feet. The minimum and maximum OSY during this period were 140,000 and 230,000 acre-feet, respectively (MSGBW, 2002).

Parties who pumped 5,000 acre-feet or more in Fiscal Year 2001-2002 from the Main San Gabriel Basin are listed below (MSGBW, 2002). In addition, there are numerous parties with smaller water rights.

- Azusa Valley Water Company
- California Domestic Water Company
- California-American Water Company
- City of Alhambra
- City of Arcadia
- City of Azusa
- City of Glendora
- City of Monrovia
- City of Monterey Park
- City of Whittier
- Covina Irrigating Company
- San Gabriel County Water District
- San Gabriel Valley Water Company
- Southern California Water Company
- Suburban Water Systems
- Valley County Water District

Central Basin Watermaster

The Central Basin was adjudicated in 1965, with the California Department of Water Resources (CDWR) as the Watermaster. Currently, 146 parties hold rights to the Central Basin. The allowed pumping allocation of the basin, as set by the Judgement, is 217,367 acre-feet (CDWR, 2002a). WRD, in conjunction with LADPW, is responsible for replenishing groundwater supply in the Central Basin. Imported water purchased from the Metropolitan Water District of Southern California (Metropolitan) and recycled water from Whittier, Pomona, and San Jose Creek WRPs are used for artificial recharge at LADPW Spreading Grounds (**Table 4.6-3**).

Parties with allocation of 3,000 acre-feet or more from the Central Basin are listed below (CDWR, 2002a). In addition, there are numerous parties with smaller water rights.

- City of Huntington Park

- City of Lakewood
- City of Long Beach
- City of Lynwood
- City of Paramount
- City of Pico Rivera
- City of Santa Fe Springs
- City of South Gate
- City of Vernon
- Los Angeles Department of Water and Power
- Pico Water District
- Southern California Water Company
- Suburban Water Systems

West Coast Basin Watermaster

The West Coast Basin was first adjudicated in 1955, with CDWR as the Watermaster. The final judgement was signed in 1965 and became effective in 1966. Currently, 68 parties hold rights to the West Coast Basin. The allowed pumping allocation of the basin, as set by the adjudication, is 64,468.25 acre-feet (CDWR, 2002b). WRD, in conjunction with LADPW, is responsible for replenishing groundwater supply in the Central Basin. Imported water purchased from the Metropolitan Water District of Southern California (Metropolitan) and recycled water from Whittier, Pomona, and San Jose Creek WRPs are used for artificial recharge at LADPW Spreading Grounds (**Table 4.6-3**).

Parties with allocation of 1,000 acre-feet or more from the West Coast Basin are listed below (CDWR, 2002b). In addition, there are numerous parties with smaller water rights.

- Atlantic Richfield Company
- California Water Service Company
- Chevron USA, Inc.
- City of Hawthorne
- City of Inglewood
- City of Lomita Water System
- City of Los Angeles
- City of Manhattan Beach
- City of Torrance
- Equilon Enterprises, LLC
- Mobil Oil Corporation
- Shell Oil Company
- Southern California Water Company
- Tosco Corporation

San Gabriel River Water Committee

SGRWC was formed in 1889 to settle disputes between nine local water interests and was originally called the "Committee of Nine." Currently, the SGRWC consists of the California-American Water Company, Monrovia Nursery Company, City of Azusa, Covina Irrigating Company, and Azusa Agricultural Water Company. The diversion rights of each SGRWC member are shown in **Table 4.6-8**. SGRWC members are entitled to the first 135 cfs of flow in the San Gabriel River (Rhone, 2003). Most of the diverted water is used for potable uses. The river water is treated at Canyon Filtration Plant (City of Azusa) and Covina Filtration Plant (Covina Irrigating Company) before distribution to consumers. Excess flows are used for groundwater recharge at spreading facilities under an agreement with LADPW. SGRWC members are the only parties allowed to divert water from the River for potable uses.

Table 4.6-8
San Gabriel River Water Committee Members and Diversion Rights
(acre-feet per year)

Party	Amount of Entitlement
City of Azusa	3,252
Covina Irrigating Company	2,514
California-American Water Company	1,672
Monrovia Nursery Company	958
Azusa Agricultural Water Company	170

Source: Rhone, 2003

San Gabriel Valley Protective Association

SGVPA was formed in 1919 to safeguard the rights of water users from Azusa to Whittier (Robinson, 1991). The SGVPA members listed below (C. Shaw, pers. comm., 2003) are entitled to water from the San Gabriel River in excess of 135 cfs (Rhone, 2003), and they use the water solely for groundwater recharge at LADPW facilities.

- Cadway, Inc.
- California Domestic Water Company
- California-American Water Company
- Central Basin Municipal Water District
- City of Alhambra
- City of Arcadia
- City of Azusa
- City of Glendora
- City of Lakewood
- City of Monrovia
- City of Whittier
- Covina Irrigating Company
- East Pasadena Water Company
- La Habra Heights County Water District
- Montebello Land and Water Company
- Pico County Water District
- San Gabriel County Water District
- San Gabriel Valley Municipal Water District
- San Gabriel Valley Water Company
- Southern California Water Company
- Suburban Water Systems
- Upper San Gabriel Valley Municipal Water District
- Valencia Heights Water Company
- Valley County Water District
- Water Replenishment District of Southern California

4.6.1.4 Water Quality

Water Quality Regulatory Framework

Basin Plan Beneficial Uses and Water Quality Objectives. The Los Angeles Regional Water Quality Control Board (Regional Board) establishes water quality standards for the Los Angeles Region in its Water Quality Control Plan, commonly known as the Basin Plan. The Basin Plan presents designated beneficial uses for surface and ground waters and numeric and narrative water quality objectives necessary to support the beneficial uses.

Table 4.6-9 summarizes the designated beneficial uses for the San Gabriel River and other water bodies within the Master Plan study area (LARWQCB, 1994).

Beneficial uses for the San Gabriel Valley, Central, and West Coast groundwater basins are Municipal and Domestic Supply, Industrial Service Supply, Industrial Process Supply, and Agricultural Supply (all designated as existing beneficial uses).

Table 4.6-9
Beneficial Uses of Water Features within the Master Plan Study Area

Water Body		Municipal and Domestic Supply	Industrial Service Supply	Industrial Process Supply	Agricultural Supply	Groundwater Recharge	Water Contact Recreation	Non-Contact Water Recreation	Warm Freshwater Habitat	Cold Freshwater Habitats	Wildlife Habitat	Rare, Threatened, or Endangered Species	Spawning, Reproduction, and/or Early Development	Wetland Habitat
Name	**HU No.**	MUN	IND	PROC	AGR	GWR	REC-1	REC-2	WARM	COLD	WILD	RARE	SPWN	WET
San Gabriel River														
San Gabriel River West Fork	405.43	P	--	--	--	E	E	E	E	E	E	E	E	E
San Gabriel River Main Stem	405.43	E	E	E	E	E	E	E	E	E	E	--	E	--
San Gabriel River	405.42	E	E	E	E	E	E	E	E	E	E	E	--	--
San Gabriel River	405.41	P	--	--	--	I	I	I	I	--	E	--	--	--
San Gabriel River (Whittier Narrows – Firestone Boulevard)	405.15	P	P	P	--	I	E	E	I	--	E	E	--	--
San Gabriel River (Firestone Boulevard - Estuary)	405.15	P	--	--	--	--	E	E	P	--	P	--	--	--
San Gabriel River Estuary*	405.15	--	E	--	--	--	E	E	--	--	E	E	E	--
Tributaries														
Walnut Creek	405.41	P	--	----	--	I	I	I	I	--	E	--	--	E
San Jose Creek	405.41	P	--	--	--	I	P	I	I	--	E	--	--	--
Coyote Creek	405.15	P	P	P	--	--	P	I	P	--	P	E	--	--
Reservoirs and Flood Control Basins														
Cogswell Reservoir	405.43	P	--	--	--	E	E	E	E	E	E	--	E	--
San Gabriel Reservoir**	405.43	E	E	E	E	E	E	E	E	E	E	--	--	--
Morris Reservoir**	405.43	E	E	E	E	E	P	E	E	E	E	--	E	--
Santa Fe Flood Control Basin	405.41	P	--	--	--	I	P	I	I	--	E	--	--	E
Whittier Narrows Flood Control Basin	405.41	P	--	--	--	E	E	E	E	--	E	P	--	--
Legg Lake	405.41	P	--	--	--	E	E	E	E	E	E	--	--	E

HU: Hydrologic Unit P: Potential Use E: Existing Use I: Intermittent Use

* Beneficial uses for the San Gabriel River Estuary also include the following: Navigation, Commercial and Sport Fishing, Estuarine Habitat, Marine Habitat, and Migration of Aquatic Organisms (existing uses) and Shellfish Harvesting (a potential use)

** Beneficial uses for the San Gabriel and Morris reservoirs also include Hydropower Generation (an existing use).

Source: LARWQCB, 1994.

The Basin Plan presents numeric water quality objectives that apply to all inland surface waters in the Los Angeles Region. These objectives have been established for various parameters including metals, organic compounds (e.g., pesticides and petroleum byproducts), bacteria, dissolved oxygen, pH, temperature, and total residual chlorine (LARWQCB, 1994).

In addition to the general objectives, the Basin Plan has established water body-specific objectives for certain areas. The objectives specific to the San Gabriel River are presented in **Table 4.6-10**.

Table 4.6-10
Water Quality Objectives for Surface Water Features in the Master Plan Study Area

Reach	Objectives					
	TDS (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	Boron (mg/L)	Nitrogen* (mg/L)	SAR
Above Morris Dam	250	30	10	0.6	2	2
Between Morris Dam and Ramona Boulevard	450	100	100	0.5	8	--
Between Ramona Boulevard And Firestone Boulevard	750	300	150	1.0	8	--
Between Firestone Boulevard and San Gabriel River Estuary including Coyote Creek	--	--	--	--	--	--
All other minor San Gabriel Mountain streams tributary to San Gabriel Valley	300	40	15	--	--	--

Source: LARWQCB, 1994.
* Nitrogen as NO_3-N + NO_2-N
-- No water body specific objectives
TDS: Total Dissolved Solids
SAR: Sodium Adsorption Ratio

Basin Plan water quality objectives for groundwater basins relevant to the Master Plan study area are shown in **Table 4.6-11**.

Table 4.6-11
Water Quality Objectives for Groundwater Basins in the Master Plan Study Area

Basin	Objectives (mg/L)			
	TDS	Sulfate	Chloride	Boron
Main San Gabriel Basin – Western Area*	450	100	100	0.5
Main San Gabriel Basin – Eastern Area*	600	100	100	0.5
Central Basin	700	250	150	1.0

Source: LARWQCB, 1994.
TDS: Total Dissolved Solids
*Walnut Creek, Big Dalton Wash, and Little Dalton Wash separate the Eastern area from the Western area.

NPDES Stormwater Program. The primary regulatory framework for pollutant discharges to water bodies is the National Pollutant Discharge Elimination System (NPDES) program, which is administered by the U.S. Environmental Protection Agency (EPA) under the Clean Water Act (CWA) with authority delegated to the Regional Board. In 1987, the NPDES program was expanded to regulate stormwater discharges in response to the increasing awareness for the need to control stormwater pollution. Under the NPDES Stormwater Program, municipalities, ten categories of industrial activities, and construction activities over 1 acre in area are required to obtain a NPDES permit for stormwater discharges.

Municipalities in the Master Plan study area are covered by three separate NPDES municipal stormwater discharge permits. The County of Los Angeles and all incorporated cities in the Master Plan Study area within Los Angeles County (except the City of Long Beach) are covered under Order No. 01-182, issued by the Regional Board in 2001. The City of Long Beach is covered under Order No. 99-060 issued by the Regional Board in 1999. The City of Seal Beach and unincorporated areas of Orange County are covered under Order No. R8-2002-0010 issued by the Santa Ana Regional Water Quality Control Board (SARWQCB) in 2002. Under these permits, municipalities are required to develop area-wide stormwater management plans (known as Standard Urban Stormwater Mitigation Plans or SUSMPs), implement best management practices (BMPs) to reduce and/or treat stormwater runoff, and perform stormwater monitoring. LADPW has prepared a manual that serves as a guideline for compliance with the County's SUSMP (LADPW, 2002b). Similarly, the County of Orange has prepared the Drainage Area Management Plan (DAMP; Orange County, 2003), which incorporates the requirements of the SARWQCB Order No. R8-2002-0010 and is the principal policy and guidance document for the countywide NPDES Stormwater Program. The SUSMP and the DAMP outline the necessary BMPs that must be incorporated into design plans for various categories of development and/or redevelopment.

(See Section 4.5.1.4 regarding the potential for stormwater capture devices or treatment options to serve as vector habitats.)

NPDES stormwater permits do not currently impose effluent limitations. However, as part of the NPDES Stormwater Program, EPA established "benchmark" concentrations for various pollutant parameters that are of potential concern in stormwater runoff from industrial facilities. If

concentrations of constituents exceed the benchmark levels, stormwater discharges are considered by EPA to have the potential to impair, or contribute to impairing, water quality or to affect human health if ingested. The benchmarks are intended to serve as a guide in determining whether stormwater pollution prevention measures have been successfully implemented. They are not effluent limitations (EPA, 1995).

Title 22 – Recycled Water Use Regulations. Title 22, Division 4, Chapter 3 of California Code of Regulations (CCR) regulates non-potable uses of recycled wastewater (i.e., water from sources that contain treated sewage). The objective of Title 22 standards is to protect public health from pathogens and other contaminants that may be present in recycled wastewater. Although they do not legally apply to stormwater reuse, Title 22 standards have been used as a treatment goal for previous stormwater reuse projects, such as the Santa Monica Urban Runoff Recycling Facility (SMURRF) (City of Santa Monica, 2003).

Title 22 establishes required treatment levels for recycled water use based on the expected degree of public contact with the recycled water. For applications with a high potential for the public to come in contact with the recycled water (e.g., irrigation of food crops, residential landscaping, and parks and playgrounds), Title 22 requires tertiary treatment and disinfection. For applications with a lower potential for public contact (e.g., irrigation of areas with restricted access, crops for livestock, and freeway landscaping), Title 22 requires secondary treatment with varying degrees of disinfection depending on the proposed use (CCR Sections 60303-60307).

Title 22 does not specify water quality or treatment level standards for use of recycled wastewater for groundwater recharge. The regulations stipulate generally that "reclaimed water used for groundwater recharge of domestic water supply aquifers by surface spreading shall be at all times of a quality that fully protects public health." The California Department of Health Services (CDHS) makes recommendations to the applicable Regional Water Quality Control Board on an individual case basis where there is a potential risk to public health (CCR Section 60320).

Surface Water Quality

LADPW Water Quality Data. Table 4.6-12 presents selected water quality data for the San Gabriel River. The left column shows water quality data collected in September 2001 from 12 locations, ranging from the West Fork of the River in the San Gabriel Mountains to upstream of the City of Azusa. This set of data was collected by LADPW (2002) as required by the permits issued for sediment management in the San Gabriel and Morris Reservoirs.

The two columns on the right present water quality data collected from 1994 to 2000 in the River below San Gabriel River Parkway in Pico Rivera and in Coyote Creek below Spring Street in Long Beach/Los Alamitos. This set of data was collected by LADPW (2001) as part of the annual stormwater sampling and reporting program throughout Los Angeles County as required by the NPDES Municipal Stormwater Permit.

Water quality in the River north of Azusa (upstream of urban development) is generally good. Most parameters are consistent with the Regional Board's water quality objectives. However, the Curve and Williams Fires of 2002 in the Angeles National Forest have affected the water

quality in this reach and will continue to do so for several years until the watershed recovers. The lower reaches of the River and Coyote Creek generally have higher turbidity and nutrient concentrations. High bacteria counts are also observed in the downstream portions.

Table 4.6-12
Selected Water Quality Data – San Gabriel River and Coyote Creek

Parameter	Unit	September 2001 (LADPW, 2002a)	1994-2000 (LADPW, 2001)	
		12 Sampling Points Upstream of City of Azusa	San Gabriel River Below San Gabriel River Parkway	Coyote Creek below Spring Street
		Range	Median	Median
Temperature	°C	19 - 23.5	---	---
pH	std units	8.1 - 8.5	7.5	7.4
Dissolved Oxygen	mg/L	6.6 - 7.2	---	---
Biological Oxygen Demand	mg/L	---	32	20
Chemical Oxygen Demand	mg/L	---	56	55
Turbidity	NTU	0.3 - 5.2	41	64
Total Suspended Solids	mg/L	ND	96	196
Total Petroleum Hydrocarbons	mg/L	---	0.5	1.0
Total Residual Chlorine	mg/L	ND - 0.14	---	---
Indicator Bacteria				
Total Coliform	MPN/100ml	---	300,000	1,600,000
Fecal Coliform	MPN/100ml	---	30,000	900,000
Nutrients				
Ammonia-Nitrogen	mg/L	ND - 0.12	0.41	0.33
Total Kjeldahl Nitrogen	mg/L	ND - 0.37	2.7	2.2
Nitrate + Nitrite as N	mg/L	ND - 0.15	1.9	1.1
Orthophosphate-P	mg/L	ND - 0.018	---	---
Total phosphorus-P	mg/L	ND - 0.053	0.43	0.28
Metals				
Aluminum	µg/L	---	333	419
Boron	µg/L	---	265	225
Copper	µg/L	---	8	14
Chromium	µg/L	---	2.5	2.5
Lead	µg/L	---	2.5	11
Nickel	µg/L	---	2.5	7.5
Zinc	µg/L	---	51	125

MPN Most Probable Number
ND non-detect
NTU nephelometric turbidity units
--- Data not reported

Impaired Water Bodies and Total Maximum Daily Loads. Section 303(d) of the CWA requires each state to develop a list of water bodies that do not meet water quality standards ("impaired water bodies"). This list of impaired water bodies is referred to as the "303(d) list", and is developed and periodically updated by the Regional Board. States are then required to develop action plans for improving the water quality of impaired water bodies on the 303(d) list.

The process for developing the action plan begins with establishment of Total Maximum Daily Loads (TMDLs). TMDL is defined as the maximum amount of a particular pollutant that a water body can receive from various sources without violating the water quality standard. Once a TMDL is established for a specific body of water, responsibility for reducing pollution is assigned among both point sources and non-point sources that discharge to the target water body.

According to the 303(d) list, the water quality of the San Gabriel River is substantially impaired downstream of Whittier Narrows by a variety of pollutants. **Table 4.6-13** lists the San Gabriel River reaches listed on the most recent 303(d) list. The major point source dischargers that are potentially contributing to these water quality impairments include: five WRPs located on the River or its tributaries (**Table 4.6-4**); industrial facilities (the Alamitos and Haynes generating stations); and municipal storm drains (LARWQCB, 2002). In addition to general urban development, potential nonpoint sources of pollution include equestrian facilities, nurseries, and golf courses (LARWQCB, 2002).

The Regional Board, SWRCB, and EPA share responsibilities for the development of TMDLs for the San Gabriel River and tributaries. The only TMDL that has been developed in the San Gabriel River Watershed to date is the Trash TMDL for the East Fork San Gabriel River (outside of the Master Plan study area). According to the Draft Strategy for Developing TMDLs and Attaining Water Quality Standards in the Los Angeles Region (LARWQCB, 2002), the following TMDLs for the San Gabriel River Watershed are scheduled for completion in 2004: nutrients, organics, bacteria, and metals. These future TMDLs will most likely include requirements for municipalities and other dischargers to reduce pollutant loads.

Table 4.6-13
Impaired Reaches within the Master Plan Study Area

Water Body / Reach	Abnormal Fish Histology	Algae	High Coliform Count	Toxicity	Copper	Zinc	Lead	Selenium	pH
San Gabriel River (From North to South)									
Above Ramona	None								
Ramona to Whittier Narrows Dam (7.2 miles)				X					
Whittier Narrows Dam to Firestone Boulevard (12 miles)			X		X	X	X		
Estuary to Firestone Boulevard (6.4 miles)	X	X	X	X					
Estuary (3.4 miles)	X								
Walnut Creek Wash – Drains from Puddingstone Reservoir (12 miles)				X					X
San Jose Creek									
Confluence with San Gabriel River to Temple Street (2.7 miles)		X	X						
Temple Street to I-10 at White Avenue (17 miles)		X	X						
Coyote Creek (13 miles)	X	X	X	X	X	X	X	X	

Source: SWRCB, 2003b.

Stormwater Quality

Stormwater contains various pollutants that are picked up as runoff travels through urban and suburban areas. Typical pollutants in urban stormwater are bacteria, nutrients, trash, sediment, heavy metals, and organic compounds (e.g., pesticides, vehicular exhaust materials, and chemicals used in industrial processes). However, the types and amounts of pollutants contained in stormwater are highly variable, depending on factors such as climate, season, drainage area land use, and sequence and duration of storm events. Therefore, numerical characterization of stormwater quality can be a challenge.

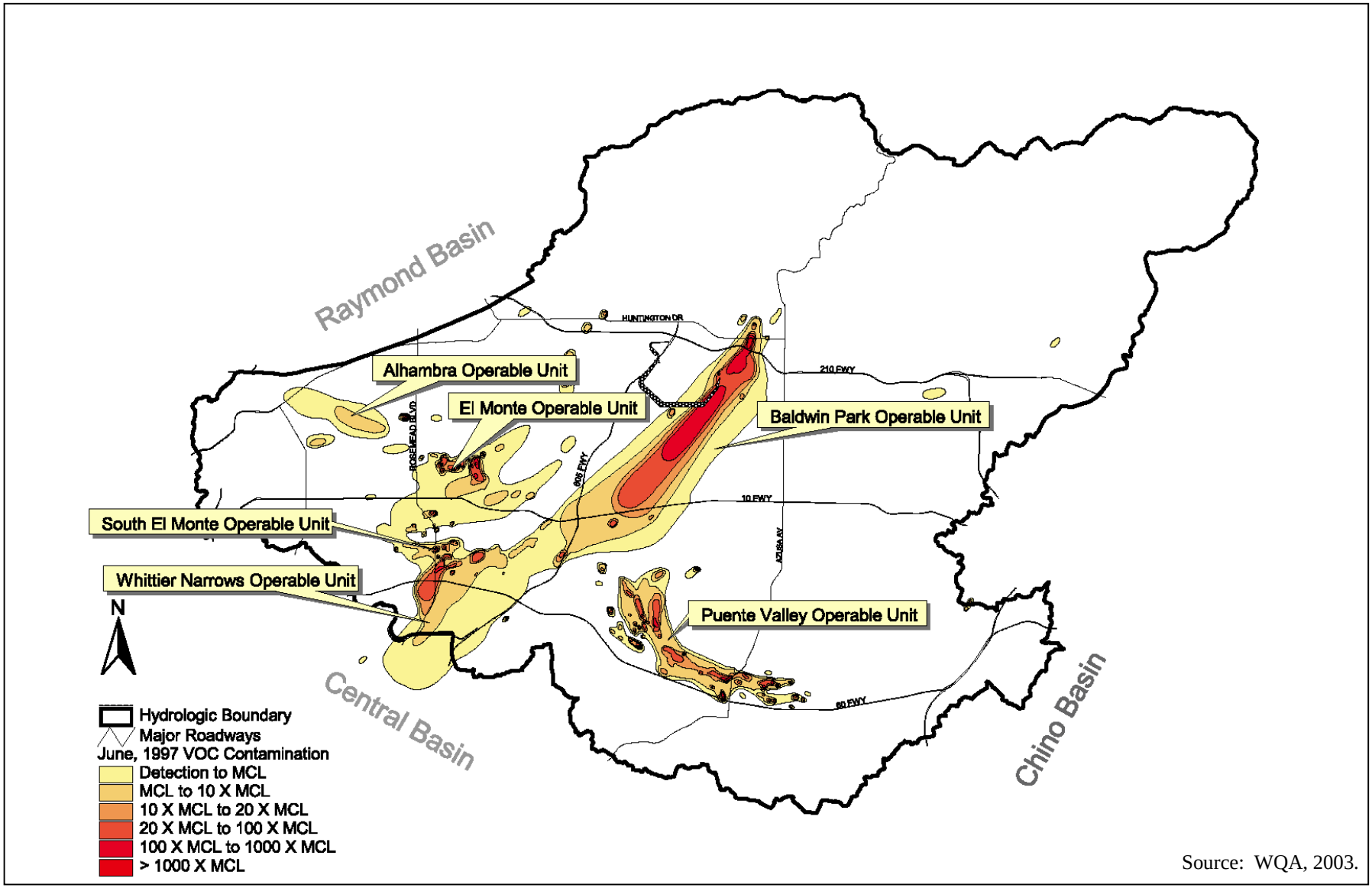
Since the 1994-1995 storm season, LADPW has been conducting an annual stormwater sampling and reporting program throughout Los Angeles County as required by the NPDES Municipal Stormwater Permit. Two of the monitoring stations used in this program are located in the Master Plan study area. The San Gabriel River Monitoring Station (Station No. S14) is located at an historic stream gage station below San Gabriel River Parkway in Pico Rivera. The Coyote Creek Monitoring Station (Station No. S13) is located at the existing COE stream gage station below Spring Street in Long Beach/Los Alamitos (LADPW, 2001). Selected water quality data collected at these two stations are shown in **Table 4.6-12** above.

Groundwater Quality

San Gabriel Valley Basin. The primary water quality issue in the San Gabriel Valley Basin is volatile organic compounds (VOCs) contamination caused by historical ground disposal of industrial solvents and other pollutants. VOC contamination in the basin was first detected in 1979. In 1984, EPA added approximately 30 square miles within the San Gabriel Valley to the National Priorities List (NPL) under the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund. NPL is a list of sites with known or threatened releases of contaminants that have been determined to warrant further investigation by EPA. Primary contaminants of concern for the San Gabriel Valley Superfund site include trichloroethylene (TCE, commonly used for degreasing and cleaning), perchloroethylene (PCE, a component of solid rocket fuel), and carbon tetrachloride (used to make chlorofluorocarbon propellants and refrigerants).

EPA and local agencies, including the San Gabriel Basin Water Quality Authority (WQA), have been conducting clean-up by pumping groundwater from a series of wells and treating the water to remove the VOCs. The WQA was formed in 1993 by cities and municipal water districts within the San Gabriel Valley Superfund area to augment EPA's cleanup activities. Currently, there are six active Operable Units (OUs), or focused study areas established to facilitate the clean-up efforts (**Figure 4.6-5**). Portions of the Whittier Narrows. South El Monte and Baldwin Park OUs overlap with the Master Plan study area. Water from wells located within the OUs is treated and/or blended with higher quality water to meet drinking water standards before entering public water supply distribution systems (EPA, 2002b).

Figure 4.6-5
San Gabriel Valley Basin Superfund Sites



Source: WQA, 2003.

Central Basin. The Central Basin Early Remediation Project removes contaminants entering the Central Basin from the San Gabriel Valley Basin. WRD issued a "Non-Consumptive Use Permit" in Fiscal Year 2001-2002 allowing groundwater extraction for the program (CDWR, 2002a).

Since the 1950s, saltwater intrusion has been an issue in groundwater basins in the coastal areas of Los Angeles County, including the Central Basin. Saltwater intrusion is the subsurface movement of ocean water into freshwater groundwater basins in coastal and inland areas, usually caused by excessive groundwater pumping. To protect the freshwater supply of the Central Basin, the Alamitos Barrier Project was constructed in 1964. The project, now operated by LADPW, recharges the basin through a series of injection wells located near the Los Angeles-Orange County line about two miles inland from the mouth of the San Gabriel River, an area known as the Alamitos Gap. The injected water consists of imported water from Metropolitan's distribution system and reclaimed water (LADPW, 2003d).

West Coast Basin

Seawater intrusion occurs in the Silverado zone along the Santa Monica Bay and in the Gaspur zone in the San Pedro Bay. Two seawater barrier projects are currently in operation: the West Coast Basin Barrier Project, which runs from the Los Angeles Airport to the Palos Verde Hills, and the Dominguez Gap Barrier Project, which covers the area of the West Coast Basin bordering the San Pedro Bay. Injection wells along these barriers create a groundwater ridge, which inhibits the inland flow of salt water into the subbasin to protect and maintain groundwater elevations (CDWR, 2003).

4.6.2 Significance Criteria

Project impacts related to hydrology and water quality would be considered significant if the project:

- Exposed people or structures to a significant risk of loss, injury or death involving flooding
- Increased runoff volume to a level which could exceed the capacity of existing or planned stormwater drainage systems
- Altered the existing drainage pattern of the site or area in a manner which would result in substantial erosion or siltation
- Resulted in substantial degradation of water quality or exceedance of the established water quality objectives for a surface water feature or groundwater basin

4.6.3 Impacts of Adopting the Master Plan Elements

The Master Plan includes six plan elements (also called Master Plan goals), set forth as the CEQA project objectives for the Master Plan. The plan elements are supported by objectives and performance criteria (see **Section 3.3.1**). The adoption of the Master Plan by the County of Los

Angeles (and other municipalities in the study area) will promote implementation of projects that are consistent with these Master Plan goals. This section describes the overall Master Plan impacts based on a qualitative assessment of reasonably foreseeable effects of the adoption of the Master Plan. Since projects similar to the Concept Design Studies are proposed throughout the river corridor, the Concept Design Study impacts (**Section 4.6.4)** further illustrate the types of potential impacts expected from implementation of the overall Master Plan.

As described below in **Table 4.6-14**, adoption of the Master Plan could result in both beneficial and potentially adverse impacts. Adverse impacts on hydrology and water quality would be addressed in second-tier CEQA documentation for future projects developed in a manner consistent with the Master Plan (see **Section 4.6.5**). Since mitigation will reduce these impacts to less than significant levels (see Master Plan program mitigation measures described in **Table 4.6-14** and Section **4.6.5**), the overall impacts on hydrology and water quality from adopting the Master Plan are considered less than significant. Site-specific mitigation measures will be identified and implemented by the specific lead agencies for each future project in the Master Plan study area.

Table 4.6-14
Impacts on Hydrology and Water Quality from Adopting the Master Plan Elements

Master Plan Elements	Impacts on Hydrology and Water Quality	Impact Summary
Habitat Element: Preserve and enhance habitat systems through public education, connectivity and balance with other uses	**Beneficial:** Habitat enhancements could result in a reduction of impervious surfaces thus reducing urban runoff and stormwater pollutant discharges to surface waters (beneficial impact on flooding and water quality). **Neutral:** This element also includes objectives and performance criteria that are neutral with respect to impacts on hydrology and water quality (e.g., identification of indicator species, enhances specific species that have experienced decline). **Potentially Adverse:** Habitat enhancement that involves active restoration (e.g., extensive removal of existing vegetation and replanting with high-value, native vegetation) would result in ground disturbance, which could have a temporary adverse impact on water quality, if appropriate measures are not taken to minimize the release of sediments from disturbed surfaces or pollutant releases from construction equipment or vehicles. Preparation of SWPPPs including implementation of standard erosion control measures that would contain sediment on-site and minimize sedimentation to adjacent waterways would reduce impacts to less than significant levels (**Section 4.6.5**). Adoption of this element would encourage removal of invasive species. If chemical herbicides are used, this could temporarily result in adverse water quality impacts. Implementation of **MP-W4** would reduce this	Potentially significant for construction related soil disturbance; less than significant with mitigation Potentially significant for effects associated with chemical use for exotics removal; less than significant with mitigation Beneficial (no adverse impact) for operations-related effects

Master Plan Elements	Impacts on Hydrology and Water Quality	Impact Summary
	impact by limiting chemical use, requiring the selection of chemicals that are less persistent in the environment, and restricting use to favorable weather conditions.	
Recreation Element: Encourage and enhance safe and diverse recreation systems, while providing for expansion, equitable and sufficient access, balance and multi-purpose uses	**Beneficial:** Development of recreational facilities could result in a reduction of impervious surfaces thus reducing urban runoff and stormwater pollutant discharges to surface waters (beneficial impact on flooding and water quality). **Neutral:** This element also includes objectives and performance criteria that are neutral with respect to impacts on hydrology and water quality (e.g., educating the public about catch and release fishing, establishing design standards for trails). **Potentially Adverse:** Construction of recreation related facilities (e.g., interpretive centers, trails and trail amenities, signs, kiosks) would result in ground disturbance, which could have a temporary adverse impact on water quality, if appropriate measures are not taken to minimize the release of sediments from disturbed surfaces or pollutant releases from construction equipment or vehicles. Preparation of SWPPPs including implementation of standard erosion control measures that would contain sediment on-site and minimize sedimentation to adjacent waterways would reduce impacts to less than significant levels (**Section 4.6.5**). Projects that involve construction of parking facilities, buildings, roads, and/or paved trails could have adverse impacts on flooding and water quality if they caused an increase in impervious surfaces or otherwise altered the existing drainage pattern and increased the amount of runoff leaving the site. However, the Master Plan includes the Flood Protection Element and Water Supply and Water Quality Element (see below), which would encourage projects designed to result in an overall reduction of stormwater runoff and associated pollutants.	Potentially significant for construction related soil disturbance; less than significant with mitigation Less than significant to beneficial for operations-related effects
Open Space Element: Enhance and protect open space systems through conservation, aesthetics, connectivity, stewardship, and multi-purpose uses.	**Beneficial:** Open space enhancements could result in a reduction of impervious surfaces thus reducing urban runoff and stormwater pollutant discharges to surface waters (beneficial impact on flooding and water quality). Adoption of this element would also encourage volunteer cleanup activities, which would reduce the amount of trash in the river corridor (beneficial impact on surface water quality). **Neutral:** This element also includes objectives and performance criteria that are neutral with respect to impacts on hydrology and water quality (e.g., identifies historical sites and cultural landscapes). **Potentially Adverse:** Use of existing open space areas	Potentially significant for construction related soil disturbance; less than significant with mitigation Beneficial (no adverse impact) for operations-related effects

Master Plan Elements	Impacts on Hydrology and Water Quality	Impact Summary
	for active recreational facilities and activities would result in ground disturbance, which could have a temporary adverse impact on water quality, if appropriate measures are not taken to minimize the release of sediments from disturbed surfaces or pollutant releases from construction equipment or vehicles. Preparation of SWPPPs including implementation of standard erosion control measures that would contain sediment on-site and minimize sedimentation to adjacent waterways would reduce impacts to less than significant levels (**Section 4.6.5**).	
Flood Protection Element: Maintain flood protection and existing water and other rights while enhancing flood management activities through the integration with recreation, open space and habitat systems.	**Beneficial:** Adoption of this element would encourage projects that maintain existing flood protection, develop stormwater detention facilities, and/or reduce impermeable surfaces, which would improve surface water quality and reduce flooding. **Neutral:** This element also includes objectives and performance criteria that are neutral with respect to impacts on hydrology and water quality (e.g., establishes visual design standards for flood control devices). **Potentially Adverse:** Construction of new flood control facilities (e.g., stormwater detention areas) would result in ground disturbance, which could have a temporary adverse impact on water quality, if appropriate measures are not taken to minimize the release of sediments from disturbed surfaces or pollutant releases from construction equipment and vehicles. Preparation of SWPPPs including implementation of standard erosion control measures that would contain sediment on-site and minimize sedimentation to adjacent waterways would reduce impacts to less than significant levels (**Section 4.6.5**).	Potentially significant for construction related soil disturbance; less than significant with mitigation Beneficial (no adverse impact) for operations-related effects
Water Supply and Water Quality Element: Maintain existing water and other rights while enhancing water quality, water supply, groundwater recharge, and water conservation through the integration with recreation, open space and habitat systems.	**Beneficial:** Adoption of this element would encourage projects that reduce runoff discharges into waterways, expand reclaimed water use, and/or treat stormwater runoff, which would improve surface water quality and reduce flooding. **Potentially Adverse:** Construction of new facilities for enhancing water quality and/or water supply (e.g., stormwater infiltration facilities, constructed wetlands, pipelines for reclaimed water distribution) would result in ground disturbance, which could have a temporary adverse impact on water quality, if appropriate measures are not taken to minimize the release of sediments from disturbed surfaces or pollutant releases from construction equipment and vehicles. Preparation of SWPPPs including implementation of standard erosion control measures that would contain sediment on-site and minimize sedimentation to adjacent waterways	Potentially significant for construction related soil disturbance; less than significant with mitigation Potentially significant for groundwater quality and hydrology related effects from stormwater infiltration; less than significant with mitigation

Master Plan Elements	Impacts on Hydrology and Water Quality	Impact Summary
	would reduce impacts to less than significant levels (**Section 4.6.5**). Adoption of this element would encourage projects that involve stormwater infiltration. In most cases, infiltration is a desirable way of managing urban runoff since it contributes to groundwater recharge, reduces pollutant discharges to downstream surface waters, and reduces downstream flooding. However, as discussed in **Section 4.6.4.4**, if site-specific conditions are not taken into account in designing and operating stormwater infiltration facilities, stormwater infiltration projects have the potential to degrade groundwater quality. Implementation of **MP-W6** would reduce this impact by monitoring to assess the ongoing effectiveness of the stormwater treatment methods and provision of additional treatment or project redesign if monitoring results indicate substantial water quality degradation. Projects that increase recharge of stormwater or recycled water would generally result in beneficial impacts on groundwater elevations of the underlying groundwater basins. However, projects that involve large amounts of groundwater recharge could have adverse effects on groundwater hydrology (groundwater elevations and flow directions). Potential adverse impacts include: the inundation of landfill materials or other contaminant sources and leaching of contaminants into the groundwater basin; and change in groundwater flow directions and consequently change in the shape and configuration of the existing VOC contamination plumes (see **Section 4.6.4.5**). Implementation of **MP-W7** would reduce this impact by evaluation of proximity to known hazardous materials sites and potential for inundation of contamination sources and siting infiltration facilities away from these potential contamination sources or partially lining infiltration basins.	
Economic Development Element: Pursue economic development opportunities derived from and compatible with the natural aesthetic and environmental qualities of the river.	**Neutral:** This element includes objectives and performance criteria that are neutral with respect to impacts on hydrology and water quality (e.g., providing incentives to participating adjacent land owners). **Potentially Adverse:** This element promotes the pursuit of economic development opportunities which consider connectivity to the river corridor and establishment of development standards. Minor modifications of existing or new business development in the river corridor needed for consistency with Master Plan elements (e.g., trail connections and aesthetic features and compliance with design guidelines) are anticipated to have minimal or no impacts on hydrology and water quality.	Less than significant

4.6.4 Impacts of Implementing the Concept Design Studies

4.6.4.1 Flood Control

Projects Involving Stormwater Retention. The Master Plan Concept Design Studies for the Woodland Duck Farm, the San Gabriel River Discovery Center at Whittier Narrows, Lario Creek, and El Dorado Regional Park include constructed wetlands. These wetlands may be designed with retention, reuse, and/or infiltration of stormwater. These and other future projects that involve stormwater retention would have beneficial impacts on flood control by reducing the amount of runoff and/or the peak flow entering existing storm drains and flood control channels (i.e., the San Gabriel River and tributaries). Projects with these elements may be designed to allow inundation of project facilities during flood flows. Since specifically designed as part of the project, flooding impacts on project-related structures (i.e., parking lots, fields, wetlands, etc.) would be considered less than significant.

Projects that Increase Impervious Surfaces or Change Drainage Patterns. The Master Plan Concept Design Studies for the San Gabriel Canyon Spreading Grounds, Woodland Duck Farm and the San Gabriel River Discovery Center at Whittier Narrows involve construction of parking facilities or buildings. These and other future projects that involve construction of parking facilities, buildings, roads, and/or paved trails could have adverse impacts on flooding if they caused an overall increase in impervious surfaces or otherwise altered the existing drainage pattern and increased the amount of runoff leaving the site. However, since the Master Plan encourages the following practices as part of the Master Plan performance criteria for the Flood Protection and Water Supply and Water Quality goals (see Tables 3.3-4 and 3.3-5 in Section 3), it is anticipated that these projects will be designed to include stormwater management features (e.g., dry wells, swales, etc.) to result in a net decrease in runoff from the site:

- Reduces volume and velocity of storm water runoff where feasible
- Reduces the amount of precipitation that is converted to urban runoff (decreases the acreage of impermeable surfaces)
- Reduces dry weather urban runoff discharge into waterways
- Utilizes on-site opportunities to reduce impermeable surfaces and increase infiltration
- Encourages onsite collection of stormwater for irrigation and percolation, where consistent with water rights
- Utilizes open spaces and landscaped areas to filter and cleanse runoff

Projects Involving Modifications to an Existing Channel. The Master Plan Concept Design Study for El Dorado Regional Park considers removal of concrete from the bottom and the eastern slope of the San Gabriel River channel as an alternative that may be implemented in the long-term. Concrete removal will increase the roughness of the channel, which increases the area required to convey the same amount of flow. If channel modifications exposed people or structures to flooding, the impact would be significant. However, since the Master Plan Flood Protection Element includes maintenance of existing flood protection as an objective and

performance criterion, project design will increase channel width such that there will be no reduction in overall channel flood capacity. Since it is expected that it will be designed in this manner, impacts on flooding would be less than significant.

The Lario Creek Concept Design Study also proposes channel modifications. Neither of the options proposed for the Concept Design Study would reduce channel capacities. Therefore, the impact on flooding is less than significant.

The Woodland Duck Farm Concept Design Study may include diversion of flows from Avocado Creek to an off-channel wetland. Minor modifications to the channel, if any, would not reduce channel capacities. Therefore, the impact on flooding is less than significant.

4.6.4.2 Construction Impacts on Surface Water Quality

Projects Involving Soil Disturbance during Construction. Construction activities that involve soil disturbance (e.g., excavation, grading, and filling) would temporarily increase the potential for soil erosion. In addition, during the rainy season, construction materials, equipment, and maintenance supplies (e.g., fuels, lubricants, paints, solvents, and adhesives) may come in contact with runoff. If appropriate measures are not taken to minimize the release of sediments and other materials from construction sites, this could result in a temporary impact on surface water quality. All five Concept Design Studies involve varying amounts of soil disturbing activities during construction.

As required by the EPA and the Regional Board, a Stormwater Pollution Prevention Plan (SWPPP) will be developed and implemented during construction of project components greater than 1 acre in area. This plan is required as part of the NPDES Permit for discharge of stormwater associated with construction activities. Incorporation of stormwater best management practices in the SWPPP would reduce the potential for soil erosion and release of other pollutants during construction. Specific control measures to be considered for inclusion in site-specific SWPPPs are listed below in **Mitigation Measure CD-W1**. These measures would minimize the amount of runoff and associated pollutants (e.g., sediments) leaving the construction site by containing the runoff onsite (e.g., sedimentation basins), containing the sediments onsite (e.g., silt fences and hay bales), or minimizing the potential for stormwater to come in contact with pollutants (e.g., conduct activities during the dry season, control pollutant releases (oils, grease, etc.) from construction equipment). With the incorporation of such control measures in the SWPPPs, construction impacts on surface water quality are expected to be less than significant.

Projects Involving Modifications to an Existing Channel. The Master Plan Concept Design Studies for El Dorado Regional Park, Lario Creek, and potentially Woodland Duck Farm include channel modifications. These and other future projects that propose earth moving activities within the channel of the River or tributaries could result in a temporary increase in the potential for soil erosion and release of sediments. The resultant increase in turbidity (and potential release of pollutants in the soils underlying the concrete) in river flows could be a significant water quality impact. For projects involving channel modifications, COE, Regional Board, U.S. Fish and Wildlife Service, and California Department of Fish and Game will be consulted (**Mitigation Measure CD-W6**). All necessary federal and state approvals, including CWA

Section 404 permits and CWA Section 401 water quality certifications or waivers will be obtained prior to the implementation of construction activities. Any conditions of agency approvals (e.g., measures to minimize the potential water quality impacts associated with the channel modification) will be incorporated into the project design to reduce impacts to below a level of significance. Water quality mitigation options for use during construction of in-channel improvements include diversion of flows around the construction site to prevent flows from coming in contact with the disturbed areas, installation of in-stream silt curtains to prevent sediments from flowing downstream, or use of off-channel sediment retention ponds or tanks to capture sediments from the disturbed areas.

4.6.4.3 Operational Impacts on Surface Water Quality

Projects that Reduce or Treat Stormwater Runoff. The Master Plan Concept Design Studies for the Woodland Duck Farm, Lario Creek, the San Gabriel River Discovery Center at Whittier Narrows, and El Dorado Regional Park include collection and treatment of stormwater runoff. Operation of these and other projects involving stormwater collection and treatment would reduce the amount of stormwater pollutants currently discharged into the San Gabriel River. In addition, projects that reduce soil erosion potential (e.g., by planting vegetation on currently unimproved surfaces prone to erosion thus reducing sediment load in stormwater runoff) or increase onsite percolation of runoff (e.g., by replacing concrete or asphalt surfaces with more porous materials thus reducing overall stormwater runoff volumes) would have beneficial operational impacts on surface water quality.

Projects that Increase Impervious Surfaces or Change Drainage Patterns. As discussed in **Section 4.6.3.1** above, individual components of future projects may increase impervious surfaces over existing conditions, potentially increasing stormwater pollutants discharged to the receiving water. However, since the Master Plan includes the performance criteria outlined above, it is anticipated that these projects will be designed for an overall improvement in surface water quality.

Use of Pesticides or Herbicides in Landscaped Areas or for Exotic Species Removal. All five Master Plan Concept Design Studies could include landscaping/habitat restoration as potential project elements. In addition, the Concept Design Studies for San Gabriel River Discovery Center, Lario Creek, and El Dorado Regional Park propose removal of exotic plant species. With incorporation of **Mitigation Measure CD-W2,** use of chemical herbicides/pesticides will be minimized, and impacts from this type of chemical use would be less than significant. As described in Mitigation Measure CD-W2, use of chemicals will be limited to approved herbicides and pesticides, and application will be conducted in accordance with manufacturers' recommendations and general standards of use, e.g., restricted application before and during rain storms.

Projects Involving Modifications to an Existing Channel. The Master Plan Concept Design Study for El Dorado Regional Park considers removal of concrete from the bottom and the eastern slope of the San Gabriel River channel as an alternative that may be implemented in the long-term. If concrete removal results in substantial erosion, water quality impacts could be significant. However, project design will consider necessary slope stabilization (via terracing, landscaping, limiting steep slopes, installation of retaining walls) and scour control (via measures

to hold soils in place by covering soils with vegetation, river rock, or other materials to control soil erosion.

4.6.4.4 Groundwater Quality Impacts of Stormwater Infiltration

The Master Plan Concept Design Studies for the Woodland Duck Farm, Lario Creek, the San Gabriel River Discovery Center at Whittier Narrows, and El Dorado Regional Park include constructed wetlands, which may be unlined and designed to allow infiltration to the groundwater. Additionally, other future projects may include groundwater recharge of stormwater (e.g., at former gravel pits). In most cases, infiltration is a desirable way of managing urban runoff since it contributes to groundwater recharge, reduces pollutant discharges to downstream surface waters, and reduces downstream flooding. However, as discussed above in **Section 4.6.1.4**, urban runoff can contain various pollutants, and therefore stormwater infiltration practices need to address the potential adverse effects on groundwater quality. Review of previous studies indicates that infiltration of stormwater generally does not pose considerable risk of groundwater contamination, given sufficient soil depth and proper design and maintenance of infiltration facilities (LASGRWC, 2002). However, if site-specific conditions are not taken into account in designing and operating stormwater infiltration facilities, certain pollutants do have the potential to reach groundwater (LASGRWC, 2002).

Whether or not stormwater infiltration can have an adverse effect on groundwater quality depends on the pollutants of concern and site-specific factors including: drainage area land use and associated stormwater quality, distance to groundwater from the point of infiltration, soil characteristics, and level of treatment that occurs prior to infiltration (Pitt et al., 1996). Below is a description of these factors.

Pollutants of Concern. Pitt, et al. (1996) conducted an extensive literature review of studies investigating the potential groundwater impacts from infiltrating stormwater. Based on the literature review and consideration of factors such as solubility, mobility, and general abundance in stormwater, the authors evaluated the groundwater contamination potential of various pollutants associated with stormwater infiltration practices. In general, stormwater pollutants that present higher risks of groundwater contamination are those that are highly soluble and have high mobility in the vadose zone (Pitt, et al., 1996). Such pollutants are more likely to remain dissolved in water and travel through the soil and reach the water table. Based on solubility and mobility, pollutants with high groundwater contamination potential are nitrate, certain organics such as VOCs and polyaromatic hydrocarbons (PAHs), viruses, some metals, and chloride.

Organics, and metals are known to be present in stormwater from county-wide samples (**Table 4.6-12**). However, chloride and nitrate are not anticipated to be pollutants of concern in infiltrated stormwater for the proposed project. The primary manmade source of chloride in stormwater is road salts used in colder climates. Observed levels of nitrate in stormwater in county-wide samples are well below Basin Plan objectives and the drinking water maximum contaminant level (MCL). Filtration and adsorption during stormwater treatment and infiltration under the proposed project will further remove nitrate.

Although high levels of bacteria can be found in stormwater, bacteria are intercepted during the infiltration process by filtration, adsorption, and microbial decomposition, and are prevented from reaching the underlying groundwater in most cases (Pitt et al., 1996).

Drainage Area Land Use. Runoff generated from residential areas is generally less polluted than runoff from other land uses, and is considered appropriate for infiltration, especially if surface infiltration is used (Pitt, et al., 1996). Runoff from industrial land uses can contain high concentrations of soluble toxicants such as metals and organics, and require caution and pretreatment if it is used for infiltration (Pitt, et al., 1996).

Depth to Groundwater. The vadose zone (layer of soil above the water table and below the ground surface; also called the unsaturated zone) provides an important pollutant removal mechanism and protects the water table from direct contamination. Therefore, the bottom of the infiltration area should be well above the seasonal high water table. Sites where the groundwater surface is less than 4 feet below the infiltration surface, or where very sandy soils with low organic content exist, are the least suitable for groundwater recharge unless runoff is first treated to remove pollutants (Urbonas and Stahre, 1993). In areas where background metals are present in the soil, depth to groundwater should not be less than 10 feet below the infiltration device (Hathhorn and Yonge, 1995). Surface devices are generally preferable to subsurface infiltration systems (e.g., dry wells) since surface infiltration takes greater advantage of pollutant removal processes in the vadose zone (Pitt, et al., 1996).

Vadose Zone Soil Properties. Properties of the vadose zone soil can affect its effectiveness in pollutant removal. Sandy soils with low organic matter content have lower pollutant removal capacities than clayey soils with high organic content (Pitt, et al., 1996). Soils with a higher proportion of clay and organic matter have greater capacity for removing metals and organic compounds by sorption processes. (However, clay soils have lower percolation rates than sandy soils, which can impact recharge capacity.)

Treatment Prior to Infiltration. Many types of stormwater pollutants, including metals and organics, are bound to particulates that can be removed through settling or filtering processes. Therefore, treatment methods designed to remove particulate pollutants (e.g., stormwater separation devices, sedimentation basins, and vegetated surfaces) reduce the risk of groundwater contamination (Pitt, et al., 1996). In addition, treating for sediment removal prior to infiltration prevents infiltration systems from becoming clogged and maintains their performance. Typical pollutant removal rates of various stormwater treatment methods are summarized in **Table 4.6-15.**

Table 4.6-15
Typical Pollutant Removal Rates of Stormwater Treatment Methods

Type of Treatment Method	Typical Pollutant Removal (Percent)				
	Suspended Solids	Nitrogen	Phosphorus	Pathogens	Metals
Sedimentation Basins	30 - 65	15 - 45	15 - 45	< 30	15 – 45
Constructed Wetlands	50 - 80	< 30	15 - 45	< 30	50 – 80
Infiltration Basins	50 - 80	50 - 80	50 - 80	65 - 100	50 – 80
Dry Wells	50 - 80	50 - 80	15 - 45	65 - 100	50 - 80
Grassed Swales	30 - 65	15 - 45	15 - 45	< 30	15 - 45
Surface Sand Filters	50 - 80	< 30	50 - 80	< 30	50 - 80
Other Media Filters	65 - 100	15 - 45	< 30	< 30	50 - 80

Source: EPA, 1999.

Conclusion. With treatment prior to infiltration (including constructed wetlands), recharge of stormwater is not expected to result in significant groundwater contamination. Treatment methods designed to remove suspended solids and floatables (e.g., oil and grease) are expected to remove many of the pollutants (e.g., heavy metals and organics) that are sorbed onto particulates. For projects that include industrial land uses in the drainage areas, additional treatment, including constructed wetlands and use of proprietary stormwater filters, could be used to further improve water quality. Some of the dissolved constituents that are not removed in treatment processes prior to infiltration will be further removed in the vadose zone as water infiltrates into the soils, provided that the vadose zone below the infiltration site is sufficiently deep. With appropriate treatment and monitoring (see **Section 4.6.5.4**), impacts on groundwater quality from pollutants in stormwater are anticipated to be less than significant.

4.6.4.5 Impacts Related to Groundwater Hydrology

The Master Plan Concept Design Studies for the Woodland Duck Farm, Lario Creek, the San Gabriel River Discovery Center at Whittier Narrows, and El Dorado Regional Park include constructed wetlands. Groundwater recharge is a potential use of stormwater collected at these and other future projects. Projects that increase recharge of stormwater or recycled water would generally result in beneficial impacts on groundwater elevations of the underlying groundwater basins. However, projects that involve large amounts of groundwater recharge could have adverse effects on groundwater hydrology (groundwater elevations and flow directions). Potential adverse impacts include the following:

- Substantial rise in groundwater levels underneath existing active or historical landfills could cause inundation of landfill materials (if unlined) and potential leaching of contaminants into the groundwater basin or impact landfill gas (methane) releases.
- Groundwater recharge may affect the groundwater flow directions and consequently change the shape and configuration of the existing VOC contamination plumes in the San Gabriel Valley Groundwater Basin (see **Section 4.6.1.4** above). If such an effect on the contamination plumes occurred, it could interfere with the ongoing remediation and cleanup efforts.

The significance of impacts on groundwater hydrology would be site-specific, and depend on the volume and rate of water infiltrated and proximity to contamination plumes and landfills. Note, there are no known active landfills in the immediate vicinity of the corridor. However, since historical landfills cannot be excluded from the project area, **Mitigation Measures CD-W3 and CD-W4** will be implemented to reduce impacts to a less than significant level. Under Mitigation Measure CD-W3, a site-specific assessment will be conducted to identify active or abandoned landfills or other land uses with the potential for contaminated soils which would be incompatible with infiltration. If the results of the investigation in Mitigation Measure CD-W3 indicate that a closed landfill (either municipal solid waste or inert construction waste) is located within 500 feet of the project site boundary, then a site-specific geotechnical study (Mitigation Measure CD-W4) will be conducted to estimate the potential for project infiltration to result in interaction between infiltrated stormwater and landfill materials. Under Mitigation Measure CD-W4, project infiltration would cease when monitoring indicates that groundwater levels have risen to the alert level (defined as within 10 feet of landfill materials), which would prevent infiltrated stormwater from interacting with the landfill materials.

4.6.4.6 Potential Soil Contamination at Infiltration Sites

The Master Plan Concept Design Studies for the Woodland Duck Farm, Lario Creek, the San Gabriel River Discovery Center at Whittier Narrows, and El Dorado Regional Park include collection and treatment of urban runoff. Groundwater recharge is a potential use of stormwater collected at these and other future projects. Due to the highly urbanized environment and the presence of industrial land uses in the Master Plan study area, there is potential for contaminated soils to be present at these and other future project sites. If stormwater were infiltrated in large amounts through contaminated soils and caused pollutants to leach out into the underlying groundwater, this would be considered a significant impact on groundwater quality. Implementation of **Mitigation Measure CD-W3** (site-specific investigation of soil contamination potential and proper disposal of contaminated soil, if any) would reduce this potential impact to a less than significant level.

4.6.4.7 Water Supply and Water Rights

Future projects that propose to use treated stormwater or recycled water for groundwater recharge will have a beneficial impact on water supply. Similarly, El Dorado Regional Park Concept Design Study proposes use of recycled water in onsite lakes, thus conserving potable water. As is the current practice, swimming will not be allowed in the lakes. Other projects that include irrigation of landscaped areas with recycled water would have a similar benefit. Quantification of water supply benefits will be conducted, if relevant, as each project is more specifically defined.

The groundwater basins in the Master Plan study area are fully adjudicated. Therefore, pumping groundwater for seasonal make-up of wetlands, if included as part of project design, would be implemented within the confines of existing groundwater rights. Similarly, water consumption associated with future projects that include planting of riparian vegetation in existing channels (i.e., increased evapotranspiration) would be implemented within the confines of existing surface water rights.

4.6.4.8 Dam Safety

The Master Plan Concept Design Studies for the Woodland Duck Farm, Lario Creek, the San Gabriel River Discovery Center at Whittier Narrows, and El Dorado Regional Park include collection and treatment of stormwater runoff using treatment wetlands or other retention facilities. Depending on their dimensions, the proposed basins and associated berms may be considered "jurisdictional dams" and require approval from CDWR Division of Safety of Dams (DSOD). Jurisdictional dams are defined as structures that are 25 feet or higher from the lowest point at the downstream toe with a reservoir storage capacity of more than 15 acre-feet, or higher than 6 feet with a storage capacity of 50 acre-feet or more (California Water Code, Sections 6002 and 6003). Prior to construction of dams within the jurisdiction of the DWR, plans and specifications must be reviewed and approved by the DSOD. All dam safety related issues must be resolved prior to approval of the application, and the work must be performed under the supervision of a civil engineer registered in California (S. Verigin, pers. comm., 2002).

During detailed design of projects involving large basins, the project proponent would determine whether each proposed structure would be jurisdictional according to DSOD criteria. If structures were determined to be jurisdictional, the project proponent would file the plans and specifications with DSOD and consult with DSOD staff regarding any dam safety related issues. With consultation and incorporation of any design recommendations from the DSOD, impacts related to dam safety are expected to be less than significant.

4.6.5 Master Plan Program Mitigation Measures

4.6.5.1 Flood Control

MP-W1 Future projects that propose modifications to an existing flood control channel will include detailed engineering studies, including hydrologic and hydraulic modeling as applicable, to assess potential impacts on the channel's flood control capacities and effects on upstream and downstream floodplain properties and recommendations to avoid or minimize these impacts. Recommendations of the engineering studies will be incorporated into project design. Modifications to Federal Emergency Management Agency (FEMA) floodplain maps will be made as needed.

4.6.5.2 Construction Impacts on Surface Water Quality

MP-W2 For future projects involving constructing, clearing, grading or excavation on areas over 1 acre in size, develop and implement a Storm Water Pollution Prevention Plan (SWPPP) to minimize the amount of runoff and associated pollutants (e.g., sediments) leaving the construction site by containing the runoff onsite, containing the sediments onsite, and/or minimizing the potential for stormwater to come in contact with pollutants. The following are possible measures to be incorporated into site-specific SWPPPs as applicable. Additional sample measures and guidelines for developing SWPPPs are available in California Stormwater Quality Association's Stormwater Best Management Practice Handbook – Construction (CASQA, 2003). Measures to reduce fugitive dust generated during construction (see Section 4.1.5 – Air Quality) will also minimize the potential for soil erosion.

- Install perimeter silt fences or hay bales.
- Stabilize soils through hydroseeding with native plant species where possible and use of soil stabilizers.
- Install temporary sedimentation basins.
- Conduct earth moving activities during the dry season (April through October), as feasible.
- Designate storage areas for construction materials, equipment, and maintenance supplies (e.g., fuels, lubricants, paints, solvents, adhesives) to keep these materials out of the rain and minimize contact with stormwater.
- Conduct regular inspections to ensure compliance with the SWPPP.

MP-W3 For future projects involving channel modifications, COE, Regional Board, U.S. Fish and Wildlife Service, and California Department of Fish and Game will be consulted. All necessary federal and state approvals (including CWA Section 404 permits, CWA Section 401 water quality certifications or waivers, and California Fish and Game Code Section 1602 Streambed Alteration Agreements) will be obtained prior to the implementation of construction activities. Any conditions of agency approvals (e.g., measures to minimize the potential water quality impacts associated with the channel modification) will be incorporated into the project design. Water quality mitigation options for use during construction of in-channel improvements include diversion of flows around the construction site, installation of in-stream silt curtains, or use of off-channel sediment retention ponds or tanks.

4.6.5.3 Operational Impacts on Surface Water Quality

MP-W4 For future projects involving landscaping, habitat restoration, and/or removal of exotic plant species, select biological or non-chemical means of controlling exotics and pests unless not feasible because biological or non-chemical controls are not readily available for the specific exotics to be controlled. If chemical pesticide or herbicide use is necessary, compounds that are less persistent in the environment will be selected, and application will be conducted in accordance with manufacturers' recommendations and general standards of use, e.g., restricted application before and during rain storms.

MP-W5 For future projects involving channel modifications, detailed engineering studies (including sediment transport as applicable) will be conducted to assess the impact of the proposed changes on the channel's stability and erodability and will include recommendations to avoid or minimize the impact. Recommendations of the engineering studies will be incorporated into project design to minimize impacts on surface water quality associated with potential increase in erosion of channel banks from proposed modifications.

4.6.5.4 Groundwater Quality Impacts of Stormwater Infiltration

MP-W6 For projects that involve stormwater infiltration, a comprehensive stormwater and groundwater quality monitoring program will be designed and implemented, or the results of existing monitoring programs will be considered. Monitoring results will be used to assess the ongoing effectiveness of the proposed stormwater treatment methods in protecting both surface

and groundwater. If monitoring results indicate substantial water quality degradation associated with project infiltration, the following strategy will be followed:

- Provide additional treatment prior to infiltration, or
- Redesign project to reduce or eliminate infiltration (e.g., lining), or
- Identify an alternative water source (e.g., reclaimed water).

4.6.5.5 Impacts Related to Groundwater Hydrology

MP-W7 For projects involving groundwater recharge, the project site's proximity to existing groundwater contamination plumes and landfills (or other known hazardous materials sites that could become a contamination source if inundated with groundwater) will be evaluated. If a project site is located within or adjacent to a plume or in the vicinity of a contamination source, the effect of the proposed recharge on groundwater hydrology (changes in flow direction and levels) will be evaluated. As applicable, groundwater modeling would be conducted to determine whether the rate and amount of recharge proposed by the project could result in substantial changes to the location or shape of existing contamination plumes, or in the inundation of landfills or other contamination sources. As part of the investigation, relevant agencies, including the Regional Board, Watermasters, and agencies involved in groundwater clean-up activities (e.g., EPA and WQA), will be consulted. As applicable, **Mitigation Measure CD-W4** will be implemented to prevent interaction of infiltrated water with landfill materials or other contaminant sources.

4.6.5.6 Potential Soil Contamination at Infiltration Sites

MP-W8 For projects involving substantial ground disturbance where prior land use is unknown and the potential for soil contamination or other constraints (e.g., oil or gas wells) from previous land uses exists, a Phase I Environmental Site Assessment (ESA) will be conducted to determine the site-specific potential for soil contamination or other constraints. The Phase I ESA will be conducted in accordance with the latest version of the American Society of Testing and Materials (ASTM) 1527 "Standard Practice for Environmental Site Assessments: Phase I Environmental Assessment Process." This document outlines the customary practice for performing ESA's in the United States. Phase I ESA will consist of a review of site-specific documents and historical maps to determine past uses of the site, a site visit to visually inspect the property for signs of potential environmental contamination, and investigation of state and federal environmental regulatory databases to identify recognized hazardous materials usage or spills, and include review of California Department of Conservation Division of Oil, Gas, & Geothermal Resources records of oil, gas, and geothermal wells. For project sites with infiltration, the boundary of the Phase I ESA will include parcels located within 500 feet of the project site boundary to identify active or abandoned landfills or other land uses with the potential for contaminated soils which would be incompatible with infiltration (to be cross-referenced with Mitigation Measure CD-W4). If the Phase I ESA concludes that there is no substantial potential for soil contamination or other constraints, no further action would be required. If the Phase I ESA indicates that there is potential for soil to be contaminated, additional investigation (Phase II ESA, including soil sampling and analysis) will be conducted to determine the presence and extent of the contamination. If the proposed project would involve disturbance of soil in the contaminated area, soil would be removed and disposed of in

compliance with applicable regulations at approved disposal sites. If the proposed project site includes or is in the immediate vicinity of oil or gas wells or if any unrecorded wells are damaged or uncovered during excavation or grading, the project proponent shall submit the information outlined in the "Construction Project Site Review and Well Abandonment Procedure" to the California Department of Conservation Division of Oil, Gas & Geothermal Resources. In order of preference, wells should be avoided, plugged or re-plugged to current Division specifications, or an adequate gas venting system should be installed if construction over an abandoned well is unavoidable.

4.6.6 Mitigation Measures for Concept Design Studies

CD-W1 Develop and implement a Storm Water Pollution Prevention Plan (SWPPP) for projects that involve constructing, clearing, grading or excavation on areas over 1 acre in size to minimize the amount of runoff and associated pollutants (e.g., sediments) leaving the construction site by containing the runoff onsite, containing the sediments onsite, and/or minimizing the potential for stormwater to come in contact with pollutants. The following are possible measures to be incorporated into site-specific SWPPPs. Additional sample measures and guidelines for developing SWPPPs are available in California Stormwater Quality Association's *Stormwater Best Management Practice Handbook – Construction* (CASQA, 2003). Measures to reduce fugitive dust generated during construction (see **Section 4.1.5 – Air Quality**) will also minimize the potential for soil erosion.

- Install perimeter silt fences or hay bales.
- Stabilize soils through hydroseeding with native plant species where possible and use of soil stabilizers.
- Install temporary sedimentation basins.
- Conduct earth moving activities during the dry season (April through October), as feasible.
- Designate storage areas for construction materials, equipment, and maintenance supplies (e.g., fuels, lubricants, paints, solvents, adhesives) to keep these materials out of the rain and minimize contact with stormwater.
- Conduct regular inspections to ensure compliance with the SWPPP.

CD-W2 For projects involving landscaping, habitat restoration, and/or removal of exotic plant species, select biological or non-chemical means of controlling exotics and pests unless not feasible because biological or non-chemical controls are not readily available for the specific exotics to be controlled. If chemical pesticide or herbicide use is necessary, compounds that are less persistent in the environment shall be selected, and application shall be conducted in accordance with manufacturers' recommendations and general standards of use, e.g., restricted application before and during rain storms.

CD-W3 For projects involving substantial ground disturbance, conduct a Phase I Environmental Site Assessment (ESA) to determine the site-specific potential for soil contamination. The Phase I ESA shall be conducted in accordance with the latest version of the American Society of Testing and Materials (ASTM) 1527 "Standard Practice for Environmental Site Assessments: Phase I Environmental Assessment Process." This document outlines the customary practice for performing ESA's in the United States. Phase I ESA shall consist of a review of site-specific documents and historical maps to determine past uses of the site, a site visit to visually inspect the property for signs of potential environmental contamination, and investigation of state and federal environmental regulatory databases to identify recognized hazardous materials usage or spills. For project sites with infiltration, the boundary of the Phase I ESA shall include parcels located within 500 feet of the project site boundary to identify active or abandoned landfills or other land uses with the potential for contaminated soils which would be incompatible with infiltration (to be cross-referenced with Mitigation Measure CD-W4). If the Phase I ESA concludes that there is no substantial potential for soil contamination, no further action would be required. If the Phase I ESA indicates that there is potential for soil to be contaminated, additional investigation (Phase II ESA, including soil sampling and analysis) shall be conducted to determine the presence and extent of the contamination. If the proposed project would involve disturbance of soil in the contaminated area, soil would be removed and disposed of in compliance with applicable regulations at approved disposal sites.

CD-W4 If the site-specific Phase I ESA (Mitigation Measure CD-W3) indicates that an active or closed landfill (either municipal solid waste or inert construction waste) is located within 500 feet of the project site boundary, then a site-specific geotechnical study shall be conducted to: 1) characterize the extent and composition of landfill materials; 2) determine whether the landfill materials are releasing methane; 3) and estimate the potential mounding effect from the proposed stormwater infiltration. The results of the geotechnical study shall be incorporated into the project design to minimize the potential for project infiltration to result in interaction between infiltrated stormwater and landfill materials or to impact landfill gas releases, if any. Potential design modifications include siting the infiltration facilities away from the landfill and/or partially lining the facilities to direct infiltration away from the landfill. For sites with stormwater infiltration within 500 feet of an active or closed landfill, a groundwater monitoring program shall be developed and implemented to ensure that infiltration does not result in interaction between infiltrated stormwater and landfilled materials or impact landfill gas releases. Infiltration would cease at any site where groundwater levels rose to within 10 feet of landfilled materials to prevent interaction of infiltrated water with landfill materials.

CD-W5 For projects that involve stormwater infiltration, conduct vadose zone and groundwater quality monitoring. If monitoring results indicate substantial water quality degradation, pursue the following general strategy:

- Provide additional treatment prior to infiltration, or

- Redesign project to reduce or eliminate infiltration (e.g., lining), or
- Identify an alternative water source (e.g., reclaimed water).

CD-W6 For projects involving channel modifications, COE, Regional Board, U.S. Fish and Wildlife Service, and California Department of Fish and Game shall be consulted. All necessary federal and state approvals (including CWA Section 404 permits, CWA Section 401 water quality certifications or waivers, and California Fish and Game Code Section 1602 Streambed Alteration Agreements) shall be obtained prior to the implementation of construction activities. Any conditions of agency approvals (e.g., measures to minimize the potential water quality impacts associated with the channel modification) shall be incorporated into the project design. Water quality mitigation options for use during construction of in-channel improvements include diversion of flows around the construction site, installation of in-stream silt curtains, or use of off-channel sediment retention ponds or tanks.

4.7 LAND USE

4.7.1 Existing Setting

4.7.1.1 Master Plan Study Area

Existing Land Uses

The Master Plan study area is a 1-mile wide corridor along 58 river miles of the San Gabriel River from its headwaters in the San Gabriel Mountains to its terminus at the Pacific Ocean between Long Beach and Seal Beach. The study area includes 19 cities as well as unincorporated areas of Los Angeles and Orange counties. The general land uses within each of the seven reaches of the Master Plan study area are described below and shown in Figure M2-19, Chapter 2 of the Master Plan.

1. Headwaters – The first reach of the river is the headwaters along the West Fork in the San Gabriel Mountains. Land use in this area is open space/recreation (Angeles National Forest). The peaks of the San Gabriel Mountains are identified as scenic resources in the Los Angeles County General Plan (1993a).

2. San Gabriel Canyon – The San Gabriel Canyon reach begins at the point where the West, North, and East Forks of the river join, and ends at Morris Dam. Land uses in this reach include open space/recreation (Angeles National Forest) and public facilities related to flood control and water resource management (e.g., San Gabriel Dam, Morris Dam, and pipelines for conveyance of imported water).

3. Upper San Gabriel Valley – The Upper San Gabriel Valley reach extends from Morris Dam, passes through unincorporated Los Angeles County and Azusa, and ends at the Santa Fe Dam in Irwindale. In the northern portion of this reach between Morris Dam and Azusa, the primary land uses are open space. While there are some residential areas in this reach within Azusa and Duarte, the southern portion between Azusa and the Santa Fe Dam in Irwindale is occupied primarily by industrial land uses and open space/recreation (Santa Fe Dam Recreation Area).

4. Lower San Gabriel Valley – The Lower San Gabriel Valley reach runs between the Santa Fe Dam and Whittier Narrows Dam in unincorporated Los Angeles County north of Pico Rivera. The primary land uses in this reach are industrial in the northern portion and residential and open space/recreation (Whittier Narrows Recreation Area and California Country Club) in the middle and southern portions.

5. Upper Coastal Plain – This reach begins at the outlet of the Whittier Narrows Dam and ends where the San Gabriel River crosses Firestone Boulevard in Norwalk, near the 605 Freeway. The primary land use in this reach is residential.

6. Lower Coastal Plain – This reach begins at Firestone Boulevard and extends to the confluence of Coyote Creek and the San Gabriel River in Rossmoor, located in

unincorporated Orange County. The primary land use in this reach is residential with some commercial and open space areas (e.g., El Dorado Regional Park).

7. Zone of Tidal Influence – This 3.5-mile reach extends from the confluence with Coyote Creek to the Pacific Ocean. The primary land uses in this reach are residential and industrial.

Most of the lands adjacent to the San Gabriel River are privately owned residential and industrial land uses. Southern California Edison (SCE) utility easements and fee owned properties make up a substantial proportion of the privately owned lands along the river corridor. Large parcels of public lands located along the river include the Angeles National Forest, Santa Fe Dam Reservoir, Whittier Narrows, El Dorado Regional Park, and the 605 Freeway.

There are no officially designated state scenic highways in the Master Plan study area. However, the following two state route segments are indicated by Caltrans (2003) as eligible for designation as state scenic highways and pass through the Master Plan study area:

- State Route 39 in the San Gabriel Mountains – Master Plan Reaches 1, 2, and 3 (from Interstate 210 Freeway in Azusa to State Route 2 in the Angeles National Forest)
- State Route 1 in Long Beach/Seal Beach area – Master Plan Reach 7 (from State Route 19 near Long Beach to Interstate 5 Freeway).

Both of these highways are indicated as proposed scenic highways in the Draft Los Angeles County General Plan Update (2003a).

Land Use Policies and Regulations

CEQA Guidelines Section 15125(d) states that an EIR should discuss any inconsistencies between the proposed project and applicable general and regional plans. The following is a discussion of the general and regional plans in place along the corridor and the project's consistency with each plan.

General Plan. Within incorporated cities located in the Master Plan study area, land use planning is provided by general plans developed by each municipality. Within unincorporated communities of Los Angeles County and Orange County, land use planning is provided by the Los Angeles County General Plan and the Orange County General Plan, respectively. The purpose of general plans is to guide future development by establishing goals and policies concerning topics that are mandated by state law or which the jurisdiction has chosen to include. Required topics are land use, circulation, housing, conservation, open space, noise, and safety. Other topics that local governments frequently choose to address are public facilities, parks and recreation, community design, and growth management, among others. General plans include descriptions and maps of where certain types of development should take place to achieve the stated goals and policies.

Table 4.7-1 summarizes the local general plan policies relevant to the Master Plan and their consistency with the Master Plan. Municipalities located in the Master Plan study area were consulted regarding the consistency of the Master Plan with local general plans and zoning

designations. None of the municipalities identified inconsistencies between the proposed project and their General Plan policies. To evaluate consistency, the General Plan goals and policies were compared to the six elements of the Master Plan (Habitat, Recreation, Open Space, Flood Protection, Water Supply and Water Quality, and Economic Development; see **Section 3.3.1.1**). In some cases, the municipalities identified specific elements and/or policies of the General Plan that are relevant to the Master Plan. It should be noted that the Master Plan goals, objectives, and performance criteria are not intended to amend or replace any existing local General Plan goals or policies.

Table 4.7-1
Project Consistency with Local General Plans

Municipality	Consistency with the San Gabriel River Corridor Master Plan
Arcadia	The City of Arcadia General Plan Community Development chapter includes policies to preserve existing open space and maintain recreational areas (General Plan Strategies CD-29 through CD-31). The Municipal Facilities and Services chapter includes a policy to provide park facilities and recreation areas (FS-31). The Environmental Resources chapter includes policies to protect riparian and other biologically sensitive habitats (ER-18), encourage education programs that increase public awareness of biological resources (ER-19), and protect existing groundwater recharge capacities (ER-35). The Open Space, Habitat, Recreation, and Water Supply and Water Quality elements of the Master Plan complement these policies. Thus, the Master Plan is consistent with the City of Arcadia General Plan.
Azusa	The City of Azusa has identified the Built Environment and the Natural Environment Chapters as General Plan elements relevant to the proposed project. The Built Environment Chapter of the General Plan includes land use policies designed to promote preservation and provision of open spaces that provide visual amenity, recreational opportunities, environmental protection, and protection from natural hazards (Policies 8.1 through 8.12). The Natural Environment Chapter of the General Plan includes policies designed to promote recreation by combining sites that contain historic or natural features with recreational learning opportunities (Recreation Policy 1.2), enhancing the river and canyon trailheads as hubs of recreational and community activity (Recreation Policy 1.3), and providing a foothill and river recreational environment that enhances the enjoyment of the natural resources without degradation (Recreation Policies 5.1 and 5.2). In addition, the Natural Environment Chapter includes goals and policies to promote preservation, restoration, and enhancement of biological resources; provide a system of natural areas that provide multiple uses including recreation, habitat, watershed protection, flood protection, and scenic beauty (Policies 1.1 through 1.3 and 2.1 through 2.4); and work with mining companies and agencies to enhance habitat in abandoned/reclaimed mined sites (Policies 7.1 through 7.3). The areas adjacent to the River are identified as Biological Resource Overlay Zones in Figure OS-1 of this chapter. The Open Space, Habitat, and Recreation elements of the Master Plan complement these policies. Thus, the Master Plan is consistent with the City of Azusa General Plan.

Table 4.7-1 (Continued)
Project Consistency with Local General Plans

Municipality	Consistency with the San Gabriel River Corridor Master Plan
Baldwin Park	The City of Baldwin Park has identified the Land Use Element as the General Plan Element relevant to the proposed project. The Land Use Element includes a policy to evaluate development projects for compliance with NPDES requirements to reduce pollution in runoff and minimize impervious surfaces and peak flows (Policy 18.1). The Water Supply and Water Quality element of the Master Plan complement this policy. Thus, the Master Plan is consistent with the City of Baldwin Park General Plan.
Bellflower	The City of Bellflower has identified the Housing Element as the General Plan Element relevant to the proposed project. The Housing Element contains a policy to ensure that adequate, freely accessible open space is provided within reasonable distance to all community residents (Policy 1.1.10). The of the Master Plan Open Space element complement this policy. Thus, the Master Plan is consistent with the City of Bellflower General Plan.
Cerritos	The City of Cerritos General Plan Land Use Element includes policies to promote environmentally conscious and verdant landscaping (Policy LU-1.3), balancing housing, open space, and public facilities (Policy LU-2.4), and maximizing open space in new developments (LU-14.1). The Habitat and Open Space elements of the Master Plan are consistent with these policies. The Open Space / Recreation Element includes policies to preserve and enhance open space resources (OSR-1.1 to 1.5, 2.1 to 2.4, 5.1 to 5.3), and provide and improve park and recreational facilities (OSR-3.1, 3.2, 4.1, and 4.2). These policies are consistent with the Open Space and Recreation elements of the Master Plan. In addition, this element includes policies to use open space areas as buffer zones adjacent to flood control facilities (OSR-6.2) and to maintain pervious surfaces within the city's open space (OSR-8.1). These policies are consistent with the Open Space, Flood Protection, and Water Supply and Water Quality elements of the Master Plan. The Conservation Element includes policies to expand use of recycled water for irrigation purposes and promote use of drought tolerant plants (CON-1.1 and 1.2). These policies are consistent with the Open Space and Water Supply and Water Quality elements of the Master Plan. In addition, this element includes policies to protect and promote community knowledge and appreciation for historic and cultural resources (CON-7.1, 7.2, 8.1, and 8.2. The Recreation and Open Space elements of the Master Plan complement these policies. Thus, the Master Plan is consistent with the City of Cerritos General Plan. The City of Cerritos has stated, "While the proposed San Gabriel River Corridor Master Plan is generally consistent with the goals and policies of the City of Cerritos General Plan Open Space/Recreation Element, any proposal for increasing the amount of existing recreational or open space adjacent to the San Gabriel River within the City of Cerritos would be in direct conflict with the Cerritos General Plan Land Use Element" (T.N. Contreras, pers. comm., May 2, 2005, Appendix F).

Table 4.7-1 (Continued)
Project Consistency with Local General Plans

Municipality	Consistency with the San Gabriel River Corridor Master Plan
Downey	The Circulation Element of the General Plan includes a policy to encourage bicycling as an alternative to vehicular transportation (Policy 2.6.1). Program 2.6.1.2 (proposed in the April 2004 Preliminary Draft General Plan Update) includes establishment of bikeways along the San Gabriel River, which is consistent with the Recreation element of the Master Plan. The Conservation Element includes policies to encourage use of reclaimed water and promote water conservation (e.g., through use of drought tolerant plants) (Policies 4.2.1, 4.2.2, and 4.3.2). These policies are consistent with the Open Space and Water Supply and Water Quality elements of the Master Plan. The Open Space Element of the General Plan includes policies to develop new parks and recreational facilities (Policy 7.2.1), examine the use of existing right-of-ways for recreational facilities (Policy 7.2.2), and upgrade existing recreation facilities and parks (Policy 7.3.1) including those along the River (e.g., the Rio San Gabriel Park and Wilderness Park; Programs 7.3.1.3 and 7.3.1.4). The Open Space and Recreation elements of the Master Plan complement these policies. Thus, the Master Plan is consistent with the City of Downey General Plan.
Duarte	The City of Duarte has identified the Conservation / Open Space Element as the General Plan Element relevant to the proposed project. The Conservation / Open Space Element includes policies to require the use of drought-resistant trees and plant materials in all new landscaping (Policy 5.4), to construct a bridge to connect the Duarte Bike and Equestrian Trail with the San Gabriel River Trail (Policy 6.2), to encourage multiple recreation uses for open space areas (Policy 7.1), to increase recreational facilities (Policies 7.2, 7.3, and 7.4), and to preserve the characteristics of the mountains, river beds, and canyons to protect the watershed (Policy 9.1). The Open Space and Recreation elements of the Master Plan complement these policies. Thus, the Master Plan is consistent with the City of Duarte General Plan.
El Monte	The City of El Monte General Plan Open Space and Conservation Element contains policies to provide and maintain open space areas and recreational facilities, including through supporting Los Angeles County's efforts to maintain and expand the multi-use corridor concept along the River (Policy 1.1), developing a system of bikeways (Policy 2.5), and cooperating with all levels of government (Policy 3.1). The Open Space and Conservation Element also contains policies to maintain groundwater recharge and flood control facilities as open space areas (Policy 4.1) cooperate with the County to prevent runoff from entering the groundwater basin (Policy 4.2), and support other agencies efforts to expand reclaimed water use (Policy 4.3). The Open Space, Recreation, and Water Supply and Water Quality elements of the Master Plan complement these policies. Thus, the Master Plan is consistent with the City of El Monte General Plan.
City of Industry	The City of Industry General Plan includes a goal to promote programs to beautify the city and conserve its natural resources. Since the Habitat, Open Space, and Recreation elements of the Master Plan include goals and objectives that complement this goal, the Master Plan is consistent with the City of Industry General Plan.

Table 4.7-1 (Continued)
Project Consistency with Local General Plans

Municipality	Consistency with the San Gabriel River Corridor Master Plan
Irwindale	The City of Irwindale has identified the Land Use Element as the General Plan Element relevant to the proposed project. The Land Use Element identifies the possibility of redevelopment of quarries as industrial, manufacturing, or recreational facilities after closures. It also recognizes the importance of Santa Fe Flood Control Reservoir as a regional recreational facility. Reclamation of quarries in Irwindale (Master Plan Action Grid projects R3.23, R3.24, R4.01 R4.02, R4.03, R4.04, R4.05, R4.07) and habitat and recreation enhancements to the Santa Fe Dam Recreation Area (Master Plan Project R3.21) are included in the Master Plan Projects Action Grid. Thus, the Master Plan is consistent with the City of Industry General Plan.
Lakewood	The City of Lakewood has identified the Recreation and Community Services Element as the General Plan Element relevant to the proposed project. The Recreation and Community Services Element of the General Plan includes a policy to maintain the existing system of parks, recreational facilities, and bikeways (Policy 2.1). The Open Space and Recreation elements of the Master Plan complement these policies. Thus, the Master Plan is consistent with the City of Lakewood General Plan.
Long Beach	The City of Long Beach has identified the Open Space and Recreation Element as the General Plan Element relevant to the proposed project. The Open Space and Recreation Element includes policies to promote creation of new and reestablished habitats and ecological preserves (Policy 1.1), protect natural resources (Policy 1.2), preserve and create open space (Policy 2.1), protect groundwater recharge areas (Policy 2.2), create additional recreation open space (Policy 4.1), and develop an open space linkage/trails plan (Policy 4.13). The Habitat, Open Space, Recreation, and Water Supply and Water Quality elements of the Master Plan complement these policies. Thus, the Master Plan is consistent with the City of Long Beach General Plan.
Los Alamitos	The City of Los Alamitos General Plan Conservation Element includes policies to encourage the use of drought tolerant landscapes (Policy 2-1.1), and promote the use of reclaimed water (Policy 2-1.7). The Open Space and Recreation Element includes policies to encourage preservation of existing parks, recreational facilities, and bikeways (Policy 4-1.1) and an implementation program (4-1.1.2) to preserve and protected selected areas, including areas along the River. The Open Space, Recreation, and Water Supply and Water Quality elements of the Master Plan complement these policies. Thus, the Master Plan is consistent with the City of Los Alamitos General Plan.

Table 4.7-1 (Continued)
Project Consistency with Local General Plans

Municipality	Consistency with the San Gabriel River Corridor Master Plan
Norwalk	The City of Norwalk General Plan Land Use element includes a policy to examine the potential and feasibility of providing for recreational facilities along the River (p. 5A.20). The Circulation Element includes a policy to support and coordinate the development and maintenance of city bikeways in conjunction with the city's Bikeway Plan, the County of Los Angeles Master Plan of Bikeways, and the bikeway plans of neighboring jurisdictions. The Conservation Element includes policies to prohibit discharge of pollutants into the River, promote public awareness of water pollution and means of prevention, and encourage recreational uses along the River, encourage the use of drought-tolerant plant materials, and minimize the amount of paved surfaces in new development (pp. 5D.6 and 5D.7). The Open Space Element includes various policies designed to preserve and enhance open space areas. The Utility Infrastructure Element includes policies to encourage reclaimed water use and to reduce storm water pollution (pp. 5J12 and 5J13). The Open Space, Recreation, and Water Supply and Water Quality elements of the Master Plan complement these policies. Thus, the Master Plan is consistent with the City of Norwalk General Plan.
Pico Rivera	The City of Pico Rivera General Plan Circulation Element includes policies to develop and maintain a system of bicycle, pedestrian and equestrian trails, including those that are located along or connect to the River (Policy A.2.4) and to coordinate the development of trails with the regional trail system and adjacent cities' local trail systems (Policy A.2.7). The Community Facilities element includes policies to coordinate park and recreation facilities planning with other agencies (Policy B.4.4) and investigate the feasibility of using open drainage facilities and utility rights-of-way to offset needed park acreage in the city (Policy B.4.6). The Environmental Resources Element includes policies to ensure that new development does not adversely affect groundwater supplies (Policy A.2.2) and adjacent wildlife areas (Policy A.5.3), protect existing water supply through a combination of water conservation and use of reclaimed water (Policy A.2.4), support protection and preservation of sensitive plants and animals (Policy A.5.1), and encourage educational programs to increase public awareness of the importance of biological resources (Policy A.5.2). The Habitat, Recreation, and Water Supply and Water Quality elements of the Master Plan complement these policies. Thus, the Master Plan is consistent with the City of Pico Rivera General Plan.
Santa Fe Springs	The City of Santa Fe Springs General Plan Open Space Element includes policies to promote acquisition of property to preserve open space (Policy 1.1), promote development of open space and recreational facilities (Policies 2.2. and 2.3), and expand Santa Fe Springs Park adjacent to the River (Policy 2.6; included in the Master Plan Project Action Grid as R5.14). The Conservation Element includes policies to protect and preserve natural resources (Policies 1.1 and 1.2), and promote use of reclaimed water (Policies 3.5 and 2.7). The Habitat, Recreation, and Water Supply and Water Quality elements of the Master Plan complement these policies. Thus, the Master Plan is consistent with the City of Santa Fe Springs General Plan.

Table 4.7-1 (Continued)
Project Consistency with Local General Plans

Municipality	Consistency with the San Gabriel River Corridor Master Plan
Seal Beach	The City of Seal Beach has identified the Land Use Element and the Open Space / Recreation / Conservation Element as the General Plan Elements relevant to the proposed project. The City has noted that several of the Master Plan Action Grid projects (R7.09, Trail Connection; R7.10, Hellman Ranch Wetland Restoration; R7-08, County of Orange Flood Control Basin; and R7.11 through R7.17) are either discussed directly in the Land Use and/or Open Space Elements of the General Plan or are projects that are consistent with the goals and policies of the City. Therefore, the Master Plan is consistent with the City of Seal Beach General Plan.
South El Monte	The City of South El Monte General Plan Circulation Element includes a policy to provide a local bicycle path link to the Whittier Narrows Recreation Area (Policy 4.2). The Resources Element includes policies to investigate opportunities to create small neighborhood or "pocket" parks in the north half of the city (including areas adjacent to the River) (Policy 1.2), and provide residents and businesses with information about landscaping and irrigation that reduce water use (Policy 4.2). The Recreation and Water Supply and Water Quality elements of the Master Plan complement these policies. Thus, the Master Plan is consistent with the City of South El Monte General Plan.
Whittier	The City of Whittier has identified the Land Use Element and Transportation Element as the General Plan Elements relevant to the proposed project. The Land Use Element of the General Plan includes policies to develop and retain parks and recreation areas and acquire land for recreational activities and urban or wilderness parks (Policies 5.1, 5.2, 5.3, and 5.4). The Transportation Element includes policies that promote bicycle paths, walking paths, and equestrian trails (Policies 3.2, 2.4, 4.1, and 4.3). The Recreation element of the Master Plan complements these policies. Thus, the Master Plan is consistent with the City of Whittier General Plan.

Zoning Code. The city or county zoning code is a set of detailed and enforceable requirements that implement the general plan policies at the level of the individual parcel. The zoning code presents standards for different uses and identifies which uses are allowed in the various zoning districts of the jurisdiction. One of the objectives of the zoning code is to separate incompatible land uses (e.g., heavy manufacturing facilities and elementary schools) and cluster compatible uses (e.g., residential uses and schools). For each zoning district, the zoning code generally identifies uses that are permitted by right, uses that may be permitted with additional review and conditions (i.e., requires a conditional use permit (CUP)), and uses that are prohibited. In addition, the zoning code regulates the size of parcels and type and size of structures that can be erected within each zoning district. A zoning variance (exemptions from or modification of zoning regulations) may be granted on a case-by-case basis if application of the zoning standards would result in unnecessary hardships or inconsistencies with the general purposes of the zoning code due to site- or case-specific conditions.

Coastal Zone. Reach 7 of the Master Plan area is located within the designated Coastal Zone. Development within the Coastal Zone (generally areas immediately adjacent to the beach, bay, ocean or canals) requires a Coastal Development Permit (or exemption) obtained from the local municipality (State authority rests with the California Coastal Commission). Consistency with both the City of Long Beach or Seal Beach (as relevant) Local Coastal Plan and California Coastal Act are generally required for improvements, demolition or construction of any structure located within the Coastal Zone boundary.

Regional Land Use Planning. The Master Plan study area is located within the regional planning area of the Southern California Association of Governments (SCAG). The SCAG Regional Comprehensive Plan and Guide is discussed in **Section 6.3.3** of this document.

Mineral Resources

Mineral Resource Areas. The Master Plan study area includes several sand, gravel, and crushed stone mining operations, primarily located in Azusa and Irwindale. This area is classified by the California Geological Survey as Mineral Resource Zone 2 (MRZ-2), which is defined as an area where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence.

Active gravel mines in the Master Plan study area, all privately owned and operated, are:

- Azusa Rock Mine (Vulcan Materials Company) – Located approximately 0.5 mile to the northwest and across the river from the San Gabriel Canyon Spreading Grounds in Azusa
- Azusa Largo and Reliance No. 2 Mines (Vulcan Materials Company) – Located approximately 0.5 mile to the southwest of the San Gabriel Canyon Spreading Grounds on the border of Azusa and Irwindale
- Durbin Quarry (Vulcan Materials Company) – Located approximately 1 mile north of the intersection of the Interstate 605 and 10 freeways in Irwindale.
- Hanson Quarry (Hanson Aggregates) – Located west of the Interstate 605 Freeway and south of Live Oak Avenue in Irwindale

United Rock Products operates two active gravel mines (Quarry No. 2 and No. 3) outside, but in the vicinity of, the Master Plan study area in Irwindale. There are other sites within and near the Master Plan study area that are no longer operated as active gravel mines and are used as gravel processing areas, landfills, or recycling centers for inert construction debris.

Historically, areas in the San Gabriel Mountains have been mined for gold, silver, and copper (Robinson, 1991). In addition, oil deposits are located in the project vicinity - primarily in the coastal areas of Los Angeles County.

Surface Mining and Reclamation Act. Under the California Surface Mining and Reclamation Act (SMARA), all surface mining operations which disturb more than 1 acre or remove more than 1,000 cubic yards of material are required to have an approved reclamation plan. A

reclamation plan identifies appropriate measures, including financial assurances to implement those measures, to rehabilitate a mineral mining site prior to its abandonment. Following completion of mining activities, mining operators return mined lands to a second, productive use in accordance with the approved reclamation plan and relevant permit conditions. Examples of post-mining uses may include, but are not limited to, open space, wildlife habitat, agricultural lands, grazing, park lands, and preparing the land for industrial or commercial uses (OMR, 2004a).

At the state level, the California Department of Conservation Office of Mine Reclamation (OMR) and the State Mining and Geology Board (SMGB) are jointly responsible for the administration of SMARA. At the local level, SMARA is implemented through city and county "lead agencies" that have adopted ordinances for land use permitting and reclamation procedures to provide the regulatory framework under which local mining and reclamation activities are conducted. The local SMARA lead agency reviews applications for mining permits and reclamation plans (or amendments thereto), submits reclamation plans and financial assurances to the State for review prior to approval, reviews financial assurances, inspects mining operations for compliance, and takes enforcement actions where necessary (OMR, 2004a). According to the list published by OMR, all active gravel mines located within or near the Master Plan study area described above have approved reclamation plans on file with the lead agencies. These reclamation plans generally propose to fill the site to street level (e.g., with inert construction debris) and develop the site for recreational, commercial, or industrial uses in accordance with the local zoning regulations. In most reclamation plans, final and interim uses are described in general terms or not specified.

Within the Master Plan study area, the following municipalities are SMARA lead agencies (OMR, 2004b):

- Arcadia (Community Development Division) – Land use regulations regarding mining and reclamation are contained in Article IX, Chapter 5 of the Arcadia Municipal Code.
- Azusa (Community Development Department) – Land use regulations regarding mining and reclamation are contained in Chapter 88, Article XII of the Azusa Municipal Code.
- Irwindale (Planning Department and Public Works Department) – Land use regulations regarding mining and reclamation are contained in Title 17, Chapter 17.63 of the Irwindale Municipal Code.
- County of Los Angeles (Department of Public Works and Department of Regional Planning) – Land use regulations regarding mining and reclamation are contained in Title 22, Chapter 22.56, Part 9 of the Los Angeles County Code.
- County of Orange (Planning and Development Services Department) – Land use regulations regarding mining and reclamation are contained in Title 7, Division 9, Article 2, Section 7-9-104 of the Orange County Code.

4.7.1.2 Concept Design Study Sites

San Gabriel Canyon Spreading Grounds

The existing land uses of the Concept Study site for San Gabriel Canyon Spreading Grounds include public facilities (spreading grounds operated by LADPW; water tanks, wells, and pumps operated by City of Azusa) and recreation (bike trail along the River).

The San Gabriel Canyon Spreading Grounds is located within the City of Azusa. The City's General Plan identifies the land use for this project site as Recreation. Typical use for the Recreation land use classification includes dedicated parks or fields (City of Azusa, 2004).

The City's zoning code is established in Chapter 88 of the Azusa Municipal Code (AMC). The Concept Design Study site for the San Gabriel Canyon Spreading Grounds is zoned as a General Commercial zone (C-3) and Water Conservation zone (W). The C-3 zone is established "to provide for the continued use and expansion and new development of a wide variety of retail and wholesale commercial enterprises, service uses, professional and medical offices, entertainment uses, and similar businesses" (AMC Section 88-1075). The primary uses that are permitted in this zone are retail and service commercial (AMC Chapter 88, Appendix A – Regulation of Use by Zoning District).

The purpose of the W zone is to protect public health, safety, and welfare by prohibiting structures in areas that are subject to inundation or flooding (AMC Section 88-1235). In general, the only uses that are permitted in this zone are agricultural activities without structures (AMC Section 88-1240). Uses listed as conditionally permitted include golf driving range, boarding/raising horses, sand and gravel pit, shooting range, and public stables (AMC Chapter 88, Appendix A). Conditionally permitted uses are subject to the review requirements and conditions contained in AMC Chapter 88, Article III, Division 7. If a specific proposed use is not listed in Appendix A, the community development director has the authority to determine whether the proposed use is permitted, permitted subject to CUP review and approval, permitted as a temporary use, or prohibited (AMC Section 88-1240).

Woodland Duck Farm

The existing land uses of the Concept Study site for the Woodland Duck Farm include: vacant (former duck farm site containing remnant structures) and recreation (Rio San Gabriel Equestrian Center maintained by RIO Trust).

Portions of this Concept Design Study site are located within the City of Industry and unincorporated Los Angeles County. The portion of the Concept Design Study located within the City of Industry is subject to the City's land use policy for open space and recreation (J. Scrivens, pers. comm., 2003). The City of Industry has designated this portion of the project site as an industrial (M) zone. Land uses permitted in the M zone include various manufacturing businesses as well as some agricultural uses such as greenhouses and livestock grazing (City of Industry, 1996).

The portion of the site located within unincorporated Los Angeles County is subject to the County land use designations of low-density residential (areas east of the 605 freeway) and open space (areas west of the 605 freeway) (L. Stark, pers. comm., 2003). The County's zoning ordinance is established in Title 22 of the Los Angeles County Code. The majority of the project site within unincorporated Los Angeles County is designated as Light Agricultural Zone (A-1). Permitted uses for the A-1 zone includes light agricultural uses, such as raising, breeding, and training horses, cattle, sheep, or goats. Land uses that would be subject to a CUP in this zone include: riding and hiking trails; arboretums and horticultural gardens; campgrounds; picnic areas; land reclamation projects; parks, playgrounds and associated facilities; and riding academies and stables. A small portion of this Concept Design Study site is designated a Restricted Business Zone (C-1). Permitted uses in the C-1 zone include: arboretums and horticultural gardens; parking lots and parking buildings; parks, playgrounds, and associated facilities; and riding and hiking trails (excluding trails for motorized vehicles) (County of Los Angeles, 2003b).

San Gabriel River Discovery Center and Lario Creek

The project sites for the San Gabriel River Discovery Center and Lario Creek are located adjacent to each other within the Whittier Narrows Nature Area. The existing land uses of these Concept Study sites include: recreation and open space (nature area within Whittier Narrows Recreation Area, including Nature Center) and public facilities (Lario Creek, a water conveyance feature operated by LADPW). The project sites are within unincorporated Los Angeles County. The County General Plan designates the general land use for this site as open space (County of Los Angeles, 1993a). The project sites fall into three different zoning categories: Open Space (O-S), Light Agricultural (A-1), and Heavy Agricultural (A-2).

The O-S zone is established to provide for the preservation, maintenance, and enhancement of natural resources. Permitted uses in the O-S zone include camping, picnic areas, and trails for hiking and riding (excluding motorized vehicles). These uses are permitted as long as the premises remain essentially unimproved. Uses that would require a CUP include parks, playgrounds, and facilities that are usually associated with such uses (County of Los Angeles, 2003b). Permitted uses in the A-1 zone are discussed above for the Woodland Duck Farm site. Permitted uses in the A-2 zone include riding and hiking trails (excluding motorized vehicles). In the A-2 zone, uses such as water reservoirs, dams, treatment plants, and other uses associated with storage and distribution of water require a CUP (County of Los Angeles, 2003b).

El Dorado Regional Park

The existing land uses of the Concept Study site for the El Dorado Regional Park are recreation and open space. The project site is located in the City of Long Beach. The City of Long Beach currently identifies El Dorado Regional Park in Land Use District (LUD) No. 11 – Open Space and Park District. There are diverse uses allowed in this LUD. Typical land uses include: agriculture, golf courses, beaches, flood control channels and basins, rivers, utility rights-of-way, public parks, local marine areas, inland bodies of water, off street bike routes, estuaries, and lagoons. This LUD also supports uses such as ecological preserves and commercial recreation (City of Long Beach, 1997).

The City's zoning ordinance is established in Title 21 of the Long Beach Municipal Code (LBMC). The zoning designation for the project site is Park (P). The purpose of the P zone is to set aside and preserve publicly owned park areas for recreational and cultural uses by the public. These areas are often characterized by landscaped open space. Permitted uses in the P zone include parks, cultural and educational uses, athletic activities, and campgrounds (LBMC Chapter 21.35).

4.7.2 Significance Criteria

Project impacts related to land use would be considered significant if the project:

- Physically divided an established community
- Conflicted with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect
- Conflicted with any applicable habitat conservation plan or natural community conservation plan

Project impacts related to mineral resources would be considered significant if the project:

- Resulted in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state
- Resulted in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan

4.7.3 Impacts of Adopting the Master Plan Elements

The Master Plan includes six plan elements (also called Master Plan goals), set forth as the CEQA project objectives for the Master Plan. The plan elements are supported by objectives and performance criteria (see **Section 3.3.1**). The adoption of the Master Plan by the County of Los Angeles (and other municipalities in the study area) will promote implementation of projects that are consistent with these Master Plan goals. This section describes the overall Master Plan impacts based on a qualitative assessment of reasonably foreseeable effects of the adoption of the Master Plan. Since projects similar to the Concept Design Studies are proposed throughout the river corridor, the Concept Design Study impacts (**Section 4.7.4**) further illustrate the types of potential impacts expected from implementation of the overall Master Plan.

As described below in **Table 4.7-2**, adoption of the Master Plan would result in mostly beneficial or no land use impacts. Most future projects developed in a manner consistent with the Master Plan are anticipated to be consistent with local planning. For example, public facilities such as parks and open space are consistent with most land use and zone designations. In locations where proposed uses are not expressly allowed, a CUP or zoning variance may be required for implementation of the specific component. Assessment of mineral resource issues associated

with conversion of active gravel mines would be addressed in second-tier CEQA documentation for future projects developed in a manner consistent with the Master Plan (see **Section 4.7.5**). The overall land use impacts from adopting the Master Plan are considered less than significant.

Table 4.7-2
Land Use Impacts from Adopting the Master Plan Elements

Master Plan Elements	Land Use Impacts	Impact Summary
Habitat Element: Preserve and enhance habitat systems through public education, connectivity and balance with other uses	**Beneficial:** Preservation of existing habitat areas could have a beneficial impact on land use by protecting open space areas from development that could be incompatible with surrounding land uses (e.g., heavy industrial use adjacent to residences). **Neutral:** This element also includes objectives and performance criteria that are neutral with respect to impacts on land use (e.g., identification of indicator species).	Beneficial (no adverse impact)
Recreation Element: Encourage and enhance safe and diverse recreation systems, while providing for expansion, equitable and sufficient access, balance and multi-purpose uses	**Beneficial:** Preservation of existing open space for passive recreational uses would have a beneficial impact on land use by protecting open space areas from development that could be incompatible with surrounding land uses (e.g., heavy industrial use adjacent to residences). The Master Plan includes aesthetic design guidelines for new or modified facilities such as trails, signage, fences, walls, and buildings (see Chapter 3.7.3 of the Master Plan). Therefore, buildings associated with recreational facilities would be designed to be compatible with the character of the surrounding community. **Neutral:** This element also includes objectives and performance criteria that are neutral with respect to impacts on land use (e.g., educating the public about catch and release fishing).	Beneficial (no adverse impact)
Open Space Element: Enhance and protect open space systems through conservation, aesthetics, connectivity, stewardship, and multi-purpose uses.	**Beneficial to Neutral:** Preservation of existing open space areas (e.g., through land acquisition or conservation easements) would generally be consistent with local general plan policies and would have beneficial effects on the character of the surrounding communities. Promoting fire safety and awareness could also result in protection of adjacent land uses. **Neutral:** This element also includes objectives and performance criteria that are neutral with respect to impacts on land use (e.g., utilizes drought tolerant and native plant materials).	Beneficial (no adverse impact)
Flood Protection Element: Maintain flood protection and existing water and other rights while enhancing flood management activities through the integration with recreation, open space and habitat systems.	**Beneficial:** Adoption of this element would result in protection of adjacent land uses from flood damage. In addition, this element would encourage establishment of visual design guidelines for new flood control facilities, which would have a beneficial impact on the aesthetic characteristics of adjacent communities. **Neutral:** This element includes objectives and	Beneficial (no adverse impact)

Master Plan Elements	Land Use Impacts	Impact Summary
	performance criteria that are neutral with respect to impacts on land use (e.g., coordination of maintenance of flood protection system with habitat needs). Additionally, future projects may include construction of storm drains, catch basins, or other structures within street rights-of-way as part of a stormwater management facility. Since such structures would be constructed underground within existing street right-of-ways, they would not physically divide an established community or otherwise adversely impact land use.	
Water Supply and Water Quality Element: Maintain existing water and other rights while enhancing water quality, water supply, groundwater recharge, and water conservation through the integration with recreation, open space and habitat systems.	**Neutral:** This element includes objectives and performance criteria that are neutral with respect to impacts on land use (e.g., employs phyto-remediation to treat water).	No adverse impact
Economic Development Element: Pursue economic development opportunities derived from and compatible with the natural aesthetic and environmental qualities of the river.	**Neutral to Potentially Adverse:** Adoption of this element could encourage redevelopment and reclamation, including development of gravel mines or abandoned lands for various purposes including active and passive recreation and habitat restoration. The Master Plan envisions that reclamation plans would be developed based on negotiation and partnership with the current owners and operators of these properties, including mining operations. Therefore, implementation of redevelopment and reclamation projects under the Master Plan are anticipated to take place after extraction of mineral resources have been completed. However, if a Master Plan project proposes development of facilities that would result in the restriction of future mineral extraction operations (e.g., reclamation of an existing gravel mine before gravel extraction activities have been completed or restriction of access for in-channel gravel removal activities approved by the U.S. Army Corps of Engineers), the potential impact of the project on mineral resources would be evaluated (see **Section 4.7.5.1**).	Potentially significant for effects on mineral resources associated with potential development at active gravel mines; less than significant with mitigation

4.7.4 Impacts of Implementing the Concept Design Studies

4.7.4.1 Land Use

Overall Impacts

The Master Plan Concept Design Studies for the Woodland Duck Farm, Lario Creek, San Gabriel River Discovery Center, and El Dorado Regional Park include collection and treatment of stormwater runoff. Projects involving stormwater collection and treatment may involve construction of storm drains, catch basins, or other structures within street rights-of-way as part of a stormwater management facility. Since such structures would be constructed underground within existing street right-of-ways, they would not physically divide an established community.

Buildings such as education centers (e.g., San Gabriel River Discovery Center) or pump buildings would be designed to be compatible with the character of the surrounding community. Any adverse impacts on the visual character and quality of the project sites during construction of the proposed facilities would be temporary and localized and less than significant.

The primary objective of the Concept Design Studies and other future projects developed in a manner consistent with the Master Plan is to provide new or enhanced open space, recreational opportunities, and habitat areas for the benefit of the surrounding communities. The Master Plan includes aesthetic design guidelines for new or modified facilities such as trails, signage, fences, walls, and buildings (see Chapter 3.7.3 of the Master Plan). These guidelines are intended to create a "sense of place" and a common identify for the river corridor. In addition, all five Concept Design Studies include landscaping or revegetation, which would improve the aesthetics of the project site. Therefore, implementation of the Concept Design Studies would have an overall beneficial impact on land use and aesthetics.

Consistency with Land Use and Zoning Designations

The compatibility of the uses proposed by the Master Plan Concept Design Studies with the existing land use and zoning designations (see Section 4.7.1.2 above) is discussed below.

San Gabriel Canyon Spreading Grounds. The Concept Design Study for the San Gabriel Canyon Spreading Grounds includes improvements to existing trails and fencing, installation of signage, habitat restoration and landscaping, and construction of small parks in southwest and northwest corners of the site. These uses are generally compatible and consistent with the City's land use designation of Conservation and Open Space. However, since these are not expressly permitted uses under the existing zoning designation of Water Conservation and General Commercial, the proposed improvements may require review by the City of Azusa.

Woodland Duck Farm. The Concept Design Study for the Woodland Duck Farm includes trail enhancements, constructed wetlands, habitat restoration and landscaping, signage, and passive recreation. These uses are generally compatible and consistent with the land use designations of open space and recreation (City of Industry) and low-density residential and open space (County of Los Angeles). However, within the Industrial zone (City of Industry) and the agricultural zone (County of Los Angeles), the proposed uses may require review by the relevant municipalities.

San Gabriel River Discovery Center and Lario Creek. The Concept Design Studies for the San Gabriel River Discovery Center and Lario Creek include a new Discovery Center building, constructed wetlands, habitat restoration, trail enhancements, signage, and modifications to an existing flood control and water conservation facility (Lario Creek). These uses are generally compatible and consistent with the County's land use designation of Open Space. However, some proposed uses such as the Discovery Center building and associated facilities and constructed wetlands may require review by the Los Angeles County.

El Dorado Regional Park. The Concept Design Study for the El Dorado Regional Park includes constructed wetlands, replacement of lake water with non-potable supply, habitat restoration, trail enhancements, and signage. These uses are generally compatible and consistent

with the City's land use designation of Open Space and Park District. However, since constructed wetlands or other stormwater management facilities are not expressly permitted under the Park zoning designation, some project elements may require review by the City of Long Beach.

4.7.4.2 Mineral Resources

The Concept Design Studies do not involve reclamation of active gravel mines or other activities that would result in the loss of availability of mineral resources that are important to the state, region, or local jurisdiction. Therefore, implementation of the Concept Design Studies would have a less than significant impact on mineral resources.

4.7.5 Master Plan Program Mitigation Measures

4.7.5.1 Mineral Resources

MP-L1 For future projects that propose development of facilities that would result in restriction of future mineral extraction operations (e.g., reclamation of an existing gravel mine before gravel extraction activities have been completed), site-specific evaluations described below will be conducted and the results will be disclosed in subsequent CEQA documentation:

1. Determine the site-specific availability of mineral resources by reviewing relevant publications from the California Geological Survey (e.g., SMARA Mineral Land Classification, available at: http://www.consrv.ca.gov/cgs/minerals/mlc/index.htm) and/or mine reclamation plans (if the proposed project site is an existing mine).
2. Contact the relevant SMARA lead agency (see **Section 4.7.1.1**) to determine whether the proposed land use change could restrict or preclude the extraction of mineral resources designated as regionally significant (MRZ-2) or locally important (as designated in a local land use plan).

4.7.6 Mitigation Measures for Concept Design Studies

Since implementation of the Concept Design Studies would not result in significant impacts on land use or mineral resources, no mitigation measures are proposed.

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4.8 NOISE

Noise is usually defined as sound that is undesirable because it interferes with speech communication and hearing, is intense enough to damage hearing, or is otherwise annoying. Sound levels are measured in decibels (dB), a unit of power expressed on a logarithmic scale. The most common measure for environmental sound is the "A" weighted sound level (dBA), which indicates that the decibel value has been adjusted to properly weigh the sound frequencies within the range of the human ear.

Two of the most commonly used noise scales designed to account for the known effects of noise on people are: Equivalent Noise Level (L_{eq}) and Community Noise Equivalent Level (CNEL). L_{eq} is the "energy" average noise level during the time period of the sample. L_{eq} can be measured for any time period, but is typically measured for 1 hour. CNEL is the predominant rating scale used in California for land use compatibility assessment. The CNEL scale represents a time weighted 24-hour average noise level based on dBA. Time weighted refers to the fact that noise that occurs during certain sensitive time periods is adjusted upwards. Noises occurring during the evening time period (7 p.m. to 10 p.m.) are counted as if they were 5 dBA louder, while nighttime (10 p.m. to 7 a.m.) noises are counted as if they were 10 dBA louder.

In addition to the absolute noise level, the increase in noise level over the existing noise environment is also an important consideration. General rules of thumb for real-life noise environments are that a change of over 5 dB is readily noticeable. Changes from 3 to 5 dB may be noticed by some individuals, possibly resulting in sporadic complaints. Changes of less than 3 dB are normally not noticeable.

Noise-sensitive land uses typically include residences, hospitals, schools, guest lodging, libraries, long-term care facilities (including convalescent and retirement facilities), houses of worship, auditoriums and concert halls, outdoor theaters, nature and wildlife preserves, and parks.

4.8.1 Existing Setting

4.8.1.1 Master Plan Study Area

The Master Plan study area is the 1-mile wide corridor along 58 river miles of the San Gabriel River from its headwaters in the San Gabriel Mountains to its terminus at the Pacific Ocean between Long Beach and Seal Beach. The study area includes 19 cities as well as unincorporated areas of Los Angeles and Orange counties.

The northern-most portion of the Master Plan Study Area from the headwaters to the area downstream of Morris Dam is located within the San Gabriel Mountains. Noise levels in this area are generally low, since existing land uses consist mostly of open space/recreation areas (Angeles National Forest) and public facilities related to flood control and water resource management (i.e., San Gabriel Dam, Morris Dam and associated maintenance facilities). However, noise levels may be higher at certain times (e.g., weekends) due to higher recreational uses, including use of off-highway vehicles.

Downstream of Morris Dam beginning in the City of Azusa, the Master Plan study area consists of a variety of urban land uses, including residential, commercial, and industrial. Noise levels in this urbanized portion are generally higher than in the undeveloped portion of the Master Plan study area. The San Gabriel Valley Gun Club in Azusa/Duarte is an intermittent source of noise in the northern portion of the study area. The Interstate 605 Freeway, which parallels the River from Azusa to Long Beach, is a major linear noise source. Other freeways that cross the study area are (from north to south): Foothill Freeway (I-210), San Bernardino Freeway (I-10), Pomona Freeway (SR 60), Santa Ana Freeway (I-5), Century Freeway (I-105), Artesia Freeway (SR 91), and San Diego Freeway (I-405). Railroads that cross the study area include Union Pacific and Metrolink tracks that run east-west through Azusa and Irwindale and Union Pacific tracks that run southeast-northwest along Valley Boulevard in the City of Industry. Another transit-related source of noise for the Master Plan study area is the Long Beach Airport, which is located approximately 2 miles west of El Dorado Regional Park near the San Gabriel River confluence with Coyote Creek.

4.8.1.2 Concept Design Study Sites

San Gabriel Canyon Spreading Grounds

The San Gabriel Canyon Spreading Grounds are located below the mouth of San Gabriel Canyon in the City of Azusa. The site consists of two spreading basins (operated by LADPW) and a parcel between the two basins that contains water storage tanks, wells, and pumps (operated by City of Azusa). The site is bounded by the San Gabriel River channel and a bike trail on the northwest and residential homes and a golf course (Azusa Greens Country Club) on the east and south. The Azusa Rock Quarry, an active mining operation, is located approximately 0.5 mile to the northwest across the River. Hodge Elementary School is located approximately 0.4 mile to the south.

Woodland Duck Farm

The Woodland Duck Farm site is located in a residential and industrial area. The site is bordered on the west by the San Gabriel River, on the north by Valley Boulevard, and on the east by a residential community. The 605 Freeway runs through the center of the site from north to south. Current uses on the property include open space (with remnant structures related to the previous use of the site as a duck farm), an equestrian center, nurseries, and a tree-trimming company. Power line towers are located throughout the site on both sides of the 605 freeway. Land uses east of the project area are primarily residential. Andrews Elementary School and Don Julian Elementary School are located approximately 0.4 mile to the east. Mountain View High School and a mobile home park are located west of the site across the San Gabriel River. Land uses north of the project site across Valley Boulevard are primarily industrial. The San Jose Creek Water Reclamation Plant is located south of the site on the east side of the river.

San Gabriel River Discovery Center

The project site is located in the northeastern portion of the Nature Area within the Whittier Narrows Dam Recreation Area. The area is bordered by Durfee Avenue to the north, Peck Road to the west, and the San Gabriel River to the south. The project area is primarily open space,

consisting of natural woodlands, scrub, grasslands, lakes, and a portion of Lario Creek. The existing Nature Center building is located on the northern portion of the site. Land uses surrounding the project site are primarily open space and recreation, including the Whittier Narrows Dam Recreation Area, Pico Rivera Park, and Pico Rivera Golf Course. Rose Hills Memorial Park and Mortuary is located within general proximity of the project. South El Monte High School is located northwest of the project site across Durfee Avenue.

Lario Creek

The Lario Creek project site consists of a man-made conveyance structure that diverts water from the San Gabriel River to the Rio Hondo through the Whittier Narrows Flood Control Basin. The site is bounded by Durfee Avenue on the north, the San Gabriel River on the east, a flood control channel to the south, and Rosemead Boulevard to the west. Rose Hills Memorial Park and Mortuary is located within general proximity of the project. The area surrounding the project site is primarily open space.

El Dorado Regional Park

The project site for El Dorado Regional Park is primarily open space. Power line towers are located along the western edge of the site and parallel to the River. The area surrounding the park is an urbanized area that includes commercial and residential land uses. To the north, the park is bordered by the Long Beach Police Academy and the Long Beach Town Center (a shopping center). The Lakewood Equestrian Center and Charter Community Hospital are located further to the north across Carson Street. The west side of the park is bordered by the San Gabriel River, and the area directly west of the river is primarily residential. There is also a nursery and the El Dorado Park Golf Course in the area surrounding the Park. The park is bordered by the 605 freeway on the east side. An industrial area borders the southeast portion of the park and contains a maintenance yard, a Society for the Prevention of Cruelty to Animals (SPCA) facility, and community gardens.

4.8.2 Regulatory Setting

Federal and state agencies generally set noise standards for mobile sources such as aircraft and motor vehicles, which are not applicable to the proposed project. Stationary noise sources and construction noise are regulated by local agencies through implementation of General Plan policies and Noise Ordinance standards. Local noise standards applicable to the proposed Master Plan Concept Design Studies are described below.

City of Azusa (San Gabriel Canyon Spreading Grounds)

Construction Noise. The San Gabriel Canyon Spreading Grounds are located in the City of Azusa. Section 88-675(c) of the Azusa Municipal Code prohibits operation of construction equipment within a radius of 500 feet of a residential zone from 6:00 p.m. to 7:00 a.m. except in cases of emergency. The same provision also prohibits generation of construction equipment noise in excess of 85 dBA as measured at a distance of 100 feet from the equipment.

Noise/Land Use Compatibility. The City of Azusa's Noise Element of the General Plan establishes general policies regarding ambient noise environments. **Table 4.8-1** shows the noise/land use compatibility goals contained in the Noise Element.

Table 4.8-1
Land Use Compatibility for Community Noise Environments – City of Azusa

Land Use Category	Community Noise Exposure (dBA, CNEL)						
	55	60	65	70	75	80	
Residential - Low Density Single-Family, Duplex, Mobile Homes							
Residential - Multi-Family							
Transient Lodging - Motels Hotels							
Schools, Libraries, Churches, Hospitals, Nursing Homes							
Auditoriums, Concert Halls, Amphitheaters							
Sports Arena, Outdoor Spectator Sports							
Playgrounds, Neighborhood Parks							
Golf Courses, Riding Stables, Water Recreation, Cemeteries							
Office Buildings, Business Commercial and Professional							
Industrial, Manufacturing, Utilities, Agriculture							

Normally Acceptable - Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.

Conditionally Acceptable - New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply system or air conditionally will normally suffice.

Normally Unacceptable - New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Clearly Unacceptable - New construction or development should generally not be undertaken.

Source: City of Azusa, 2003a.

County of Los Angeles (Woodland Duck Farm, San Gabriel River Discovery Center, and Lario Creek)

The following Concept Design Studies are located within unincorporated portions of the County of Los Angeles, and are subject to the noise regulations contained in the Los Angeles County Code: Woodland Duck Farm, San Gabriel River Discovery Center, and Lario Creek.

Construction Noise. Title 12, Chapter 12.08 of the Los Angeles County Code contains regulations pertaining to construction noise. It generally prohibits generation of construction noise between weekday hours of 7:00 p.m. and 7:00 a.m., or at any time on Sundays or holidays, such that the sound creates a noise disturbance across a residential or commercial real-property line. Exceptions to this prohibition are made for emergency work of public service utilities and if a variance is issued by the health officer. It also establishes maximum noise levels at the affected buildings that should not be exceed during construction (**Table 4.8-2)**.

In addition, Title 12, Chapter 12.12 prohibits use of noise-generating equipment (e.g., compressors, jackhammers, power-driven drill, riveting machine, excavator, diesel-powered truck, tractor or other earth moving equipment, hand hammers on steel or iron) on any Sunday or at any other time between the hours of 8:00 p.m. and 6:30 a.m. if it results in disturbance of persons occupying sleeping quarters in a dwelling, apartment, hotel, mobile home, or other place of residence.

Table 4.8-2
Maximum Noise Levels – Los Angeles County Construction Noise Ordinance

Time	Single Family Residential	Multi-Family Residential	Semi-residential/ Commercial
Nonscheduled, intermittent, short-term operation (less than 10 days) of mobile equipment			
Daily, except Sundays and legal holidays, 7:00 a.m. to 8:00 p.m.	75 dBA	80 dBA	85 dBA
Daily, 8:00 p.m. to 7:00 a.m. and all day Sunday and legal holidays	60 dBA	64 dBA	70 dBA
Repetitively scheduled and relatively long-term operation (periods of 10 days or more) of stationary equipment			
Daily, except Sundays and legal holidays, 7:00 a.m. to 8:00 p.m.	60 dBA	65 dBA	70 dBA
Daily, 8:00 p.m. to 7:00 a.m. and all day Sunday and legal holidays	50 dBA	55 dBA	60 dBA

Source: Los Angeles County Code, Section 12.08.440.

Noise/Land Use Compatibility. Title 12, Chapter 12.08 outlines guidelines for noise/land use compatibility for development and planning purposes (**Table 4.8-3**).

Table 4.8-3
Los Angeles County Guidelines for Noise Compatible Land Use

Designated Noise Zone Land Use	Time Interval	Exterior Noise Level
Noise-Sensitive Area	Anytime	45 dBA
Residential	Nighttime (10:00 p.m. to 7:00 a.m.)	45 dBA
	Daytime (7:00 a.m. to 10:00 p.m.)	50 dBA
Commercial	Nighttime (10:00 p.m. to 7:00 a.m.)	55 dBA
	Daytime (7:00 a.m. to 10:00 p.m.)	60 dBA
Industrial	Anytime	70 dBA

Source: Los Angeles County Code, Section 12.08.390.

City of Long Beach (El Dorado Regional Park)

Construction Noise. The Concept Design Study site for the El Dorado Regional Park is located within the City of Long Beach. Noise generating activities prohibited by the City of Long Beach Noise Ordinance (Long Beach Municipal Code Title 8, Chapter 8.80) are as follows:

- Loading or unloading of building materials or similar objects between the hours of 10:00 p.m. and 7:00 a.m. in such as manner as to cause noise disturbance across a residential property line
- Operating a device that creates vibration above the vibration threshold (0.001g in the frequency range of 0-30 hertz and 0.003 g in the frequency range between 30-100 hertz) at 150 feet from the source
- Creating sound within or adjacent to a noise sensitive zone containing a hospital, nursing home, school or other designated use
- Operation of construction tools or equipment which produce loud or unusual noise between 7:00 p.m. and 7:00 a.m. Monday through Friday and federal holidays, between 7:00 p.m. on Friday and 9:00 a.m. on Saturday, after 6:00 p.m. on Saturday, and all day Sunday. (Emergency work authorized by the building official is exempt. Construction work on Sundays between 9:00 a.m. and 6:00 p.m. may be conducted if a permit is obtained from the noise control officer.)

Noise/Land Use Compatibility. The Noise Element of the City of Long Beach General Plan establishes the criteria for maximum acceptable noise levels by land use type.

Table 4.8-4
Criteria for Maximum Acceptable Noise Levels – City of Long Beach

Major Land Use Type	Outdoor			Indoor
	Maximum Single Hourly Peak	L_{10}	L_{50}	L_{dn}
Residential (7:00 a.m. – 10:00 p.m.)	70 dBA	55 dBA	45 dBA	45 dBA
Residential (10:00 p.m. – 7:00 a.m.)	60 dBA	45 dBA	35 dBA	35 dBA
Commercial	75 dBA	65 dBA	55 dBA	--
Industrial	85 dBA	70 dBA	60 dBA	--

Source: City of Long Beach, 2003.
L_{10}: Noise levels exceeded 10 percent of the time
L_{50}: Noise levels exceeded 50 percent of the time
L_{dn}: Day-night average sound level.

4.8.3 Significance Criteria

Project impacts related to noise would be considered significant if the project:

- Exposed persons to noise levels in excess of standards established in the applicable municipal noise ordinance during project construction (**Section 4.8.2**)
- Resulted in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project

(See Section 4.2, Biological Resources, for a discussion of noise-related impacts on wildlife.)

4.8.4 Impacts of Adopting the Master Plan Elements

The Master Plan includes six plan elements (also called Master Plan goals), set forth as the CEQA project objectives for the Master Plan. The plan elements are supported by objectives and performance criteria (see **Section 3.3.1**). The adoption of the Master Plan by the County of Los Angeles (and other municipalities in the study area) will promote implementation of projects that are consistent with these Master Plan goals. This section describes the overall Master Plan impacts based on a qualitative assessment of reasonably foreseeable effects of the adoption of the Master Plan. Since projects similar to the Concept Design Studies are proposed throughout the river corridor, the Concept Design Study impacts (**Section 4.8.5**) further illustrate the types of potential impacts expected from implementation of the overall Master Plan.

As described below in **Table 4.8-5**, adoption of the Master Plan could result in both beneficial and potentially adverse impacts related to noise. Adverse noise impacts would be addressed in second-tier CEQA documentation for future projects developed in a manner consistent with the Master Plan (see **Section 4.8.6**). Since mitigation will reduce these impacts to less than significant levels (see **Table 4.8-5** and Master Plan program mitigation measures described in **Section 4.8.6**), the overall noise impacts from adopting the Master Plan are considered less than

significant. Site-specific mitigation measures will be identified and implemented by the specific lead agencies for each future project in the Master Plan study area.

Table 4.8-5
Noise Impacts from Adopting the Master Plan Elements

Master Plan Elements	Impacts on Traffic and Transportation	Impact Summary
Habitat Element: Preserve and enhance habitat systems through public education, connectivity and balance with other uses	**Beneficial:** Preservation of existing habitat areas would result in protection of currently undisturbed open space areas, which would have a beneficial impact on noise by preventing generation of noise associated with new residential, commercial, or industrial development. **Neutral:** This element also includes objectives and performance criteria that are neutral with respect to noise impacts (e.g., establishment of habitat area design standards and identification of indicator species). **Potentially Adverse:** Habitat enhancement that involves active restoration in undeveloped areas (e.g., extensive removal of existing vegetation and replanting with high-value, native vegetation) would result in noise generation from use of construction equipment and worker commutes. Other activities associated with habitat enhancement (e.g., monitoring and maintenance activities or exotic species removal) could also result in minor noise increases from worker vehicle trips. The Master Plan mitigation measure described in **Section 4.8.6** outlines an approach to evaluation of construction noise and implementation of measures to reduce noise (via installation of mufflers, notification to nearby receptors, limitation of construction hours, and development of site-specific noise mitigation plans (to potentially include sound barriers, etc.)). The implementation of appropriate noise control measures is expected to reduce noise impacts to below a level of significance.	Potentially significant for construction-related effects; less than significant with mitigation Less than significant for operations-related effects
Recreation Element: Encourage and enhance safe and diverse recreation systems, while providing for expansion, equitable and sufficient access, balance and multi-purpose uses	**Beneficial:** Preservation of existing undisturbed open space areas for passive recreational uses would result in protection of currently undisturbed open space areas, which would have a beneficial impact on noise by preventing generation of noise associated with new residential, commercial, or industrial development. **Neutral:** This element also includes objectives and performance criteria that are neutral with respect to noise impacts (e.g., educating the public about catch and release fishing, establishing design standards for trails). **Potentially Adverse:** Construction of recreation related facilities (e.g., interpretive centers, trails and trail amenities, signs, and kiosks) would temporarily increase noise from construction equipment use and worker vehicle trips. The Master Plan mitigation measure described in **Section 4.8.6** outlines an approach to	Potentially significant for construction-related effects; less than significant with mitigation Potentially significant for operational effects of new parks adjacent to noise-sensitive land uses; less than significant with mitigation

Master Plan Elements	Impacts on Traffic and Transportation	Impact Summary
	evaluation of construction noise and implementation of measures to reduce noise (via installation of mufflers, notification to nearby receptors, limitation of construction hours, and development of site-specific noise mitigation plans (to potentially include sound barriers, etc.). Operation of recreational facilities would also result in generation of noise associated with park users, which could have adverse impacts on adjacent noise-sensitive land uses (e.g., residential uses or habitat areas). Implementation of **MP-N2** would require siting facilities away from noise sensitive land uses, limiting hours of operation, and installation of sound barriers, etc, thereby mitigating this impact to below a level of significance. Most of the river corridor is parallel to the Interstate 605 freeway. Projects that propose noise-sensitive uses (e.g., parks) adjacent to the freeway could require installation of sound barriers (e.g., trees and/or structural barriers) to minimize noise exposure of future visitors to the outdoor recreational facilities.	Less than significant for other operations-related effects
Open Space Element: Enhance and protect open space systems through conservation, aesthetics, connectivity, stewardship, and multi-purpose uses.	**Beneficial:** Preservation of existing open space areas (e.g., through land acquisition or conservation easements) could result in protection of currently undisturbed open space areas, which would have a beneficial impact on noise by preventing generation of noise associated with new residential, commercial, or industrial development. **Neutral:** This element also includes objectives and performance criteria that are neutral with respect to noise impacts (e.g., use of drought tolerant and native plants). **Potentially Adverse:** Use of existing open space areas for active recreational facilities and activities would result in generation of noise from construction of facilities (e.g., parking and sports fields) and vehicle trips from new recreational users. The Master Plan mitigation measure described in **Section 4.8.6** outlines an approach to evaluation of construction noise and implementation of measures to reduce noise (via installation of mufflers, notification to nearby receptors, limitation of construction hours, and development of site-specific noise mitigation plans (to potentially include sound barriers, etc.).	Potentially significant for construction-related effects; less than significant with mitigation Less than significant for operations-related effects
Flood Protection Element: Maintain flood protection and existing water and other rights while enhancing flood management activities through the integration with recreation, open space and habitat systems.	**Beneficial:** Improving flood protection using natural processes (e.g., use of non-structural flood control) could have beneficial noise impacts by minimizing the need for development of new structural flood control facilities (which would generate more noise during construction). **Neutral:** This element also includes objectives and performance criteria that are neutral with respect to noise impacts (e.g., ensures liability is not increased, coordination of maintenance of flood protection system with habitat needs).	Potentially significant for construction-related effects; less than significant with mitigation Less than significant for operations-

Master Plan Elements	Impacts on Traffic and Transportation	Impact Summary
	Potentially Adverse: Construction of new flood control facilities (e.g., stormwater detention areas) would result in noise generation from use of construction equipment and worker commutes. The Master Plan mitigation measure described in **Section 4.8.6** outlines an approach to evaluation of construction noise and implementation of measures to reduce noise (via installation of mufflers, notification to nearby receptors, limitation of construction hours, and development of site-specific noise mitigation plans (to potentially include sound barriers, etc.). Operation of flood control facilities would also result in minor less than significant noise generation (vehicle trips by operations and maintenance crews).	related effects
Water Supply and Water Quality Element: Maintain existing water and other rights while enhancing water quality, water supply, groundwater recharge, and water conservation through the integration with recreation, open space and habitat systems.	**Neutral:** This element includes objectives and performance criteria that are neutral with respect to noise impacts (e.g., maintains conservation of local water). **Potentially Adverse:** Construction of new facilities for enhancing water quality and/or water supply (e.g., stormwater infiltration facilities, constructed wetlands, pipelines for reclaimed water distribution) would result in noise generation from use of construction equipment and materials and worker commutes. The Master Plan mitigation measure described in **Section 4.8.6** outlines an approach to evaluation of construction noise and implementation of measures to reduce noise (via installation of mufflers, notification to nearby receptors, limitation of construction hours, and development of site-specific noise mitigation plans (to potentially include sound barriers, etc.). Operation of flood control facilities would also result in minor less than significant noise generation (vehicle trips by operations and maintenance crews).	Potentially significant for construction-related effects; less than significant with mitigation Less than significant for operations-related effects
Economic Development Element: Pursue economic development opportunities derived from and compatible with the natural aesthetic and environmental qualities of the river.	**Neutral:** This element includes objectives and performance criteria that are neutral with respect to noise impacts (e.g., educates participating landowners about potential liability and protective measures). **Potentially Adverse:** This element promotes the pursuit of economic development opportunities which consider connectivity to the river corridor and establishment of development standards. Minor modifications of existing or new business development in the river corridor needed for consistency with Master Plan elements (e.g., trail connections and aesthetic features and compliance with design guidelines) are anticipated to have minimal or no noise impacts.	Less than significant

4.8.5 Impacts of Implementing the Concept Design Studies

4.8.5.1 Construction Impacts

Construction noise represents a temporary impact on ambient noise levels. The dominant source of noise from most construction equipment is the engine, usually diesel, without sufficient muffling. In a few cases, such as impact pile driving or pavement breaking, noise generated by the process dominates (FTA, 1995). During project construction, the highest noise-generating activities at most project component sites are expected to be earth moving, including excavation, grading, and filling. Typical noise levels during excavation at public works construction sites (e.g., roads, highways, sewers, and trenches) are 88 dBA with all pertinent equipment present at the site (Canter, 1977).

Construction equipment can operate intermittently or continuously. Construction activities are characterized by variations in the power expended by the equipment, with resulting variation in noise levels over time. To account for this variation, noise generated from equipment can be expressed in terms of L_{eq}, which takes into consideration the percentage of time during the workday that the equipment is operating at full power. Typical noise levels for various types of equipment in terms of L_{eq} are shown in **Table 4.8-6**.

Table 4.8-6
Construction Equipment Noise Levels in terms of L_{eq}

Equipment	Typical Noise Level (dBA) at 50 feet from Source	Equipment	Typical Noise Level (dBA) at 50 feet from Source
Air Compressor	81	Pile Driver (Impact)	101
Backhoe	80	Pile Driver (Sonic)	96
Ballast Equalizer	82	Pneumatic Tool	85
Ballast Tamper	83	Pump	76
Compactor	82	Rail Saw	90
Concrete Mixer	85	Rock Drill	98
Concrete Pump	82	Roller	74
Concrete Vibrator	76	Saw	76
Crane, Derrick	88	Scarifier	83
Crane, Mobile	83	Scraper	89
Dozer	85	Shovel	82
Generator	81	Spike Driver	77
Grader	85	Tie Cutter	84
Impact Wrench	85	Tie Handler	80
Jack Hammer	88	Tie Inserter	85
Loader	85	Truck	88
Paver	89		

Source: FTA, 1995.

In addition to having daily variations in activities, construction projects are carried out in several different phases, each with a different combination of equipment depending on the work being performed. The L_{eq} for each phase can be determined by combining the L_{eq} contributions from each piece of equipment used in that phase. For a general assessment of construction noise, it is

sufficient to determine the noise levels generated from the two noisiest pieces of equipment used concurrently in each phase (FTA, 1995).

Since detailed construction plans have not been developed for the proposed Concept Design Studies, MWH staff members experienced with construction management have estimated the types of construction equipment required for each project based on the concept designs of the proposed facilities. To assess a typical construction noise condition for each project site, the two noisiest pieces of equipment that would be operating concurrently were selected based on the estimated noise levels shown in **Table 4.8-6**. Then, the cumulative noise level of the two pieces of equipment was estimated using **Table 4.8-7**. Since dB is expressed on a logarithmic scale, dB values cannot be summed directly (Canter, 1977). For example, two pieces of equipment each generating 80 dB do not add up to 160 dB, but would have a cumulative noise level of 83 dB.

The following equation was then used to estimate the attenuation of noise with distance from its source (i.e., the two pieces of construction equipment) to the nearest sensitive receptor.

$$SL_2 = SL_1 - 20 \log_{10} (r_2/r_1)$$

Where:
SL_1 = sound level at 50 feet, in dB
SL_2 = sound level at the boundary of the nearest noise sensitive receptor's property, in dB
r_1 = 50 feet
r_2 = distance to the boundary of the nearest noise sensitive receptor's property, in feet

(Source of Equation: Canter, 1977)

Table 4.8-7
Aid for Determining Cumulative Noise Levels

Difference Between Noise Levels, dBA	No. of dBA to be added to higher level
0	3.0
1	2.6
2	2.1
3	1.8
4	1.5
5	1.2
6	1.0
7	0.8
8	0.6
10	0.4
12	0.3
14	0.2
16	0.1

Source: Canter, 1977

Table 4.8-8 presents the estimated construction noise levels at the nearest sensitive receptor for each Concept Design Study site.

Table 4.8-8
Estimated Construction Noise for Concept Design Studies
(without incorporation of noise-related mitigation)

Concept Design Study	Two Noisiest Pieces of Equipment Estimated to be in Use Concurrently		Approx. Distance to Nearest Sensitive Receptor, r_2 (feet)	Estimated Noise Level at Nearest Sensitive Receptor, SL_2 (dBA)	Relevant Jurisdiction's Construction Noise Standard (Section 4.8.2)
	Type of Equipment	Cumulative Noise Level at 50 feet from the Source, SL_1 (dBA)			
San Gabriel Canyon Spreading Grounds	Trucks	91	2,500[1] 50[2]	57 91	85 dBA at 100 feet from noise source
Woodland Duck Farm	Trucks	91	1,000[1] 50[2]	65 91	60 dBA if continuous; 75 dBA if intermittent (daytime on weekdays)
San Gabriel River Discovery Center	Trucks	91	250[3]	77	
Lario Creek	Trucks	91	100[4]	85	
El Dorado Regional Park	Trucks	91	1,000[1] 100[2]	65 85	No numerical standard

[1] Distance to the nearest school
[2] Distance to the nearest residence
[3] Distance to nearest school building
[4] Distance to the nearest school's athletic filed

Table 4.8-8 indicates that, during project construction, noise levels at the sensitive receptors located near the project component sites would range between approximately 57 dBA and 91 dBA, and in some cases would, at times, exceed the applicable jurisdiction's standard for construction noise.

The estimated noise levels shown in **Table 4.8-8** represent the worst-case scenario, since the equation does not take into account noise attenuation due to site topography (i.e., difference in elevation between the noise source and the receiver), presence of natural or man-made sound barriers, and ground conditions (hard vs. soft surfaces). Furthermore, actual distances to the nearest sensitive receptor from the noise source (construction equipment) would be smaller than the distances used in the calculation since the construction equipment would likely be operated at some distance away from the project site boundary. However, for all Concept Design Study sites, at least a portion of the site boundary is adjacent to a sensitive receptor such as a school or residences. The project would also result in construction vehicle traffic and an associated increase in noise levels along the streets in the project area. (Construction impact on traffic is discussed in **Section 4.11**.)

In addition, the Master Plan Concept Design Studies for the Woodland Duck Farm, Lario Creek, San Gabriel River Discovery Center, and El Dorado Regional Park include collection and

treatment of stormwater runoff. Construction of these and other projects involving stormwater collection and treatment may involve construction of storm drains, catch basins, or other structures within street rights-of-way as part of a stormwater management facility. While noisy, construction impacts related to storm drain installation are very temporary at any one location. These linear construction zones typically progress at an average rate of 200 to 500 feet per day. Therefore, any particular location would usually be directly impacted by the construction activities for only one to five days.

Construction noise impacts on sensitive receptors would be potentially significant for all five Concept Design Studies. Implementation of **Mitigation Measures CD-N1 through CD-N4** would reduce construction noise impacts to less than significant levels by limiting construction activities to daytime hours (thereby avoiding noise generation during nighttime when nearby receptors are most sensitive to noise), using noise reduction devices on construction equipment, and identifying site specific measures to reduce noise levels to meet construction noise standards established by the applicable municipality.

4.8.5.2 Operational Impacts

The Master Plan Concept Design Studies for the Woodland Duck Farm, Lario Creek, San Gabriel River Discovery Center, and El Dorado Regional Park include collection and treatment of stormwater runoff. Projects involving stormwater collection and treatment may require operation of pumps (e.g., for circulation of water in constructed wetlands or to transport collected stormwater to irrigation systems). Typical noise levels from water pumps are 76 dBA for standard equipment and 75 dBA for quieted equipment (Bolt, et. al., 1971). Since these pumps would generally be enclosed thus substantially reducing the noise generated, noise impacts from operation of these pumps would be less than significant. Note, noise enclosures can be designed to accomplish a wide range of noise abatement depending on site needs (distance of pump to sensitive receptors).

During project operation, noise will also be generated by worker vehicles travelling to various project components for maintenance and inspection, which is expected to be several times a year for each project component. Operation of proposed parks would result in generation of visitor traffic (see **Section 4.11**). Noise impacts related to increases in traffic associated with project operation are considered less than significant.

4.8.5.3 Impact of Siting New Parks

Two of the five Concept Design Studies (San Gabriel Canyon Spreading Grounds and Woodland Duck Farm) include development of new parks. Existing surrounding land uses for the San Gabriel Canyon Spreading Grounds site are primarily open space and residential. Recreational use policies for the proposed new or improved recreational facilities as part of this Concept Design Study (e.g., trail improvements, pocket parks) would define hours of operation, prohibited activities, etc. to limit noise generation by users. Therefore, recreational facilities proposed at this site would be compatible with the surrounding land uses and the associated noise environment.

The project site for the Woodland Duck Farm is traversed by the Interstate 605 freeway. Portions of the project site adjacent to the freeway currently experience high ambient noise levels. The project design would include installation of sound barriers (e.g., trees and/or structural barriers) to ensure that future visitors to the project site's outdoor recreational facilities would not be exposed to excessive noise levels. This impact would be less than significant.

4.8.6 Master Plan Program Mitigation Measures

Future projects involving use of use of heavy equipment and vehicles during construction will require an evaluation of the impact of proposed actions related to noise as described in program Mitigation Measure MP-N1:

MP-N1 Evaluations of construction noise generation will be conducted as follows during site-specific environmental review of each future Master Plan project:

1. Identify noise-sensitive land uses located in the vicinity of the project site (e.g., residences, hospitals, schools, guest lodging, libraries, convalescent and retirement facilities, houses of worship, auditoriums and concert halls, outdoor theaters, nature and wildlife preserves, parks, and cemeteries).

2. Determine the existing noise environment of the project area (e.g., rural vs. high density urban). Identify nearby existing noise sources that affect the project site (e.g., heavy industrial operations or major highways).

3. Review the relevant jurisdiction's noise regulations and policies (e.g., noise ordinances and general plan noise element) to identify construction noise standards and noise/land use compatibility guidelines.

4. Estimate the construction equipment needed and resultant noise generation (see **Section 4.8.5.1**). Compare the estimated construction noise levels that would be experienced by the nearest sensitive receptor to the relevant jurisdiction's construction noise standards. The impact evaluation will also take into consideration construction duration, whether the noise generated would be intermittent or continuous, and the existing noise environment of the project area.

5. If the estimated noise levels exceed the standards, one or more of the following applicable site-specific measures will be implemented to reduce noise levels to meet the relevant jurisdiction's noise standards:

    - Equip all mobile construction equipment with properly operating mufflers or other noise reduction devices
    - Install sound walls, sound curtains, or other temporary sound barriers
    - Select quieter construction procedures and/or equipment

6. For projects at school sites: schedule the noisier phases of construction on Saturdays, school vacation periods, and/or after regular class hours but before 9 p.m., as feasible; and maintain ongoing communications with the schools' administrators to address any construction noise-related issues.

Future projects involving new or expanded facilities for active recreation (e.g., athletic fields) will require an evaluation of the impact of proposed actions related to noise as described in program Mitigation Measure MP-N2:

MP-N2 Projects that involve new or expanded facilities for active recreation (e.g., athletic fields) will be designed to minimize impacts on nearby noise-sensitive land uses, if any, by siting facilities away from noise-sensitive land uses, limiting hours of operation, installation of sound barriers, and/or using other appropriate measures as necessary.

4.8.7 Mitigation Measures for Concept Design Studies

The following mitigation measures shall be implemented for all five Concept Design Studies:

CD-N1 Limit construction activities to the hours allowed by the applicable jurisdiction's noise ordinance (City of Azusa for San Gabriel Canyon Spreading Grounds; County of Los Angeles for Woodland Duck Farm, San Gabriel River Discovery Center, and Lario Creek; and City of Long Beach for El Dorado Regional Park).

CD-N2 Equip all mobile construction equipment with properly operating mufflers or other noise reduction devices.

CD-N3 Notify businesses and residences immediately adjacent to the construction site prior to the start of construction (e.g., via flyers). Include a telephone number for noise complaints in this notification.

CD-N4 Prior to the start of construction of the project, require the construction contractor to develop a site-specific noise mitigation plan based on an updated estimate of construction equipment and schedule. One or more of the following measures shall be implemented as applicable to reduce noise levels to meet the relevant jurisdiction's construction noise standards:

- Install temporary sound walls, sound curtains, or other temporary sound barriers
- Select quieter construction procedures and/or equipment

4.9 PUBLIC SERVICES AND UTILITIES

4.9.1 Existing Setting

The Master Plan study area is the 1-mile wide corridor along 58 river miles of the San Gabriel River from its headwaters in the San Gabriel Mountains to its terminus at the Pacific Ocean between Long Beach and Seal Beach. The study area includes 19 cities as well as unincorporated areas of Los Angeles and Orange counties.

4.9.1.1 Fire and Police

The Master Plan study area is served by multiple fire and police protection providers (**Table 4.9-1**). While some incorporated cities have their own police or fire departments, others contract with the Los Angeles County Fire Department (LACFD), Los Angeles County Sheriff's Department (LASD), or the Orange County Fire Authority (OCFA) for police and fire protection services. LACFD, LASD, OCFA, and Orange County Sheriff's Department (OSD) also provide police and fire services to unincorporated areas of Los Angeles and Orange Counties.

Table 4.9-1
Fire and Police Service Providers in the Master Plan Area

Municipality	Fire	Police
Arcadia	Arcadia Fire Department	Arcadia Police Department
Azusa	LACFD	Azusa Police Department
Baldwin Park	LACFD	Baldwin Park Police Department
Bellflower	LACFD	LASD
Cerritos	LACFD	LASD
City of Industry	LACFD	LASD
Downey	Downey Fire Department	Downey Police Department
Duarte	LACFD	LASD
El Monte	LACFD	El Monte Police Department
Irwindale	LACFD	Irwindale Police Department
Lakewood	LACFD	LASD
Long Beach	Long Beach Fire Department	Long Beach Police Department
Los Alamitos	OCFA	Los Alamitos Police Department
Norwalk	LACFD	LASD
Pico Rivera	LACFD	LASD
Santa Fe Springs	Santa Fe Springs Fire Department	Whittier Police Department
Seal Beach	OCFA	Seal Beach Police Department
South El Monte	LACFD	LASD
Whittier	LACFD	Whittier Police Department
Unincorporated Los Angeles County	LACFD	LASD
Unincorporated Orange County	OCFA	OSD

LACFD: Los Angeles County Fire Department
OCFA: Orange County Fire Authority
LASD: Los Angeles County Sheriff's Department
OSD: Orange County Sheriff's Department

Fire and police/sheriff stations that serve the Concept Design Study sites are shown in **Table 4.9-2**.

Table 4.9-2
Fire and Police Stations Serving the Concept Design Study Sites

Concept Design Study	Police Station	Fire Station
San Gabriel Canyon Spreading Grounds	Azusa Police Station 725 N. Alameda Avenue, Azusa	LACFD Station No. 32 805 N. Angeleno Avenue, Azusa
Woodland Duck Farm	LASD Bassett Substation 13308 1/2 Valley Boulevard, Bassett	LACFD Station No. 87 140 S. Second Avenue, Industry
San Gabriel River Discovery Center	LASD Pico Rivera Station 6631 Passons Blvd, Pico Rivera	LACFD Station No. 40 4864 S. Durfee Avenue, Pico Rivera
Lario Creek		
El Dorado Regional Park	Long Beach Police Department East Substation 4800 E Los Coyotes Diagonal, Long Beach	Long Beach Fire Department Station No. 5 7575 E. Wardlow Road, Long Beach

LACFD: Los Angeles County Fire Department
LASD: Los Angeles County Sheriff's Department

4.9.1.2 Schools

Over 20 public school districts serve the municipalities and communities in the Master Plan study area. Elementary, middle and high schools located in the vicinity of the Concept Design Study sites and the associated school districts are shown in **Table 4.9-3**.

Table 4.9-3
Schools Located in the Vicinity of Concept Design Study Sites

Concept Design Study Site	School Name* and Address	School District
San Gabriel Canyon Spreading Grounds	Hodge Elementary 700 W. Eleventh Street, Azusa	Azusa Unified
	Longfellow Elementary 245 W. Tenth Street, Azusa	Azusa Unified
Woodland Duck Farm	Andrews Elementary 1010 S. Caraway Drive, Whittier	Whittier City Elementary
	Don Julian Elementary 13855 Don Julian Road, La Puente	Bassett Unified
	Kranz Intermediate 12460 Fineview Street, El Monte	Mountain View Elementary
	Madrid Middle 3300 Gilman Road, El Monte	Mountain View Elementary
	Maxson Elementary 12380 Felipe Street, El Monte	Mountain View Elementary
	Mountain View High 2900 Parkway Drive, El Monte	El Monte Union High
San Gabriel River Discovery Center	South El Monte High 1001 Durfee Avenue, South El Monte	El Monte Union High
Lario Creek		
El Dorado Regional Park	DeMille Middle 7025 E. Parkcrest Street, Long Beach	Long Beach Unified
	Keller Elementary 7020 E. Brittain Street, Long Beach	Long Beach Unified
	Lee Elementary 11481 Foster Road, Los Alamitos	Los Alamitos Unified
	Los Alamitos High 3591 Cerritos Avenue, Los Alamitos	Los Alamitos Unified
	Oak Middle School 10821 Oak Street, Los Alamitos	Los Alamitos Unified
	Rossmoor Elementary 3272 Shakespeare Drive, Los Alamitos	Los Alamitos Unified
	Weaver Elementary 11872 Wembley Road, Los Alamitos	Los Alamitos Unified

* Schools within approximately 0.5-mile radius of the project site boundary

4.9.1.3 Utilities

Utilities (e.g., water, sewer, electricity, gas, cable, and telephone) are operated by various public and private entities throughout the Master Plan study area. **Table 4.9-4** lists utilities that serve the Concept Design Study sites.

Table 4.9-4
Utilities Serving the Concept Design Study Sites

Concept Design Study Site	Water	Sewer Lines	Electricity	Natural Gas
San Gabriel Spreading Grounds	Azusa Light and Water	City of Azusa Department of Public Works	Azusa Light and Water	SCGC
Woodland Duck Farm	San Gabriel Valley Water Company	City of Industry Engineering Department	SCE	SCGC
San Gabriel River Discovery Center	San Gabriel Valley Water Company	City of Whittier Public Works Department	SCE	SCGC
Lario Creek				
El Dorado Regional Park	City of Long Beach Water Department	City of Long Beach Water Department	SCE	SCGC

SCE: Southern California Edison
SCGC: Southern California Gas Company

Flood Protection. Throughout Los Angeles County, LADPW operates and maintains 15 major dams, nearly 500 miles of open channel, 2,500 miles of underground storm drains, over 70,000 catch basins, approximately 300 debris retaining structures, 230 concrete stream bed stabilization structures, 40 pumping plants, and nearly 27 spreading grounds. Specifically for the San Gabriel River, LADPW and the United States Army Corps of Engineers (COE) are the two primary agencies responsible for operating flood control facilities. Additional information on flood control facilities within the River system is provided in Section 4.6.1.1.

Water. Water is provided in the Master Plan study area by various public and private entities. The Metropolitan Water District of Southern California (Metropolitan) owns and operates various pipelines within the Master Plan study area, including: Foothill Feeder-Service Connection USG-3, Fish Canyon Adit to Monrovia Tunnel No. 3 of the Upper Feeder Pipeline, Upper Feeder Pipeline, Middle Feeder Pipeline, Lower Feeder Pipeline, and Second Lower Feeder Pipeline. In addition, Metropolitan owns a property known as Old Navy Peninsula, which is located on the west side of Morris Reservoir (L.J. Simonek, Metropolitan, pers. comm., 2003). Other public water providers that may operate pipelines within street rights-of-way and/or have utility easements in the Master Plan study area include: Azusa Light and Water, San Gabriel Valley Municipal Water District, Central Basin Municipal Water District, City of Long Beach Water Department, and Upper San Gabriel Valley Municipal Water District.

Sewer and Wastewater Treatment Systems. Sewer lines in the Master Plan study area are operated by the County Sanitation Districts of Los Angeles County (LACSD) and various municipalities. In general, the public works department or the engineering department of each municipality is responsible for maintenance and repair of local sewer lines, and LACSD operates and maintains the larger trunk sewer lines. Wastewater treatment is provided by water reclamation plants operated by LACSD (see **Table 4.6-4** in **Section 4.6)**.

Electricity. Electrical power for a majority of the Master Plan study area is provided by Southern California Edison (SCE), a private utility. Azusa Light and Water, operated by City of Azusa, provides electrical power to residents of Azusa. SCE high-voltage power line towers are located throughout the Master Plan study area, approximately paralleling the river from south of Santa Fe Dam in Irwindale to the electrical power facilities in Seal Beach. The City of Los Angeles Department of Water and Power (LADWP) also operates some high-voltage power line towers along the River.

Natural Gas. Southern California Gas Company (SCGC), a private utility, provides natural gas service throughout the Master Plan study area, except for the City of Long Beach and portions of surrounding communities. The service area for Long Beach Energy, a municipal utility and natural gas supplier owned and operated by the City of Long Beach, includes the cities of Long Beach and Signal Hill, and sections of surrounding communities, including Lakewood, Bellflower, Compton, Seal Beach, Paramount, and Los Alamitos (SCAG, 2004).

Other Utilities. Other utilities that may have facilities or easements located within the Master Plan study area (e.g., within street rights-of-way) include telephone, cable, and oil.

(See Section 4.5.4.3 regarding the potential for underground utility vaults to retain standing water and breed mosquitoes.)

4.9.1.4 Solid Waste

Solid waste collection services are provided by private companies or municipalities throughout the Master Plan study area. Municipal solid waste landfills in the region are listed in **Table 4.9-5**. Puente Hills Landfill, operated by LACSD, is located just outside of the Master Plan study area in Whittier.

The California Integrated Waste Management Act of 1989 and its subsequent amendments required all California cities and counties to implement programs (by the year 2000) that would reduce, recycle, or compost at least 50 percent of the quantity of wastes produced. The California Integrated Waste Management Board is the state entity that administers the act. To facilitate the County's compliance with the waste reduction mandate, projects implemented by the County are required to comply with the County's construction and demolition debris recycling specifications and submit reports to LADPW Environmental Programs Division, detailing the volume of debris generated and the percentages of debris that are recycled and disposed in landfills.

Solid waste issues for the River include wash-down of litter onto downstream beaches. For example, during the first three months of 2005, Seal Beach removed in excess of 540 tons of debris from area beaches (P. Yost, pers. comm., April 25, 2005 (Appendix F)).

4.9.1.5 Road Maintenance

If construction vehicle travel associated with the project resulted in substantial damage to roadways or other features within the public right-of-way, the municipality with jurisdiction over the local roadways or Caltrans (for state routes and other Caltrans facilities such as highway bridges) may require repair of the damage.

Table 4.9-5
Regional Municipal Solid Waste Landfills

Facility Name (Location)	**Owner/Operator**	**Permitted Tonnage** (tons per day)	**Average Daily Tonnage** (tons per day)	**Approximate Closure Date**
Antelope Valley (Palmdale)	Antelope Valley Recycling and Disposal Facility	1,400	600	2011
Bradley West (Sun Valley)	Waste Management, Inc.	10,000	2,200	2006
Calabasas (Agoura)	LACSD	3,500	1,100	2018
Chiquita Canyon (Castaic)	Republic Services of California	6,000	5,300	2011
Lancaster (Lancaster)	Waste Management, Inc.	1,700	1,200	2032
Puente Hills Landfill (Whittier)	LACSD	13,200	13,200	2013
Scholl Canyon (Glendale)	LACSD	3,400	1,200	2024
Sunshine Canyon (Sylmar)	Browning-Ferris Industries	11,500	6,500	2006

Sources: Federal Aviation Authority and City of Los Angeles, 2003, and R. Barker, pers. comm., 2004.

4.9.2 Significance Criteria

Project impacts related to public services and utilities would be considered significant if the project:

- Required additional fire protection or law enforcement staff and/or equipment to maintain an acceptable level of service
- Substantially increased emergency service response times by fire and law enforcement staff
- Required substantial changes to the daily schedule or calendar of a school, a major reorganization of students or classrooms, or other temporary or permanent disturbance to a school's activities

- Created unsafe conditions for school staff and/or students
- Created overcrowded conditions at schools
- Interfered with existing utility infrastructure in a manner which would result in interruption of service for extended periods
- Generated demand for utilities which exceeds the capacity of the providers
- Was not served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs

4.9.3 Impacts of Adopting the Master Plan Elements

The Master Plan includes six plan elements (also called Master Plan goals), set forth as the CEQA project objectives for the Master Plan. The plan elements are supported by objectives and performance criteria (see **Section 3.3.1**). The adoption of the Master Plan by the County of Los Angeles (and other municipalities in the study area) will promote implementation of projects that are consistent with these Master Plan goals. This section describes the overall Master Plan impacts based on a qualitative assessment of reasonably foreseeable effects of the adoption of the Master Plan. Since projects similar to the Concept Design Studies are proposed throughout the river corridor, the Concept Design Study impacts (**Section 4.9.4**) further illustrate the types of potential impacts expected from implementation of the overall Master Plan.

As described below in **Table 4.9-6**, adoption of the Master Plan could result in both beneficial and potentially adverse impacts. Adverse impacts on public services and utilities would be addressed in second-tier CEQA documentation for future projects developed in a manner consistent with the Master Plan (see **Section 4.9.5**). Since mitigation will reduce these impacts to less than significant levels (see **Table 4.9-6** and Master Plan program mitigation measures described in **Section 4.9.5**), the overall impacts on public services and utilities from adopting the Master Plan are considered less than significant. Site-specific mitigation measures will be identified and implemented by the specific lead agencies for each future project in the Master Plan study area.

Table 4.9-6
Impacts on Public Services and Utilities from Adopting the Master Plan Elements

Master Plan Elements	Impacts on Public Services and Utilities	Impact Summary
Habitat Element: Preserve and enhance habitat systems through public education, connectivity and balance with other uses.	**Beneficial:** Preservation of existing habitat areas would have a beneficial impact on public services and utilities by protecting open space areas from residential, commercial, or industrial development which could increase the demand for public services and/or require increased capacities of utility infrastructure. **Neutral:** This element also includes objectives and performance criteria that are neutral with respect to impacts on public services and utilities (e.g., establishment of habitat area design standards and identification of indicator species).	Beneficial (no adverse impact)
Recreation Element: Encourage	**Beneficial:** Preservation of existing open space for	Less than

Master Plan Elements	Impacts on Public Services and Utilities	Impact Summary
and enhance safe and diverse recreation systems, while providing for expansion, equitable and sufficient access, balance and multi-purpose uses.	passive recreational uses would have a beneficial impact on public services and utilities by protecting open space areas from residential, commercial, or industrial development which could increase the demand for public services and/or require increased capacities of utility infrastructure. In addition, adoption of this element would encourage projects that provide access for emergency use. **Neutral:** This element also includes objectives and performance criteria that are neutral with respect to impacts on public services and utilities (e.g., educating the public about catch and release fishing, establishing design standards for trails). **Potentially Adverse:** Construction of recreational facilities would generate solid waste (e.g., soil, asphalt, concrete, and rock). Projects involving demolition of existing structures or modification of paved areas could generate the greatest volumes of construction waste. Implementation of **MP-P5** would further reduce this impact by requiring the construction contractors to identify and implement programs for minimizing solid waste during construction including recycling. Operation of new parks may result in minor less than significant increases for police services. Operation of recreational facilities would result in minor less than significant increases in electricity consumption (e.g., park buildings and night-time lighting), water use (e.g., park buildings), sewer connections (e.g., park buildings), and solid waste generation (e.g., trash collection at parks).	significant
Open Space Element: Enhance and protect open space systems through conservation, aesthetics, connectivity, stewardship, and multi-purpose uses.	**Beneficial:** Preservation of existing open space would have a beneficial impact on public services and utilities by protecting open space areas from residential, commercial, or industrial development which could increase the demand for public services and/or require increased capacities of utility infrastructure. In addition, adoption of this element would encourage projects that promote fire safety and awareness, use drought tolerant native plants (reduces water use for irrigation of landscaped areas), and establish public safety measures to prevent crime in the river corridor, all beneficial impacts on public services and utilities. **Neutral:** This element also includes objectives and performance criteria that are neutral with respect to impacts on public services and utilities (e.g., improves aesthetic quality of the corridor, reduce vector breeding potential).	Beneficial (no adverse impact)
Flood Protection Element: Maintain flood protection and existing water and other rights	**Beneficial:** Maintenance of flood protection and development of new flood control facilities would have beneficial impacts on the capacity of existing storm	Potentially significant for construction

Master Plan Elements	Impacts on Public Services and Utilities	Impact Summary
while enhancing flood management activities through the integration with recreation, open space and habitat systems.	drains. **Neutral:** This element also includes objectives and performance criteria that are neutral with respect to impacts on public services and utilities (e.g., establish visual design standards for flood control facilities). **Potentially Adverse:** Adoption of this element would encourage construction of stormwater management facilities, which may include storm drains, catch basins, or other structures within street rights-of-way. Temporary road or lane closures associated with construction of these facilities may have a temporary adverse impact on police and fire emergency response times and emergency vehicle access to streets, fire hydrants or structures adjacent to the affected roadways. Temporary road or lane closures may also have adverse impacts on school commuting routes. Implementation of MP-P1 and MP-P2 would reduce this impact to below a level of significance by requiring consultation with emergency service providers and schools and implementation of traffic control measures to reduce temporary adverse effects to emergency vehicle response and school vehicles. Construction of storm drains, catch basins, or other structures within street rights-of-way has the potential to affect various underground utilities, including water, sewer, electricity, gas, oil, telephone, and cable. If underground utilities are not identified prior to construction, damage and temporary disruption to those lines and associated services could occur. Implementation of **MP-P3** would reduce this impact to below a level of significance by requiring identification of buried facilities in affected roadways and relocation of facilities as necessary. Operation of stormwater management facilities would result in generation of minor less than significant amounts of solid waste from periodic removal of sediments. Operation of pumps associated with conveyance of stormwater would result in less than significant increased electricity consumption.	effects; less than significant with mitigation Less than significant for operational effects
Water Supply and Water Quality Element: Maintain existing water and other rights while enhancing water quality, water supply, groundwater recharge, and water conservation through the integration with recreation, open space and habitat systems.	**Beneficial:** Adoption of this element would encourage projects that enhance groundwater recharge and increase reclaimed water use, a beneficial impact on water supply. **Potentially Adverse:** Adoption of this element would encourage construction of stormwater management facilities, which may include storm drains, catch basins, or other structures within street rights-of-way. Temporary road or lane closures associated with construction of these facilities may have an temporary adverse impact on police and fire emergency response	Potentially significant for construction effects; less than significant with mitigation Potentially significant for stormwater infiltration

Master Plan Elements	Impacts on Public Services and Utilities	Impact Summary
	times and emergency vehicle access to streets, fire hydrants or structures adjacent to the affected roadways. Temporary road or lane closures may also have adverse impacts on school commuting routes. Implementation of **MP-P1** and **MP-P2** would reduce this impact to below a level of significance by requiring consultation with emergency service providers and schools and implementation of traffic control measures to reduce temporary adverse effects to emergency vehicle response and school vehicles. Construction of storm drains, catch basins, or other structures within street rights-of-way has the potential to affect various underground utilities, including water, sewer, electricity, gas, oil, telephone, and cable. If underground utilities are not identified prior to construction, damage and temporary disruption to those lines and associated services could occur. Implementation of MP-P3 would reduce this impact to below a level of significance by requiring identification of buried facilities in affected roadways and relocation of facilities as necessary. Operation of stormwater management facilities would result in generation of minor less than significant amounts of solid waste from periodic removal of sediments. Operation of pumps for conveyance of stormwater or provision of water circulation in constructed wetlands would result in increased electricity consumption. Portions of the river corridor parallel power transmission lines. Operation of stormwater infiltration facilities near power line towers could result in saturation of soil surrounding the towers, which could affect the stability of the power line towers, a potentially significant impact on utilities. Implementation of **MP-P4** would reduce this impact to below a level of significance by requiring a geotechnical investigation and modifications to infiltration system design to minimize saturation of soils around power line towers.	impacts on power line tower stability; less than significant with mitigation Less than significant for all other operations-related effects
Economic Development Element: Pursue economic development opportunities derived from and compatible with the natural aesthetic and environmental qualities of the river.	**Neutral:** This element includes objectives and performance criteria that are neutral with respect to impacts on public services and utilities (e.g., educates participating landowners about potential liability and protective measures). **Potentially Adverse:** This element promotes the pursuit of economic development opportunities which consider connectivity to the river corridor and establishment of development standards. Minor modifications of existing or new business development in the river corridor needed for consistency with Master Plan elements (e.g., trail connections and aesthetic features and compliance with	Less than significant

Master Plan Elements	Impacts on Public Services and Utilities	Impact Summary
	design guidelines) are anticipated to have minimal or no impacts on public services and utilities.	

4.9.4 Impacts of Implementing the Concept Design Studies

4.9.4.1 Fire and Police

Construction Impacts

The Master Plan Concept Design Studies for the Woodland Duck Farm, Lario Creek, San Gabriel River Discovery Center, and El Dorado Regional Park include collection and treatment of stormwater runoff. Projects involving stormwater collection and treatment may include construction of storm drains, catch basins, or other structures within street rights-of-way as part of a stormwater management facility. During construction of these structures, temporary road or lane closures may be required. Road or lane closures may require police and fire emergency vehicles to use less direct routes in responding to emergency calls in the project area, resulting in increased response times. In addition, project construction may temporarily affect fire vehicle access to streets, fire hydrants or structures adjacent to the affected roadways. Incorporation of **Mitigation Measures CD-P1, CD-P2, and CD-P3** would reduce these potential impacts to less-than-significant levels through consultation with fire and police service providers so that appropriate traffic controls and emergency routes may be put in place to avoid traffic and emergency tie-ups.

Operational Impacts

Fire Protection Services. The project does not involve construction of housing or other structures that would result in a substantial increase in the demand for fire protection or emergency medical services. Buildings that could be constructed as part of Concept Design Studies or other future projects include park buildings (e.g., San Gabriel River Discovery Center) and pump enclosures, which would not substantially increase fire hazards in the area. The Discovery Center building will be designed to comply with applicable fire codes. Therefore, the project is expected to be adequately served by existing resources of fire departments serving the project area, and would not require additional fire protection staff and/or equipment to maintain an acceptable level of service. No significant impacts would occur.

Police Protection Services. Implementation of the Master Plan would not result in an increase in residences or businesses, and would not otherwise result in a substantial increase in the demand for security or calls for police services. Minor increases for police services may be required at newly developed park space and project proponents would consult with law enforcement agencies regarding security issues. However, since no population increase is associated with the Master Plan, project sites are expected to be adequately served by the existing resources of police departments serving the project area, and would not require additional law enforcement staff and/or equipment to maintain an acceptable level of service. Impacts on police services are anticipated to be less than significant.

4.9.4.2 Schools

Construction Impacts

The Concept Design Study sites for the San Gabriel River Discovery Center and Lario Creek are located adjacent to the South El Monte High School. Construction activities (e.g., construction traffic and parking of construction vehicles on the street adjacent to the school) could have temporary impacts on access to the school and on student safety. This is a less than significant impact. Implementation of **Mitigation Measures CD-P4 and CD-P5** would further reduce the magnitude of this impact through proper planning of construction activities in coordination with school administrators and/or implementation of traffic control measures to avoid impacts on access to the school and student safety.

The Master Plan Concept Design Studies for the Woodland Duck Farm, Lario Creek, San Gabriel River Discovery Center, and El Dorado Regional Park include collection and treatment of stormwater runoff. Projects involving stormwater collection and treatment may include construction of storm drains, catch basins, or other structures within street rights-of-way as part of a stormwater management facility. During construction of these structures, temporary road or lane closures may be required, which may cause students to take less direct routes when commuting to school. Construction vehicles may also cause traffic delays within the project area and affect the on-time performance of school buses. Incorporation of **Mitigation Measure CD-P6** would reduce these potential impacts to less-than-significant levels through proper planning of construction activities and/or identification of alternative bus routes, as necessary.

Operational Impacts

The Concept Design Studies would not involve construction of housing or other structures that would result in an increase in population. Therefore, the proposed project would not have any impact on school capacity, and would not cause or contribute to overcrowding of schools in the project area. No impacts would occur regarding school population.

4.9.4.3 Utilities

Construction Impacts

Various utility lines are likely located within existing street rights-of-way surrounding the Master Plan project sites. The Master Plan Concept Design Studies for the Woodland Duck Farm, Lario Creek, San Gabriel River Discovery Center, and El Dorado Regional Park include collection and treatment of stormwater runoff. Projects involving stormwater collection and treatment may include construction of storm drains, catch basins, or other structures within street rights-of-way as part of a stormwater management facility. Utilities that may be affected by construction of these facilities include water, sewer, electricity, gas, oil, telephone, and cable. In addition, the Concept Design Study site for the San Gabriel Canyon Spreading Grounds contains an underground water pipeline near the perimeter of the spreading grounds. This pipeline is owned and maintained by City of Azusa for conveying water from its wells to its water treatment facility.

If affected utilities in the project area are not identified prior to construction, damage and temporary disruption to those lines and associated services could occur. Damage to major utility lines could result in significant impacts on the service area. Coordination and notification with utility service providers, as outlined in **Mitigation Measure CD-P7** would minimize interference with existing lines and interruption of service through proper planning of construction activities and use of construction methods that avoid damage and minimize interference with utilities as necessary. With implementation of these mitigation measures, construction impacts on utilities would be less than significant.

Operational Impacts

Sewer and Wastewater Treatment Systems. The Concept Design Studies and other projects developed in a manner consistent with the Master Plan would only require minimal, if any, connection to the sewer system at park buildings (e.g., San Gabriel River Discovery Center). Therefore, project operation would have a less-than-significant impact on existing sewer or wastewater treatment systems.

Water Supply Systems. All five Master Plan Concept Design Studies could include landscaping/habitat restoration as potential project elements. To the extent feasible, collected stormwater would be used to supply the water necessary to irrigate these new landscaped areas. Therefore, new or expanded water supply sources or entitlements would not be required.

The Master Plan Concept Design Studies for the Woodland Duck Farm, Lario Creek, San Gabriel River Discovery Center at Whittier Narrows, and El Dorado Regional Park include collection and treatment of stormwater runoff. Stormwater runoff collected for these Concept Design Studies would be infiltrated into the ground for groundwater recharge or reused for non-potable purposes at local facilities (e.g., landscape irrigation). Additionally, other future projects developed in a manner consistent with the Master Plan may include groundwater recharge of stormwater (e.g., at former gravel pits). Implementation of these types of projects would conserve water, which would be a beneficial impact on the existing water supply.

Electricity Consumption. The Concept Design Studies and other projects developed in a manner consistent with the Master Plan that involve collection and treatment of stormwater may require electricity for operation of pumps associated with the stormwater collection and treatment systems. In addition, minor pumps would be required for project components that include irrigation systems designed to use stormwater collected onsite.

Operation of these pumps would result in a minor increase in the demand for electricity. The project could also result in a minor increase in electricity demand from operation of park buildings (e.g., San Gabriel River Discovery Center) and lighting for recreational facilities that include night-time use (e.g., sports fields). However, the minor increases in demand from the project would not exceed the existing capacity of electricity providers or local delivery systems. Therefore, this impact is less than significant.

Operational Impact on Power Line Towers. Master Plan Concept Design Studies for the Woodland Duck Farm and El Dorado Regional Park and other projects developed in a manner

consistent with the Master Plan may involve construction of stormwater infiltration facilities near power line towers. If stormwater infiltration saturates the soil surrounding the towers and affects the stability of the power line towers, it could result in a significant impact on the electricity infrastructure. **Mitigation Measure CD-P10** would reduce this impact to a less-than-significant level by requiring proper geotechnical investigations and incorporation of design changes if stormwater infiltration may affect the stability of the power line towers.

4.9.4.4 Solid Waste

Construction Impacts

Construction Waste Generation. Construction waste generated from implementation of the Concept Design Studies and other projects developed in a manner consistent with the Master Plan would primarily be soil, asphalt, concrete, and rock. For some project sites, disturbed soils could be reused onsite, limiting the volume of material needing disposal at a landfill. Projects that involve building demolition (e.g., potentially at San Gabriel River Discovery Center) or modification of paved areas could generate the greatest volumes of construction waste. Since implementation of future projects and associated construction waste generation would be phased over decades and since onsite reuse/redistribution of soil would reduce the net amount of construction waste, the impact on landfill capacity is less than significant. **Mitigation Measure CD-P8** will be implemented to further reduce impacts on solid waste by requiring construction contractors to minimize waste through recycling and reuse as feasible.

Modification of Solid Waste Collection Routes. During project construction within roadways, some roadway lane closures may be required. Any temporary modifications to existing solid waste collection routes associated with lane closures would be a less-than-significant impact. Implementation of **Mitigation Measure CD-P9** would further reduce project-related impacts on solid waste collection by providing advance notification so that solid waste collection routes may be modified as necessary.

Operational Impacts

Solid waste generated during operation of the project would be limited to sediments removed periodically from the stormwater collection facilities during maintenance. Sediments would be disposed of in compliance with applicable regulations at approved sites. In addition, the project could generate minor amounts of solid waste from operation of parks and park buildings (e.g., San Gabriel River Discovery Center). However, the minor increases in demand from the project would not exceed the capacity of the existing waste collection and disposal system. Therefore, this impact is less than significant.

4.9.4.5 Road Maintenance

Project construction will be phased over decades, and would occur at various locations throughout the Master Plan study area. Substantial damage to local roadways or other features within the public right-of-way is not anticipated but could occur depending on the weight and size of construction vehicles necessary and the condition of affected roadways at the time of

construction. Impacts are anticipated to be less than significant. However, if deemed necessary by the relevant municipality, post-construction road maintenance would be implemented.

4.9.5 Master Plan Program Mitigation Measures

4.9.5.1 Fire and Police

MP-P1 For future projects with substantial construction periods, the following measures will be implemented as applicable to minimize construction impacts on emergency response requirements of relevant police and fire departments. (See also **Section 4.11.6** regarding mitigation measures related to construction impacts on traffic and roadways).

- Prior to the start of construction, consult the fire station(s) serving the project area and review phasing, road/lane closure, and detour plans. The fire station(s) may then identify alternative fire and emergency medical response routes.

- Prior to the start of construction, consult the police station(s) serving the project area, as appropriate, of project-related lane and/or road closures and detour plans. The police station(s) may then identify alternative police emergency response routes.

- If determined to be necessary by the relevant police and/or fire service providers, implement one or more of the following applicable traffic control measures capable of reducing the temporary adverse effects to police and emergency vehicle travel during project construction:

  - Use flagmen to direct traffic
  - Post "No Parking" signs along the affected area
  - Install temporary signals or signs to direct traffic
  - Other equivalent traffic control measures

4.9.5.2 Schools

MP-P2 For future projects located adjacent to a school, evaluate the impact on school access (vehicles and pedestrians) and student safety from operation and/or parking of construction vehicles and equipment near the school property. The school district or the school administrator will be contacted to identify any policies that the school or the school district has established regarding construction on or near school properties (e.g., noise and traffic control standards) and to provide sufficient notice to forewarn school bus operators, children, and parents if existing pedestrian and vehicular routes to school would be affected. As necessary to protect the safety of children, parents and employees accessing the school, one or more of the following measures will be implemented in coordination with the school administrators:

- Develop temporary alternative pedestrian and vehicular routes to the school that avoid construction areas
- Install appropriate temporary traffic controls (signs, crossing guards, and/or signals) as needed to ensure pedestrian and vehicular safety

- Minimize use of haul routes past the school when school is in session
- Prohibit parking or staging of construction or worker vehicles on streets adjacent to the school.

4.9.5.3 Utilities

MP-P3 For future projects that include construction of pipelines or other underground structures, identify the roadways or other rights-of-way that would be affected during construction. During facility design, contact the relevant utilities (e.g., water, sewage, electricity, natural gas, telephone, cable, and oil) to identify existing and proposed buried facilities in affected roadways. To the extent feasible, the alignment of new facilities will be designed to avoid the existing utilities. If avoidance is not feasible, one or more of the following measures will be implemented as applicable:

- If relocation is required, sequence construction activities to avoid or minimize interruptions in service.
- If utility service disruption is necessary, notify residents and businesses in the project area a minimum of 2 to 4 days prior to service disruption through local newspapers, direct mailings to affected parties, or public posting of notices.
- If project construction would occur near existing utilities, require the contractor to excavate around utilities, including hand excavation as necessary, to avoid damage and to minimize interference with safe operation and use. Hand tools must be used to expose the exact location of buried gas or electric utilities.

MP-P4 For future projects that include stormwater infiltration in the vicinity of power line towers, a geotechnical investigation will be conducted during facility design to assess the characteristics and stability of the soil around the power line towers. If results of the investigation indicate that stormwater infiltration may saturate the soil and affect the stability of the towers, one or more of the following changes will be incorporated into the site design as applicable:

- Site the proposed retention basins to avoid the towers, if possible, or construct a series of drywells so that water would be infiltrated deeper into the ground to avoid saturation of surface soils.
- Install a liner along the sideslope of the basin closest to the power line towers to prevent infiltration. (The liner would cover only a small portion of the infiltration basin.)

4.9.5.4 Solid Waste

MP-P5 State in the plans and specifications for the proposed project that the construction contractor is required to identify and implement programs for minimizing solid waste generated during construction. These programs could include recycling of asphalt and concrete paving materials, reuse and composting of green waste materials on site where appropriate (e.g., where there is limited potential for inadvertent spreading of invasive plants), and balance of graded soil on site to the maximum extent feasible.

MP-P6 Prior to construction, notify the relevant municipality of the construction schedule and planned lane or road closures. The municipality or agency may then modify the solid waste collection routes and access in the area.

4.9.6 Mitigation Measures for Concept Design Studies

Construction Impact on Fire and Police Protection Services

The following mitigation measure shall be implemented for **all five Concept Design Studies:**

CD-P1 Prior to the start of construction, consult the fire station(s) serving the project area and review phasing, road/lane closure, and detour plans. The fire station(s) may then identify alternative fire and emergency medical response routes.

CD-P2 Prior to the start of construction, consult the police station(s) serving the project area, as appropriate, of project-related lane and/or road closures and detour plans. The police station(s) may then identify alternative police emergency response routes.

CD-P3 If determined to be necessary by the relevant police and/or fire service providers, implement one or more of the following applicable traffic control measures capable of reducing the temporary adverse effects to police and emergency vehicle travel during project construction:

- Use flagmen to direct traffic
- Post "No Parking" signs along the affected area
- Install temporary signals or signs to direct traffic
- Other equivalent traffic control measures

Construction Impact on South El Monte High School

The following mitigation measures shall be implemented for **San Gabriel River Discovery Center and Lario Creek** Concept Design Studies to minimize impacts at South El Monte High School**:**

CD-P4 Prior to project construction, contact school administrators to provide sufficient notice to forewarn school bus operators, children, and parents when existing pedestrian and vehicular routes to school will be affected. As necessary to protect the safety of children, parents and employees accessing the school, one or more of the following measures shall be implemented in coordination with the school administrators:

- Develop temporary alternative pedestrian and vehicular routes to the school that avoid construction areas

- Install appropriate temporary traffic controls (signs, crossing guards, and/or signals) as needed to ensure pedestrian and vehicular safety

- Minimize use of haul routes past the school when school is in session

- Prohibit parking or staging of construction or worker vehicles on streets adjacent to the school.

CD-P5 Secure all construction areas adjacent to the school, including trench areas, operating equipment areas and equipment staging and stockpile areas, through fencing or other barriers to prevent trespassing and reduce hazards to children and other pedestrians.

Construction Impact on School Commuting Routes

The following mitigation measures shall be implemented for **all five Concept Design Studies:**

CD-P6 Notify the applicable school district of the expected start and end dates for various portions of the project that may affect traffic in the area and any potential impact on existing school bus routes to facilitate identification of alternative routes and minimize unexpected delays in commuting to the school.

Construction Impact on Underground Utilities

The following mitigation measure shall be implemented for **all five Concept Design Studies:**

CD-P7 During design of each project component, consult the applicable utility service provider(s) to identify existing and proposed buried facilities in affected roadways and to determine which utilities require relocation and which can be avoided. If results of the consultation indicate that project construction could affect buried facilities, one or more of the following measures shall be implemented as applicable:

- If relocation is required, sequence construction activities to avoid or minimize interruptions in service.

- If utility service disruption is necessary, notify residents and businesses in the project area a minimum of 2 to 4 days prior to service disruption through local newspapers, direct mailings to affected parties, or public posting of notices.

- If project construction would occur near existing utilities, require the contractor to excavate around utilities, including hand excavation as necessary, to avoid damage and to minimize interference with safe operation and use. Hand tools must be used to expose the exact location of buried gas or electric utilities.

Construction Waste Disposal

The following mitigation measure shall be implemented for **all five Concept Design Studies:**

CD-P8 State in the plans and specifications for the proposed project that the construction contractor is required to identify and implement one or more of the following applicable programs for minimizing solid waste generated during construction:

- Recycling of asphalt and concrete paving materials
- Reuse and composting of green waste materials where there is limited potential for inadvertent spreading of invasive plants
- Balance graded soil on site to the maximum extent feasible

Construction Impact on Solid Waste Collection Routes

The following mitigation measure shall be implemented for **all five Concept Design Studies:**

CD-P9 Prior to construction, notify the relevant municipality of the construction schedule and planned lane or road closures. The municipality or agency may then modify the solid waste collection routes and access in the area.

The following mitigation measure shall be implemented for **Woodland Duck Farm and El Dorado Regional Park** Concept Design Studies:

CD-P10 During design of the facility, conduct a geotechnical investigation to assess the characteristics and stability of the soil around the power line towers. If results of the investigation indicate that stormwater infiltration may saturate the soil and affect the stability of the towers, one or more of the following changes shall be incorporated into the site design as applicable:

- Site the proposed retention basins to avoid the towers, if possible, or construct a series of drywells so that water would be infiltrated deeper into the ground to avoid saturation of surface soils.
- Install a liner along the sideslope of the basin closest to the power line towers to prevent infiltration. (The liner would cover only a small portion of the infiltration basin.)

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4.10 RECREATION

4.10.1 Existing Setting

4.10.1.1 Master Plan Study Area

Regional Parks

There are four recreation areas of regional significance in the Master Plan area: Angeles National Forest, Santa Fe Dam Recreation Area, Whittier Narrows Recreation Area, and El Dorado Regional Park (see Figure M2-05, Chapter 2.3 of the Master Plan).

Angeles National Forest. The Angeles National Forest is managed by the U.S. Forest Service, and covers over 650,000 acres of the San Gabriel Mountains, including the headwaters of the San Gabriel River. It provides a wide range of recreational activities including hiking, backpacking, camping, picnicking, fishing, off-roading, gold-panning, swimming and other water sports. Within the Master Plan area, fishing is permitted from a limited portion of the shoreline of San Gabriel Reservoir (no watercraft access permitted) and on the West Fork and its tributaries (limited to "catch and release" from the second bridge upstream of Highway 39 to Cogswell Reservoir). Recreational access to Morris Reservoir and Cogswell Reservoir are currently not permitted.

Santa Fe Dam Recreation Area (Irwindale). The Santa Fe Dam Recreation Area is a 836-acre park operated by County of Los Angeles Department of Parks and Recreation. It includes a 70-acre lake for sailing, swimming, and fishing, biking and hiking trails, picnic areas, and campsites. North of the lake is a 400-acre natural area. The San Gabriel River Bike Trail runs through the park from the San Gabriel Mountains to the coast.

Whittier Narrows Recreation Area (South El Monte). Whittier Narrows Recreation Area is operated by the County of Los Angeles Department of Parks and Recreation and the City of Pico Rivera. The 1,400-acre park provides fishing lakes, picnic areas, playgrounds, an equestrian facility, trails, a multi-purpose athletic complex, a military museum, soccer fields, volleyball courts, and archery, skeet, pistol and trap ranges. The park also includes the 320-acre Whittier Narrows Nature Center, which consists of over 200 acres of natural woodland including four lakes that provide habitat for migrating waterfowl. The Nature Center building is located on a 0.5-acre parcel, and has a museum with displays of animal and plant life, a small gift shop and a library. The Nature Center staff conduct recreational and educational programs such as hay rides, lectures, ranger tours, and school field trips (LACDPR, 2003).

El Dorado Regional Park (Long Beach). El Dorado Regional Park is operated by the City of Long Beach. The 500-acre park is bordered on the west by the San Gabriel River and on the east by the 605 Freeway. The park includes the El Dorado Nature Center, community gardens, an archery range, six lakes and several man-made streams, picnic areas, play equipment, a campground, trails, a glider flying area, and a model sailboat area. The El Dorado Golf Course, also operated by the City, is located adjacent to the park.

San Gabriel River Bike Trail

The San Gabriel River Bike Trail (Bike Trail) is a 39-mile trail that extends along most of the San Gabriel River throughout the Master Plan study area from Azusa to Long Beach (see Figure M2-03, Chapter 2.3 of the Master Plan). There are over 30 access points to the Bike Trail, typically off of street intersections, bridge crossings or local parks (see Master Plan Chapter 2, Map 2-3). For the most part, the Bike Trail is separated from the river channel by a fence. In addition to recreational uses (hiking and biking), the Bike Trail is used by LADPW and other agencies as an access road for maintenance of facilities located in the river channel. In most areas, the paved Bike Trail is accompanied by a parallel unpaved trail used by equestrians and hikers; this trail (approximately 24 miles) is part of the County Department of Parks and Recreation System of Riding and Hiking Trails and is indicated as Trail No. 8, "San Gabriel River Trail" on the Riding and Hiking Trails map (LADPR, 2001). A 6-mile extension of this trail along the river from Azusa to Mount Baldy has been proposed by the County Department of Parks and Recreation (proposed trail No. 33) (T. Lay, pers. comm., 2004; LADPR, 2001).

The Los Angeles County Metropolitan Transportation Authority (MTA) is currently preparing a county-wide Bicycle Transportation Strategic Plan (BTSP), which is scheduled for completion in October 2005 (MTA, 2005). The BTSP will include regional policy recommendations for bicycle facilities and access improvements to transit, identification and evaluation of bike-transit hubs, Bike-Transit Access Plans, and identification of gaps in the regional bike path network (MTA, 2005). The San Gabriel River Bike Trail is considered to be a major regional transportation spine for the BTSP (R.G. Orpin, pers. comm., May 13, 2005 (Appendix F)).

The Bike Trail is connected to several other trails in the region, including: the Van Tassel Trail (connects at the north end of the Bike Trail in Azusa), the San Jose Creek Bike Trail (connects near the River confluence with San Jose Creek), the Schabarum Trail (connects at Whittier Narrows and extends eastward through Puente Hills), the Rio Hondo Trail (connects at Whittier Narrows and extends southwest to the Los Angeles River Bike Trail), and the Coyote Creek Bike Trail (connects near the River confluence with Coyote Creek and extends along the creek).

Local Parks and Other Recreational Facilities

Over 30 community and neighborhood parks are located within the Master Plan study area (see Figure M2-05, Chapter 2.3 of the Master Plan). Most of these parks are operated by local municipalities, and are less than 15 acres in size. Other recreational facilities in the Master Plan study area include golf courses and equestrian centers. Based on a comparative analysis of park distribution and population density, communities in the Master Plan study area that appear to have insufficient number of parks include Baldwin Park, El Monte, Pico Rivera, West Whittier-Los Nietos, Bellflower, and Long Beach (see Chapter 2.3.3 of the Master Plan).

4.10.1.2 Concept Design Study Sites

San Gabriel Canyon Spreading Grounds

The Concept Design Study site for the San Gabriel Canyon Spreading Grounds is located within the City of Azusa. The site currently includes public facilities (spreading grounds operated by

LADPW; water tanks, wells, and pumps operated by City of Azusa) and is bordered by a portion of the San Gabriel River Bike Trail to the northwest.

In June 2003, the City of Azusa published the Final Draft Recreation, Parks, Green Space, and Family Services Master Plan (Azusa Recreation Master Plan), which identifies the City's priorities for parks and recreation programs and facilities. The Plan is intended to be an implementation tool of the City of Azusa General Plan Update (currently in the draft stage), providing a guide for the development and/or management of recreation and community services, programs, and facilities for the City (City of Azusa, 2003b). The Draft General Plan Update establishes a goal of providing a minimum of 3.5 acres of local parkland per 1,000 residents. A comparative analysis of population and existing parks acreage shows that the City would require approximately 100 acres of additional park land to achieve this goal (City of Azusa, 2003b).

Two of the future recreation opportunities identified in the Azusa Recreation Master Plan are related to the Concept Design Study for the San Gabriel Canyon Spreading Grounds. One is the "Net Development Site," which is a City-owned 1-acre parcel of vacant land adjacent to the Concept Design Study site. The Azusa Recreation Master Plan identifies this site as a potential bicycle path rest area and trailhead park. The other is the "Reservoir area, " which refers to the open space area surrounding the spreading grounds. Potential improvements identified in the Azusa Recreation Master Plan for this area include passive recreation opportunities such as trails, benches, interpretive plantings, and picnicking.

Woodland Duck Farm

The Concept Design Study site for the Woodland Duck Farm site includes currently vacant land (former duck farm site containing remnant structures) and the Rio San Gabriel Equestrian Center, which is used primarily for boarding horses. About one-third of the Woodland Duck Farm site is located within the City of Industry. The rest is in unincorporated Los Angeles County (community of Basset).

Since land uses in the City of Industry are primarily industrial, and the city has a very small residential population, the City currently has no plans to increase recreational areas within the city proper. However, the City supports efforts by the surrounding communities to provide additional recreational areas (J. Ballas, pers. comm., 2003).

As identified in the Los Angeles County General Plan, the County's overall goal with respect to recreation is "to improve opportunities for a variety of outdoor recreational experiences" (Los Angeles County, 1993a). Recreation policies outlined in the County General Plan are:

- Provide low intensity outdoor recreation in areas of scenic and ecological value compatible with protection of these natural resources.
- Develop local parks in urban areas as part of urban revitalization projects, wherever possible.
- Encourage improved public transportation to recreation sites.

- Develop a system of bikeways, scenic highways, and riding and hiking trails; link recreational facilities where possible.
- Encourage safe conversion of sanitary landfills for recreational use when no longer needed for waste disposal.
- Support the provision of appropriate areas for off-road recreational vehicles, so as to reduce their impact on environmentally sensitive areas.
- Actively participate in the planning for acquisition and development of the Santa Monica Mountains National Recreation Area. Strongly encourage Congress to maintain a funding level adequate to meet the objectives of the National Recreation Area legislation.
- Support improved public access to coastal recreation areas, including the Channel Islands, consistent with protecting marine and land environments.

San Gabriel River Discovery Center at Whittier Narrows

The Concept Design Study site for the San Gabriel River Discovery Center is located in the Whittier Narrows Nature Center, which is part of the Whittier Narrows Dam Recreation Area. The Nature Center includes recreational/educational facilities and public facilities (Lario Creek, a water conveyance feature operated by LADPW). The project site is within unincorporated Los Angeles County. Therefore, the Los Angeles County General Plan recreation policies discussed above for the Woodland Duck Farm site also apply to these two Concept Design Studies.

Lario Creek

The Concept Design Study site for Lario Creek is located adjacent to the San Gabriel River Discovery Center project site discussed above. While it flows through the Whittier Narrows Nature Center, Lario Creek is a water conveyance feature used by LADPW to divert water from the San Gabriel River to the Rio Hondo, and is not a recreational facility.

El Dorado Regional Park

The Concept Design Study site for the El Dorado Regional Park is located in the City of Long Beach. The City of Long Beach General Plan Open Space and Recreation Element (City of Long Beach, 2002) establishes the City's recreation open space standard as 8 acres per 1,000 residents. Based on year 2000 census data and the existing acreage of recreation open space, the ratio of recreation open space acreage to population is 5.6 acres per 1,000 residents. To meet the target of 8 acres per 1,000 residents, the City needs approximately 1,080 acres of additional recreation open space (City of Long Beach, 2002).

4.10.2 Significance Criteria

Project impacts related to recreation would be considered significant if the project:

- Increases the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated

4.10.3 Impacts of Adopting the Master Plan Elements

The Master Plan includes six plan elements (also called Master Plan goals), set forth as the CEQA project objectives for the Master Plan. The plan elements are supported by objectives and performance criteria (see **Section 3.3.1**). The adoption of the Master Plan by the County of Los Angeles (and other municipalities in the study area) will promote implementation of projects that are consistent with these Master Plan goals. This section describes the overall Master Plan impacts based on a qualitative assessment of reasonably foreseeable effects of the adoption of the Master Plan. Since projects similar to the Concept Design Studies are proposed throughout the river corridor, the Concept Design Study impacts (**Section 4.10.4**) further illustrate the types of potential impacts expected from implementation of the overall Master Plan.

As described below in **Table 4.10-1**, adoption of the Master Plan could result in both beneficial and potentially adverse impacts. Adverse impacts are associated with temporary closures or access restrictions at existing recreational facilities during construction of new facilities (e.g., stormwater retention basins) or modification of the recreational facilities proposed as part of projects implemented to meet the Master Plan goals. Site-specific impacts on existing recreational facilities would be addressed in second-tier CEQA documentation for future projects developed in a manner consistent with the Master Plan (see **Section 4.10.5**). Site-specific mitigation measures, if necessary, will be identified and implemented by the specific lead agencies for each future project in the Master Plan study area. Overall, adoption of the Master Plan would result in beneficial impacts on recreation by promoting projects that include new or improved recreational facilities (e.g., parks, biking/hiking/equestrian trails, and new or improved access points to existing facilities).

Table 4.10-1
Impacts on Recreation from Adopting the Master Plan Elements

Master Plan Elements	Impacts on Recreation	Impact Summary
Habitat Element: Preserve and enhance habitat systems through public education, connectivity and balance with other uses	**Beneficial:** Adoption of this element would encourage preservation and enhancement of open space, a beneficial impact on passive recreational activities such as bird watching and wildlife appreciation. **Neutral:** This element includes objectives and performance criteria that are neutral with respect to impacts on recreation (e.g., establishment of habitat area design standards and identification of indicator species). **Potentially Adverse:** Habitat enhancement that involves active restoration (e.g., extensive removal of existing vegetation and replanting with high-value, native vegetation) in or near existing recreational facilities could temporarily reduce public access to the facilities. Implementation of **MP-R1** would reduce this impact by modification of construction schedules to minimize the	Potentially significant for construction impacts at existing recreational facilities; less than significant with mitigation Beneficial for operations-related effects (no adverse impacts)

Master Plan Elements	Impacts on Recreation	Impact Summary
	duration of closure and/or to avoid peak use periods.	
Recreation Element: Encourage and enhance safe and diverse recreation systems, while providing for expansion, equitable and sufficient access, balance and multi-purpose uses	**Beneficial:** Adoption of this element would encourage development of and enhancement of recreational facilities and improve access to those facilities. **Potentially Adverse:** Projects that involve modifications of existing recreational facilities could temporarily reduce public access to the facilities. Implementation of **MP-R1** would reduce this impact by modification of construction schedules to minimize the duration of closure and/or to avoid peak use periods.	Potentially significant for construction impacts at existing recreational facilities; less than significant with mitigation Beneficial for operations-related effects (no adverse impacts)
Open Space Element: Enhance and protect open space systems through conservation, aesthetics, connectivity, stewardship, and multi-purpose uses.	**Beneficial:** Preservation of existing open space areas that provide for active or passive recreational uses would have beneficial impacts on recreation. **Neutral:** This element also includes objectives and performance criteria that are neutral with respect to impacts on recreation (e.g., use of drought tolerant and native plants, best management practices that support habitat and water quality goals). **Potentially Adverse:** Projects that involve modification of open space areas with existing recreational facilities could temporarily reduce public access to the facilities. Implementation of **MP-R1** would reduce this impact by modification of construction schedules to minimize the duration of closure and/or to avoid peak use periods.	Potentially significant for construction impacts at existing recreational facilities; less than significant with mitigation Beneficial for operations-related effects (no adverse impacts)
Flood Protection Element: Maintain flood protection and existing water and other rights while enhancing flood management activities through the integration with recreation, open space and habitat systems.	**Beneficial:** Maintenance of flood protection would have beneficial impacts on recreation (e.g., protection of recreational facilities from flood damage). **Neutral:** This element also includes objectives and performance criteria that are neutral with respect to impacts on recreation (e.g., ensures liability is not increased, coordination of maintenance of flood protection system with habitat needs). **Potentially Adverse:** Construction of new flood control facilities (e.g., stormwater detention areas) in or near existing recreational facilities could temporarily reduce public access to the facilities. Implementation of **MP-R1** would reduce this impact by modification of construction schedules to minimize the duration of closure and/or to avoid peak use periods.	Potentially significant for construction impacts at existing recreational facilities; less than significant with mitigation Beneficial for operations-related effects (no adverse impacts)
Water Supply and Water Quality Element: Maintain existing water and other rights while enhancing water quality, water supply,	**Beneficial:** Construction of new facilities for enhancing water quality and/or water supply (e.g., stormwater infiltration facilities, constructed wetlands) could provide new opportunities for passive recreational activities (e.g.,	Potentially significant for construction impacts at

Master Plan Elements	Impacts on Recreation	Impact Summary
groundwater recharge, and water conservation through the integration with recreation, open space and habitat systems.	bird watching and wildlife appreciation). **Neutral:** This element includes objectives and performance criteria that are neutral with respect to impacts on recreation (e.g., maintains conservation of local water). **Potentially Adverse:** Construction of new facilities for enhancing water quality and/or water supply (e.g., stormwater infiltration facilities, constructed wetlands, pipelines for reclaimed water distribution) in or near existing recreational facilities could temporarily reduce public access to the facilities. Implementation of **MP-R1** would reduce this impact by modification of construction schedules to minimize the duration of closure and/or to avoid peak use periods.	existing recreational facilities; less than significant with mitigation Beneficial for operations-related effects (no adverse impacts)
Economic Development Element: Pursue economic development opportunities derived from and compatible with the natural aesthetic and environmental qualities of the river.	**Beneficial:** Adoption of this element would result in beneficial impacts on recreation by encouraging development of trails to and along the waterways. **Neutral:** This element promotes the pursuit of economic development opportunities which consider connectivity to the river corridor and establishment of development standards. This element also includes objectives and performance criteria that are neutral with respect to impacts on recreation (e.g., education of participating landowners about potential liability and protective measures).	Beneficial (no adverse impacts)

4.10.4 Impacts of Implementing the Concept Design Studies

4.10.4.1 Construction Impacts

Three of the Master Plan Concept Design Studies (San Gabriel River Discovery Center, Lario Creek, and El Dorado Regional Park) include construction at existing recreational facilities. Construction of proposed facilities would have temporary effects on the availability of existing onsite recreational facilities.

- **San Gabriel River Discovery Center and Lario Creek.** Both of these Concept Design Studies will be located within the 320-acre Whittier Narrows Nature Area. During construction of the Discovery Center building, the existing Nature Center building will be closed to visitors. In addition, up to approximately 20 acres of the Nature Center could be unavailable during construction of the proposed wetlands, modification of Lario Creek, and/or habitat restoration. If the construction activities for these two Concept Design Studies occurred in sequence, the total construction time could be up to approximately 8 months. During detailed design, a more detailed estimate of construction duration and phasing will be developed. If necessary, arrangements would be made for existing educational/recreational programs at the Nature Center to continue at an alternate location during project construction.

- **El Dorado Regional Park.** Up to approximately 10 acres of undeveloped areas of the 500-acre park could be unavailable during construction. The estimated construction time for this Concept Design Study is 2 months (excluding the potential future removal of concrete from the river channel).

The areas affected during specific stages of construction would be smaller than indicated above due to phasing of construction activities. Disturbance from construction at these project sites may result in temporary increases in the use of other existing recreational facilities in the area. However, due to the small acreage of disturbance relative to the total size of the parks, any increase in usage at other nearby recreational facilities would be short-term and minimal, and is not expected to cause or accelerate a substantial physical deterioration of those facilities. Construction-related impacts on recreation would be less than significant.

4.10.4.2 Operational Impacts

Implementation of the Concept Design Study for the Woodland Duck Farm would contribute up to approximately 57 acres of additional park land and open space to the Master Plan study area. The other Concept Design Studies also involve new or improved recreational facilities (e.g., parks, biking/hiking/equestrian trails, and new or improved access points to existing facilities). These new facilities and enhancements will improve the quality of riding, hiking, and other recreational experiences in the Master Plan study area. Therefore, the long-term impact of the Concept Design Studies on recreational resources is beneficial (no adverse impact).

4.10.5 Master Plan Program Mitigation Measures

Future projects that include modifications of existing recreational facilities will require an evaluation of the impacts of proposed actions on other nearby recreational facilities as described in program Mitigation Measure MP-R1:

MP-R1 For projects that include modifications of existing recreational facilities, the timing, duration and areal extent of disturbance that would occur during construction of the proposed facilities will be identified during facility design. If temporary closures of existing recreational facilities would be necessary, the potential increase in use of other nearby recreational facilities will be evaluated. Factors to be considered in the evaluation include the duration of the closure, acreage and type of facility that would be unavailable due to the closure, and existing usage levels at the relevant recreational facilities.

If the impacts on nearby recreational facilities are determined to be potentially significant, one or more of the following measures will be implemented:

- Minimize construction period
- Modify construction phasing to limit disturbance of existing recreational facilities
- Avoid construction during peak use periods

4.10.6 Mitigation Measures for Concept Design Studies

Since implementation of the Concept Design Studies would not result in significant impacts on recreation, no mitigation measures are proposed.

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4.11 TRAFFIC AND TRANSPORTATION

The following sections summarize the evaluation of the potential traffic/transportation impacts of the San Gabriel River Corridor Master Plan. First, the analysis methodology and the existing conditions are presented. This is followed by a description of the significance criteria, a presentation of the anticipated project construction and operational impacts, and a set of recommended mitigation measures. Finally, the process for evaluating the traffic/transportation impacts of future projects developed in a manner consistent with the Master Plan is outlined.

The analysis addresses the general programmatic impacts of implementing the Master Plan as well as the site-specific impacts associated with four of the five Concept Design Studies (San Gabriel Canyon Spreading Grounds, San Gabriel River Discovery Center, Lario Creek, and El Dorado Regional Park). Since the project sites for San Gabriel River Discovery Center and Lario Creek are contiguous, these two Concept Design Studies would affect the same surrounding streets. Therefore, these two Concept Design Studies were evaluated together for the purpose of this traffic impact analysis. The traffic evaluation conducted for the Woodland Duck Farm site as part of this Program EIR is based on the access analysis conducted by Kaku Associates (2003; see **Appendix E**). The description of the proposed improvements for the Woodland Duck Farm provided in **Section 3.3.3.2** of this Program EIR represents an initial concept for the project. WCA is undertaking a master plan for the site which involves all stakeholders. This planning effort will examine all potential uses of the site, and will include a CEQA process.

4.11.1 Traffic Analysis Methodology

The general objective of the traffic analysis is to evaluate the impacts of the proposed Master Plan on the streets and roadways in the overall study area and in the vicinity of each site for the Concept Design Studies. The traffic analysis addresses the short-term impacts associated with construction of the proposed Master Plan facilities as well as the long-range operational impacts associated with the complementary uses proposed at the selected project sites (e.g., recreational/park development and activities).

Two primary categories of traffic studies have been prepared for the Master Plan. The first category is an assessment of the impacts of construction traffic on the roadways that provide access to each project site. During construction activities, a number of vehicles would be traveling to and from each project site, including trucks delivering materials to the site, trucks transporting excavated or other waste material away from the site, and construction workers' vehicles commuting to and from the site. The traffic volumes associated with these construction activities have been estimated for each Master Plan site and the traffic impacts on the surrounding roadway network are evaluated.

The second category for the traffic analysis is a quantification of the impacts associated with the permanent activities that would be developed at several of the Concept Design Study project sites, which includes possible park developments and minor operational activities at the Master Plan sites. The volumes of traffic that would be generated by these activities have been estimated for each site and the associated impacts on the surrounding roadway network are evaluated.

4.11.2 Existing Conditions

One of the initial tasks for the traffic analysis is to establish the existing baseline conditions on the regional access system (freeways) as well as the streets in the vicinity of each Concept Design Study site. The study area streets and highways have been inventoried with regard to physical characteristics such as number of lanes, on-street parking, sidewalks, and types of traffic control devices (stop signs and traffic signals). Traffic volume data were also collected for the roadways in the project area. This data collection effort included the freeways and the streets that would be used as primary access routes to and from each Concept Design Study project site. The existing conditions on the study area street network are described in the paragraphs below. A discussion of the freeway network is presented first, followed by a discussion of the local street system in the vicinity of each Concept Design Study site.

4.11.2.1 Regional Setting

The project area for the Master Plan is a north-south corridor in the southeastern region of Los Angeles County that lies generally along the alignment of the San Gabriel River Freeway (Interstate 605). The Master Plan area extends from the Angeles National Forest and the San Gabriel Wilderness Area on the north (in an unincorporated area of Los Angeles County north of the cities of Azusa and Glendora) to the mouth of the river at the Pacific Ocean on the south (at the border of Los Angeles and Orange Counties between the cities of Long Beach and Seal Beach).

The freeways that serve the project area include Interstate 605 and the freeways that intersect with I-605, which are the Foothill Freeway (Interstate 210), the San Bernardino Freeway (Interstate 10), the Pomona Freeway (State Route 60), the Santa Ana Freeway (Interstate 5), the Century Freeway (Interstate 105), the Artesia Freeway (State Route 91), and the San Diego Freeway (Interstate 405). A regional map showing the project area and the location of these freeways is shown on **Figure 3-1** (**Section 3**).

In addition to the freeways, the primary arterial route that provides access to the north end of the project area is San Gabriel Canyon Road (State Route 39), which is linked to the I-210 by San Gabriel Avenue and Azusa Avenue through the City of Azusa. The primary arterial route at the south end of the project area is Pacific Coast Highway (State Route 1).

The existing number of lanes on these freeways and arterial routes, the average daily traffic volumes, and the peak hour traffic volumes are shown in **Table 4.11-1**.

Table 4.11-1
Existing Conditions on Regional Highway Network

Roadway/Segment	Number of Lanes	Average Daily Traffic Volume	Peak Hour Traffic Volume
San Gabriel River Freeway (I-605)			
North of I-405 (Carson Street)	8	219,000	16,600
North of Route 91	12	307,000	22,300
North of I-5 (Telegraph Road)	8	249,000	16,400
North of Route 60	8	224,000	15,600
North of I-10 (Lower Azusa Road)	8	147,000	11,500
Foothill Freeway (I-210)			
West of I-605	10	245,000	19,000
East of I-605	8	223,000	16,700
San Bernardino Freeway (I-10)			
West of I-605	8	234,000	15,800
East of I-605	10	259,000	17,000
Pomona Freeway (SR 60)			
West of I-605	8	236,000	16,800
East of I-605	10	265,000	17,000
Santa Ana Freeway (I-5)			
South of I-605	8	199,000	13,300
North of I-605	8	239,000	15,000
Century Freeway (I-105)			
West of I-605	8	190,000	14,300
Artesia Freeway (SR 91)			
West of I-605	10	248,000	19,100
East of I-605	8	283,000	19,700
San Diego Freeway (I-405)			
Northwest of I-605	8	255,000	17,900
Southeast of I-605	12	318,000	23,000
San Gabriel Canyon Road (SR 39)			
At Morris Reservoir	2	2,000	530
Pacific Coast Highway (SR 1)			
At San Gabriel River	6	40,000	3,300

Source: Caltrans 2002 Traffic Volumes and 2004 Los Angeles County Congestion Management Program, MTA.
SR: State Route

4.11.2.2 Existing Setting for the Concept Design Study Sites

The existing conditions on the streets in the vicinity of each Concept Design Study site are described in the following sections.

San Gabriel Canyon Spreading Grounds

The streets that provide access to the San Gabriel Canyon Spreading Grounds site include San Gabriel Canyon Road, San Gabriel Avenue, Azusa Avenue, Sierra Madre Avenue, and Foothill Boulevard, all of which are located in the City of Azusa. San Gabriel Canyon Road abuts the northeast end of the spreading grounds site and provides direct access to the site. San Gabriel

Avenue and Azusa Avenue provide a north-south link between the spreading grounds site and the Foothill Freeway (I-210). These parallel streets form a one-way couplet with Azusa Avenue carrying northbound traffic and San Gabriel Avenue carrying southbound traffic. Sierra Madre Avenue and Foothill Boulevard are east-west streets that intersect San Gabriel Avenue and Azusa Avenue south of the spreading grounds site. **Figure 4.11-1** illustrates the layout of these streets and shows the existing number of travel lanes on each street segment. Azusa Avenue has an interchange with the Foothill Freeway. Union Pacific and Metrolink railroad tracks run east-west through the study area between the spreading grounds site and the Foothill Freeway.

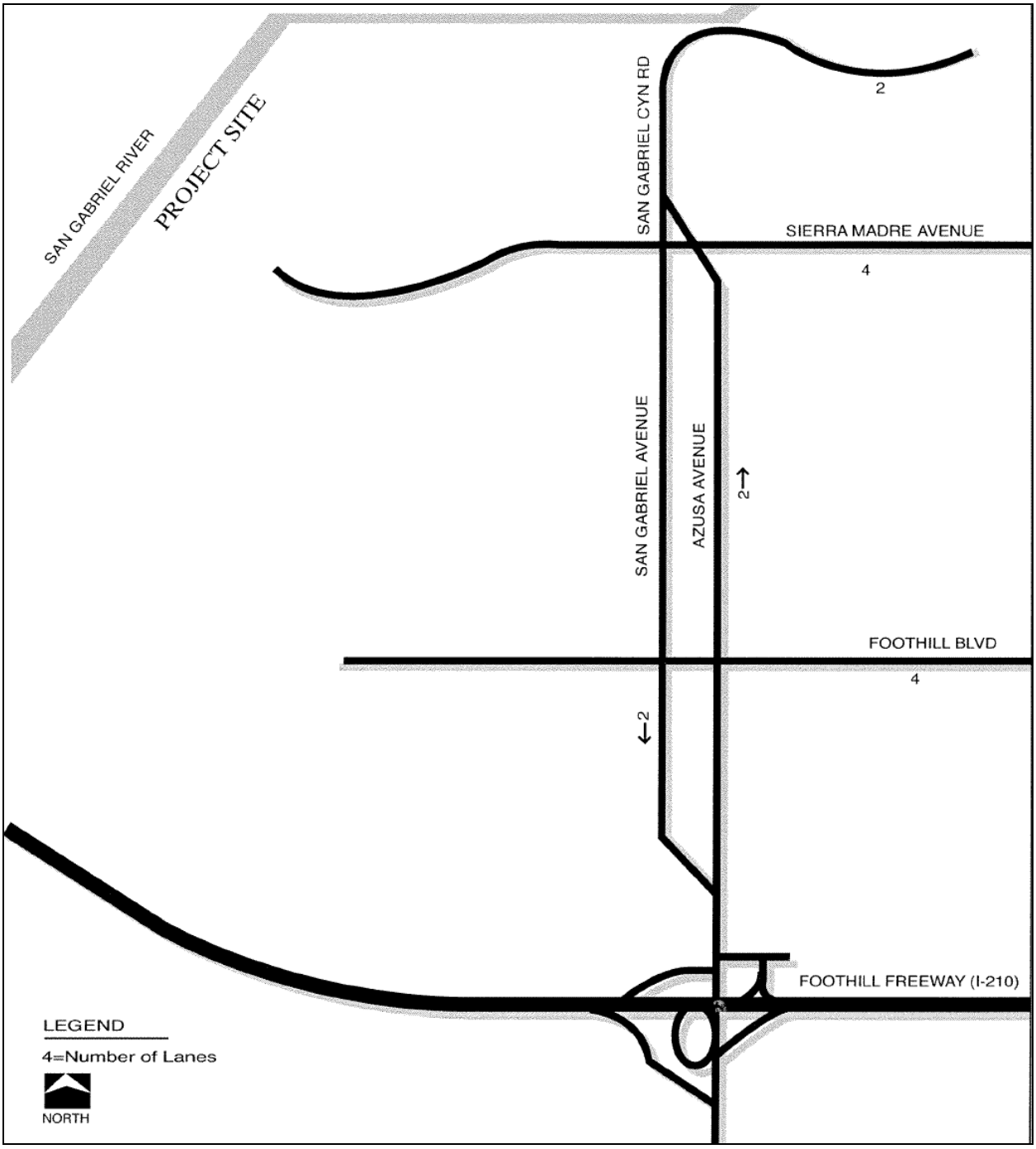
Table 4.11-2 shows the existing daily and peak hour traffic volumes and the number of travel lanes at representative locations on the streets in the San Gabriel Canyon Spreading Grounds vicinity. Also shown are the volume/capacity (V/C) ratios and levels of service (LOS) for the peak direction of travel on each street segment for the morning and afternoon peak hours. The V/C ratios are based on a capacity assumption of 800 vehicles per hour per lane (Los Angeles County, 2002).

Table 4.11-2
Existing Traffic Volumes & Levels of Service –
Streets in San Gabriel Canyon Spreading Grounds Vicinity

Street/ Location	No. of Lanes	Daily Traffic Volume	Peak Hour Traffic		V/C Ratio & LOS	
			AM	PM	AM Peak	PM Peak
San Gabriel Canyon Rd At Project Site	2	2,000	120n/260s	340n/190s	0.33-A	0.43-A
San Gabriel Avenue At Foothill Blvd	2 SB	18,000	1210s	950s	0.76-C	0.59-A
Azusa Avenue At Foothill Blvd	2 NB	19,000	830n	1380n	0.52-A	0.86-D
Sierra Madre Avenue At Azusa Avenue	4	12,000	430e/580w	630e/490w	0.36-A	0.39-A
Foothill Boulevard At Azusa Avenue	4	25,000	740e/1030w	1180e/810w	0.64-B	0.74-C

Source: City of Azusa and Field Reconnaissance.

Figure 4.11-1
Local Street Network – San Gabriel Canyon Spreading Grounds Vicinity



Source: Garland Associates
Not to scale

El Dorado Regional Park

The streets that provide access to the El Dorado Regional Park site include Wardlow Road, Spring Street, Willow Street, and Studebaker Road, all of which are located in the City of Long Beach. Wardlow Road, Spring Street and Willow Street are east-west roadways that traverse El Dorado Regional Park and provide direct access to the site. Willow Street has a full interchange with the I-605 Freeway, while Spring Street has a half interchange that provides freeway access only to and from the north. Park access gates are currently provided on Spring Street and Wardlow Road. Studebaker Road is a north-south street located approximately one-half mile west of El Dorado Park. It has a half interchange at the I-405 Freeway that provides freeway access only to and from the north. **Figure 4.11-2** illustrates the layout of these streets and shows the existing number of travel lanes on each street segment.

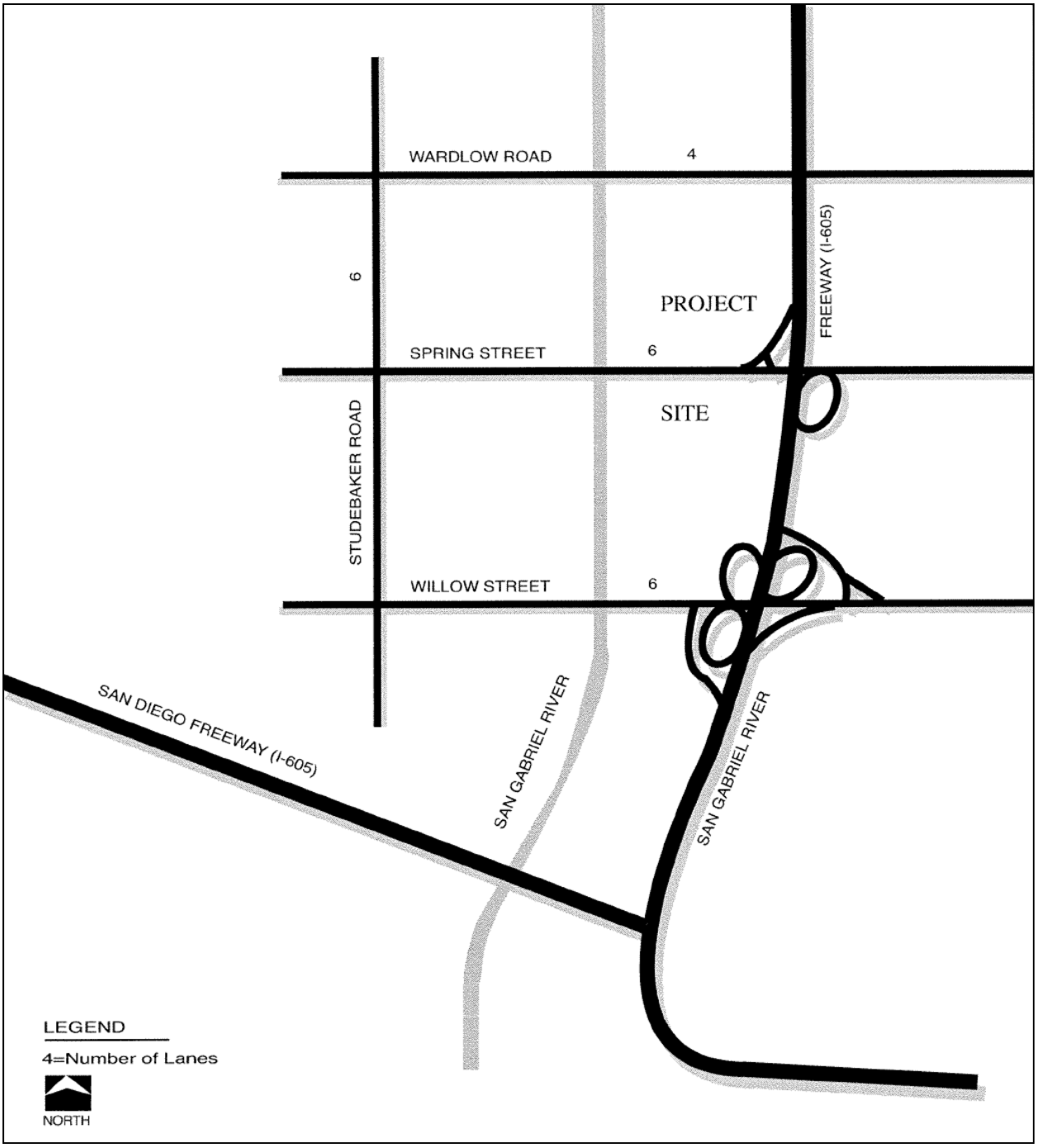
Table 4.11-3 shows the existing daily and peak hour traffic volumes and the number of travel lanes at representative locations on the streets in the vicinity of El Dorado Regional Park. Also shown are the V/C ratios and LOS for the peak direction of travel on each street segment for the morning and afternoon peak hours.

Table 4.11-3
Existing Traffic Volumes & Levels of Service –
Streets in El Dorado Regional Park Vicinity

Street/ Location	No. of Lanes	Daily Traffic Volume	Peak Hour Traffic		V/C Ratio & LOS	
			AM	PM	AM Peak	PM Peak
Wardlow Road West of I-605 Frwy	4	21,000	530e/790w	830e/650w	0.49-A	0.52-A
Spring Street West of I-605 Frwy	6	31,000	1080e/1410w	1560e/1030w	0.59-A	0.65-B
Willow Street West of I-605 Frwy	6	34,000	1150e/1630w	1750e/1220w	0.68-B	0.73-C
Studebaker Road At Spring Street	6	28,000	960n/1090s	1370n/1020s	0.45-A	0.57-A

Source: City of Long Beach and Field Reconnaissance.

Figure 4.11-2
Local Street Network – El Dorado Regional Park Vicinity



Source: Garland Associates
Not to scale

Lario Creek/San Gabriel River Discovery Center

The streets that provide access to the Lario Creek/San Gabriel River Discovery Center site include Durfee Avenue, Santa Anita Avenue, Peck Road, and Rosemead Boulevard, all of which are located partially in the City of South El Monte and partially in an unincorporated area of Los Angeles County. Durfee Avenue is an east-west street that abuts the north side of the project site and provides direct access to the site, which is within the Whittier Narrows Recreation Area. Santa Anita Avenue is a north-south street that provides a link between the project site and the Pomona Freeway (Route 60). Peck Road is a north-south street located at the northeast end of the project site and Rosemead Boulevard is a north-south street that abuts the west end of the project site. Peck Road, Santa Anita Avenue, and Rosemead Boulevard all have interchanges with the Pomona Freeway. **Figure 4.11-3** illustrates the layout of these streets and shows the existing number of travel lanes on each street segment.

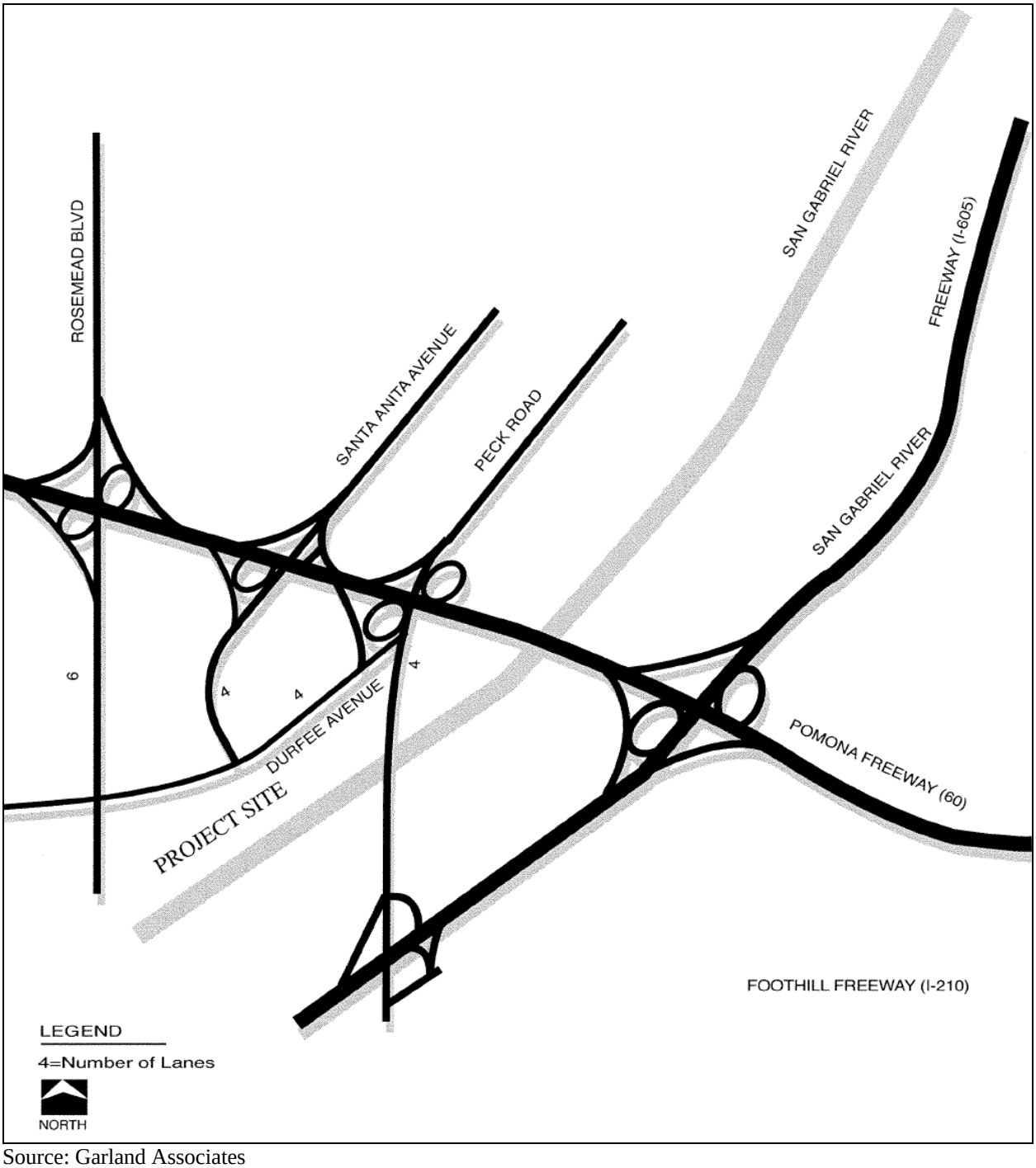
Table 4.11-4 shows the existing daily and peak hour traffic volumes and the number of travel lanes at representative locations on the streets in the vicinity of the Lario Creek/San Gabriel River Discovery Center site. Also shown are the V/C ratios and LOS for the peak direction of travel on each street segment for the morning and afternoon peak hours.

Table 4.11-4
Existing Traffic Volumes & Levels of Service –
Streets in Lario Creek/San Gabriel River Discovery Center Vicinity

Street/ Location	No. of Lanes	Daily Traffic Volume	Peak Hour Traffic		V/C Ratio & LOS	
			AM	PM	AM Peak	PM Peak
Durfee Avenue At Santa Anita Ave	4	16,000	680e/530w	650e/740w	0.43-A	0.46-A
Santa Anita Avenue At Durfee Avenue	4	22,000	970n/780s	850n/1030s	0.61-B	0.64-B
Peck Road At Durfee Avenue	4	25,000	1050n/930s	1040n/1250s	0.66-B	0.78-C
Rosemead Boulevard At Durfee Avenue	6	32,000	1690n/1490s	1540n/1950s	0.71-C	0.81-D

Source: City of South El Monte, Los Angeles County, and Field Reconnaissance.

Figure 4.11-3
Local Street Network – Lario Creek/San Gabriel River Discovery Center Vicinity



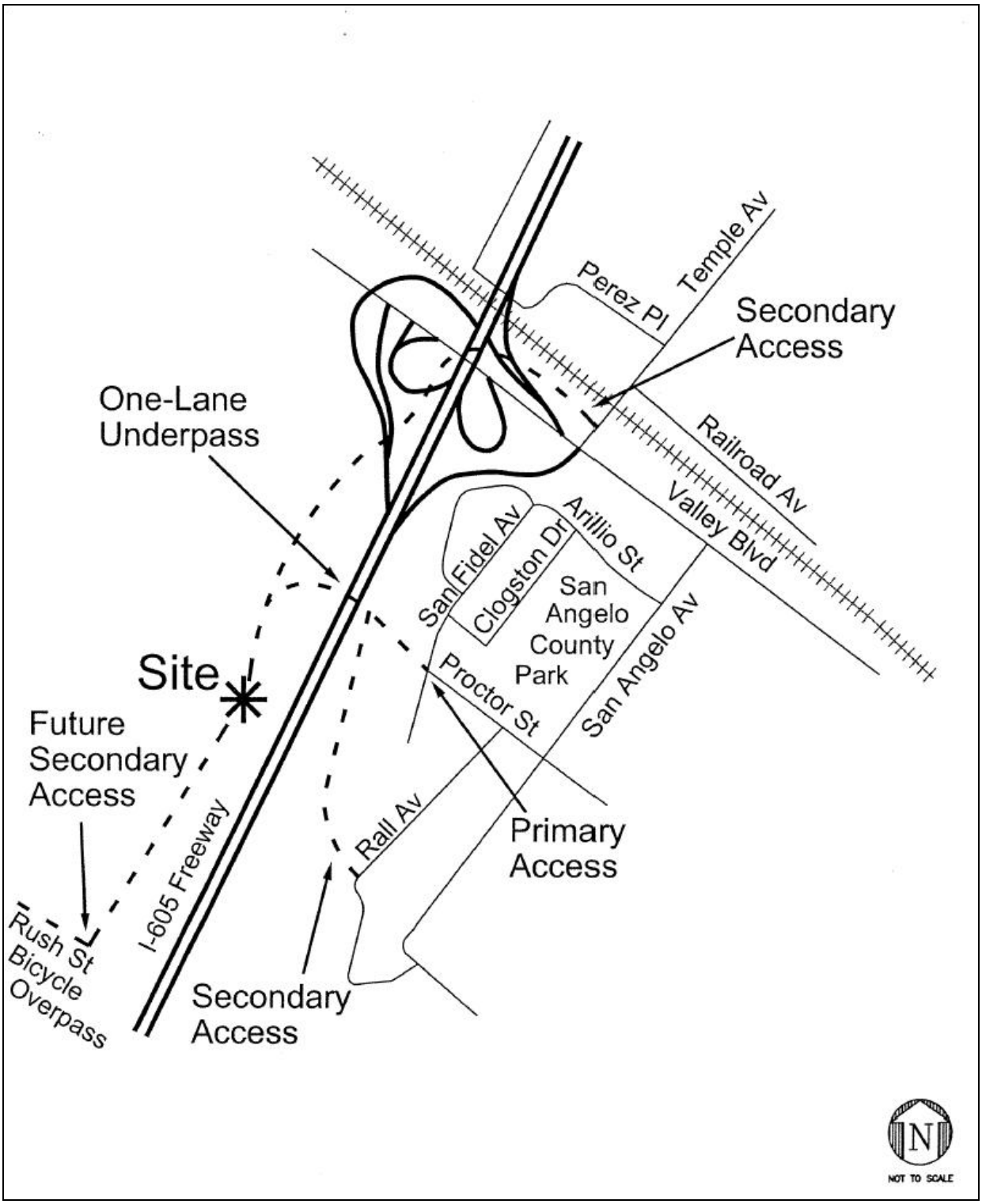
Source: Garland Associates
Not to scale

Woodland Duck Farm

The Woodland Duck Farm site is located along I-605 south of Valley Boulevard and is bordered by the River on the west. The site is divided into east and west portions by I-605. The existing access points to the site are: Proctor Street, Rall Avenue, and Temple Avenue (**Figure 4.11-4**). Proctor Street is a two-lane local street with residential units on the south side of the street and a Los Angeles County Park (San Angelo Park) on the north side. The results of the traffic counts conducted by Kaku Associates (2003) on April 10 and April 11, 2003 show that Proctor Street carries approximately 1,674 vehicles per day. During the morning and evening peak hours, Proctor Street has a total of 133 and 137 vehicles per hour, respectively. These traffic volumes are very low and are equivalent to LOS A. From the western end of Proctor Street, a driveway connects the east and west portions of the site via a one-lane underpass below I-605.

The access point off of Rall Avenue can be reached via Proctor Street or San Angelo Avenue. The Temple Avenue access point is located north of Valley Boulevard in the vicinity of the I-605/Valley Boulevard interchange. This access point is currently being used by Southern California Edison (trucks for maintenance of the power line located along I-605) and existing lease holders of the project site (trucks and autos used by a nursery and a tree trimming operation).

Figure 4.11-4
Local Street Network – Woodland Duck Farm Vicinity



Source: Kaku Associates, 2003
Not to scale

4.11.3 Significance Criteria

The significance criteria used to evaluate the traffic impacts of the Master Plan are outlined below, first for construction impacts then for operational impacts.

4.11.3.1 Construction Thresholds

The impacts of the traffic that would be generated by construction activities within the Master Plan project areas would be considered significant if one or more of the following conditions were to occur.

With regard to the impacts of construction traffic, the project impacts would be considered significant if one or more of the following conditions were to occur.

- The project would result in an increase in the volume/capacity ratio on a street that is projected to operate at a volume/capacity ratio greater than 0.85 (Los Angeles County, 1993b).
- The project would result in an increase in the demand/capacity ratio of 0.02 or greater on a freeway segment that is projected to operate at LOS F and/or at a D/C ratio that is greater than 1.00 (Los Angeles County, 2002).

With regard to the impacts of pipeline construction, the project impacts would be considered significant if one or more of the following conditions were to occur:

- The installation of a pipeline or other project feature within, adjacent to, or across a roadway would reduce the number of travel lanes during the peak traffic periods, thereby resulting in a temporary disruption to traffic flow and increased traffic congestion.
- A major roadway would be closed to through traffic as a result of construction activities.
- Construction activities would restrict access to or from adjacent land uses with no suitable alternative access.
- Construction activities would restrict the movements of emergency vehicles (police vehicles, fire vehicles, and ambulance/paramedic units) and there would be no reasonable alternative access routes available.
- Construction activities would disrupt bus service and there would be no suitable alternative routes or bus stops.
- Construction activities would impede pedestrian movements in the construction area and there would be no suitable alternative pedestrian access routes.
- Construction activities would result in safety problems for vehicular traffic, pedestrians, or transit operations.

4.11.3.2 Operation Thresholds

The traffic impacts during operation of the Master Plan project areas would be considered significant if one or more of the following conditions were to occur.

- The project would result in an increase in the volume/capacity ratio on a street that is projected to operate at a volume/capacity ratio greater than 0.85 (Los Angeles County, 1993b).
- The project would result in an increase in the demand/capacity ratio of 0.02 or greater on a freeway segment that is projected to operate at LOS F and/or at a D/C ratio that is greater than 1.00 (Los Angeles County, 2002).
- The design and/or operation of the facilities would result in safety problems for vehicular traffic, pedestrians, or transit operations.
- The site would have inadequate parking facilities and the project-generated parking demand would result in a spillover of parked vehicles into a nearby neighborhood or adjacent land uses.

4.11.4 Impacts of Adopting the Master Plan Elements

The Master Plan includes six plan elements (also called Master Plan goals) set forth as the CEQA project objectives for the Master Plan. The plan elements are supported by objectives and performance criteria (see **Section 3.3.1**). The adoption of the Master Plan by the County of Los Angeles (and other municipalities in the study area) will promote implementation of projects that are consistent with these Master Plan goals. This section describes the overall Master Plan impacts based on a qualitative assessment of reasonably foreseeable effects of the adoption of the Master Plan. Since projects similar to the Concept Design Studies are proposed throughout the river corridor, the Concept Design Study impacts (**Section 4.11.5**) further illustrate the types of potential impacts expected from implementation of the overall Master Plan.

As described below in **Table 4.11-5**, adoption of the Master Plan could result in both beneficial and potentially adverse impacts. Adverse impacts are primarily associated with short-term increases in traffic volumes during construction of facilities proposed as part of future projects implemented to meet the Master Plan goals. Minor traffic impacts may also result from operation and maintenance of these facilities (e.g., vehicle trips from park visitors and maintenance crews). Traffic impacts that could result from adoption of the Master Plan cannot be specified with enough detail at this time to support site-specific mitigation measures. However, the Master Plan may have adverse traffic impacts at the program level, which will be discussed below. Site-specific traffic impacts would be addressed in second-tier CEQA documentation for future projects developed in a manner consistent with the Master Plan (see **Section 4.11.6**), and each project will be reviewed individually at such time that details are developed relative to the size, types of components, location, schedule, etc. This review process would involve the jurisdictions that are responsible for the affected streets and highways (i.e., Caltrans, Los Angeles County, and the incorporated cities). A detailed traffic impact study may then be required depending on the size and intensity of the project and the anticipated levels of traffic that would be generated. Since mitigation will reduce these impacts to less than

significant levels (see **Table 4.11-5** and **Section 4.11.7**), the overall traffic impacts from adopting the Master Plan are considered less than significant. Site-specific mitigation measures will be identified and implemented by the specific lead agencies for each future project in the Master Plan study area.

Table 4.11-5
Impacts on Traffic and Transportation from Adopting the Master Plan Elements

Master Plan Elements	Impacts on Traffic and Transportation	Impact Summary
Habitat Element: Preserve and enhance habitat systems through public education, connectivity and balance with other uses	**Beneficial:** Preservation of existing habitat areas would result in protection of currently undisturbed open space areas, which would have a beneficial impact by preventing traffic that would be generated from new residential, commercial, or industrial development. **Neutral:** This element also includes objectives and performance criteria that are neutral with respect to impacts on traffic (e.g., establishment of habitat area design standards and identification of indicator species). **Potentially Adverse:** Habitat enhancement that involves active restoration in undeveloped areas (e.g., extensive removal of existing vegetation and replanting with high-value, native vegetation) would result in construction traffic from transport of construction equipment and materials and worker commutes. Other activities associated with habitat enhancement (e.g., monitoring and maintenance activities or exotic species removal) could also result in minor traffic increases from worker vehicle trips. Implementation of **MP-T1** would reduce these impacts to below a level of significance by requiring the evaluation of construction and operations-related traffic and implementation of traffic control measures such as installation of warning signs, lights, and barricades; restriction of lane closure hours; provision of alternative pedestrian and bicycle routes; and restriction of travel times during construction to avoid peak periods.	Potentially significant for construction-related traffic increases; less than significant with mitigation Less than significant for operations-related traffic increases
Recreation Element: Encourage and enhance safe and diverse recreation systems, while providing for expansion, equitable and sufficient access, balance and multi-purpose uses	**Beneficial:** Preservation of existing undisturbed open space areas for passive recreational uses would result in protection of currently undisturbed open space areas, which would have a beneficial impact by preventing traffic that would be generated from new residential, commercial, or industrial development. New or improved bike trails would have a beneficial impact on transportation by promoting bicycling as an alternative to vehicles. **Neutral:** This element also includes objectives and performance criteria that are neutral with respect to traffic impacts (e.g., educating the public about catch and release fishing, establishing design standards for trails). **Potentially Adverse:** Construction of recreation related	Potentially significant for both construction- and operations-related traffic increases; less than significant with mitigation

Master Plan Elements	Impacts on Traffic and Transportation	Impact Summary
	facilities (e.g., interpretive centers, trails and trail amenities, signs, and kiosks) would temporarily increase traffic from transport of construction equipment and materials and worker commutes. Operation of recreational facilities would also result in generation of vehicle trips (new park visitors and workers for operation and maintenance of facilities). Implementation of **MP-T1** would reduce these impacts to below a level of significance by requiring the evaluation of construction and operations-related traffic and implementation of traffic control measures such as installation of warning signs, lights, and barricades; restriction of lane closure hours; provision of alternative pedestrian and bicycle routes; and restriction of travel times during construction to avoid peak periods.	
Open Space Element: Enhance and protect open space systems through conservation, aesthetics, connectivity, stewardship, and multi-purpose uses.	**Beneficial:** Preservation of existing open space areas (e.g., through land acquisition or conservation easements) could result in protection of currently undisturbed open space areas, which would have a beneficial impact by preventing traffic that would result from new residential, commercial, or industrial development. **Neutral:** This element also includes objectives and performance criteria that are neutral with respect to impacts on traffic (e.g., use of drought tolerant and native plants). **Potentially Adverse:** Use of existing open space areas for recreational facilities and activities would result in traffic from construction of facilities (e.g., parking and sports fields) and vehicle trips from new recreational users. Implementation of **MP-T1** would reduce these impacts to below a level of significance by requiring the evaluation of construction and operations-related traffic and implementation of traffic control measures such as installation of warning signs, lights, and barricades; restriction of lane closure hours; provision of alternative pedestrian and bicycle routes; and restriction of travel times during construction to avoid peak periods.	Potentially significant for both construction- and operations-related traffic increases; less than significant with mitigation
Flood Protection Element: Maintain flood protection and existing water and other rights while enhancing flood management activities through the integration with recreation, open space and habitat systems.	**Beneficial:** Improving flood protection using natural processes (e.g., use of non-structural flood control) could have beneficial traffic impacts by minimizing the need for development of new structural flood control facilities (which would generate more traffic during construction). **Neutral:** This element also includes objectives and performance criteria that are neutral with respect to impacts on traffic (e.g., ensures liability is not increased, coordination of maintenance of flood protection system with habitat needs). **Potentially Adverse:** Construction of new flood control	Potentially significant for construction-related traffic increases; less than significant with mitigation Less than significant for operations-related traffic increases

Master Plan Elements	Impacts on Traffic and Transportation	Impact Summary
	facilities (e.g., stormwater detention areas) would result in traffic generation from transport of construction equipment and worker commutes. Operation of flood control facilities would also result in minor traffic increases (vehicle trips by operations and maintenance crews). Implementation of **MP-T1** would reduce these impacts to below a level of significance by requiring the evaluation of construction and operations-related traffic and implementation of traffic control measures such as installation of warning signs, lights, and barricades; restriction of lane closure hours; provision of alternative pedestrian and bicycle routes; and restriction of travel times during construction to avoid peak periods.	
Water Supply and Water Quality Element: Maintain existing water and other rights while enhancing water quality, water supply, groundwater recharge, and water conservation through the integration with recreation, open space and habitat systems.	**Neutral:** This element includes objectives and performance criteria that are neutral with respect to impacts on traffic (e.g., maintains conservation of local water). **Potentially Adverse:** Construction of new facilities for enhancing water quality and/or water supply (e.g., stormwater infiltration facilities, constructed wetlands, pipelines for reclaimed water distribution) would result in traffic generation from transport of construction equipment and materials and worker commutes. Operation of flood control facilities would also result in minor traffic increases (vehicle trips by operations and maintenance crews). Implementation of **MP-T1** would reduce these impacts to below a level of significance by requiring the evaluation of construction and operations-related traffic and implementation of traffic control measures such as installation of warning signs, lights, and barricades; restriction of lane closure hours; provision of alternative pedestrian and bicycle routes; and restriction of travel times during construction to avoid peak periods.	Potentially significant for construction-related traffic increases; less than significant with mitigation Less than significant for operations-related traffic increases
Economic Development Element: Pursue economic development opportunities derived from and compatible with the natural aesthetic and environmental qualities of the river.	**Neutral:** This element includes objectives and performance criteria that are neutral with respect to impacts on traffic (e.g., educates participating landowners about potential liability and protective measures). **Potentially Adverse:** This element promotes the pursuit of economic development opportunities which consider connectivity to the river corridor and establishment of development standards. Minor modifications of existing or new business development in the river corridor needed for consistency with Master Plan elements (e.g., trail connections and aesthetic features and compliance with design guidelines) are anticipated to have minimal or no impacts on traffic.	Less than significant

4.11.5 Impacts of Implementing the Concept Design Studies

The following sections address the construction impacts and the operational impacts associated with the proposed Master Plan Concept Design Studies.

4.11.5.1 Construction Impacts

To address the construction impacts associated with the Concept Design Studies, each project site was evaluated by estimating the levels of traffic that would be generated by the construction activities, then quantifying the impacts of this additional traffic on the affected streets and highways. A comparative analysis of traffic volumes and levels of service with and without the proposed construction projects was conducted. Truck volumes as well as the volume of traffic generated by construction workers and miscellaneous trips were quantified. The trip generation characteristics were based on work force estimates and quantities of material that would be transported to and from the various sites on a typical day of construction activity.

While the target years of construction for the Concept Design Studies have not yet been determined, it is assumed that the construction activities would be completed within a 20-year time frame. Based on traffic data and projections in the Congestion Management Program for Los Angeles County (2002), the general traffic volume growth factors for the San Gabriel Valley and Gateway areas indicate that there would be approximately a 15 percent growth in traffic volumes over the next 20 years. The existing traffic volumes were, therefore, increased by a factor of 1.15 to estimate the future baseline traffic volumes. While the use of this overall growth factor may overestimate the baseline traffic volumes for the project components that would be constructed during a time frame that is less than 20 years, the standard rate has been used to establish a consistent baseline for the impact analysis, particularly since the actual years of construction are yet to be determined.

In addition to the impacts of construction traffic on the study area roadways, the construction activities may also result in physical impacts within the right-of-way of public streets, pedestrian facilities, and/or bikeways. Construction activities could result in traffic disruptions, lane blockages, and sidewalk blockages adjacent to the project site. The typical impacts associated with construction within public roadways include increased traffic congestion in the vicinity of the construction zone, temporary roadway closures at locations where sufficient right-of-way is not available to maintain travel lanes through the work zone, temporary elimination of on-street parking, blockages and disruption to pedestrian and bicycle circulation (sidewalks, crosswalks, bike lanes, etc.), increased safety risks, and disruption to public transit service (schedule delays and blocked bus stops).

The traffic impacts associated with the construction activities at each individual Concept Design Study project site are discussed in the following sections. The traffic generation estimates for each site are based on the anticipated number of truck trips for hauling equipment and materials and automobile/light-duty vehicle trips by the construction workers. While the number of construction-related trips would fluctuate from day to day and from week to week throughout the duration of a construction project, the traffic volumes used in the analysis represent the assumed levels of traffic that would occur during a relatively busy day of construction activity at each project site.

San Gabriel Canyon Spreading Grounds

Based on the conceptual project descriptions in the Master Plan, construction activities at the San Gabriel Canyon Spreading Grounds would involve only minor improvements to features such as fences and landscaping, and would also involve some habitat restoration activities. The volumes of site-generated traffic during construction would, therefore, be minimal (i.e., less than 20 vehicle trips on a typical day of activity and less than five trips during the peak hours). This increase in traffic volumes would have a less than significant impact on the streets in the project vicinity.

El Dorado Regional Park

Based on the conceptual project descriptions in the Master Plan, construction activities at the El Dorado Regional Park Concept Design Study project site would involve a maximum of 10 construction workers, up to 20 truck trips per day (round trips) for the delivery of materials and the hauling of excavated material away from the site, and other miscellaneous auto/light duty vehicle trips (inspectors, managers, lunch, etc.). The estimated volumes of traffic that would be generated on a typical day are shown in **Table 4.11-6**.

Table 4.11-6
Construction Traffic – El Dorado Regional Park

Construction Traffic Category	Daily Traffic	Peak Hour Traffic			
		AM Peak Hour		PM Peak Hour	
		In	Out	In	Out
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10
TOTAL	80	15	7	7	15

The impacts of the construction-generated traffic on the study area roadways are summarized in **Table 4.11-7**. The numbers shown in parentheses after the name of each street represent an estimate of the percentage of the project traffic that would use the street as an access route. As shown, the construction project would not cause thresholds to be exceeded, and would therefore result in a less than significant impact on the affected roadways.

Table 4.11-7
Construction Traffic Impacts – Streets in the El Dorado Regional Park Vicinity

Street/ Location	No. of Lanes	Daily Traffic Volume	Peak Hour Traffic		V/C Ratio & LOS	
			AM	PM	AM Peak	PM Peak
Wardlow Road (10%)						
Baseline Conditions	4	24,000	610e/910w	950e/750w	0.57-A	0.59-A
With Project Traffic		24,010	611e/912w	952e/751w	0.57-A	0.59-A
Spring Street (80%)						
Baseline Conditions	6	36,000	1240e/1620w	1790e/1180w	0.68-B	0.75-C
With Project Traffic		36,060	1246e/1632w	1802e/1186w	0.68-B	0.75-C
Willow Street (10%)						
Baseline Conditions	6	39,000	1320e/1870w	2010e/1400w	0.78-C	0.84-D
With Project Traffic		39,010	1321e/1872w	2012e/1401w	0.78-C	0.84-D
Studebaker Road (25%)						
Baseline Conditions	6	32,000	1100n/1250s	1580n/1170s	0.52-A	0.66-B
With Project Traffic		32,030	1102n/1254s	1584n/1172s	0.52-A	0.66-B

Lario Creek/San Gabriel River Discovery Center

Based on the conceptual project descriptions in the Master Plan, construction activities at the Lario Creek/San Gabriel River Discovery Center Concept Design Study project sites would involve a maximum of 20 construction workers, up to 40 truck trips per day (round trips) for the delivery of materials and the hauling of excavated material away from the site, and other miscellaneous auto/light duty vehicle trips (inspectors, managers, lunch, etc.). The estimated volumes of traffic that would be generated on a typical day are shown in **Table 4.11-8**.

Table 4.11-8
Construction Traffic – Lario Creek/San Gabriel River Discovery Center

Construction Traffic Category	Daily Traffic	Peak Hour Traffic			
		AM Peak Hour		PM Peak Hour	
		In	Out	In	Out
Trucks	80	10	10	10	10
Autos/Light-Duty Vehicles	80	20	4	4	20
TOTAL	160	30	14	14	30

The impacts of the construction-generated traffic on the study area roadways are summarized in **Table 4.11-9**. As shown, the construction project would not exceed significance thresholds, and would therefore result in a less than significant impact on the affected roadways.

Table 4.11-9
Construction Traffic Impacts – Streets in the Lario Creek/ San Gabriel River Discovery Center Vicinity

Street/ Location	No. of Lanes	Daily Traffic Volume	Peak Hour Traffic		V/C Ratio & LOS	
			AM	PM	AM Peak	PM Peak
Durfee Avenue (100%)						
Baseline Conditions	4	18,000	780e/610w	750e/850w	0.49-A	0.53-A
With Project Traffic		18,160	810e/624w	764e/880w	0.51-A	0.55-A
Santa Anita Avenue (60%)						
Baseline Conditions	4	25,000	1120n/900s	980n/1180s	0.70-C	0.74-C
With Project Traffic		25,100	1128n/918s	998n/1188s	0.71-C	0.74-C
Peck Road (20%)						
Baseline Conditions	4	29,000	1210n/1070s	1200n/1440s	0.76-C	0.90-E
With Project Traffic		29,030	1216n/1073s	1203n/1446s	0.76-C	0.90-E
Rosemead Blvd (10%)						
Baseline Conditions	6	37,000	1940n/1710s	1770n/2240s	0.81-D	0.93-E
With Project Traffic		37,020	1943n/1712s	1771n/2243s	0.81-D	0.93-E

4.11.5.2 Operational Impacts

For purposes of demonstration, site-specific impact analyses have been conducted for several Concept Design Studies that have been selected as components of the Master Plan. The traffic analyses for these projects are presented in the following sections. The issues addressed in these Concept Design Studies are typical of the projects that would be included in the Master Plan.

To address the operational impacts associated with the Concept Design Study projects, each site was evaluated by estimating the levels of traffic that would be generated by the anticipated operation and maintenance activities, then quantifying the impacts of this site-generated traffic on the affected streets and highways. A comparative analysis of traffic volumes and levels of service with and without each proposed project component was conducted. The primary factor used to estimate the site-generated traffic volumes was the size of each project site. A more definitive calculation of project generated traffic volumes cannot be made because specific development plans and uses have not yet been established. While each site would also generate minor traffic volumes associated with maintenance, cleaning, sediment removal, and inspection of the watershed management facilities, these traffic levels would be negligible (typically less than 10 vehicle trips per day on an active day, with no traffic on most days at each site).

While the target years for the completion of the proposed facilities have not yet been determined, it is assumed that all of the facilities would be completed within a 20-year time frame. Based on traffic data and projections in the Congestion Management Program for Los Angeles County (2002), the general traffic volume growth factors for the San Gabriel Valley and Gateway areas indicate that there would be approximately a 15 percent growth in traffic volumes over the next 20 years. The existing traffic volumes were, therefore, increased by a factor of 1.15 to estimate the future baseline traffic volumes. While the use of this overall growth factor may overestimate

the baseline traffic volumes for the project components that would be constructed during a time frame that is less than 20 years, the standard rate has been used to establish a consistent baseline for the impact analysis.

The traffic impacts associated with the operation of the facilities proposed at each individual Concept Design Study project site are discussed in the following sections. The traffic generation estimates for each project site are based on trip rates from the Institute of Transportation Engineers *Trip Generation* manual (6th Edition, 1997) for the County Park land use category. For a project site that would be converted to a new park (i.e., San Gabriel Canyon Spreading Grounds), the average rate from the manual was used for the traffic projections. For a project site where an existing park is already in place (i.e., El Dorado Park and Lario Creek/San Gabriel River Discovery Center), it is assumed that the additional activities associated with the concept design would generate traffic at 25 percent of the average rate for the County Park category in the manual.

San Gabriel Canyon Spreading Grounds

It is estimated that a park of approximately 45 acres in size could be developed at the San Gabriel Canyon Spreading Grounds site. The estimated volumes of traffic that would be generated on a typical day are shown in **Table 4.11-10**.

Table 4.11-10
Operation Traffic – San Gabriel Canyon Spreading Grounds

Proposed Use: Park	Daily Traffic	AM Peak Hour			PM Peak Hour		
		Total	In	Out	Total	In	Out
Trip Generation Rates (vehicle trips per acre)	2.28	0.52	71%	29%	0.59	35%	65%
Generated Traffic (45 Acres)	100	24	17	7	27	9	18

The impacts of the site-generated traffic on the study area roadways are summarized in **Table 4.11-11**. As shown, the project would result in a less than significant traffic impact.

Table 4.11-11
Operation Traffic Impacts –
Streets in the San Gabriel Canyon Spreading Grounds Vicinity

Street/ Location	No. of Lanes	Daily Traffic Volume	Peak Hour Traffic		V/C Ratio & LOS	
			AM	PM	AM Peak	PM Peak
San Gabriel Cyn Rd (100%)						
Baseline Conditions	2	2,300	140n/300s	390n/220s	0.38-A	0.49-A
With Project Traffic		2,400	157n/307s	399n/238s	0.38-A	0.50-A
San Gabriel Ave (90%)						
Baseline Conditions	2 SB	21,000	1390s	1090s	0.87-D	0.68-B
With Project Traffic		21,050	1396s	1106s	0.87-D	0.69-B
Azusa Avenue (90%)						
Baseline Conditions	2 NB	22,000	950n	1590n	0.59-A	0.99-E
With Project Traffic		22,050	965n	1598n	0.60-B	0.99-E
Sierra Madre Ave (10%)						
Baseline Conditions	4	14,000	490e/670w	720e/560w	0.42-A	0.45-A
With Project Traffic		14,010	491e/672w	722e/561w	0.42-A	0.45-A
Foothill Blvd (10%)						
Baseline Conditions	4	29,900	850e/1180w	1360e/930w	0.74-C	0.85-D
With Project Traffic		29,010	851e/1182w	1362e/931w	0.74-C	0.85-D

El Dorado Regional Park

It is estimated that approximately 520 acres of the existing El Dorado Regional Park would be included in the Concept Design Study project site. The estimated volumes of additional traffic that would be generated on a typical day are shown in **Table 4.11-12**.

Table 4.11-12
Operation Traffic – El Dorado Regional Park

Proposed Use: Park	Daily Traffic	AM Peak Hour			PM Peak Hour		
		Total	In	Out	Total	In	Out
Trip Generation Rates (vehicle trips per acre)	0.57	0.13	71%	29%	0.15	35%	65%
Generated Traffic (520 Acres)	300	68	48	20	78	27	51

The impacts of the additional site-generated traffic on the study area roadways are summarized in **Table 4.11-13**. As shown, the project would result in a less than significant traffic impact.

Table 4.11-13
Operation Traffic Impacts – Streets in the El Dorado Regional Park Vicinity

Street/ Location	No. of Lanes	Daily Traffic Volume	Peak Hour Traffic		V/C Ratio & LOS	
			AM	PM	AM Peak	PM Peak
Wardlow Road (10%)						
Baseline Conditions	4	24,000	610e/910w	950e/750w	0.57-A	0.59-A
With Project Traffic		24,030	612e/915w	955e/753w	0.57-A	0.59-A
Spring Street (80%)						
Baseline Conditions	6	36,000	1240e/1620w	1790e/1180w	0.68-B	0.75-C
With Project Traffic		36,240	1256e/1658w	1831e/1202w	0.69-B	0.76-C
Willow Street (10%)						
Baseline Conditions	6	39,000	1320e/1870w	2010e/1400w	0.78-C	0.84-D
With Project Traffic		39,030	1322e/1875w	2015e/1403w	0.78-C	0.84-D
Studebaker Road (25%)						
Baseline Conditions	6	32,000	1100n/1250s	1580n/1170s	0.52-A	0.66-B
With Project Traffic		32,080	1105n/1262s	1593n/1177s	0.53-A	0.66-B

Lario Creek/San Gabriel River Discovery Center

It is estimated that approximately 330 acres of the existing Whittier Narrows Recreation Area would be included in the Concept Design Studies for the Lario Creek/San Gabriel River Discovery Center project sites. The estimated volumes of additional traffic that would be generated on a typical day are shown in **Table 4.11-14**.

Table 4.11-14
Operation Traffic – Lario Creek/San Gabriel River Discovery Center

Proposed Use: Park	Daily Traffic	AM Peak Hour			PM Peak Hour		
		Total	In	Out	Total	In	Out
Trip Generation Rates (vehicle trips per acre)	0.57	0.13	71%	29%	0.15	35%	65%
Generated Traffic (330 Acres)	190	43	31	12	50	17	33

The impacts of the additional site-generated traffic on the study area roadways are summarized in **Table 4.11-15**. As shown, the project would result in a less than significant traffic impact.

Table 4.11-15
Operation Traffic Impacts – Streets in the Lario Creek/ San Gabriel River Discovery Center Vicinity

Street/ Location	No. of Lanes	Daily Traffic Volume	Peak Hour Traffic		V/C Ratio & LOS	
			AM	PM	AM Peak	PM Peak
Durfee Avenue (75%)						
Baseline Conditions	4	18,000	780e/610w	750e/850w	0.49-A	0.53-A
With Project Traffic		18,140	803e/619w	763e/875w	0.50-A	0.55-A
Santa Anita Avenue (60%)						
Baseline Conditions	4	25,000	1120n/900s	980n/1180s	0.70-C	0.74-C
With Project Traffic		25,110	1127n/919s	1000n/1190s	0.70-C	0.74-C
Peck Road (20%)						
Baseline Conditions	4	29,000	1210n/1070s	1200n/1440s	0.76-C	0.90-E
With Project Traffic		29,040	1216n/1072s	1203n/1447s	0.76-C	0.90-E
Rosemead Blvd (10%)						
Baseline Conditions	6	37,000	1940n/1710s	1770n/2240s	0.81-D	0.93-E
With Project Traffic		37,020	1943n/1711s	1772n/2243s	0.81-D	0.93-E

Woodland Duck Farm

The description of the proposed improvements for the Woodland Duck Farm provided in **Section 3.3.3.2** of this Program EIR represents an initial concept for the project. WCA is undertaking a master plan for the site involving all stakeholders. For the purpose of the traffic access analysis conducted by Kaku Associates (2003), a development of a 100-space parking lot was assumed.

The primary access point to the project site would be Proctor Street, which is a two-lane local street located on the east side of the site. From the western end of Proctor Street, a driveway connects the east and west portions of the site via a one-lane underpass below I-605. One lane of a roadway has the capacity to accommodate a maximum of 1,800 vehicles per hour per direction of travel. In the case of the one-lane underpass, the eastbound and westbound traffic would share the same roadway; therefore, the underpass would have a capacity of 900 vehicles per hour (450 vehicles per direction). Even if 50 percent of the parking spaces turned over in an hour (i.e., 50 vehicles in and 50 vehicles out), the existing underpass would have enough capacity to accommodate the resulting traffic. However, because the existing underpass provides only one lane of travel, the access analysis recommends implementation of a system of assigning right-of-way in the underpass (e.g., installation of a traffic signal at both entrances to the underpass) (Kaku Associates, 2003).

As described in **Section 4.11.2.2**, Proctor Street is currently operating at LOS A, and during the morning and evening peak hours, has a total of 133 and 137 vehicles per hour, respectively. Assuming that 50 percent of the parking spaces turned over in an hour, this would be equivalent to 50 vehicles in and 50 vehicles out, or approximately one vehicle per minute in each direction. Kaku Associates (2003) has concluded that this increase in traffic level will not change the residential character of Proctor Street. Therefore, operation of the Woodland Duck Farm project would result in a less than significant impact on traffic.

Emergency access to the site would be provided by Proctor Street as well as the two secondary access points (Rall Avenue and Temple Avenue). The Los Angeles County Fire Department typically requires two points of emergency access to every development or public assembly place. The access off Temple Avenue to the west side of the site is currently accommodating trucks accessing the nursery and tree trimming operation as well as SCE maintenance trucks, and can be used for emergency access. Since the underpass connecting the east and west sides of the site cannot accommodate large emergency vehicles due to height constraints of the underpass, Temple Avenue is the only access point to the west side of the site that is capable of accommodating large trucks. However, the land area along the driveway off of Temple Avenue is wide enough that it would be unlikely for the entire driveway to be blocked. Thus, this access point would provide sufficient emergency vehicle access to the west part of the site. Currently, Los Angeles County is planning a bicycle/pedestrian bridge over the San Gabriel River at Rush Street. The bridge project is scheduled to be constructed and open by 2006. The access analysis report recommends that the Rush Street overpass be designed to accommodate emergency vehicles to provide a second emergency access route to the west side of the project site.

Both the Proctor Street and Rall Avenue access points can also be used for emergency access to the east side of the site. Driveways off of Proctor Street and Rall Avenue can accommodate emergency vehicles. Therefore, there would be two emergency access points to the west side of the site in compliance with the Fire Department standard.

As described above, the existing access points to the project site would provide sufficient emergency vehicle access to the site. Therefore, operation of the Woodland Duck Farm project would result in a less than significant impact on emergency vehicle access.

4.11.6 Master Plan Program Mitigation Measures

As identified above in **Section 4.11.5**, implementation of projects developed in a manner consistent with the Master Plan have the potential for adverse impacts on transportation/traffic from 1) construction vehicle trips, 2) construction within the right-of-way of public streets/bikeways, and/or 3) vehicle trips generated by operation of the proposed facilities (e.g., ongoing maintenance activities and/or visitors to recreational or educational facilities). For these types of projects, a site-specific evaluation of traffic impacts as described in program Mitigation Measure MP-T1 will be conducted:

> **MP-T1** A traffic impact study will be prepared for any Master Plan project that is projected to meet or exceed the site-generated traffic volume thresholds cited in the Los Angeles County Congestion Management Program "Guidelines for CMP Transportation Impact Analysis." The guidelines indicate that a study is required if a project would add 50 or more vehicle trips during either the a.m. or p.m. weekday peak hours to a CMP arterial monitoring intersection or freeway on- or off-ramp. An analysis will be conducted if the project would add 150 or more trips in either direction to a mainline freeway during either the a.m. or p.m. weekday peak hours. A traffic study will also be prepared if the project meets the criteria for the municipality in which the project site is located (i.e., an incorporated city, County of Los Angeles, or County of Orange). If the project would result

in significant traffic impacts, one or more of the following measures will be implemented as applicable.

- A construction traffic management plan shall be developed for each project site that will include but not be limited to such measures as designated haul routes for construction-related traffic (e.g., construction equipment, pickup and dump trucks, and other material delivery trucks), travel time restrictions for construction-related traffic to avoid weekday peak periods on selected roadways, designated site access locations, driveway turning restrictions, temporary traffic controls and/or flaggers, and designated parking/staging locations for workers and equipment.
- A construction area traffic control plan and/or detour plan shall be prepared for any location where construction activities would encroach into the right-of-way of a public roadway. The plan would include, but not be limited to such features as warning signs, lights, barricades, cones, lane closures, and restricted hours during which lane closures would not be allowed (e.g., 6:00 to 9:00 a.m. and 3:00 to 6:00 p.m., or as directed by the affected public agency).
- Provide advance notification to affected property owners, businesses, residents, etc. of possible driveway blockages or other access obstructions and implement alternate access and parking provisions where necessary.
- Provide alternative pedestrian and bicycle access/circulation routes if existing facilities such as sidewalks, crosswalks, and bike lanes would be obstructed to ensure safe pedestrian/bicycle travel.
- Coordinate with emergency service providers (police, fire, and ambulance/paramedic agencies) prior to construction to provide information regarding lane closures, construction schedules, driveway blockages, etc., if any, and develop a plan to maintain or accommodate essential emergency access routes (e.g., plating over excavations and use of detours).
- Coordinate with public transit agencies (e.g., MTA) to provide information regarding lane closures, bus stop disruptions, etc. so that MTA or relevant agency can designate alternate pick-up/drop-off locations, if appropriate, and provide for uninterrupted service.
- As necessary, obtain a transportation permit from Caltrans for transportation of heavy construction equipment and/or materials which requires the use of oversized-transport vehicles on State highways.
- Other relevant traffic control measures.

4.11.7 Mitigation Measures for Concept Design Studies

As identified above in **Section 4.11.5**, the traffic analyses for the Concept Design Study projects indicate that neither the construction activities nor the operational aspects at the project sites would result in a significant traffic impact.

The following mitigation measures shall be implemented for all five Concept Design Studies to further reduce the impacts associated with construction traffic and/or construction activities within the right-of-way of public streets and/or bikeways.

CD-T1 A construction traffic management plan shall be developed for each project site that shall include but not be limited to such measures as designated haul routes for construction-related traffic (e.g., construction equipment, pickup and dump trucks, and other material delivery trucks), travel time restrictions for construction-related traffic to avoid weekday peak periods on selected roadways, designated site access locations, driveway turning restrictions, temporary traffic controls and/or flaggers, and designated parking/staging locations for workers and equipment.

CD-T2 A construction area traffic control plan and/or detour plan shall be prepared for any location where construction activities would encroach into the right-of-way of a public roadway. The plan would include, but not be limited to such features as warning signs, lights, barricades, cones, lane closures, and restricted hours during which lane closures would not be allowed (e.g., 6:00 to 9:00 a.m. and 3:00 to 6:00 p.m., or as directed by the affected public agency).

CD-T3 Provide advance notification to affected property owners, businesses, residents, etc. of possible driveway blockages or other access obstructions and implement alternate access and parking provisions where necessary.

CD-T4 Provide alternative pedestrian and bicycle access/circulation routes if existing facilities such as sidewalks, crosswalks, and bike lanes would be obstructed to ensure safe pedestrian/bicycle travel.

CD-T5 Coordinate with emergency service providers (police, fire, and ambulance/paramedic agencies) prior to construction to provide information regarding lane closures, construction schedules, driveway blockages, etc., if any, and develop a plan to maintain or accommodate essential emergency access routes (e.g., plating over excavations and use of detours).

CD-T6 Coordinate with public transit agencies (e.g., MTA) to provide information regarding lane closures, bus stop disruptions, etc. so that MTA or relevant agency can designate alternate pick-up/drop-off locations, if appropriate, and provide for uninterrupted service.

CD-T7 As necessary, obtain a transportation permit from Caltrans for transportation of heavy construction equipment and/or materials which requires the use of oversized-transport vehicles on State highways.

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Section 5
Cumulative Impacts

5.1 CEQA REQUIREMENTS FOR CUMULATIVE IMPACT ANALYSIS

CEQA requires an evaluation of the cumulative impacts of related projects in an EIR (CEQA Guidelines Section 15130). Based on State CEQA Guidelines Appendix G, the proposed project would have significant cumulative impacts if it had impacts that were individually limited but "cumulatively considerable." Cumulatively considerable means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects and the effects of probable future projects.

Since the EIR was prepared as a program document for a regional planning effort, probable future activities of the Master Plan are discussed throughout the environmental topic sections of the Program EIR (see **Section 4**).

Section 15130(b) identifies two approaches for evaluating cumulative impacts: the "list approach" and the "planning scenario approach." The list approach uses "a list of past, present, and reasonably anticipated probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency." The planning scenario approach utilizes "a summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area-wide conditions contributing to the cumulative impact. Any such planning document shall be referenced and made available to the public at a location specified by the lead agency."

The list of projects presented below reflects projects known for the planning area that have, or may have, cumulative impacts with the proposed Master Plan. It should also be noted that the Master Plan identifies over 130 river corridor enhancement projects currently proposed or planned by stakeholders located along the river (see Chapter 3.6 and Appendix A of the Master Plan)[1].

Additionally, as individual Master Plan projects are defined and proposed, the cumulative impacts of the site-specific proposal and relevant related projects will be determined and disclosed in subsequent second-tier CEQA documentation. It is anticipated that for these site-specific analyses, cumulative construction-related impacts on air quality, traffic, and noise will be especially considered.

5.2 RELATED PROJECTS

The following list of related projects has been identified for the cumulative analysis pursuant to CEQA Guidelines Section 15130:

1 Information on these projects was gathered by the Master Plan Planning Team through interviews with the planning departments of the 19 municipalities located along the River.

- Los Angeles and San Gabriel Rivers Watershed Feasibility Study
- Watershed Management Plan for the San Gabriel River Above Whittier Narrows
- Whittier Narrows Dam Master Plan and Environmental Assessment
- Coyote Creek Watershed Plan
- Rio Hondo Watershed Management Plan
- San Gabriel River Watershed Non-Point Source Pollution Reduction Program
- Angeles Forest Plan Update
- San Gabriel Valley Basin Superfund Site
- Projects Identified by Municipalities in the Master Plan Study Area

5.2.1 Los Angeles and San Gabriel Rivers Watershed Feasibility Study

The U.S. Army Corps of Engineers (COE) and LADPW prepared a feasibility study of the Los Angeles and San Gabriel Rivers watershed to gather and evaluate available information, look for opportunities for watershed involvement, and initiate thinking on a future Integrated Basin Management Plan (IBMP). The study area included the entire 1,500 square mile Los Angeles and San Gabriel Rivers watershed and focused on opportunities for non-structural, integrated (multiple-use) solutions for flood control and drainage. The study also included a Database Management Plan to develop a mechanism for public access to geographical data for future project planning. Multi-objective demonstration projects were identified, including a project along the San Gabriel River in the City of Lakewood. It was considered a potential location for new recreational activities because of its proximity to other park and equestrian sites, as well as the opportunity to incorporate the river into recreational activities. A second site, on California State Polytechnic University, Pomona property, was identified along the San Jose Creek Channel, which is a tributary to the San Gabriel River. Potential uses of the site included development of former riparian habitat adjacent to the creek for recreation, flood control, and groundwater recharge. It was recommended in the report that stakeholders in the watershed develop an IBMP that sets forth an approach to "balance the needs of the natural ecosystem and the needs of humans" (COE, 2001) when considering new projects.

5.2.2 Watershed Management Plan for the San Gabriel River Above Whittier Narrows

The San Gabriel Mountains Regional Conservancy is a California nonprofit public benefit corporation with the mission of connecting mountains, urban creeks, and the watershed of the Upper San Gabriel River. The Conservancy's Watershed Management Plan is intended to provide a foundation and framework to facilitate planning and implementation efforts in the upper half of the San Gabriel River Watershed including the Upper San Gabriel River, Walnut Creek, and San Jose Creek sub-watersheds. The Plan will address opportunities and challenges in a comprehensive watershed management plan that supports future planning efforts in the region. Future programs already identified include: citizen-based water quality monitoring that

would coordinate with watershed-wide monitoring efforts anticipated by the Los Angeles Regional Water Quality Control Board and the Los Angeles and San Gabriel Rivers Watershed Council, citizen-based land stewardship programs, local land conservation and resource management plans, implementation of identified pilot projects, and formation of a "San Gabriel River Tributaries Land Trust."

5.2.3 Whittier Narrows Dam Master Plan

In 1996, the COE prepared a Master Plan for the Whittier Narrows Dam. Its purpose was to "guide the use and development of all resources within the Whittier Narrows Dam Recreation Area" (COE, 1996). The plan preparers were to provide recommendations that optimized use of land and natural resources, while supporting the uses (flood control, recreation, and water conservation) for which the dam was originally intended. The Master Plan included a Proposed Resource Use Plan that primarily included recommendations for the development of recreational facilities. Potential future uses included in the Plan were: biking facilities; overnight camping; expansion of an existing golf course into the Rio Hondo; soccer facilities; playgrounds; parking; an open-air amphitheater; commercial recreation activities (e.g., Grand Prix racing, a roller hockey, a waterplay park, or a golf driving range); expansion of the nature area; expansion of bicycle, equestrian, and hiking trails; and the development of a riverfront park on the Rio Hondo. A draft Environmental Assessment under the National Environmental Policy Act (NEPA) was prepared that included an evaluation of the impacts of the aforementioned projects. The assessment concluded with a Finding of No Significant Impact (FONSI) as no specific developments were included in the Master Plan. Specific developments proposed in the future will require additional environmental documentation.

5.2.4 Coyote Creek Watershed Plan

The Coyote Creek Watershed is located in the northwest corner of Orange County and covers an area of 41.3 square miles. The watershed and its tributaries, namely Coyote Creek, Fullerton Creek, and Brea Creek, drain approximately 155 square miles through the cities of Whittier, Santa Fe Springs, La Mirada, Cerritos, Buena Park, La Habra, Fullerton, and Brea.

Coyote Creek flows adjacent to the El Dorado Regional Park in the City of Long Beach. The Coyote Creek Flood Control Channel, a concrete-lined trapezoidal channel, is the principal tributary to the San Gabriel River. Water quality problems exist for Coyote Creek, its tributaries and receiving waters, including the San Gabriel River. According to the Regional Water Quality Control Board, the presence of metals, pesticides, non-point source pollutants, and other urban runoff constituents (nutrients and pathogens) contribute to the impaired water quality in the creek.

In June 2001, the COE conducted the "Westminster Watershed Reconnaissance Study," which consisted of feasibility-phase studies of water resource problems and opportunities in the urbanized and coastal areas in Orange County. Although the main focus of the reconnaissance study was the Westminster watershed, the Coyote Creek and the Carbon Creek watersheds were also evaluated. These watersheds have highly urbanized residential, commercial, and industrial developments.

The Coyote Creek Watershed Plan includes recommendations for water quality improvements, ecosystem restoration, recreation, and education at El Dorado Regional Park at the confluence of Coyote Creek and the San Gabriel River. The proposed plan is designed to improve the quantity and quality of wetland and riparian habitats; reduce ammonia and silver concentrations; and address coliform, algae, and abnormal fish histology in the Coyote Creek Watershed. The plan will also increase passive and active recreation opportunities, improve beach nourishment opportunities from sources in the watershed, provide educational benefits on watershed related issues, and improve aesthetic conditions in the flood control channel (Orange County, 2003a and 2003b).

5.2.5 Rio Hondo Watershed Management Plan

The San Gabriel Valley Council of Governments (SGVCOG) and San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy (RMC) have prepared the Rio Hondo Watershed Management Plan (SGVCOG, 2004). This multi-objective project is intended to integrate issues of land use, water supply, water quality, recreation and habitat into an implementation plan. The beneficial uses of the Rio Hondo are impaired by trash, copper, lead, zinc, ammonia, pH and coliform bacteria. The recharge basins and multiple habitat areas within the watershed provide opportunities for water quality improvements, parks, wildlife habitat and multiple-use projects.

Goals of the Watershed Management Plan are: to integrate issues of land use, water supply, water quality, recreation and habitat; to provide a forum for stakeholders to present and solve shared issues; and to provide an implementation plan for short- and long-term watershed restoration. In addition to other key stakeholders, project participants represent the 22 cities that lie partially or completely within the boundaries of the Rio Hondo watershed, the U.S. Forest Service, and LADPW.

5.2.6 San Gabriel River Watershed Non-Point Source Pollution Reduction Program

Undertaken by the Upper San Gabriel Valley Municipal Water District, this program addresses non-point source pollution including excessive trash, nutrients and coliform bacteria. The focus of this effort is in the San Gabriel Canyon and Chantry Flats areas of the Angeles National Forest. Trash reduction, retrofit of lavatories, stream clearance to remove blockages caused by sedimentation and debris build-up, clearance/rehabilitation of designated trails, stream bank stabilization, and public outreach are all proposed.

5.2.7 Angeles Forest Plan Update

The U.S. Forest Service's Southern California Forest Plan includes updates of forest plans for the Angeles, Cleveland, Los Padres, and San Bernardino National Forests. The San Gabriel River's headwaters originate in the Angeles National Forest and extend from the West Fork of the river upstream of Cogswell Dam. Potential impacts to the San Gabriel River as a result of the Angeles National Forest's Revised Land Management Plan are summarized below.

Some objectives of the forest plan include enhancing environmental quality, increasing water yield, developing and dispersing recreation and managing chaparral vegetation. A goal of the fish and wildlife program is to maintain habitat for 'Management Indicator Species' that prefer conifer, oak woodland, riparian and pinyon/juniper vegetation (USFS, 2001). According to the plan, treatment of chaparral vegetation using prescribed burns with controlled fire would be the primary management tool. The prescribed burning is expected to reduce sediment loading in streams and rivers, and improve habitat for aquatic insects and fish.

Under the Angeles Forest Plan Update, the U.S. Forest Service aims to develop and implement plans for existing and proposed water developments to provide for optimum recreation facilities and use, specifically in areas not currently available or accessible to the public. Potential developments include family campgrounds and day-use facilities near water-oriented areas. The plan also outlines goals for improving and protecting the physical, chemical, biological and aesthetic quality of the water resources. These goals are to be accomplished by continuing the water-quality monitoring program necessary to determine compliance with current laws and regulations and producing water of sufficient quality to meet or exceed identified use requirements. The plan also calls for managing watersheds, such as the San Gabriel Watershed, to increase the yield of high quantity and quality water that meets water quality standards over the next 20 years (USFS, 2003). The draft plan was published in May 2004, and is expected to be finalized in early 2005.

5.2.8 San Gabriel Valley Basin Superfund

Within the approximately 170 square miles of the San Gabriel Valley, over 30 square miles of groundwater may be contaminated, including water within the San Gabriel River corridor. The area of contamination underlies portions of the cities of Alhambra, Arcadia, Azusa, Baldwin Park, Industry, El Monte, La Puente, Monrovia, Rosemead, South El Monte, and West Covina. Groundwater contamination by volatile organic compounds (VOCs) was first detected in this area in 1979. Since then, contaminants found in the groundwater include trichloroethene (TCE), perchloroethylene (PCE), carbon tetrachloride, perchlorate, and N-nitrosodimethylamine (NDMA). Existing cleanup activities include groundwater extraction, containment and treatment.

As discussed in **Section 4.6**, the Master Plan would encourage implementation of projects that include groundwater recharge, which may affect the groundwater flow directions and consequently change the shape and configuration of the existing VOC contamination plumes in the San Gabriel Valley Groundwater Basin. If such an effect on the contamination plumes occurred, it could interfere with the ongoing remediation and cleanup efforts. To avoid adverse groundwater quality effects, the rate and amount of recharge proposed under a Master Plan project will be reviewed to determine if the action could result in substantial changes to the location or shape of existing contamination plumes (see **Mitigation Measure MP-W7**, **Section 4.6.5.5**). With proper location and design of project elements that include groundwater infiltration, cumulative impacts on groundwater quality with the San Gabriel Valley Basin Superfund site would be less than significant.

5.2.9 Projects Identified by Municipalities in the Master Plan Study Area for Cumulative Impact Analysis

In addition to the area-wide projects identified above, numerous residential, commercial, industrial, and other types of projects are planned in the Master Plan study area that may have related impacts. In order to identify such projects, municipalities located in the Master Plan study area were consulted to develop a list of related projects within each municipality that might contribute to a cumulative impact with the Master Plan (**Table 5-1**).

Table 5-1
Related Projects Identified by Municipalities in the Master Plan Study Area

Related Project	Location
Arcadia	
14,726 square-foot warehouse	11700 Clark Street (Vacant site east of Peck Road)
Azusa	
84,000 square-foot facility for the U.S. National Guard Armories	1351 Sierra Madre Avenue
29,000 square-foot single-story building for the Laborers Union Training School	1385 Sierra Madre Avenue
Baldwin Park	
Six-unit multi-family residential development	12776 Torch Avenue
Ten-unit single-family residential development (under construction)	4751 Center Street
Bellflower	
None	--
Cerritos	
None	--
Downey	
McDonald's Restaurant	Southwest corner of Firestone Boulevard and Rives Avenue
53,000 square-foot warehouse	Hall Road just west of Woodruff Avenue
12,000 square-foot industrial facility	Washburn Road just east of Woodruff Avenue
156,000 square-foot commercial facility (Kaiser offices)	Bellflower Boulevard north of Imperial Highway
Duarte	
29 Single Family Housing	2900 Huntington Drive
Daycare Center	2500 Huntington Drive

Table 5-1 (Continued)
Related Projects Identified by Municipalities in the Master Plan Study Area

Related Project	Location
El Monte	
Office/warehouses	2304 Durfee Avenue and 2411 Durfee Avenue
Four-unit Planned Unit Development (PUD)	11958 Lower Azusa Road
Three-unit PUD	11821 The Wye St
Auto dealership	2720-24 Durfee Avenue
Four-unit PUD	3627-29 Durfee Avenue
Three-unit PUD	3757-37 Durfee Avenue
Six-unit PUD	4318-30 Durfee Avenue
Storage facility for repossessed vehicles	3350 Gilman Road
Four-unit PUD	12359-63 Magnolia
Three-unit PUD	12359 Felipe Street
City of Industry	
2100 square-foot shop building	10006 Rose Hills Road
4,950 square-foot restaurant/convenience store and four onsite gasoline pumps	13401 Crossroads Parkway East
46,400 square-foot industrial building	3700 Capitol Avenue
Irwindale	
[(1)]United Rock Products Inc. Conditional Use Permit (CUP) No. 5-04 for continued mining of Quarry No. 2 until December 31, 2020, or until reaching the maximum permitted depth of 410 feet from the original grade level, whichever event occurs first. Reclamation of the Quarry is anticipated to be completed and the site ready for development by December 31, 2061. The proposed end use of the site is industrial and/or commercial development.	West of Buena Vista Street and north of Arrow Highway
[(2)]United Rock Products Inc. CUP No. 6-04 for continued mining of Quarry No. 3 until December 31, 2037, or until reaching the maximum permitted depth of 440 feet from the original grade level, whichever event occurs first. The proposed end use of the site is a groundwater recharge basin.	West of I-605 and north of Arrow Highway
[(3)]Hanson Aggregates West Inc. Development Agreement (DA) No. 1-01 (application being processed; not yet approved) to extend the mining operations to a planned depth not to exceed 0 feet above mean sea level (an additional 150 feet deep) or to December 31, 2030, whichever occurs first. The site will be reclaimed and developed with commercial/recreation and industrial/ commercial uses.	West of I-605 and south of Live Oak Avenue
Lakewood	
[(4)]Boyar Park Renovation Project Phase I	On Del Amo Boulevard adjacent to the River

Table 5-1 (Continued)
Related Projects Identified by Municipalities in the Master Plan Study Area

Related Project	Location
Long Beach	
Shopping center	120 Studebaker Road
Commercial center	400 Studebaker Road
175,000 square-foot commercial building	7200 Carson Street
Haynes Generating Station Units 5 & 6 Repowering Project (identified by City of Seal Beach). Installation of a 600-megawatt natural gas-fired combined-cycle generating system to replace existing Units 5 & 6. No net increase in capacity. NOP published June 25, 2004.	Westminster Avenue and 2nd Street
Los Alamitos	
None	--
Norwalk	
None	--
Pico Rivera	
Five 2300 square-foot homes	8338 Orange Avenue
51-unit motel	6515 Whittier Boulevard
188,000 square-foot self-storage facility	Beverly Boulevard and Abbeywood Avenue
Santa Fe Springs	
Nature Conservancy	Adjacent to the River from Cedardale Drive to Telegraph Road
RV storage project	Northwest corner of the city
Seal Beach	
[(5)]Hellman Ranch Wetland Restoration Project	North of Gum Grove Park, west of the Seal Beach Naval Weapons Station, and east of the River
South El Monte	
Mixed use (commercial/single family housing/elderly housing) development	Durfee Avenue and Michael Hunt Drive
Whittier	
[(6)]Pio Pico Park	Approximately 100 feet east of the River on Whittier Boulevard

Notes: The following projects, while identified by the cities as related projects and included in the above table, are included on the Master Plan Action Grid (see Chapter 3 and Appendix A):

(1) Master Plan Project No. R4.02 United Rock Products Quarry #2
(2) Master Plan Project No. R3.25 United Rock Products Quarry #3
(3) Master Plan Project No. R4.05 Hanson Quarry
(4) Master Plan Project No. R6.17 Mae Boyer Park Renovation
(5) Master Plan Project No. R7.10 Hellman Ranch Wetlands Freshwater Marsh Restoration
(6) Master Plan Project No. R5.06 Pio Pico State Historic Park

5.3 CUMULATIVE IMPACT ANALYSIS

The cumulative effects of implementing the proposed project with the identified projects producing related impacts are summarized in this section.

5.3.1 Cumulatively Considerable Impacts

State CEQA Guidelines Section 15130 (a) requires that an EIR discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable. The Draft EIR identified Air Quality as a potential cumulative considerable impact due to limited mitigation for tailpipe emissions from heavy construction. However, in preparation of the Findings of Fact, several mitigation measures were identified to reduce emissions to a level of less than significant. Therefore, development of Master Plan projects should not have incremental effects that are cumulatively considerable.

5.3.2 Less Than Significant Cumulative Impacts

State CEQA Guidelines Section 15130(a)(2) states that when the combined cumulative impact associated with the project's incremental effect and the effects of other projects is not significant, the EIR shall briefly indicate why the cumulative impact is not significant and not discussed in further detail in the EIR.

5.3.2.1 Air Quality

The SCAB is a non-attainment area for ozone (extreme), PM10 (serious), and CO (serious). It can be reasonably assumed that construction of Master Plan projects would overlap with other construction in the South Coast Air Basin including construction of one or more of the related projects. However, each of the Master Plan projects is anticipated to be below the construction emission thresholds established by SCAQMD, and operational impacts on air quality of Master Plan projects would be negligible. In addition, each of the related projects would be required to mitigate its temporary construction impacts to the extent feasible. Therefore, cumulative effects are anticipated to be less than significant.

5.3.2.2 Biological Resources

With regard to biological resources, development of Master Plan projects would not have incremental effects that are cumulatively considerable. Instead, overall Master Plan impacts to biological resources are beneficial, and would be expected to partially offset biological resources impacts from development of the related projects by increasing open space, improving habitats, and reducing exotics. These projects are located in highly disturbed urban areas but some sites may contain remnant vegetation and wildlife resources. Overall, the cumulative effect with implementation of the Master Plan would be less than cumulatively considerable, and would be beneficial as compared with existing conditions.

5.3.2.3 Cultural Resources

Impacts on historic resources are specific to individual sites, unless adjacent or part of a historic resources district, which does not apply in the present case. Therefore, the incremental effects on historic resources associated with implementation of the Master Plan would not be cumulatively considerable when combined with other related projects that could affect historic resources, and is therefore less than significant.

Significant impacts to archaeological materials are not predicted for the Master Plan since mitigation measures, including monitoring during subsurface disturbances, would be conduced as warranted. Since other related projects are located in disturbed urban areas with limited potential for cultural resources, and since these projects would also mitigate their individual impacts, if any, significant cumulative impacts on cultural resources are not anticipated.

5.3.2.4 Geology and Soils

Hazards related to geology including seismic events and soil conditions are specific to individual sites. Potentially cumulative impacts could occur if other related projects near Master Plan project sites also impacted groundwater levels and therefore created a liquefaction hazard. However, none of the related projects identified by the cities would substantially impact groundwater and the Master Plan includes mitigation measures to reduce potential adverse impacts related to liquefaction. Therefore, implementation of the Master Plan would have a less than significant cumulative effect with other related projects related to geology and soils.

5.3.2.5 Hazards

Potential Master Plan impacts related to hazards include mosquito and bird habitat creation and construction in areas of potential soil contamination. Mitigation has been identified to reduce these impacts to less than significant levels. Although none of the related projects identified by the cities (and not already included in the Master Plan) are known to incorporate surface water features that would create mosquito or bird habitat, any of the related projects could include stormwater best management practices, such as above-ground water features and/or below-ground stormwater treatment devices, which could serve as mosquito habitat. However, since the Master Plan incorporates mitigation measures for vector control, and the extent of mosquito habitat potentially created by any stormwater BMPs associated with the related projects is not known, a cumulatively considerable increase in vector-related public health risks is not anticipated based on available information.

Increases in habitat quality and connectivity may increase risks to public health due to increased movement of animals (and animal diseases transmittable to humans) into and through densely populated urban areas. However, the Master Plan goal includes balancing enhancements to habitat, recreation, and open space while maintaining and enhancing flood protection and water resources; therefore, the extent of habitat enhancements that can be achieved along the River corridor would be moderated by these other objectives. Furthermore, the Master Plan Habitat element includes Performance Criteria H.2.5 and H.4.3, which are intended to encourage future Master Plan project proponents to consider the public health implications of habitat enhancement projects early in the planning process. Therefore, the Master Plan would not result in a

cumulatively considerable increase in risks to public health associated with increased human-wildlife interactions.

The potential to encounter contaminated soils during construction of Master Plan projects, or of any of the listed projects, is site specific and generally does not have impacts beyond the particular project site after proper mitigation. Therefore the cumulative impact on hazards is less than significant.

5.3.2.6 Hydrology and Water Quality

The other related development projects could increase impervious surface area within the corridor and, therefore, result in generation of additional runoff over existing conditions. Increases in runoff which exceed the capacity of the receiving waterbody would be potentially significant without mitigation.

However, compliance with LADPW standards for stormwater discharges would be required at every construction site within the County. LADPW has determined the allowable discharge rate for parcels within their jurisdiction. Allowable discharge rates are calculated by multiplying the site acreage by the allowable flow rate per acre, which varies by the design capacity of the receiving drainage facility and is determined by LADPW. The objective of the allowable discharge rates is to maintain the design capacities of LADPW's existing storm drainage facilities in compliance with the agency's flood protection standards. Compliance with the LADPW standards would reduce cumulative impacts on drainage to a less than significant level for the related development projects. Together with the beneficial impacts on runoff from the Master Plan projects which would decrease stormwater runoff by provision of infiltration and detention facilities, the cumulative impact would be less than significant or beneficial.

With regard to stormwater runoff quality, development of Master Plan projects would not have an incremental effect that is cumulatively considerable. Instead, Master Plan impacts to water quality are net beneficial, and would be expected to partially offset water quality impacts from development of the related projects which would increase impervious surface area (homes, warehouses, restaurants, etc.). Each of the related projects would contribute non-point source pollutants to runoff that flows into surface waters tributary to the San Gabriel River. However, the cities along the corridor require implementation of BMPs in compliance with SUSMP. Overall, the cumulative effect with implementation of Master Plan is less than cumulatively considerable. Runoff quality from the watershed should improve over time as compared with existing conditions.

5.3.2.7 Land Use

Each of the proposed related projects and the Master Plan projects would require compliance with local zoning and land use regulations. Master Plan projects would be generally consistent with relevant land use policies. The cumulative impact on land use of all related projects is less than significant.

5.3.2.8 Noise

Cumulatively considerable noise impacts could occur in the event construction schedules overlapped for various projects in the same vicinity and the net effect was generation of noise in excess of local noise standards. However, the Master Plan and each of its Concept Design Studies, however, would not contribute to a significant noise impact. Further, since each project would be required to incorporate mitigation to reduce noise generation to the extent feasible, the cumulative effect would be less than significant. Operations related noise related to the Master Plan projects would be limited to infrequent maintenance and recreation use. Again, with compliance with local noise standards, cumulative impacts with the related projects would be less than significant.

5.3.2.9 Public Services and Utilities

The demand for utilities and public services at the Master Plan project sites would be extremely limited. Since the demand for these services by the related development projects would be coordinated with the relevant utilities, the cumulative demand for water, sewerage, electricity, telephone, police services, and fire services of the proposed project with the identified related projects would be less than significant.

5.3.2.10 Recreation

Development of the Master Plan projects will increase recreational opportunities throughout the corridor. This will serve the needs of limited number of new people residing in the proposed housing (total of 77 identified units) on the related projects list. The cumulative impacts is beneficial.

5.3.2.11 Traffic Impacts

Cumulatively considerable impacts could occur on traffic in the event construction schedules overlapped for various projects and the net effect was degradation of service to unacceptable volume/capacity ratios on specific roadway segments. The cumulative impact would then be considered significant, but temporary. It is anticipated that in this case, traffic mitigation would be required of each project to reduce LOS on the affected streets to "D." The cumulative impact would then be mitigated to a level of less than significant.

5.3.3 Cumulatively Beneficial Impacts of Other Areawide Plans

Restoration and environmental improvement are goals common to the relevant local and regional planning efforts detailed in **Sections 5.2.1** through **5.2.8**. Overall, construction of individual projects as part of the local and regional planning efforts together with implementation of projects under the proposed Master Plan would result in beneficial impacts on:

- Recreation – increased connectivity of trail systems and overall improved levels of service for San Gabriel Valley residents
- Biological resources – increased habitat linkages and overall acreage of open space; increased exotics removal within the river system

- Aesthetics – visual improvements in the watershed and along the river corridor; reduced trash
- Water quality – improvements from treatment (e.g., constructed wetlands) and from reduction of non-point source pollution within the watershed; beneficial impacts from upstream projects (e.g., Coyote Creek Watershed Plan) on downstream water quality
- Water conservation – increased groundwater volumes from stormwater infiltration projects and reduction in potable demand from reuse projects
- Education – increased interagency coordination and information exchange with the public; increased availability of interpretive material
- Data collection – increases in monitoring networks and quantity of data available for analysis and interpretation

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Section 6
Additional Analyses

This section contains additional environmental analyses required in the State CEQA Guidelines for environmental impact reports.

6.1 ALTERNATIVES

CEQA requires that an EIR consider a reasonable range of alternatives to a proposed project that can attain most of the basic project objectives, but has the potential to reduce or eliminate significant adverse impacts of the proposed project and may be feasibly accomplished in a successful manner, considering the economic, environmental, social and technological factors involved. As presented in Section 2, the Vision for the Master Plan (Proposed Project) is:

> *The San Gabriel River will be the corridor of an integrated watershed system while providing protection, benefit and enjoyment to the public.*

The following goals of the Master Plan support the vision for the San Gabriel River:

1. Habitat: Preserve and enhance habitat systems through public education, connectivity, and balance with other uses.

2. Recreation: Encourage and enhance safe and diverse recreation systems, while providing for expansion, equitable and sufficient access, balance, and multi-purpose uses.

3. Open Space: Enhance and protect open space systems through conservation, aesthetics, connectivity, stewardship, and multi-purpose uses.

4. Flood Protection: Maintain flood protection and existing water and other rights while enhancing flood management activities through the integration with recreation, open space, and habitat systems.

5. Water Supply and Water Quality: Maintain existing water and other rights while enhancing water quality, water supply, groundwater recharge, and water conservation through the integration with recreation, open space, and habitat systems.

6. Economic Development: Pursue economic development opportunities derived from and compatible with the natural aesthetic and environmental qualities of the river.

An EIR must evaluate the comparative merits of the alternatives (CEQA Guidelines Sections 15126.6(a), (d) and (e)). If certain alternatives are found to be infeasible, the analysis must explain the reasons and facts supporting that conclusion. Section 15126.6(d) also requires that, if an alternative would cause one or more significant effects in addition to those caused by the proposed project, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed. One of the alternatives analyzed must be

the "No Project" alternative (CEQA Guidelines Section 15126.6(e)). The EIR must also identify alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and should briefly explain the reasons underlying the lead agency's determination (CEQA Guidelines Section 15126.6(c)).

The Master Plan document does not detail any alternatives. Therefore, for the purposes of EIR analysis, this section evaluates the environmental effects of the following alternatives to the Master Plan:

- No Project
- Maximum Habitat Alternative
- Maximum Recreation Alternative
- Maximum Master Plan
- Specific Alternatives for Individual Master Plan Elements

6.1.1 No Project Alternative

The No Project alternative under CEQA represents what is reasonably expected to occur in the future given well-defined trends and other parameters, such as adopted or on-going plans and programs (e.g., general plans and population projections), in the absence of the proposed project.

This section presents the following:

- No Project analysis for the overall Master Plan, which is the continuation of projects under the existing general plans and land use policies of the municipalities in the study area; and
- No Project analysis for the Concept Design Studies
  - Implementation of the Concept Design Studies without the Master Plan
  - "No build" assumption for the Concept Design Studies

6.1.1.1 No Project Analysis for the Overall Master Plan

In the absence of the Master Plan, the existing general plans and land use policies of the municipalities in the study area would continue to be in place (and updated as necessary), and apply to various types of projects implemented along the river corridor. A review of the Geographic Information System (GIS) database (accessed April, 2004) of general plan land use designations collected by the Southern California Association of Governments (SCAG) was conducted to describe the types of general land use designations within the Master Plan study area (1-mile wide corridor along 58 river miles of the San Gabriel River from its headwaters in the San Gabriel Mountains to its terminus at the Pacific Ocean) (see **Table 6-1**). In the absence of the Master Plan, restoration and enhancement projects with a nexus to the river could be proposed for areas within any of these land use designations.

Table 6-1
General Plan Land Use Designations in the Master Plan Study Area by Area and Percentage

General Plan Land Use Designation Type*	Approximate Area (Square Miles)	Approximate Percent of Total
Public Facilities	0.2	<1 %
Open Space/Parks	8.6	14 %
Industrial	12.1	20 %
Residential	32.5	54 %
Transportation	5.4	9 %
Commercial	0.7	1 %
Other/Mixed Use	1.1	2 %
Total	60.5	100 %

Source: Developed from SCAG GIS Database, accessed April 2004.
* Various names of general plan land use categories used by different jurisdictions were grouped and standardized into the land use designation types shown.

Under the No Project alternative, the 134 river corridor enhancement projects proposed or planned by stakeholders and identified in the Master Plan action grid would most likely still be implemented by their respective project leads. Other restoration projects in the river corridor not currently listed in the action grid are also anticipated. In the absence of the Master Plan, implementation of each project would be subject to a variety of local, state, and federal regulatory processes, including the existing general plan land use designations of the relevant municipality, as is currently the case. In addition, other projects of various types (those not identified in the Master Plan action grid, such as a housing development) would be implemented and would be subject to the same existing processes.

The Master Plan does not involve any modifications to existing general plans or other land use policies/regulations of the local jurisdictions within the study area. Therefore, under both the Proposed Project and the No Project alternative, the existing land use policies and regulations would continue to guide development within the Master Plan study area.

However, under the No Project alternative there would not be any unifying planning process or Master Plan document to guide future projects in the river corridor. In the absence of the Master Plan, future projects would not be compared to the objectives and performance criteria defined in the Master Plan, and the individual projects may not properly consider the design guidelines advocated by the Master Plan. Therefore, the focus of the Master Plan on integration and multi-use would be lost. Similarly, a facilitated mechanism for information sharing, building on past experience, public education, integration of monitoring systems and cost sharing (including coordination of grant applications) would not exist. Under No Project, no momentum for restoration efforts along the San Gabriel River would be built. Without the Master Plan, identification of opportunities for new river corridor enhancement projects may also be reduced since the spatial analysis and mapping completed for the project would not be widely adopted.

Under the No Project alternative, the environmental benefits that would result from the collaborative process and the multi-objective planning approach advocated by the Master Plan would be reduced as described below for specific resource areas:

- Biological resources – reduced consistency of restoration projects, possible reduction in the use of native species and therefore reduced habitat values, no planned wildlife corridors or linkages would be established, reduced coordination for invasive species removal and therefore potentially reduced success of individual efforts
- Recreation – reduced integration of trails and reduced focus on underserved areas
- Open space – reduced integration of land acquisition, potentially reduced coordination of clean-up efforts
- Water resources – elimination of another coordination mechanism for TMDL and NPDES processes
- Aesthetics – reduced potential for common design elements for signs, fences, gates, etc.

Therefore, the No Project alternative is not considered environmentally superior to the Proposed Project.

6.1.1.2 No Project Alternative for the Concept Design Studies

The purpose of the Master Plan Concept Design Studies is to illustrate how the Master Plan goals of habitat, recreation and open space can be simultaneously accomplished. The five Concept Design Studies were selected from projects that had already been planned or proposed by various stakeholders along the river corridor. During the Master Plan planning process, the Steering Committee members participated in the selection of the Concept Design Studies (based on the process and selection criteria described in **Section 3.3.2.3**) and also provided input regarding the potential elements of the Concept Design Studies. This participation process and input by the Steering Committee members (and the resultant momentum for the project leads to implement the project) would not have taken place without the Master Plan planning process; however, the Concept Design Studies as projects would have eventually been implemented by their respective project leads in some form even without the Master Plan.

The design of each Concept Design Study as described in the Master Plan is preliminary and conceptual, and each project lead is conducting additional planning to further develop the project. While the effect of the Master Plan's participatory process on the final project description of the Concept Design Studies is not known, it is assumed that, without the Master Plan, the individual projects may not reflect the design guidelines or multi-use approach advocated by the Master Plan. However, implementation of the Concept Design Studies in the absence of the Master Plan would be expected to have the same or similar environmental impacts as detailed in **Sections 4.1** through **4.11**.

A second type of No Project alternative for the Concept Design Studies involves the "no build" assumption. Under the "no build" assumption, the Concept Design Study projects would not be implemented in any form. Since all five Concept Design Studies involve use of publicly owned properties and there is no reasonably predictable development proposed by others, the existing

uses are assumed to continue at all five sites under the "no build" assumption as described in **Table 6-2**.

Table 6-2
"No Build" Assumptions for the Concept Design Study Sites

Concept Design Study Site (Jurisdiction)	Zoning Designation*	General Plan Land Use Designation	Existing Use and Assumed Continued Use under the "No Build" Assumption
San Gabriel Canyon Spreading Grounds (City of Azusa)	C-3 and W	Conservation and Open Space	Public facilities (LADPW spreading grounds; City of Azusa water tanks, wells, and pumps)
Woodland Duck Farm (County of Los Angeles and City of Industry)	A-1, C-1, and M	Open Space, Recreation, and Low-Density Residential	Vacant and recreation (equestrian center)
San Gabriel River Discovery Center (County of Los Angeles)	O-S, A-1, and A-2	Open Space	Recreation and open space within Whittier Narrows flood control basin
Lario Creek (County of Los Angeles)	O-S, A-1, and A-2	Open Space	Public facilities, recreation, and open space Whittier Narrows flood control basin
El Dorado Regional Park (City of Long Beach)	P	Open Space and Park	Public park

* Zoning Designations (see also Section 4.7)

A-1:	Light Agricultural	M:	Industrial
A-2:	Heavy Agricultural	O-S:	Open Space
C-1:	Restricted Business	P:	Park
C-3:	Commercial	W:	Water Conservation

Under a "no build" No Project alternative for the Concept Design Studies, environmental impacts (primarily temporary impacts associated with construction of new facilities) associated with development of the sites would not occur (see Section header "Impacts of Implementing the Concept Design Studies" in **Sections 4.1 through 4.11**). For example, air pollutant emissions, noise, and traffic associated with earthwork and installation of new facilities at each of the sites would not occur. However, the No Project alternative with the "no build" assumption for the Concept Design Studies would not result in the beneficial effects described for the Concept Design Studies or meet project objectives since continuation of existing uses at the Concept Design Study sites would not result in enhancement of habitat, open space, recreation, flood protection, water quality, or water supply. Therefore, the No Project alternative for the Concept Design Studies is identified as environmentally inferior to the Proposed Project.

6.1.2 Maximum Habitat Alternative

The proposed Master Plan is designed to integrate and balance the goals established in the County of Los Angeles Board of Supervisors' resolution (habitat, recreation, and open space) and the additional goals identified by the Steering Committee (flood protection, water supply and water quality, and economic development). In contrast, the Maximum Habitat Alternative places the primary focus on meeting the habitat objective. This alternative de-emphasizes the recreation

element since certain forms of recreation (particularly active recreation) are generally not compatible with habitat preservation and enhancement. This alternative was defined to avoid or reduce environmental impacts associated with the proposed project related to: traffic, air pollutant emissions, and noise from active recreational use (as described in **Sections 4.11.4, 4.1.3,** and **4.8.4**); trampling of vegetation and disturbance to nesting behavior from human activities (as described in **Section 4.2.5**); and increases in stormwater runoff from creation of new parking lots at new parks (as described in **Section 4.6.3**). Under the Maximum Habitat Alternative, each future Master Plan project would maximize the opportunities for habitat preservation and enhancement available at each site. The recreation component of each project would consist mostly of passive forms of recreation that are compatible with the habitat component of the project (e.g., bird watching, wildlife appreciation, etc.). Active recreation (e.g., extensive trails, sports fields) that involves more intense human activity would not be incorporated into project design or would be minimized. This alternative is therefore defined as the River Corridor Master Plan which includes only the Habitat and Open Space elements (goals), objectives, and performance criteria (see **Tables 3-1** and **3-3** in **Section 3**).

Adverse impacts identified for the Proposed Project are primarily temporary impacts related to construction of new facilities. It is anticipated that impacts for all environmental topics would be less than significant after incorporation of mitigation. Therefore, this alternative does not avoid any significant unmitigable impacts identified for the Proposed Project but would have greater beneficial impacts on biological resources than the proposed Master Plan by encouraging a greater number of projects to maximize habitat enhancement and preservation of open space. The Maximum Habitat Alternative would mostly avoid potentially adverse impacts associated with the Recreation, Flood Protection, Water Quality, and Economic Development Elements (see tables summarizing the Impacts from Adopting the Master Plan Elements in **Sections 4.1 through 4.11**). This alternative would largely avoid the traffic, noise, and air pollutant emissions related to an increase in recreational visitor trips associated with active recreation. It would also minimize the potential for trampling of vegetation and disturbance to nesting behavior from human activities and mostly eliminate the need for new parking lots at parks thus avoiding increases in impervious surface area which increase stormwater runoff.

For this reason, and since this alternative would maximize habitat restoration efforts within the river corridor resulting in greater beneficial impacts on biological resources, it can be considered the environmentally superior alternative. However, this alternative would not encourage projects that provide active recreation to the communities along the river thus not meeting the Master Plan objectives to encourage and enhance *diverse* recreation systems. Where there are existing deficiencies in recreational resources, this alternative would fail to provide for expansion, equitable and sufficient access, balance and multi-purpose uses. Since it would fail to meet the goal of balancing habitat, recreation, and open space, as intended by the Board of Supervisors' resolution and as defined by the project objectives, it is rejected and not proposed for adoption by the Board and the other municipalities in the river corridor.

6.1.3 Maximum Recreation Alternative

The Proposed Project is designed to integrate and balance the goals established in the County of Los Angeles Board of Supervisors' resolution (habitat, recreation, and open space) and the additional goals identified by the Steering Committee (flood protection, water supply and water

quality, and economic development). In contrast, the Maximum Recreation Alternative places the primary focus on meeting the recreation objective, particularly through provision of opportunities for active recreation (e.g., development of sports fields). This alternative also de-emphasizes the habitat element since habitat enhancement and preservation are generally not compatible with active recreation. This alternative was defined to avoid or reduce environmental impacts associated with the proposed project related to creation of mosquito habitat and increase in liquefaction hazard from development of stormwater retention facilities (as described in **Sections 4.5.3** and **4.6.3**). Under the Maximum Recreation Alternative, each future Master Plan project would maximize the opportunities for providing recreational facilities, particularly those for active forms of recreation. The habitat component of each project would consist of landscaping, tree planting, and other forms of enhancements that are compatible with human activities. Restoration of habitat for sensitive species, for example, would be avoided or minimized under this alternative, since it would be incompatible with the more intense human activity associated with active recreation. This alternative is therefore defined as the River Corridor Master Plan which includes only the Recreation element (goal), objectives, and performance criteria (see **Table 3-2** in **Section 3**).

Adverse impacts identified for the Proposed Project are primarily temporary impacts related to construction of new facilities. It is anticipated that impacts for all environmental topics would be less than significant after incorporation of mitigation. Therefore, this alternative does not avoid any significant impacts identified for the Proposed Project but would have greater beneficial impacts on recreation than the proposed Master Plan by encouraging a greater number of projects to maximize recreational opportunities. The Maximum Recreation Alternative would mostly avoid potentially adverse impacts associated with the Habitat, Open Space, Flood Protection, Water Quality, and Economic Development Elements (see tables summarizing the Impacts from Adopting the Master Plan Elements in **Sections 4.1** through **4.11**). This alternative would avoid impacts associated with development of stormwater retention facilities such as an increase in mosquito breeding habitat or potential liquefaction concerns. However, this alternative would have increased operational impacts on traffic, air quality, and noise associated with recreational visitors as compared to the Proposed Project. In addition, this alternative would not encourage projects that provide habitat restoration and preservation of open space, reducing beneficial impacts on biological resources thus not meeting the Master Plan objectives to preserve and enhance habitat systems. Where there are existing degraded habitats, this alternative would fail to provide for public education, connectivity, and balance with other uses. Since it would fail to meet the goal of balancing habitat, recreation, and open space, as intended by the Board of Supervisors' resolution and as defined by the project objectives, it is rejected and not proposed for adoption by the Board and the other municipalities in the river corridor.

6.1.4 Maximum Master Plan

An alternative approach for the Master Plan that would meet the overall vision defined by the Steering Committee could be termed the "Maximum Master Plan". Under this alternative, the goal of the Master Plan would be to restore the river to a more natural state reminiscent of its condition prior to urban development. This alternative could include removal of the engineered features currently found on the river, including the dams and concrete- or riprap-lined channels that provide flood control and water supply benefits. Concrete removal would increase the roughness of the channel, which would increase the area required to convey the same amount of

flow. Without the concrete and riprap currently in place, vegetation growth would also increase, further limiting the capacity of the river to convey flood flows. Therefore, removal of concrete to re-naturalize the river would result in:

1. Significant flooding impacts from decreased flood control capacity currently designed into the system, or
2. Significant land use changes from expansion of the floodplain to accommodate flood flows, for example, the displacement of existing residential, commercial, and industrial land uses through building demolition and replacement with open space.

This alternative was not designed to and does not avoid any significant impact identified for the Proposed Project but could maximize beneficial impacts on biological resources, recreation, and open space. However, this alternative would have significant impacts on water supply, flooding, land use, population, and housing. Implementation of this alternative is therefore not environmentally superior to the Proposed Project and, at this time, is considered infeasible.

6.1.5 Specific Alternatives for Individual Master Plan Projects

For many of the future Master Plan projects, more than one project description will be considered. These alternatives may focus on balancing project objectives at specific sites. For example, recreation areas at the Woodland Duck Farm could be developed for active (e.g., soccer fields) or passive (e.g., open space) opportunities. Other alternatives will focus on operational issues. For example, two alternatives for modification of Lario Creek were initially defined: a dual flow model and a dual channel model (see **Section 3.3.3.4**). Overall, future definition of component-specific alternatives will focus on balancing the multiple uses of the sites to accommodate various interests and maximize beneficial effects.

6.2 GROWTH INDUCING IMPACTS

Section 15126.2(d) of the CEQA Guidelines states that an EIR should discuss "…the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment." Growth can be induced in a number of ways, including through the elimination of obstacles to growth, or through the stimulation of economic activity within the region.

The Proposed Project does not involve construction of new homes or businesses and does not include construction of new, potentially growth-inducing, infrastructure such as roads or potable water or wastewater systems. Minor improvements to existing roadways may be proposed to improve site-specific access and circulation. The Master Plan would encourage projects that include infiltration of stormwater which could increase the volume of available groundwater. Since no new potable water treatment or distribution systems are proposed, this is not considered growth inducing. The Proposed Project would provide recreation and open space benefits to areas that have already been developed with residential, commercial, and industrial uses. Therefore, it would not result in the elimination of obstacles to growth. No growth inducing impacts would occur.

6.3 CONSISTENCY WITH LOCAL AND AREAWIDE PLANNING

CEQA Guidelines Section 15125(d) requires that EIRs discuss any inconsistencies between the proposed project and applicable general plans and regional plans.

6.3.1 Local Zoning and General Plans

The corridor for the Master Plan transverses numerous municipalities. Site-specific analysis will be necessary for each individual project component to compare the zoning and land use of the site with the proposed use. The consistency of the Master Plan with applicable local plans is presented in **Section 4.7**. The types of general land use designations within the Master Plan study area are described in **Section 6.1.1**. As an environmentally beneficial project, most elements are anticipated to be consistent with local planning. For example, public facilities such as parks and open space are consistent with most land use and zone designations. In locations where proposed uses are not expressly allowed, a Conditional Use Permit (CUP) or zoning variance may be required for implementation of the specific component.

6.3.2 Air Quality Management Plan

As discussed in **Sections 4.1** and **6.2**, the project does not include development of housing or employment centers, and would not induce population or significant employment growth. Therefore, the project would not conflict with or obstruct the implementation of the Air Quality Management Plan developed by the SCAQMD.

6.3.3 SCAG Regional Comprehensive Plan and Guide

The Southern California Association of Governments (SCAG) is the metropolitan planning organization for six southern California counties: Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial. SCAG is mandated by both the federal and state governments to plan for transportation, growth management, hazardous waste management, and air quality throughout the region. As part of its mandate, SCAG develops demographic projections of each city and unincorporated community within its planning area. The Regional Comprehensive Plan and Guide (RCPG), published by SCAG, is intended to serve the region as a framework for decision-making with respect to the growth and changes that can be anticipated during the next 20 years and beyond (SCAG, 1996).

The proposed Master Plan is considered a regionally significant project by SCAG (see SCAG NOP letter in **Appendix B**). **Table 6-3** summarizes RCPG policies potentially relevant to the Master Plan. As an environmentally beneficial project, the project is considered to be consistent or neutral with regard to RCPG policies.

Table 6-3
Project Consistency with SCAG Regional Comprehensive Plan and Guide Policies

No.	Policy	Consistency with San Gabriel River Corridor Master Plan
Growth Management Chapter of Regional Comprehensive Plan and Guide		
3.03	The timing, financing, and location of public facilities, utility systems, and transportation systems shall be used by SCAG to implement the region's growth policies.	At this time, phasing and implementation of individual public facilities proposed under the Master Plan are not known. However, since the project is not growth inducing (see **Section 6.2**), it will not conflict with growth policies for the region. Construction and operation of the project will provide a limited number of both temporary and permanent jobs but is unlikely to impact housing.
3.18	Encourage planned development in locations least likely to cause adverse environmental impact.	The project includes development of public facilities including trails, education centers, parks, open space, and stormwater management facilities. The project is designed to enhance environmental conditions. For potentially adverse effects (especially those related to construction), mitigation measures are proposed where feasible. The Proposed Project does not involve development of residential, commercial, or industrial facilities.
3.22	Discourage development, or encourage the use of special design requirements, in areas with steep slopes, high fire, flood, and seismic hazards.	The Proposed Project includes educational centers but does not include construction of any residences. All structures (buildings, pipelines, retention basins, etc.) will be constructed in consideration of site specific slope, fire, and seismic hazards. Regarding flood protection, one of the Master Plan goals is to: "Maintain flood protection and existing water and other rights while enhancing flood management activities through the integration with recreation, open space and habitat systems."
3.23	Encourage mitigation measures that reduce noise in certain locations, measures aimed at preservation of biological and ecological resources, measures that would reduce exposure to seismic hazards, minimize earthquake damage, and to develop emergency response and recovery plans.	Program-level and site-specific mitigation measures for these resource topics have been identified in the Program EIR (see **Sections 4.2, 4.4 and 4.8**). Additional site-specific mitigation measures will be developed in second-tier environmental documents as necessary. Additionally, Master Plan goals include: "Preserve and enhance habitat systems through public education, connectivity, and balance with other uses."
3.27	Support local jurisdictions and other service providers in their efforts to develop sustainable communities and provide, equally to all members of society, accessible and effective services such as: public education, housing, health care, social services, recreational facilities, law enforcement, and fire protection.	The project has been developed in cooperation with and input from the Steering Committee members, whose members includes over 80 municipalities, regulators, service providers, and organizations. The project proposes to provide opportunities for environmental education and recreational facilities to communities throughout the San Gabriel River corridor. See **Section 4.10.1** regarding the existing levels of recreational opportunities in the planning area.

Table 6-3 (Continued)
Project Consistency with SCAG Regional Comprehensive Plan and Guide Policies

No.	Policy	Consistency with San Gabriel River Corridor Master Plan
Regional Transportation Plan Policies		
4.02	Transportation investments shall mitigate environmental impacts to an acceptable level.	The Proposed Project includes improvements to existing, and installation of new, facilities to increase the connectivity of bicycle and pedestrian transportation systems (bridges, trails, gateways, and access points). Aside from the addition of new parking, the project does not expand the capacity of motor vehicle transportation systems. At some locations (e.g., Woodland Duck Farm) improvements to vehicle access points to improve circulation are proposed. Construction of project elements would result in temporary traffic impacts. Mitigation measures are identified in **Section 4.11** to minimize these effects.
4.04	Transportation Control Measures shall be a priority.	
4.16	Maintaining and operating the existing transportation system will be a priority over expanding capacity.	
Air Quality Chapter Core Actions		
5.07	Determine specific programs and associated actions needed (e.g., indirect source rules, enhanced use of telecommunications, provision of community based shuttle services, provision of demand management based programs, or vehicle-miles-traveled/emission fees) so that options to command and control regulations can be assessed.	Project-related adverse impacts on air quality and transportation would be mostly limited to short-term construction impacts. Air quality is discussed in **Section 4.1** and Transportation is discussed in **Section 4.11**. Mitigation measures are identified in both sections in order to reduce project-related effects. Indirectly, project-related improvements in trail systems could have a beneficial impact on air quality by increasing pedestrian and bicycle travel. Land use issues are discussed in **Section 4.7**.
5.11	Through the environmental document review process, ensure that plans at all levels of government (regional, air basin, county, sub-regional and local) consider air quality, land use, transportation and economic relationships to ensure consistency and minimize conflicts.	
Open Space Chapter Ancillary Goals		
9.01	Provide adequate land resources to meet the outdoor recreation needs of the present and future residents in the region and to promote tourism in the region.	The Proposed Project includes development of new parks, playgrounds, greenways, and natural areas along the San Gabriel River. Access to existing and proposed facilities would be enhanced by the proposed improvements to trails, fencing, bridges and gateways.
9.02	Increase the accessibility to open space lands for outdoor recreation.	
9.03	Promote self-sustaining regional recreation resources and facilities.	
9.04	Maintain open space for adequate protection of lives and properties against natural and man-made hazards.	

Table 6-3 (Continued)
Project Consistency with SCAG Regional Comprehensive Plan and Guide Policies

No.	Policy	Consistency with San Gabriel River Corridor Master Plan
9.05	Minimize potentially hazardous developments in hillsides, canyons, areas susceptible to flooding, earthquakes, wildfire and other known hazards, and areas with limited access for emergency equipment.	The proposed project includes educational centers but does not include construction of any residences. All structures (buildings, pipelines, retention basins, etc.) will be constructed in consideration of site specific fire, flood and seismic hazards. As described in the Master Plan goals, project elements will be designed to maintain existing levels of flood protection.
9.06	Minimize public expenditure for infrastructure and facilities to support urban type uses in areas where public health and safety could not be guaranteed.	The project involves construction of recreational, educational, open space, and water resources facilities throughout an existing urban corridor.
9.07	Maintain adequate viable resource production land, particularly lands devoted to commercial agriculture and mining operations.	Aside from plant nurseries, lands in agricultural production are not present in the planning area. For the project elements identified to date, one plant nursery (at Woodland Duck Farm) may be impacted. This property is leased by the nursery operator. Since this nursery could be relocated, the change in land use at this project site is not considered to significantly impact viable resource production land. Development of project elements at existing gravel mines has not yet been specifically defined. Future elements could include multi-use stormwater management and recreational facilities at these sites as part of closure procedures for the mines.
9.08	Develop well-managed viable ecosystems or known habitats of rare, threatened and endangered species, including wetlands.	The project includes development of wetlands at numerous sites (e.g., Woodland Duck Farm, San Gabriel River Discovery Center, Lario Creek, and El Dorado Regional Park) and other enhancements of wildlife habitat areas (e.g., exotics removal or revegetation).
Water Quality Chapter Recommendations and Policy Options		
11.02	Encourage "watershed management" programs and strategies, recognizing the primary role of government in such efforts.	As described in **Section 2**, the vision and goals of the Master Plan are to develop the river corridor as an integrated watershed system that enhances habitat, provides recreational benefits, and protects open space while maintaining and enhancing flood protection and water resources. As listed in **Table 2-1**, the project is a cooperative effort involving numerous governmental agencies.
11.03	Coordinate watershed management planning at the sub-regional level by: (1) providing consistent regional data; (2) serving as a liaison between affected local, state, and federal watershed management agencies; and (3) ensuring that watershed planning is consistent with other planning objectives (e.g., transportation, air quality, and water supply).	The project has been developed in cooperation with and input from the Steering Committee members, who represent over 80 federal, state, and local agencies and groups related to natural resources management.

Table 6-3 (Continued)
Project Consistency with SCAG Regional Comprehensive Plan and Guide Policies

No.	Policy	Consistency with San Gabriel River Corridor Master Plan
11.05	Support regional efforts to identify and cooperatively plan for wetlands to facilitate both sustaining the amount and quality of wetlands in the region and expediting the process for obtaining wetlands permits.	The project includes development of wetlands at numerous sites (e.g., Woodland Duck Farm, San Gabriel River Discovery Center, Lario Creek, and El Dorado Regional Park) and other enhancements of wildlife habitat areas (e.g., exotics removal or revegetation).
11.07	Encourage water reclamation throughout the region where it is cost-effective, feasible, and appropriate to reduce reliance on imported water and wastewater discharges. Current administrative impediments to increase use of wastewater should be addressed.	Project goals include: "Maintain existing water and other rights while enhancing water quality, water supply, groundwater recharge, and water conservation through the integration with recreation, open space, and habitat systems." For example, the project includes replacement of the water supply for the lakes at El Dorado Regional Park with a non-potable source. Additionally, implementation of some of the Master Plan elements will increase local groundwater supply by infiltrating stormwater in stormwater management facilities.

Source of Policies: SCAG, 1996 and SCAG comment letter on the NOP dated May 7, 2003 (see **Appendix B**).

6.4 PROJECT IMPACT SUMMARY

6.4.1 Significant, Irreversible Environmental Changes

CEQA Guidelines (Sections 15126 and 15127) require that an EIR identify any significant irreversible changes that would result from project implementation. Section 15126.2(c) of CEQA Guidelines provides guidance as to what sorts of changes might be considered irreversible. Such changes include commitment of nonrenewable resources to uses that future generations will probably be unable to reverse and environmental accidents that could occur as a result of the project.

No significant, irreversible impacts have been identified for the Master Plan. Construction of the project components and, to a lesser extent project maintenance, would result in the consumption of nonrenewable vehicle and equipment fuels. However, the volume of this fuel use is considered limited and less than significant. Additionally, mitigation measure A-14 (Section 4.1) will be considered by the County during the implementation of components with more extensive construction. This measure calls for the use of alternative fuel vehicles and equipment to the extent feasible and would reduce the unavoidable consumption of traditional fossil fuels from implementation of the project.

6.4.2 Significant Unavoidable Impacts

An EIR must address any significant effect on the environment that cannot be avoided if the project is implemented (Public Resources Code Section 21100(b)(2)(B)). Based on the programmatic analyses presented in this document, adoption and implementation of the proposed Master Plan would not result in significant unavoidable impacts on the environment. It is anticipated that mitigation measures will be identified in second-tier CEQA documents for each of the project components that would reduce adverse environmental impacts (mostly related to short-term construction effects) to less than significant levels.

6.4.3 Impacts Found to be Less Than Significant

Table 6-4 summarizes potential environmental impacts of the Proposed Project found to be less than significant, as well as beneficial impacts and impacts mitigated to levels of less than significant, as required by Public Resources Code section 21100(c).

Table 6-4
Summary of Less than Significant Impacts

Topic	Beneficial Impact	Less than Significant Impact		Potentially Significant Impact but Mitigation Identified to Reduce Impacts Below a Level of Significance
		No Mitigation Proposed	Mitigation Identified to Further Reduce Adverse Effects	
Aesthetics	X	X		
Agricultural Resources		X		
Air Quality		X	X	X
Biological Resources	X	X	X	X
Cultural Resources		X	X	X
Geology and Soils		X		X
Hazards and Hazardous Materials		X		X
Hydrology and Water Quality	X	X	X	X
Land Use	X	X		
Mineral Resources		X		X
Noise		X		X
Population and Housing		X		
Public Services		X	X	X
Recreation	X	X		X
Traffic and Transportation		X	X	X
Utilities		X	X	X

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Appendix A
References, Glossary, and Report Preparation

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A.2 ACRONYMS AND ABBREVIATIONS

AAM	annual arithmetic mean
AFY	acre-feet per year
ALWD	Azusa Light and Water Department
AMC	Azusa Municipal Code
AQMP	Air Quality Management Plan
AVR	average vehicle ridership
BACM	Best Available Control Measures
BMPs	Best Management Practices
CAAQS	California Ambient Air Quality Standards
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CASQA	California Stormwater Quality Association
CDC	Center for Disease Control
CDFG	California Department of Fish and Game
CDHS	California Department of Health Services
CDWR	California Department of Water Resources
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
cfs	cubic feet per second
cm/yr	centimeter per year
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNG	compressed natural gas
CNPS	California Native Plant Society
CO	carbon monoxide
COE	United States Army Corps of Engineers
CRA	California Resources Agency
CSPUP	California State Polytechnic University, Pomona
CWA	Clean Water Act
DAMP	Orange County Stormwater Program 2003 Drainage Area Management Plan
dB	decibel
dBA	decibels using “A” weighted sound level
DSOD	Division of Safety of Dams, California Department of Water Resources
EIR	Environmental Impact Report
EPA	United States Environmental Protection Agency
ESA	Environmental Site Assessment
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FONSI	Finding of No Significant Impact
g	gravity
GLAVCD	Greater Los Angeles Vector Control District

HABS	Historic American Buildings Survey
HAER	Historic American Engineering Record
HALS	Historic American Landscapes Survey
LACDA	Los Angeles County Drainage Area
LACDPR	County of Los Angeles Department of Parks and Recreation
LACFD	Los Angeles County Fire Department
LACSD	Sanitation Districts of Los Angeles County
LADPW	County of Los Angeles Department of Public Works
LASD	Los Angeles County Sheriff's Department
LASGRWC	Los Angeles and San Gabriel Rivers Watershed Council
L_{eq}	Equivalent Noise Level
LOS	level of service
LUST	Leaking Underground Storage Tank
MCL	Maximum Contaminant Level
mgd	million gallons per day
mm/yr	millimeter per year
mph	miles per hour
MSGBW	Main San Gabriel Basin Watermaster
msl	mean sea level
MTA	Los Angeles County Metropolitan Transportation Agency
NAAQS	National Ambient Air Quality Standards
NDMA	N-nitrosodimethylamine
NEPA	National Environmental Policy Act
NO_2	nitrogen dioxide
NOP	Notice of Preparation
NPDES	National Pollution Discharge Elimination System
NPS	National Park Service
OCFA	Orange County Fire Authority
OCVCD	Orange County Vector Control District
OHP	State Office of Historic Preservation
OMR	California Department of Conservation Office of Mine Reclamation
OSD	Orange County Sheriff's Department
PAH	polyaromatic hydrocarbon
PCE	perchloroethylene
PM10	particulate Matter less than 10 microns in diameter
PM2.5	particulate Matter less than 2.5 microns in diameter
PRC	California Public Resources Code
Regional Board	Los Angeles Regional Water Quality Control Board
RIO Trust	Riverlands Preservation Trust of the Rio San Gabriel
RMC	San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy
ROC	reactive organic compounds
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District

SCCIC	South Central Coastal Information Center
SCE	Southern California Edison
SCGC	Southern California Gas Company
SEA	Significant Ecological Area
SGVCOG	San Gabriel Valley Council of Governments
SGVMVCD	San Gabriel Valley Mosquito and Vector Control District
SMARA	Surface Mining and Reclamation Act of 1975
SMGB	State Mining and Geology Board
SO_2	sulfur dioxide
SO_x	sulfur oxides
SWPPP	stormwater pollution prevention plan
TCE	trichloroethene
TDS	Total Dissolved Solids
TMDL	Total Maximum Daily Load
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
V/C ratio	volume/capacity ratio
VOC	volatile organic compound
WCA	Watershed Conservation Authority
WQA	San Gabriel Basin Water Quality Authority
WRD	Water Replenishment District of Southern California
WRP	Water Reclamation Plant

A.3 GLOSSARY

100-year discharge	The rate of flow or volume of water discharged during an 100-year frequency flood (a flood which has a two percent chance of occurring in any given year)
acre-feet	A quantity of volume of water that covers one acre to a depth of one foot; equal to 43,560 cubic feet or 325,851 gallons.
aquiclude	A geologic unit (e.g., rock, clay, shale, etc.) that does not transmit water readily and acts as a barrier to the flow of groundwater.
discharge	The rate of flow or volume of water passing a point in a given time. Expressed using a unit of volume over time, typically cubic feet per second.
distributary	A river branch flowing away from the main stream
dry well	An excavated pit lined with gravel or other porous materials to infiltrate stormwater
fecal coliform bacteria	A group of organisms common to the intestinal tracts of humans and animals. The presence of fecal coliform bacteria in water, wastewater, or biosolids is an indicator of pollution and possible contamination by pathogens.
Holocene	10,000 years ago to today
Holocene	10,000 years ago to the present
impervious (impermeable)	Description of a material that prevents passage of water into the underlying soils. Examples of impervious surfaces include asphalt, concrete, roof tops, clay, and compacted soils.
infiltration	The absorption of water into the ground. The rate at which infiltration occurs is expressed in terms of depth per unit time, such as inches/hour.
invert width	Width of a channel bottom
Mesozoic	65 to 245 million years ago
non-point source pollution	Storm water conveyed pollution that is not identifiable to one particular source, and is occurring at locations scattered throughout the drainage basin. Typical sources include erosion, agricultural activities, and runoff from urban lands.
peak discharge (or peak flow)	The maximum instantaneous rate of flow during a storm, usually expressed in cubic feet per second.
perched groundwater	A separate body of groundwater lying (perched) above the main body of groundwater, separated from the main body by an unsaturated, impermeable layer (e.g., clay or rock). Perched groundwater usually occur where there are discontinuous impermeable layers.
Pleistocene	1.8 million years ago to 10,000 years ago

Pleistocene	57.8 to 65 million years ago
Precambrian	544 to 4,600 million years ago
recycled water or reclaimed water	Wastewater that is suitable for a beneficial use as a result of treatment. The degree of treatment provided for recycled water depends on the quality of water needed for the specific beneficial use and for public health protection and may include effluent from Primary Wastewater Treatment, Secondary Wastewater Treatment, Tertiary Wastewater Treatment, or Advanced Treatment.
runoff	The excess portion of precipitation that does not infiltrate into the ground, but "runs off" and reaches a stream, water body or storm drain.
saltwater intrusion	Subsurface movement of ocean water into freshwater groundwater basins in coastal and inland areas, usually caused by excessive groundwater pumping.
sediment	Soil material that is transported from its site of origin by water.
sedimentation	The process by which sand and mud carried by water settles down to and accumulates on the bottom of a natural (river, stream, lake) or manmade (reservoirs, basins, tanks) body of water.
swale	A shallow, depressed strip of land in which the filtering action of grass and soil infiltration are utilized to remove pollutants from urban stormwater.
unconfined aquifer	An aquifer that is not separated from the ground surface by an impermeable geological boundary
vadose zone	A layer of unsaturated soil above the groundwater table
watershed	The area or region of land draining into a common outlet such as a river or body of water. Synonymous with river basin or drainage basin.

A.4 PREPARERS OF THE PROGRAM EIR

County of Los Angeles Department of Public Works (Lead Agency)
Daniel Rynn, Watershed Manager, Watershed Management Division
Martin Moreno, Watershed Management Division
Ramy Rydman, Watershed Management Division
Bruce Hamamoto, Watershed Management Division
Daniel Bobadilla, Watershed Management Division

MWH (EIR Consultant)
Sarah Garber, Project Manager
Akiko Kawaguchi, Project Scientist
Dr. Janet Fahey, P.E., Technical Reviewer
Tracy Wilcox, Hydrologist
Meha Patel, Project Analyst

BonTerra Consulting (Biological Resources Consultant)
Thomas E. Smith, Jr., AICP, FSMPS

Greenwood and Associates (Cultural Resources Consultant)
John Foster, R.P.A.

Garland Associates (Traffic and Transportation Consultant)
Richard Garland, Principal Traffic Engineer

A.5 ORGANIZATIONS AND PERSONS CONSULTED

Brandt, N. – Irvine Ranch Water District

Denger, L. – Irvine Ranch Water District

Flowers, L. – San Gabriel Valley Municipal Water District

Fujioka, K. – San Gabriel Valley Mosquito and Vector Control District

Jallo, D. – Natural Areas Superintendent for Whittier Narrows, County of Los Angeles Department of Parks and Recreation

Mendiola, A. – City of Long Beach Department of Parks, Recreation and Marine

Meyer, R. – Orange County Vector Control District

Musick, S. – Riverlands Preservation Trust of the Rio San Gabriel

Scrivens, J. – City of Industry.

Shaw, C. – San Gabriel County Water District

Shaw, M. – Greater Los Angeles County Vector Control District

Simpson, F. – San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy

Stark, L. – Los Angeles County Department of Regional Planning

Appendix B
Notice of Preparation and Comments Received

Appendix B contains the following materials:

- Notice of Preparation (NOP) for the Program EIR (April, 2003)
- Summary of oral comments received at the public scoping meeting
- Written comments received on the NOP

Notice of Preparation

To: Agencies, Organizations, and Interested Parties

Subject: Notice of Preparation of a Draft Program Environmental Impact Report in Compliance with Title 14, (CEQA Guidelines) Sections 15082(a), 15103, and 15375 of the California Code of Regulations

County of Los Angeles Department of Public Works (DPW) will be the Lead Agency under the California Environmental Quality Act (CEQA) for the preparation of a Program Environmental Impact Report (Program EIR) for the San Gabriel River Master Plan.

Agencies: We request the views of your agency as to the scope and content of the environmental information which is relevant to your agency's statutory responsibilities in connection with the project. Your agency will need to use the EIR prepared by the County of Los Angeles Department of Public Works when considering your permit or other approval for the project.

Organizations and Interested Parties: Comments and concerns regarding the environmental issues associated with construction and operation of this project are requested from organizations and individuals.

Project Title:	**San Gabriel River Master Plan**
Lead Agency Contact Information:	Mr. Marty Moreno County of Los Angeles Department of Public Works Watershed Management Division P.O. Box 1460 Alhambra, CA 91802-1460 Phone: (626) 458-4119 Fax: (626) 457-1526 E-mail: MMORENO@ladpw.org
Lead Agency Project Role:	On September 7, 1999, the County of Los Angeles Board of Supervisors unanimously passed a motion to instruct the Department of Public Works (DPW) to prepare a San Gabriel River Master Plan for Board approval, with the assistance of the Departments of Regional Planning and Parks and Recreation, and the National Park Service. DPW established a Steering Committee composed of cities along the river; water and regulatory agencies; interested community, business, and environmental groups; and other stakeholders. Steering Committee members have met about 35 times over three years. DPW and the Rivers and Mountains Conservancy (RMC) formed a Joint Powers Authority (JPA) that will seek to fund projects of mutual interest. The JPA also contemplates acquisition and protection of lands for watershed protection, conservation, natural open space, and recreational purposes. DPW will also pursue projects on its properties along the San Gabriel River, focusing on those related to flood management, water quality and conservation, and groundwater recharge.

Lead Agency Project Role (Continued):	The Master Plan will include projects along the San Gabriel River initiated by cities and other stakeholder organizations. DPW will support projects that are planned and implemented along the river corridor in a manner that is consistent with the San Gabriel River Master Plan.
Project Location:	The Master Plan will focus on the 58-mile long San Gabriel River (from Cogswell Dam in the San Gabriel Mountains to the Pacific Ocean, **Figure 1**). While the corridor is defined as the Los Angeles County Flood Control District right-of-way, the Master Plan also addresses connections between the river and significant resources and opportunities that lie adjacent to or near the river such as relevant and significant biological, hydrologic, community, historic, and cultural resources. The corridor is primarily located within Los Angeles County; the mouth of the river is bordered by land within both Los Angeles and Orange counties. Cities within the San Gabriel River corridor include: • Arcadia • Azusa • Baldwin Park • Bellflower • Cerritos • City of Industry • Downey • Duarte • El Monte • Irwindale • Lakewood • Long Beach • Los Alamitos • Norwalk • Pico Rivera • Santa Fe Springs • Seal Beach • South El Monte • Whittier
Project Description:	Engineered improvements currently present along the San Gabriel River provide flood protection for surrounding urban development. These improvements have also allowed development almost to the river's edge, decreasing open space and altering natural habitats. The San Gabriel River Master Plan will be a consensus-based document that will recognize and address a renewed interest in recreation, open space, and habitat, while also seeking to enhance and maintain flood protection, water conservation benefits, along with existing water rights. The Master Plan is expected to be ready for Board approval in early 2004. As defined by the Steering Committee, the vision for the project is: *The San Gabriel River will be the corridor of an integrated watershed system while providing protection, benefit and enjoyment to the public.* Project goals include: • Preserve and enhance habitat systems through public education, connectivity, and balance with other uses • Encourage and enhance safe and diverse recreation systems, while providing for expansion, equitable and sufficient access, balance, and multi-purposes uses • Enhance and protect open space systems through conservation, aesthetics, connectivity, stewardship, and multi-purpose uses • Maintain flood protection and existing water and other rights while enhancing flood management activities through the integration with recreation, open space, and habitat systems • Maintain existing water and other rights while enhancing water quality, water supply, groundwater recharge, and water conservation through the integration with recreation, open space, and habitat systems

Project Description (Continued):	Nine categories of river enhancement projects embody the goals of the Master Plan and serve as a framework to guide future projects by cities, agencies, and other stakeholders. Categories include: 1. Trail Enhancements – elements include: signage, fencing, landscaping with native plants and trees, trail surfacing appropriate to the river, lighting, site amenities, and gateways at river entrances and crossings 2. Educational Centers – educational centers to inform and educate visitors about the river and its environs 3. Bridges, Gateways and Connections – elements to reconnect the river with residential areas and commercial districts 4. Multiple Uses on Corridor Rights-of-Way – potential use of utility corridors for gardens, parks and trails and/or planting with native vegetation 5. Bio-Engineered Wetlands – stormwater-fed wetland areas; may also include groundwater infiltration 6. Flood Channel Enhancements – natural-looking terraces built over engineered levees or earthen levees set back from the river channel in less developed areas along the river 7. Land Reclamation - gravel pits, old parking lots, exhausted mines and unused land reclaimed as parks, residential and commercial development, restored habitat areas, "green" golf courses and river frontage 8. Recreational Activities - new and improved recreational and park facilities along the river (sports fields, playgrounds, and passive recreation) 9. Development Standards and Guidelines – Such as, model ordinance to outline landscape design, vegetation, surfacing, drainage engineering, roofing, building materials and other sustainable land use practices
Demonstration Projects:	To date, stakeholders have identified over 160 individual projects that could be included in the Master Plan. The Steering Committee will select five of these projects to demonstrate how project planning can simultaneously address the Master Plan goals of habitat, recreation, and open space. A schematic plan and site design, preliminary cost estimates, and likely funding sources will be identified for each of the demonstration projects. Selection as one of the five demonstration projects will not guarantee future funding or implementation.
Potentially Significant Environmental Effects:	At a programmatic level, the EIR will address: air quality, noise, traffic, and disturbance of cultural resources during project construction; water quality for elements with groundwater infiltration; impacts to existing recreational and biological resources; and health and safety.

Future Environmental Documentation:	In the future, as individual elements of the Master Plan are proposed for implementation, project proponents would review the Program EIR and determine whether or not the Program document sufficiently analyzes the environmental effects of the individual project. If the subsequent activity would have effects not covered by the Program EIR, a second-tier CEQA document (a Negative Declaration or an EIR) would then be prepared.
Related Documents:	Documents related to the proposed project are available for review at County of Los Angeles DPW headquarters in Alhambra (see contact information above).
NOP Review Period:	The County invites your written comments on the scope of the Program EIR. The public review period is scheduled to begin on April 29, 2003 and end on May 28, 2003. Due to the time limits mandated by CEQA, your response must be received no later than 30 days after receipt of this notice. Please indicate a contact person in your response and send your response to: Mr. Marty Moreno County of Los Angeles Department of Public Works Watershed Management Division P.O. Box 1460 Alhambra, CA 91802-1460
Public Scoping Meeting:	Date: A public scoping meeting will be held on **Monday, May 12, 2003**, as part of the regularly scheduled San Gabriel River Master Plan Steering Committee Meeting. Time: The Steering Committee Meeting will be held from 1:00 – 5:00 p.m.; the EIR will be discussed starting at approximately **4:00 p.m.** Location: County of Los Angeles Department of Public Works Conference Rooms A & B 900 S. Fremont Avenue, Alhambra, California 91803 All parties are welcome to attend and present environmental information that they believe should be addressed in the Program EIR.

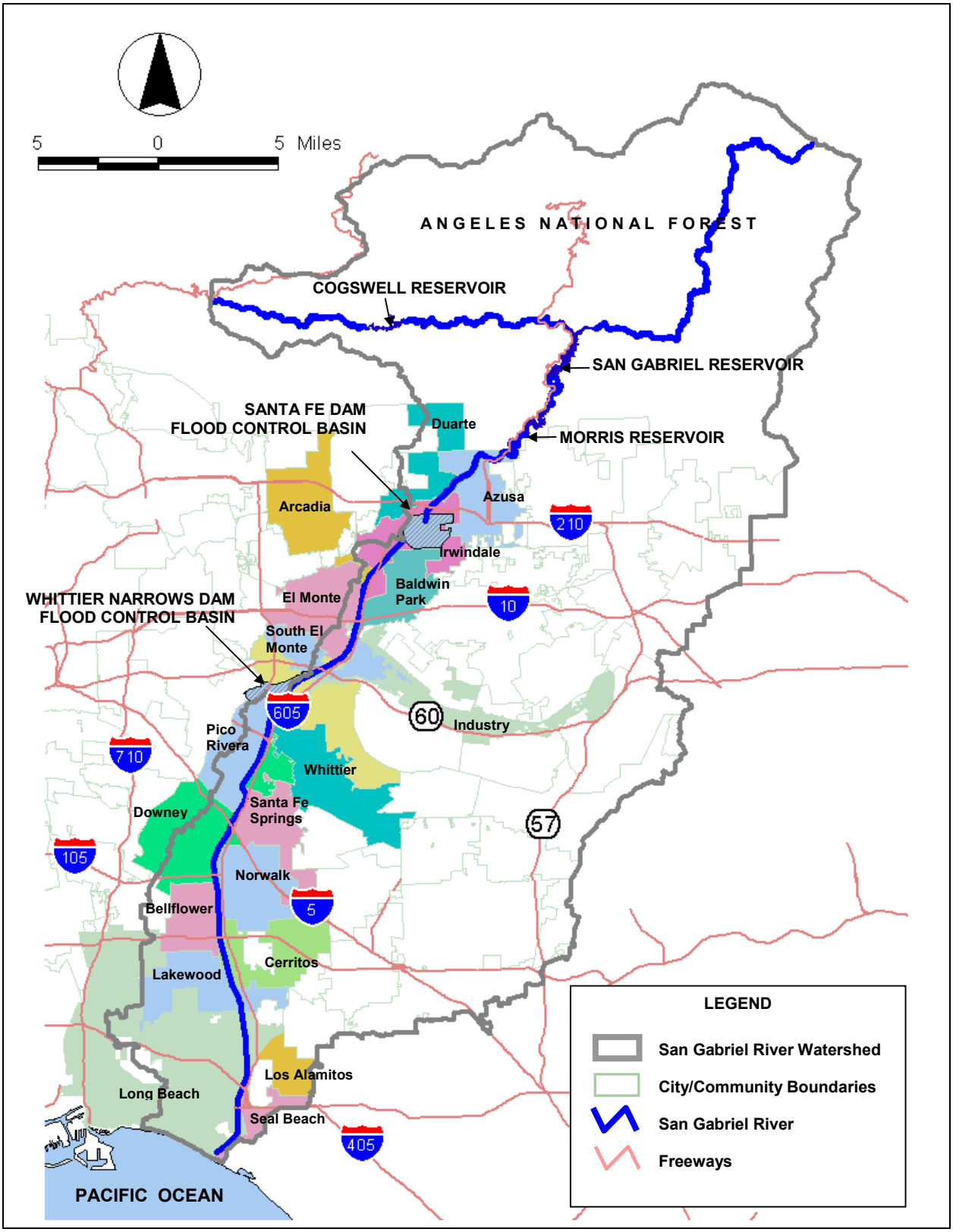
Martin Moreno
Signature

April 24 2003
Date

Martin Moreno
Printed Name

Sr Civil Engineer
Title

Figure 1
Project Area



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Summary of Oral Comments Received at the Public Scoping Meeting

A public scoping meeting was held on May 12, 2003 at the County of Los Angeles Department of Public Works headquarters in Alhambra for the San Gabriel River Corridor Master Plan Program EIR as a part of the Steering Committee meeting for the Master Plan.

The following oral comments and questions were received during the meeting:

- All groundwater and surface water rights in the Basin are fully adjudicated. It is essential to maintain the water supply.

- There is no unappropriated water in the San Gabriel River, and no water can be added or diverted without the authority of the Water Master.

- The San Gabriel River is the primary local water source for 7 million people.

- Area where drinking water wells are served by recharge should be mapped and delineated in the EIR. Identification of wells, recharge areas, and geology is needed.

- The perched groundwater should be mapped. Recharge of water above the Whittier Narrows would not be a problem, but excess recharge below Whittier Narrows could cause problems. Perched water now causes problems (e.g., on building foundations) along the 605 freeway especially closer to the coast, and this needs to be delineated in the Plan. There are injection wells being operated to counter saltwater intrusion.

- Water recharge in certain areas (e.g., areas of clay lenses near El Dorado Park) may cause problems for stability of structures.

- Relationship between the San Gabriel River watershed and the river corridor. Need to address the impact on the watershed from activities in the corridor.

- Flooding impact should be addressed.

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United States Department of Agriculture
Forest Service
San Gabriel River Ranger District
110 N. Wabash Ave.
Glendora, CA 91741
626-335-1251 Voice
626-574-5209 TTY

Watershed

File Code: 1900

Date: May 20, 2003

Marty Moreno
County of Los Angeles
Department of Public Works
Watershed Management Division
P.O. Box 1460
Alhambra, CA 91802-1460

Dear Mr. Moreno:

This letter is in regards to the Notice of Preparation of the San Gabriel River Master Plan and the scope of the Program EIR. The U.S. Forest Service strongly supports the development of a River Master Planning effort and commends the County for taking the lead in this endeavor.

As you know, the Angeles Forest, San Gabriel Canyon offers a wide variety of recreational uses. These recreational opportunities can be offered along many undeveloped stretches of the river corridor. We would like to see the County include recreational use at the San Gabriel Reservoir, Cogswell Reservoir and Morris Reservoir to include: picnicking, boating, fishing, hiking and camping. There are many natural benches there that would allow for easy access to the lake and meet the public's need for additional areas to recreate.

Many comments voiced during the River Planning Sessions are the need to keep the reservoirs clean and free of pollutants. I find the argument to keep people out of the reservoirs somewhat silly, when over 8 million people recreate in the waters within 1 mile upstream of the reservoir body which flows directly into the reservoirs.

Another issue I would like to see the Plan reflect is the goal of maintaining some kind of minimal flow below the reservoirs to maintain the riparian and aquatic fish habitats. This would involve insuring a year round minimum flow of 10 cfs. Biologist input should be sought to ensure the flow is adequate to support the desired outcome. Flood management practices can be modified to ensure a steady flow regime.

Should you have any questions, please don't hesitate to contact me.

Karen Forte for

MARTY DUMPIS
District Ranger

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road
Carlsbad, California 92009-4213

FACSIMILE TRANSMITTAL FORM

Date Sent: June 2, 2003 **Time Sent (PT):** 5:20 pm

Number of pages, INCLUDING this transmittal sheet: 4

TO:	FAX NUMBER:
Marty Moreno	626 457-1526

FAXED BY:

Fax No: (760) 918-0638

Phone No: (760) 431-9440

FOR: Jill Terp USFWS

SUBJECT: NOP for DEIR for San Gabriel River Master Plan

COMMENTS:

☞ **Please call Doreen Milligan at (760) 431-9440, ext 258, if you have problems receiving this fax.**

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road
Carlsbad, California 92009

In Reply Refer To:
FWS-LA-3539.1

JUN 0 2 2003

Marty Moreno
County of Los Angeles
Department of Public Works
Watershed Management Division
P.O. Box 1460
Alhambra, California 91802-1460

Re: Notice of Preparation of a Draft Environmental Impact Report for the San Gabriel River Master Plan, Counties of Los Angeles and Orange, California

Dear Mr. Moreno:

We have reviewed the above referenced Notice of Preparation (NOP) for a Draft Environmental Impact Report (DEIR) received by our office on May 2, 2003. The project proposes to develop a Master Plan that will focus on the 58-mile long San Gabriel River (from Cogswell Dam in the San Gabriel Mountains to the Pacific Ocean). While the corridor is defined as the Los Angeles County Flood Control District right-of-way, the Master Plan will address connections between the river and significant resources and opportunities that lie adjacent to or near the river, such as relevant and significant biological, hydrologic, community, historic, and cultural resources. The corridor is primarily located within Los Angeles County; the mouth of the river is bordered by land within both Los Angeles and Orange counties.

We offer the following comments and recommendations regarding project-associated biological impacts based on our review of the NOP and our knowledge of declining habitat types and species within Los Angeles County. We provide these comments in keeping with our agency's mission to work "with others to conserve, protect, and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people." Specifically, we administer the Endangered Species Act of 1973, as amended. We also provide comments on public notices issued for a Federal permit or license affecting the Nation's waters pursuant to the Clean Water Act.

To facilitate the evaluation of the proposed project from the standpoint of fish and wildlife protection, we request that the DEIR contain the following specific information:

1. A description of the environment in the vicinity of the project from both a local and regional perspective, including aerial photograph(s) of the area with the project site outlined.

2. A complete discussion of the purpose and need for the project and each of its alternatives.

3. A complete description of the proposed project, including the limits of any development, grading, and fuel modification zones.

4. Quantitative and qualitative assessments of the biological resources and habitat types that will be impacted by the proposed project and its alternatives. An assessment of direct, indirect, and cumulative project impacts to fish and wildlife associated habitats, particularly growth-accommodating effects of the project (e.g., increased population, increased development, increased traffic). All facets of the project (e.g., construction, implementation, operation, and maintenance) should be included in this assessment. Proposed developments in the surrounding area should be addressed in the analysis of cumulative impacts.

   The assessments should include a list of Federal candidate, proposed, or listed species; State-listed species; and locally sensitive species that are on or near the project site, including a detailed discussion of these species and information pertaining to their local status and distribution. We are particularly interested in any and all information and data pertaining to potential impacts to populations of federally listed species.

   The analysis of impacts to biological resources and habitat types should include detailed maps and tables summarizing specific acreages and locations of all habitat types, as well as the number and distribution of all Federal candidate, proposed, or listed species, State-listed species and locally sensitive species on or near the project site that may be affected by the proposed project or project alternatives.

5. A detailed discussion of measures to be taken to avoid, minimize, and offset impacts to biological resources.

6. A detailed analysis of impacts of the proposed project on the movement of wildlife and measures proposed to avoid, minimize, and offset impacts to wildlife movement.

7. An assessment of potential impacts to wetlands and jurisdictional waters of the United States. Section 404 of the Clean Water Act prohibits the unauthorized discharge of dredged or fill material into such waters, including wetlands. This section also provides that the U.S. Army Corps of Engineers (Corps) may issue permits for discharges of dredged or fill material into jurisdictional waters and wetlands. Potential areas of Corps jurisdiction should be evaluated and wetlands should be delineated using the methodology set forth in the Corps' Wetland Delineation Manual (Environmental Laboratory 1987). The DEIR should disclose all impacts to jurisdictional waters and wetlands and on lands currently owned by the Corps, and proposed measures to be taken to avoid and minimize impacts, and offset unavoidable impacts.

We appreciate the opportunity to comment on the referenced NOP for potential impacts to sensitive and endangered species, wildlife and wetlands. Should you have any questions pertaining to these comments, please contact Kerri Davis of my staff at (760) 431-9440.

Sincerely,

Jill Terp
for

Karen A. Goebel
Assistant Field Supervisor

Waterhed

DEPARTMENT OF TRANSPORTATION
DISTRICT 7, REGIONAL PLANNING
IGR/CEQA BRANCH
120 S. SPRING STREET
LOS ANGELES, CA 90012
PHONE (213) 897-4429
FAX (213) 897-1337

Flex your power!
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May 13, 2003

IGR/CEQA cs/030511
NOP
County of Los Angeles
San Gabriel River Master Plan
Vic. LA-605-VAR
SCH# 2003041187

Mr. Marty Moreno
County of Los Angeles
Department of Public Works
900 S. Fremont Ave.
P.O. Box 1460
Alhambra, CA 91802-1460

RECEIVED
MAY 20 2003
DEPT. PUBLIC WORKS
PROJECT MANAGEMENT DIVISION 11

Dear Mr. Moreno:

Thank you for including the California Department of Transportation in the environmental review process for the above-mentioned program document. Based on the information received, we have the following comments:

A traffic study will be needed to evaluate the project's overall impact on the State transportation system including I-605 (San Gabriel River Freeway) as well as State Route 39, I-210, I-10, State Route 60, I-5, I-105, State Route 91, I-405, State Route 22 and State Route 1. The traffic study should include, but not be limited to:

1) Assumptions used to develop trip generation/distribution percentages and assignments.

2) An analysis of ADT, AM and PM peak hour volumes for both the existing and future (year 2025) conditions. This should also include level-of-service calculations using the HCM 2000 methodology. The analysis should include the following:

- existing traffic volumes
- project and cumulative traffic volumes
- future traffic volumes projections for year 2025
- existing level-of-service (LOS) calculations
- project and cumulative level-of-service (LOS) calculations

3) Any mitigation measures proposed to alleviate traffic impact should include, but not be limited to the following:

- financing
- scheduling considerations
- implementation responsibilities
- monitoring plan

Any stormwater facilities that conforms with the National Pollution Discharge Elimination System (NPDES) requirements relating to construction activities and Post-Construction Storm Water Management should be fully discussed. To the maximum extent practicable, Best Management Practices will need to be implemented to address storm water runoff from new development.

Caltrans has proposals to widen transportation facilities which cross the San Gabriel River. These proposed transportation improvements include State Route 60 and Interstate 5 corridors.

The locations of proposed groundwater recharging facilities should be identified in the report.

Any alteration to the riverbed including extraction operations, changes to the channel bed or river bank which could affect channel degradation, excessive local and general scouring, lateral movement of the channel and the ability of the river to maintain a stable channel which may have an impact on bridge structures and substructures will need to be fully discussed.

Any activity to be performed within the State Right-of-way will need a California Department of Transportation Encroachment Permit.

We recommend that construction related truck trips on State highways be limited to off-peak commute periods. Transport of over-size or over-weight vehicles on State highways will need a Caltrans Transportation Permit.

Since the Department and other local agencies have projects proposed for the study area, including federally funded projects requiring FHWA approval, we would appreciate advance copies of the DEIR and traffic study to facilitate internal Departmental review. Copies should be sent to the undersigned :

Stephen Buswell, IGR/CEQA Program Manager
California Department of Transportation
District 7, Office of Regional Planning
120 South Spring Street
Los Angeles, CA 90012

If you have any questions regarding our comments, refer to our internal IGR/CEQA Record # cs/030511, and please do not hesitate to contact me at (213) 897-4429.

Sincerely,

STEPHEN BUSWELL
IGR/CEQA Branch Chief

cc: Mr. Scott Morgan, State Clearinghouse

DEPARTMENT OF TRANSPOR
District 12
3337 Michelson Drive, Suite 380
Irvine, CA 92612-8894
PHONE (949)724-2010
FAX (949) 724-2019
TTY: (949) 756- 7813

Post-it® Fax Note 7671	Date 5-28-03 # of pages 4 + two
To Marty Moreno	From Becky Shuyler-Lacy
Co./Dept. LASPWD	Co. Caltrans
Phone 626-458-4124	Phone 949-440-4466
Fax # 626-457-1526	Fax #

Flex your power! energy efficient!

FAX & MAIL

May 29, 2003

Mr. Marty Moreno
County of Los Angeles
Department of Public Works
Watershed Management Division
P.O. Box 1460
Alhambra, CA 91802-1460

File: IGR/CEQA
SCH#: 2003041187
Log #: 1248
Interstates 405, 605 & PCH

Subject: **Notice of Preparation (NOP) for the San Gabriel River Master Plan Draft Environmental Impact Report (DEIR)**

Dear Mr. Moreno;

Thank you for the opportunity to review and comment on the document cited above. This Master Plan proposes an integrated watershed system achieving various goals and providing a wide variety of activities including but not limited to open space and habitat protection, water conservation benefits, flood safety, groundwater recharge and public recreation The nearest state freeways are Interstates 405, 605 and Pacific Coast Highway.

Caltrans District 12 status is a responsible agency and we have the following comments:

1. Discussion should be included in the DEIR about impacts (temporary or otherwise) to posted bike trails within or adjacent to the channel (please refer to the 2001 OCTA Strategic Bike Plan). Please note that if bike trails are temporarily removed or blocked, a bike trail 'detour' will need to be provided;

2. All work within the State right-of-way must conform to Caltrans' Standard Plans and Standard Specifications for water pollution control, including preparation of a Water Pollution Control Program (WPCP) or Storm Water Pollution Prevention Plan (SWPPP) as required. (See attachment: *Water Pollution Control Provisions)*;

3. Please note that all projects involving soil disturbing activities should pay extra attention to storm water pollution control during the "rainy season" (October 1st – April 30th) and follow

4. the water pollution control Best Management Practices (BMPs) to minimize impact to the receiving waters;

5. An Encroachment Permit from Caltrans may be required if any project activities or project improvements encroach upon Caltrans' right-of-way or Pacific Coast Highway. To acquire an encroachment permit, environmental concerns such as cultural resources, biological resources, and water quality concerns must be addressed. See the attachment, *Environmental Review Requirements for Encroachment Permits.*

6. No drainage, seepage of run-off water or waste of any kind is allowed on State property unless written authorization has been obtained from the State. Any water run-off that does drain onto Caltrans right-of-way from construction operations or from the resulting project must fully conform to the current discharge requirements of the Regional Water Quality Control Board to avoid impacting water quality. Measures must be incorporated to contain all vehicle loads and avoid any tracking of materials that may fall or blow onto Caltrans' roadways or facilities.

Please continue to keep us informed of this project and any future developments that could potentially impact the State transportation facilities. If you have any questions or need to contact us, please do not hesitate to call Becky Shumway at (949) 440-4461.

Sincerely,

for Robert F. Joseph, Chief
Advanced Planning Branch

Enclosures:

cc: R. Helgeson

Post-it® Fax Note 7671	Date 5-28-02 # of pages ▶ two
To Marty Inocens	From Becky Shumway
Co./Dept. LASPWD	Co. Caltrans
Phone # 626-458-4117	Phone # 909-440-4461
Fax # 626-457-1526	Fax #

AT
CALTRA

WATER POLLUTION CONTROL PROVISIONS

Any runoff draining into Caltrans Right of Way must fully conform to the current discharge requirements of the Regional Water Quality Control Board (RWQCB) to avoid impacting water quality. Permittee shall fully conform to the requirements of the Caltrans Statewide National Pollutant Discharge Elimination System (NPDES) Storm Water Permit, Order No. 99-06-DWQ, NPDES No. CAS000003, adopted by the State Water Resources Control Board (SWRCB) on July 15, 1999, in addition to the BMPs specified in the Caltrans Storm Water Management Plan (SWMP). When applicable, the Permittee will also conform to the requirements of the General NPDES Permit for Construction Activities, Order No. 99-08-DWQ, NPDES No. CAS000002, and any subsequent General Permit in effect at the time of issuance of this Encroachment Permit. These permits regulate storm water and non-storm water discharges associated with year-round construction activities.

Please note that project activities should pay extra attention to storm water pollution control during the "Rainy Season" (October 1st – May 1st) and follow the Water Pollution Control BMPs to minimize impact to receiving waters. Measures must be incorporated to contain all vehicle loads and avoid any tracking of materials, which may fall or blow onto Caltrans Right of Way.

For all projects resulting in 2 hectares (5 acres) or more of soil disturbance or otherwise subject to the NPDES program, the Contractor will develop, implement, and maintain a Storm Water Pollution Prevention Plan (SWPPP) conforming to the requirements of the Caltrans Specification Section 7-1.01G "Water Pollution Control", Caltrans Statewide NPDES Permit, the General NPDES Permit for Construction Activities, and the Caltrans Storm Water Quality Handbooks "Storm Water Pollution Prevention Plan (SWPPP) and Water Pollution Control Program (WPCP) Preparation Manual", and "Construction Site Best Management Practices (BMPs) Manual" effective November 2000, and subsequent revisions. In addition, the SWPPP must conform to the requirements of the SWRCB Resolution No. 2001-046, the Sampling and Analytical Procedures (SAP) Plan.

For all projects resulting in less than 2 hectares (5 acres) of soil disturbance or not otherwise subject to the requirements of the NPDES program, the Contractor will develop, implement, and maintain a Water Pollution Control Program (WPCP) conforming to the requirements of Caltrans Specifications Section 7-1-.01G, "Water Pollution Control", and the Caltrans Storm Water Quality Handbooks "Storm Water Pollution Prevention Plan (SWPPP) and Water Pollution Control Program (WPCP) Preparation Manual", and "Construction Site Best Management Practices (BMPs) Manual" effective November 2000, and subsequent revisions.

Copies of the Permits and the Construction Contractor's Guide and Specifications of the Caltrans Storm Water Quality Handbook may be obtained from the Department of Transportation, Material Operations Branch, Publication Distribution Unit, 1900 Royal Oaks Drive, Sacramento, California 95815, Telephone: (916) 445-3520. Copies of the Permits and Handbook are also available for review at Caltrans District 12, 3347 Michelson Drive, Suite 100, Irvine, California 92612, Telephone: (949) 724-2260. Electronic copies can be found at http://www.dot.ca.gov/hq/construc/stormwater.html

ENVIRONMENTAL REVIEW REQUIREMENTS FOR ENCROACHMENT PERMITS

Any Party, outside of Caltrans, that does work on a State Highway or Interstate Highway in California needs to apply for an encroachment permit. To acquire any encroachment permit, environmental concerns must be addressed. Environmental review of encroachment permit applications may take 3 weeks if the application is complete or longer if the application is incomplete. For soil disturbing activities (e.g. geotechnical borings, grading, usage of unpaved roads from which dirt and other materials may be tracked onto the State/Interstate highways, etc.), compliance with Water Quality and Cultural Resources Provisions are emphasized. Surveys may/ may not be soil-disturbing activities, depending on the site and survey method.

A complete application for environmental review includes the following:

1. If an environmental document (CE, EIR/EIS, ND, etc.) has been completed for the project, copy of the final, approved document must be submitted with the application.

2. **Water Quality Provision:** All work within the State Right of Way must conform to Caltrans Standard Plans and Standard Specifications for Water Pollution Control including production of a Water Pollution Control Program or Storm Water Pollution Prevention Plan as required. The applicant must provide Encroachments with a copy of the Storm Water Pollution Prevention Plan (SWPPP) including Best Management Practices (BMPs) to be implemented for construction activities impacting Caltrans Right of Way, prepared for this as required by the NPDES Statewide Storm Water Permit for General Construction Activities. If no SWPPP has been prepared for this project, then the applicant must follow the requirements described in the attached Water Pollution Control Provisions (please see attachment).

3. **Cultural Resources Provisions:** If not included in the environmental document, before permit approval and project construction, the encroachment permit applicant must complete a *Cultural Resource Assessment* pursuant to Caltrans Environmental Handbook, Volume 2, Appendix B-1, and Exhibit 1, as amended. The Cultural Resources Assessment ascertains the presence or absence of cultural resources within a one-mile radius of the project area and evaluates the impact to any historical/cultural resource. Cultural Resources include "those resources significant in American history, architecture, archaeology, and culture, including Native American Resources" (Caltrans Environmental Handbook, Volume 2, Chapter1, as amended)]. The Cultural Resource Assessment must include:
   a) a clear project description and map indicating project work, staging areas, site access, etc.;
   b) a Record Search conducted at the South Central Coastal Information Center (SCCIC) located at California State University, Fullerton. For information call (714) 278-5395;
   c) proof of Native American consultation. Consultation involves contacting the Native American Heritage Commission (NAHC), requesting a search of their Sacred Lands File, and following the recommendations provided by the NAHC. For information call (916) 653-4082;
   d) documentation of any historic properties (e.g. prehistoric and historic sites, buildings, structures, objects, or districts listed on, eligible for, or potentially eligible for listing on the National Register of Historic Places) within a one mile radius of the project area;
   e) and a survey by qualified archaeologist for all areas that have not been previously researched.

   The SCCIC and NAHC have an approximate turn around time of 2 weeks.

4. **Biological Resources Provisions:** Work conducted within Caltrans Right of Way should have the appropriate plant and wildlife surveys completed by a qualified biologist. If the information is not included in the environmental document, Environmental Planning requests that the applicant submit a copy of the biological study, survey, or technical report by a qualified biologist that provides details on the existing vegetation and wildlife at the project site and any vegetation that is to be removed during project activities. Official lists and databases should also be consulted for sensitive species such as the California Natural Diversity Database and lists provided by the U.S. Fish and Wildlife Service and the California Department of Fish and Game. Any impacts that affect waterways and drainages and/or open space during construction, or that occur indirectly as a result of the project must be coordinated with the appropriate resource agencies. As guidance, we ask that the applicant include:
   a) clear description of project activities and the project site
   b) completed environmental significance checklist (not just yes and no answers, but a description should be given as to the reason for the response),
   c) staging/storage areas noted on project plans,
   d) proposed time of year for work and duration of activities (with information available),
   e) any proposed mitigation (if applicable to the project),
   f) and a record of any prior resource agency correspondence (if applicable to the project).

State of California—Health and Human Services Agency
Department of Health Services

California Department of Health Services
DIANA M. BONTÁ, R.N., Dr. P.H.
Director

GRAY DAVIS
Governor

May 29, 2003

Mr. Marty Moreno
County of Los Angeles Department of Public Works
Watershed Management Division
Lead Agency for the Program EIR for the San Gabriel River Master Plan
PO Box 1460
Alhambra CA 91802-1460

RE: Notice of Preparation of a Draft Program Environmental Impact Report in Compliance with Title 14, (CEQA Guidelines) Section 10582(a), 15103 and 15375 of the California Code of Regulations.

Dear Mr. Moreno,

The State Department of Health Services (DHS) is charged with maintaining a program of vector biology and control (California Health and Safety Code). Within DHS, this program is administered by the Vector-Borne Disease Section (VBDS). It is our understanding that several local vector control programs are commenting on the Notice of Preparation for the Program EIR for the San Gabriel River Master Plan separately.

Activities that have the potential for changing the current status of the San Gabriel River Corridor also have the potential for impacting public health through creation of a "disease corridor" from the Angeles National Forest to the Pacific Ocean. The San Gabriel River corridor cuts through one of the most highly urbanized areas of the state. Efforts to create "natural areas" such as wetlands and parklands within this corridor create the potential for disease transmission to visitors and residents in proximity to the river corridor.

It is essential that any projects within the scope of this EIR address the potential public health impacts and provide permanent measures to assure proper design, maintenance and funding for vector control activities. All plans and projects should be submitted for review to the appropriate vector control agency or agency/agencies or DHS.

A "short list" of the zoonotic and vector-borne diseases of concern would include (but not be limited to) the following: plague, rabies, hantavirus pulmonary syndrome, Lyme disease, murine typhus, malaria, encephalitis (including West Nile Virus, Saint Louis Encephalitis and Western Equine Encephalomyelitis). In addition to the potential diseases listed above, many people are allergic (sometimes fatally) to the bites and stings of insects commonly found in parklands and "natural" settings. These include mosquitoes, black flies and other biting flies, midges, yellow jackets, bees, ticks, fleas and kissing bugs.

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The vision statement defined by the Steering Committee requires "—providing protection, benefit and enjoyment to the public". VBDS requests that the Los Angeles County Department of Public Works incorporate specific language into the EIR that addresses the issues raised here. We appreciate the opportunity to comment and request that we be added to the official mailing list for future developments. VBDS staff will be available to provide additional information and input in conjunction with local agencies.

Sincerely,

Charles Myers
Supervising Public Health Biologist

State of California - The Resources Agency GRAY DAVIS, *Governor*

DEPARTMENT OF FISH AND GAME
http://www.dfg.ca.gov
4949 Viewridge Avenue
San Diego, CA 92123
(858) 467-4201

May 28, 2003

Marty Moreno
Los Angeles County Department of Public Works
P.O Box 1460
Alhambra, CA 91802-1460

San Gabriel River Master Plan

State Clearinghouse Number 2003041187

Dear Mr. Moreno:

The Department of Fish and Game (Department) appreciates this opportunity to comment on the above-referenced project, relative to impacts to biological resources. To enable Department staff to adequately review and comment on the proposed project, we recommend the following information be included in the Draft Environmental Impact Report (DEIR), as applicable:

1. A complete assessment of the flora and fauna within and adjacent to the project area, with particular emphasis upon identifying endangered, threatened, and locally unique species and sensitive habitats.

   a. A thorough assessment of rare plants and rare natural communities, following the Department's May 1984 Guidelines (revised May 2000) for Assessing Impacts to Rare Plants and Rare Natural Communities (Attachment 1).

   b. A complete assessment of sensitive fish, wildlife, reptile, and amphibian species. Seasonal variations in use of the project area should also be addressed. Focused species-specific surveys, conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable, are required. Acceptable species-specific survey procedures should be developed in consultation with the Department and the U.S. Fish and Wildlife Service.

c. Rare, threatened, and endangered species to be addressed should include all those which meet the California Environmental Quality Act (CEQA) definition (see CEQA Guidelines, § 15380).

d. The Department's California Natural Diversity Data Base in Sacramento should be contacted at (916) 327-5960 to obtain current information on any previously reported sensitive species and habitat, including Significant Natural Areas identified under Chapter 12 of the Fish and Game Code.

2. A thorough discussion of direct, indirect, and cumulative impacts expected to adversely affect biological resources, with specific measures to offset such impacts, should be included.

a. CEQA Guidelines, § 15125(c), direct that knowledge of the regional setting is critical to an assessment of environmental impacts and that special emphasis should be placed on resources that are rare or unique to the region.

b. Project impacts should be analyzed relative to their effects on off-site habitats. Specifically, this should include nearby public lands, open space, adjacent natural habitats, riparian ecosystems, and any designated and/or proposed Natural Communities Conservation Planning (NCCP) reserve lands. Impacts to and maintenance of wildlife corridor/movement areas, including access to undisturbed habitat in adjacent areas, should be fully evaluated and provided.

c. A discussion of impacts associated with increased lighting, noise, human activity, changes in drainage patterns, changes in water volume, velocity, and quality, soil erosion, and /or sedimentation in streams and water courses on or near the project site, with mitigation measures proposed to alleviate such impacts should be included.

d. The zoning of areas for development projects or other uses that are nearby or adjacent to natural areas may inadvertently contribute to wildlife-human interactions. A discussion of possible conflicts and mitigation measures to reduce these conflicts should be included in the environmental document.

e. A cumulative effects analysis should be developed as described under CEQA Guidelines, § 15130. General and specific plans, as well as past, present, and anticipated future projects, should be analyzed relative to their impacts on similar plant communities and wildlife habitats.

3. A range of alternatives should be analyzed to ensure that alternatives to the proposed project are fully considered and evaluated. A range of alternatives which avoid or

otherwise minimize impacts to sensitive biological resources should be included. Specific alternative locations should also be evaluated in areas with lower resource sensitivity where appropriate.

a. The Department considers Rare Natural Communities as threatened habitats having both regional and local significance. Thus, these communities should be fully avoided and otherwise protected from project-related impacts (Attachment 2).

4. Mitigation measures for adverse project-related impacts to sensitive plants, animals, and habitats should be discussed. Mitigation measures should emphasize avoidance and reduction of project impacts. For unavoidable impacts, on-site habitat restoration or enhancement should be discussed in detail. If on-site mitigation is not feasible, off-site mitigation through habitat creation and/or acquisition and preservation in perpetuity should be addressed.

a. The Department generally does not support the use of relocation, salvage, and/or transplantation as mitigation for impacts to rare, threatened, or endangered species. Studies have shown that these efforts are experimental in nature and largely unsuccessful.

b. Areas reserved as mitigation for project impacts should be protected from future direct and indirect impacts. Potential issues to be considered include limitation of access, conservation easements, monitoring and management programs, control of illegal dumping, water pollution, and fire.

c. Plans for restoration and revegetation should be prepared by persons with expertise in southern California ecosystems and native plant revegetation techniques. Each plan should include, at a minimum: (a) the location of the mitigation site; (b) the plant species to be used, container sizes, and seeding rates; (c) a schematic depicting the mitigation area; (d) planting schedule; (e) a description of the irrigation methodology; (f) measures to control exotic vegetation on site; (g) specific success criteria; (h) a detailed monitoring program; (i) contingency measures should the success criteria not be met; and (j) identification of the party responsible for meeting the success criteria and providing for conservation of the mitigation site in perpetuity.

5. A California Endangered Species Act (CESA) Permit must be obtained, if the project has the potential to result in "take" of species of plants or animals listed under CESA, either during construction or over the life of the project. CESA Permits are issued to conserve, protect, enhance, and restore State-listed threatened or endangered species and their habitats. Early consultation is encouraged, as significant modification to a project and mitigation measures may be required in order to obtain a CESA Permit. Revisions to

the Fish and Game Code, effective January 1998, may require that the Department issue a separate CEQA document for the issuance of a 2081 permit unless the project CEQA document addresses all project impacts to listed species and specifies a mitigation monitoring and reporting program that will meet the requirements of a 2081 permit. For these reasons, the following information is requested:

a. Biological mitigation monitoring and reporting proposals should be of sufficient detail and resolution to satisfy the requirements for a CESA Permit.

b. A Department-approved Mitigation Agreement and Mitigation Plan are required for plants listed as rare under the Native Plant Protection Act.

6. The Department has responsibility for wetland and riparian habitats. It is the policy of the Department to strongly discourage development in wetlands or conversion of wetlands to uplands. We oppose any development or conversion which would result in a reduction of wetland acreage or wetland habitat values, unless, at a minimum, project mitigation assures there will be "no net loss" of either wetland habitat values or acreage. Development and conversion include but are not limited to conversion to subsurface drains, placement of fill or building of structures within the wetland, and channelization or removal of materials from the streambed. All wetlands and watercourses, whether intermittent or perennial, should be retained and provided with substantial setbacks which preserve the riparian and aquatic values and maintain their value to on-site and off-site wildlife populations.

a. If the site has the potential to support aquatic, riparian, or wetland habitat, a jurisdictional delineation of lakes, streams, and associated riparian habitats should be included in the DEIR, including a delineation of wetlands pursuant to the U. S. Fish and Wildlife Service wetland definition adopted by the Department[1]. Please note that some wetland and riparian habitats subject to the Department's authority may extend beyond the jurisdictional limits of the U.S. Army Corps of Engineers.

b. The project may require a Lake or Streambed Alteration Agreement, pursuant to Section 1600 *et seq.* of the Fish and Game Code, with the applicant prior to the applicant's commencement of any activity that will substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank (which may include associated riparian resources) of a river, stream or lake, or use material from a streambed. The Department's issuance of a Lake or Streambed Alteration Agreement for a project that is subject to CEQA will require CEQA compliance actions by the Department as a responsible agency. The Department as a

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[1] Cowardin, Lewis M., et al. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service.

responsible agency under CEQA may consider the local jurisdiction's (lead agency) Negative Declaration or Environmental Impact Report for the project. To minimize additional requirements by the Department pursuant to Section 1600 *et seq.* and/or under CEQA, the document should fully identify the potential impacts to the lake, stream or riparian resources and provide adequate avoidance, mitigation, monitoring and reporting commitments for issuance of the agreement[2].

The Department holds regularly scheduled pre-project planning/early consultation meetings. To make an appointment, please call our office at (858) 636-3160.

Thank you for this opportunity to comment. Questions regarding this letter and further coordination on these issues should be directed to Brad Henderson at (310) 214-9950.

Sincerely,

Donald R. Chadwick
Habitat Conservation Supervisor

Attachments

cc: Department of Fish and Game
File
San Diego
U.S. Fish and Wildlife Service
Kerri Davis
Carlsbad
State Clearinghouse
Sacramento
bjh

[2] A Streambed Alteration Agreement form may be obtained by writing to: Department of Fish and Game, 4949 Viewridge Avenue, San Diego, CA 92123, by calling (858) 636-3160, or by accessing the Department's web site at www.dfg.ca.gov/1600 .

Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities

State of California
THE RESOURCES AGENCY
Department of Fish and Game
December 9, 1983
Revised May 8, 2000

The following recommendations are intended to help those who prepare and review environmental documents determine when a botanical survey is needed, who should be considered qualified to conduct such surveys, how field surveys should be conducted, and what information should be contained in the survey report. The Department may recommend that lead agencies not accept the results of surveys that are not conducted according to these guidelines.

1. Botanical surveys are conducted in order to determine the environmental effects of proposed projects on all rare, threatened, and endangered plants and plant communities. Rare, threatened, and endangered plants are not necessarily limited to those species which have been "listed" by state and federal agencies but should include any species that, based on all available data, can be shown to be rare, threatened, and/or endangered under the following definitions:

   A species, subspecies, or variety of plant is "endangered" when the prospects of its survival and reproduction are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, over-exploitation, predation, competition, or disease. A plant is "threatened" when it is likely to become endangered in the foreseeable future in the absence of protection measures. A plant is "rare" when, although not presently threatened with extinction, the species, subspecies, or variety is found in such small numbers throughout its range that it may be endangered if its environment worsens.

   Rare natural communities are those communities that are of highly limited distribution. These communities may or may not contain rare, threatened, or endangered species. The most current version of the California Natural Diversity Database's List of California Terrestrial Natural Communities may be used as a guide to the names and status of communities.

2. It is appropriate to conduct a botanical field survey to determine if, or to the extent that, rare, threatened, or endangered plants will be affected by a proposed project when:

   a. Natural vegetation occurs on the site, it is unknown if rare, threatened, or endangered plants or habitats occur on the site, and the project has the potential for direct or indirect effects on vegetation; or
   b. Rare plants have historically been identified on the project site, but adequate information for impact assessment is lacking.

3. Botanical consultants should possess the following qualifications:

   a. Experience conducting floristic field surveys;
   b. Knowledge of plant taxonomy and plant community ecology;
   c. Familiarity with the plants of the area, including rare, threatened, and endangered species;
   d. Familiarity with the appropriate state and federal statutes related to plants and plant collecting; and,
   e. Experience with analyzing impacts of development on native plant species and communities.

4. Field surveys should be conducted in a manner that will locate any rare, threatened, or endangered species that may be present. Specifically, rare, threatened, or endangered plant surveys should be:

   a. Conducted in the field at the proper time of year when rare, threatened, or endangered species are both evident and identifiable. Usually, this is when the plants are flowering.

ATTACHMENT 2

Sensitivity of Top Priority Rare Natural Communities in Southern California

Sensitivity rankings are determined by the Department of Fish and Game, California Natural Diversity Data Base and based on either number of known occurrences (locations) and/or amount of habitat remaining (acreage). The three rankings used for these top priority rare natural communities are as follows:

S1.# Less than 6 known locations and/or on less than 2,000 acres of habitat remaining.

S2.# Occurs in 6-20 known locations and/or 2,000-10,000 acres of habitat remaining.

S3.# Occurs in 21-100-known locations and/or 10,000-50,000 acres of habitat remaining.

The number to the right of the decimal point after the ranking refers to the degree of threat posed to that natural community regardless of the ranking. For example:

S1.1 = very threatened
S2.2 = threatened
S3.3 = no current threats known

Sensitivity Rankings (February 1992)

Rank	Community Name
S1.1	Mojave Riparian Forest
	Sonoran Cottonwood Willow Riparian
	Mesquite Bosque
	Elephant Tree Woodland
	Crucifixion Thorn Woodland
	Allthorn Woodland
	Arizonan Woodland
	Southern California Walnut Forest
	Mainland Cherry Forest
	Southern Bishop Pine Forest
	Torrey Pine Forest
	Desert Mountain White Fir Forest
	Southern Dune Scrub
	Southern Coastal Bluff Scrub
	Maritime Succulent Scrub
	Riversidean Alluvial Fan Sage Scrub
	Southern Maritime Chaparral
	Valley Needlegrass Grassland
	Great Basin Grassland
	Mojave Desert Grassland
	Pebble Plains
	Southern Sedge Bog
	Cismontane Alkali Marsh

WMD

COUNTY SANITATION DISTRICTS
OF LOS ANGELES COUNTY

1955 Workman Mill Road, Whittier, CA 90601-1400
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www.lacsd.org

JAMES F. STAHL
Chief Engineer and General Manager

May 20, 2003

File No: 31-390.10

Mr. Marty Moreno
County of Los Angeles Department of Public Works
Watershed Management Division
P.O. Box 1460
Alhambra, CA 91802-1460

Dear Mr. Moreno:

San Gabriel River Master Plan

The County Sanitation Districts of Los Angeles County (Districts) received a Notice of Preparation of a Draft Environmental Impact Report for the subject project on April 28, 2003. We offer the following comments:

- The Districts maintain facilities along the San Gabriel River that may be affected by individual projects proposed in the Master Plan. Approval to construct improvements within a Districts' sewer easement and/or over a Districts' sewer is required before construction may begin. The Districts should review proposed projects in order to determine whether or not Districts' trunk sewers will be affected.

- In order to reduce paper waste, the Districts encourage distribution of large documents in electronic format. When possible, please submit documents on CD (pdf files) or provide Notices of Availability that include website information for downloading environmental documents.

If you have any questions, please contact the undersigned at (562) 699-7411, extension 2717.

Very truly yours,

James F. Stahl

Ruth I. Frazen

Ruth I. Frazen
Engineering Technician
Planning & Property Management Section

RIF:rf

231452.1

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IV MWD

In Re: EIR Scoping Process MAY 13, 2003
S. Gabriel River Master Plan

Ms. Marty Moreno

County of Los Angeles
Dept. of Public Works- Watershed Management Division

P. O. Box 1450
Alhambra, CA 91802

Dear Marty:

In addition to the Flood flow impacts of the various projects which I mentioned at yesterdays hearing. I neglected to mention that a careful evaluation of the Quantitative **water supply** aspects (in acre feet) of each project should be carefully estimated as well as **water quality benefits** by chemical compound so the various projects ideas can be compared, weighed balanced and ranked in a more precise way. If these two criteria are better defined than all of the other projects criteria can be combined with the other various criteria and values which cannot be numerically estimated. The result will yield better cost and benefits analysis and rankings.

The qualitative ranking that we arrived at as a group could then be further refined using the scoped study results of the process your agency is conducting with the programmatic River EIR.

I understand that these two additional suggestion will be timely as long as you receive them before the Deadline of May 28, 2003.

Best, Bill Robinson

R. William "Bill" Robinson
Director, Upper San Gabriel Valley
Municipal Water District, Division 4
West Covina

WMD 38

Main San Gabriel Basin
WATERMASTER

May 8, 2003

Mr. Marty Moreno
County of Los Angeles
Department of Public Works
Watershed Management Division
P.O. Box 1460
Alhambra, CA 91803-1331

Subject: Notice of Preparation
Program Environmental Impact Report
San Gabriel River Master Plan

Dear Mr. Moreno:

Thank you for providing the Main San Gabriel Basin Watermaster (Watermaster) with the Notice of Preparation of Program Environmental Impact Report (PEIR) for the San Gabriel River Master Plan. Our comments follow.

The Watermaster was created by the Court in 1973 to manage the groundwater and surface water in the Main San Gabriel Basin (Main Basin), including flows along the San Gabriel River system down to about Whittier Narrows Dam. The project goals indicate that all projects under consideration will "maintain existing water rights...." The PEIR should address the Main San Gabriel Basin Judgment and specifically indicate that all groundwater and surface water rights in the Relevant Watershed of the Main Basin have been fully adjudicated. Proposed activities must not impact existing water rights owners. No water may be produced from the basin except as permitted by the Watermaster in accordance with the Judgment. In addition, the State Water Resources Control Board (SWRCB) declared the San Gabriel River system to be fully appropriated in order WR 89-25. No surface water may be diverted for proposed activities without acquiring appropriate water rights.

Watermaster also works closely with DPW and regional agencies to ensure local runoff and imported water are conserved into the groundwater basin to maintain water supplies. Proposed projects should not have negative impacts on water conservation activities.

Watermaster looks forward to reviewing the PEIR upon its release and we appreciate the opportunity to provide comments on the NOP.

725 North Azusa Avenue • Azusa, California 91702 • Telephone (626) 815-1300 • Fax (626) 815-1303
http://www.watermaster.org

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Please feel free to contact me should you have any questions or wish to discuss Watermaster's management authority in the Main Basin.

Sincerely,

Main San Gabriel Basin Watermaster

Carol Williams
Executive Officer

c: Stetson Engineers Inc.
San Gabriel Valley Protective Association
San Gabriel River Water Committee

KMV
456
Watershed

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Riverside County: Bob Buster, Riverside County • Ron Loveridge, Riverside • Jeff Miller, Corona • Greg Pettis, Cathedral City • Ron Roberts, Temecula • Charles White, Moreno Valley

San Bernardino County: Paul Biane, San Bernardino County • Bill Alexander, Rancho Cucamonga • Lawrence Dale, Barstow • Lee Ann Garcia, Grand Terrace • Susan Longville, San Bernardino • Gary Ovitt, Ontario • Deborah R[illegible]n, Rialto

Ventura County: Judy Mikels, Ventura County • Glen Becerra, Simi Valley • Carl Morehouse, San Buenaventura • Toni Young, Port Hueneme

Riverside County Transportation Commission: Robin Lowe, Hemet

Ventura County Transportation Commission: Bill Davis, Simi Valley

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May 7, 2003

Mr. Marty Moreno
County of Los Angeles
Department of Public Works
Water Management Division
P.O. Box 1460
Alhambra, CA 91802

RE: **Comments on the Notice of Preparation for a Draft Environmental Impact Report for the San Gabriel River Master Plan Project – SCAG No. I 20030221**

Dear Mr. Moreno:

Thank you for submitting the **Notice of Preparation for a Draft Environmental Impact Report for the San Gabriel River Master Plan Project** to SCAG for review and comment. As areawide clearinghouse for regionally significant projects, SCAG reviews the consistency of local plans, projects, and programs with regional plans. This activity is based on SCAG's responsibilities as a regional planning organization pursuant to state and federal laws and regulations. Guidance provided by these reviews is intended to assist local agencies and project sponsors to take actions that contribute to the attainment of regional goals and policies.

We have reviewed the **Notice of Preparation** and have determined that **the proposed Project is regionally significant. The proposed Project would substantially affect sensitive wildlife habitats such as riparian lands, wetlands, bays, estuaries, marshes, and habitats for rare and endangered species.** CEQA requires that EIRs discuss any inconsistencies between the proposed project and applicable general plans and **regional plans (Section 15125 [d])**. If there are inconsistencies, an explanation and rationalization for such inconsistencies should be provided.

Policies of SCAG's Regional Comprehensive Plan and Guide and Regional Transportation Plan, which may be applicable to your project, are outlined in the attachment. **We expect the Draft EIR to specifically cite the appropriate SCAG policies and address the manner in which the Project is consistent with applicable core policies or supportive of applicable ancillary policies. Please use our policy numbers to refer to them in your Draft EIR. Also, we would encourage you to use a side-by-side comparison of SCAG policies with a discussion of the consistency or support of the policy with the Proposed Project.**

Please provide a minimum of 45 days for SCAG to review the Draft EIR when this document is available. If you have any questions regarding the attached comments, please contact me at (213) 236-1867. Thank you.

Sincerely,

Jeffrey M. Smith

JEFFREY M. SMITH, AICP
Senior Regional Planner
Intergovernmental Review

May 7, 2003

Mr. Marty Moreno
County of Los Angeles
Department of Public Works
Water Management Division
P.O. Box 1460
Alhambra, CA 91802

RE: **Comments on the Notice of Preparation for a Draft Environmental Impact Report for the San Gabriel River Master Plan Project – SCAG No. I 20030221**

Dear Mr. Moreno:

Thank you for submitting the **Notice of Preparation for a Draft Environmental Impact Report for the San Gabriel River Master Plan Project** to SCAG for review and comment. As areawide clearinghouse for regionally significant projects, SCAG reviews the consistency of local plans, projects, and programs with regional plans. This activity is based on SCAG's responsibilities as a regional planning organization pursuant to state and federal laws and regulations. Guidance provided by these reviews is intended to assist local agencies and project sponsors to take actions that contribute to the attainment of regional goals and policies.

We have reviewed the **Notice of Preparation** and have determined that **the proposed Project is regionally significant. The proposed Project would substantially affect sensitive wildlife habitats such as riparian lands, wetlands, bays, estuaries, marshes, and habitats for rare and endangered species.** CEQA requires that EIRs discuss any inconsistencies between the proposed project and applicable general plans and **regional plans (Section 15125 [d]).** If there are inconsistencies, an explanation and rationalization for such inconsistencies should be provided.

Policies of SCAG's Regional Comprehensive Plan and Guide and Regional Transportation Plan, which may be applicable to your project, are outlined in the attachment. **We expect the Draft EIR to specifically cite the appropriate SCAG policies and address the manner in which the Project is consistent with applicable core policies or supportive of applicable ancillary policies. Please use our policy numbers to refer to them in your Draft EIR. Also, we would encourage you to use a side-by-side comparison of SCAG policies with a discussion of the consistency or support of the policy with the Proposed Project.**

Please provide a minimum of 45 days for SCAG to review the Draft EIR when this document is available. If you have any questions regarding the attached comments, please contact me at (213) 236-1867. Thank you.

Sincerely,

JEFFREY M. SMITH, AICP
Senior Regional Planner
Intergovernmental Review

COMMENTS ON THE PROPOSAL TO DEVELOP A DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE SAN GABRIEL RIVER MASTER PLAN PROJECT SCAG NO. I 20030221

PROJECT DESCRIPTION

The proposed Project considers a number of improvements centered around renewed interest in recreation, open space, and habitat, while seeking to enhance and maintain flood protection water conservation benefits, along with existing water rights.

CONSISTENCY WITH REGIONAL COMPREHENSIVE PLAN AND GUIDE POLICIES

The **Growth Management Chapter (GMC)** of the Regional Comprehensive Plan and Guide (RCPG) contains the following policies that are particularly applicable and should be addressed in the Draft EIR for the San Gabriel River Master Plan Project.

3.03 The timing, financing, and location of public facilities, utility systems, and transportation systems shall be used by SCAG to implement the region's growth policies.

GMC POLICIES RELATED TO THE RCPG GOAL TO IMPROVE THE REGIONAL QUALITY OF LIFE

The Growth Management goals to attain mobility and clean air goals and to develop urban forms that enhance quality of life, that accommodate a diversity of life styles, that preserve open space and natural resources, and that are aesthetically pleasing and preserve the character of communities, enhance the regional strategic goal of maintaining the regional quality of life. The evaluation of the proposed project in relation to the following policies would be intended to provide direction for plan implementation, and does not allude to regional mandates.

3.18 Encourage planned development in locations least likely to cause environmental impact.

3.22 Discourage development, or encourage the use of special design requirements, in areas with steep slopes, high fire, flood, and seismic hazards.

3.23 Encourage mitigation measures that reduce noise in certain locations, measures aimed at preservation of biological and ecological resources, measures that would reduce exposure to seismic hazards, minimize earthquake damage, and to develop emergency response and recovery plans.

GMC POLICIES RELATED TO THE RCPG GOAL TO PROVIDE SOCIAL, POLITICAL, AND CULTURAL EQUITY

The Growth Management Goal to develop urban forms that avoid economic and social polarization promotes the regional strategic goal of minimizing social and geographic disparities and of reaching equity among all segments of society. The evaluation of the proposed project in relation to the policy stated below is intended guide direction for the accomplishment of this goal, and does not infer regional mandates and interference with local land use powers.

3.27 Support local jurisdictions and other service providers in their efforts to develop sustainable communities and provide, equally to all members of society, accessible and effective services such as: public education, housing, health care, social services, recreational facilities, law enforcement, and fire protection.

REGIONAL TRANSPORTATION PLAN

The **Regional Transportation Plan (RTP)** also has goals, objectives, policies and actions pertinent to this proposed project. This RTP links the goal of sustaining mobility with the goals of fostering economic development, enhancing the environment, reducing energy consumption, promoting transportation-friendly development patterns, and encouraging fair and equitable access to residents affected by socio-economic, geographic and commercial limitations. Among the relevant goals, objectives, policies and actions of the RTP are the following:

Core Regional Transportation Plan Policies

4.02 Transportation investments shall mitigate environmental impacts to an acceptable level.

4.04 Transportation Control Measures shall be a priority.

4.16 Maintaining and operating the existing transportation system will be a priority over expanding capacity.

AIR QUALITY CHAPTER CORE ACTIONS

The **Air Quality Chapter** core actions related to the proposed project includes:

5.07 Determine specific programs and associated actions needed (e.g., indirect source rules, enhanced use of telecommunications, provision of community based shuttle services, provision of demand management based programs, or vehicle-miles-traveled/emission fees) so that options to command and control regulations can be assessed.

5.11 Through the environmental document review process, ensure that plans at all levels of government (regional, air basin, county, subregional and local) consider air quality, land use, transportation and economic relationships to ensure consistency and minimize conflicts.

OPEN SPACE CHAPTER ANCILLARY GOALS

Outdoor Recreation

9.01 Provide adequate land resources to meet the outdoor recreation needs of the present and future residents in the region and to promote tourism in the region.

9.02 Increase the accessibility to open space lands for outdoor recreation.

9.03 Promote self-sustaining regional recreation resources and facilities.

Public Health and Safety

9.04 Maintain open space for adequate protection of lives and properties against natural and man-made hazards.

9.05 Minimize potentially hazardous developments in hillsides, canyons, areas susceptible to flooding, earthquakes, wildfire and other known hazards, and areas with limited access for emergency equipment.

9.06 Minimize public expenditure for infrastructure and facilities to support urban type uses in areas where public health and safety could not be guaranteed.

Resource Production

9.07 Maintain adequate viable resource production land, particularly lands devoted to commercial agriculture and mining operations.

Resource Protection

9.08 Develop well-managed viable ecosystems of known habitats of rare, threatened and endangered species, including wetlands.

WATER QUALITY CHAPTER RECOMMENDATIONS AND POLICY OPTIONS

The **Water Quality Chapter** core recommendations and policy options relate to the two water quality goals: to restore and maintain the chemical, physical and biological integrity of the nation's water; and, to achieve and maintain water quality objectives that are necessary to protect all beneficial uses of all waters.

11.02 Encourage "watershed management" programs and strategies, recognizing the primary role of local governments in such efforts.

11.03 Coordinate watershed management planning at the subregional level by (1) providing consistent regional data; (2) serving as a liaison between affected local, state, and federal watershed management agencies; and (3) ensuring that watershed planning is consistent with other planning objectives (e.g., transportation, air quality, water supply).

11.05 Support regional efforts to identify and cooperatively plan for wetlands to facilitate both sustaining the amount and quality of wetlands in the region and expediting the process for obtaining wetlands permits.

11.07 Encourage water reclamation throughout the region where it is cost-effective, feasible, and appropriate to reduce reliance on imported water and wastewater discharges. Current administrative impediments to increased use of wastewater should be addressed.

CONCLUSIONS

All feasible measures needed to mitigate any potentially negative regional impacts associated with the proposed project should be implemented and monitored, as required by CEQA.

SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

Roles and Authorities

THE SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS (SCAG) is a ***Joint Powers Agency*** established under California Government Code Section 6502 et seq. Under federal and state law, SCAG is designated as a Council of Governments (COG), a Regional Transportation Planning Agency (RTPA), and a Metropolitan Planning Organization (MPO). SCAG's mandated roles and responsibilities include the following:

SCAG is designated by the federal government as the Region's ***Metropolitan Planning Organization*** and mandated to maintain a continuing, cooperative, and comprehensive transportation planning process resulting in a Regional Transportation Plan and a Regional Transportation Improvement Program pursuant to 23 U.S.C. '134, 49 U.S.C. '5301 et seq., 23 C.F.R. '450, and 49 C.F.R. '613. SCAG is also the designated ***Regional Transportation Planning Agency***, and as such is responsible for both preparation of the Regional Transportation Plan (RTP) and Regional Transportation Improvement Program (RTIP) under California Government Code Section 65080 and 65082 respectively.

SCAG is responsible for developing the demographic projections and the integrated land use, housing, employment, and transportation programs, measures, and strategies portions of the ***South Coast Air Quality Management Plan***, pursuant to California Health and Safety Code Section 40460(b)-(c). SCAG is also designated under 42 U.S.C. '7504(a) as a ***Co-Lead Agency*** for air quality planning for the Central Coast and Southeast Desert Air Basin District.

SCAG is responsible under the Federal Clean Air Act for determining ***Conformity*** of Projects, Plans and Programs to the State Implementation Plan, pursuant to 42 U.S.C. '7506.

Pursuant to California Government Code Section 65089.2, SCAG is responsible for ***reviewing all Congestion Management Plans (CMPs) for consistency with regional transportation plans*** required by Section 65080 of the Government Code. SCAG must also evaluate the consistency and compatibility of such programs within the region.

SCAG is the authorized regional agency for ***Inter-Governmental Review*** of Programs proposed for federal financial assistance and direct development activities, pursuant to Presidential Executive Order 12,372 (replacing A-95 Review).

SCAG reviews, pursuant to Public Resources Code Sections 21083 and 21087, Environmental Impacts Reports of projects of regional significance for consistency with regional plans [California Environmental Quality Act Guidelines Sections 15206 and 15125(b)].

Pursuant to 33 U.S.C. '1288(a)(2) (Section 208 of the Federal Water Pollution Control Act), SCAG is the authorized ***Areawide Waste Treatment Management Planning Agency.***

SCAG is responsible for preparation of the ***Regional Housing Needs Assessment***, pursuant to California Government Code Section 65584(a).

SCAG is responsible (with the Association of Bay Area Governments, the Sacramento Area Council of Governments, and the Association of Monterey Bay Area Governments) for preparing the ***Southern California Hazardous Waste Management Plan*** pursuant to California Health and Safety Code Section 25135.3.

Revised July 2001

MWD
METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Executive Office

May 22, 2003

Mr. Marty Moreno
County of Los Angeles Department of Public Works
Watershed Management Division
P.O. Box 1460
Alhambra, CA 91802-1460

Dear Mr. Moreno:

Notice of Preparation of a
Draft Program Environmental Impact Report for the San Gabriel River Master Plan

The Metropolitan Water District of Southern California (Metropolitan) has received a copy of the Notice of Preparation (NOP) of a Draft Program Environmental Impact Report (Draft PEIR) for the San Gabriel River Master Plan (Master Plan). The County of Los Angeles Department of Public Works (LADPW) is the lead agency for this project. The proposed project will be a consensus-based document that will recognize and address a renewed interest in recreation, open space, and habitat, while also seeking to enhance and maintain flood protection, and water conservation benefits, along with existing water rights. The proposed project will focus on the 58-mile long San Gabriel River (River) from Cogswell Dam in the San Gabriel Mountains to the Pacific Ocean. The River corridor is primarily located within Los Angeles County; the mouth of the river is bordered by land within both Los Angeles and Orange counties. This letter contains Metropolitan's response to the Notice of Preparation as both a Responsible Agency and potentially affected agency.

Metropolitan owns and operates various facilities within the boundaries of the proposed Master Plan. The Metropolitan facilities include the following: Old Navy Peninsula, Foothill Feeder-Service Connection USG-3, Fish Canyon Adit to Monrovia Tunnel No. 3 of the Upper Feeder Pipeline, Upper Feeder Pipeline, Middle Feeder Pipeline, Lower Feeder Pipeline, and Second Lower Feeder Pipeline.

These Metropolitan facilities are described as follows:

- Old Navy Peninsula - Metropolitan owns property known as the Old Navy Peninsula on Morris Reservoir. The Peninsula is located on the west side of the reservoir, approximately 500 yards north of the Morris Dam.

- The Foothill Feeder-Service Connection USG-3 has a 200-foot wide permanent easement and is located in Los Angeles County south of Morris Dam. Water is discharged from a 78-inch pipe and provides recharge for the Central and West Basin Municipal Water Districts.

- The Fish Canyon Adit to Monrovia Tunnel No. 3 of the Upper Feeder Pipeline is approximately two miles west of Morris Dam and Metropolitan has an access right-of-way that extends from the adit into the River.

- The Upper Feeder Pipeline is a ten-foot inside diameter pipeline with a 200-foot wide permanent easement and approximately 15 to 20 feet of cover at the River invert. It is located in Los Angeles County, just south of Morris Dam and traverses the River in an easterly to southwesterly direction.

- The Middle Feeder Pipeline is a 73-inch inside diameter pipeline with a 50-foot wide permanent easement and approximately 20 feet of cover at the River invert. The Middle Feeder traverses the River in an easterly to southwesterly direction at Ramona Boulevard, located within the cities of Irwindale and El Monte.

- The Lower Feeder Pipeline is a 70-inch inside diameter pipeline with a 40-foot wide permanent easement and approximately 15 to 20 feet of cover at the River invert. The Lower Feeder Pipeline traverses the River in an easterly to westerly direction just south of Firestone Boulevard in the city of Downey.

- The Second Lower Feeder Pipeline is a 78-inch inside diameter pipeline with a 30-foot wide permanent easement and approximately five to ten feet cover at the River invert. The Second Lower Feeder Pipeline traverses the River in an easterly direction from Keynote Street in the city of Long Beach.

Metropolitan is concerned with potential impacts to these facilities that may occur as a result of implementation of the proposed Master Plan. Metropolitan requests that the LADPW consider these facilities in its planning and analyze in the Draft PEIR potential impacts to these facilities that may occur as a result of implementation of the proposed Master Plan.

In order to avoid potential conflicts with Metropolitan's rights-of-way, we request that any design plans for any activity in the area of Metropolitan's pipelines or facilities be submitted for our review and written approval. Metropolitan must also be allowed to maintain its rights-of-way and access to its facilities at all times in order to repair and maintain the current condition of those facilities. The applicant may obtain detailed prints of drawings of Metropolitan's pipelines and rights-of-way by calling Metropolitan's Substructures Information Line at (213) 217-6564. To assist the applicant in preparing plans that are compatible with Metropolitan's facilities and easements, we have enclosed a copy of the "Guidelines for Developments in the Area of Facilities, Fee Properties, and/or Easements of The Metropolitan Water District of Southern

California." Please note that all submitted designs or plans must clearly identify Metropolitan's facilities and rights-of-way.

It is imperative that Metropolitan's member agencies ability to take imported water for groundwater replenishment is not impacted. Imported water for replenishment is generally available on a seasonal basis and the ability to deliver water to these agencies on short notice can be important both to Metropolitan's operations and the member agencies receiving the imported water. The following service connections can deliver water to the River:

- USG-03 Glendora Tunnel: Capacity maximum is 400 cubic feet per second (cfs); source of imported water is generally the State Water Project (SWP).

- CENB-48 La Verne Pipeline: Capacity maximum is 300 cfs; deliveries can be made to USG through this connection; source of imported water is generally the SWP.

- CENB-28 Upper Feeder Pipeline: Capacity maximum is 120 cfs; source of imported water is mostly a blend of the SWP and Colorado River Water.

- PM-26 Glendora Tunnel: Capacity is 20 cfs; source of imported water is the SWP.

Deliveries through these connections are often problematic, because the downstream facilities operated and maintained by the LADPW are not always available for the delivery of water to our member agencies. Sometimes when water is available from Metropolitan, LADPW is unable to facilitate deliveries due to maintenance or basin conditions. Therefore, when water is available and LADPW has the ability to move the imported water, it is imperative that the water be moved or the opportunity may be lost.

Metropolitan's facilities may also be used to dewater pipelines (blow-offs, pump wells, pressure relief valves) for maintenance or inspection. In addition, facilities along or adjacent to the River may contain pressure relief valves which operate automatically to relieve the pressure on a pipeline to ensure that Metropolitan's distribution system is not damaged by hydraulic transients that can occur due to pressure fluctuations arising from agency service connection problems, system malfunctions, or operator error. In these cases, water is automatically discharged from Metropolitan's system either directly into the River, or into a channel or flood control facility, which interconnects with the River. In the case of dewatering for a pipeline outage, the treated water in the pipeline is mixed with a chemical upon discharge to remove the residual from the disinfectant. When the pressure relief valve(s) open, treated water is discharged. The appropriate Regional Water Quality Control Board is notified in either case. LADPW needs to ensure that Metropolitan's operations (imported water deliveries, normal pipeline operations, and emergency discharge) are not impacted by the Master Plan.

Also, Metropolitan is required to coordinate any activities that might affect groundwater with its member agencies that receive groundwater recharge. The Draft PEIR and Master Plan must

include measures to ensure that imported groundwater replenishment operations by Metropolitan's member agencies are not negatively impacted. The Draft PEIR must also include measures to ensure that recycled water replenishment operations by Metropolitan's member agencies at the Montebello Forebay spreading grounds, near Interstates 605 and 60, are not negatively impacted. Additionally, Metropolitan must be allowed to maintain discharge and other facilities (i.e., service connection USG-3, blow-off structures, air-vacuum valves, etc.) and 24-hour patrol access. The Draft PEIR and Master Plan must clearly and properly address these Metropolitan requirements.

In order to avoid conflicts with Metropolitan facilities, provisions to allow emergency excavation and repair must be included in the Master Plan. Also, creation of wetland and sensitive habitat within and adjacent to Metropolitan facilities must be avoided and any sensitive habitat and/or revegetation processes must be carefully planned to avoid conflicts with Metropolitan facilities. Additionally, engineered protections (i.e., protective slabs) to prevent erosion must be provided in any areas along the River that may be converted to greenbelt areas.

Metropolitan requests that the LADPW analyze the consistency of the proposed Master Plan with the growth management plan adopted by the Southern California Association of Governments (SCAG). Metropolitan uses SCAG's population, housing and employment projections to determine future water demand.

Additionally, Metropolitan encourages projects within its service area to include water conservation measures. Water conservation, reclaimed water use, and groundwater recharge programs are integral components to regional water supply planning. Metropolitan supports mitigation measures such as using water efficient fixtures, drought-tolerant landscaping, and reclaimed water to offset any increase in water use associated with the proposed project.

We appreciate the opportunity to provide input to your planning process and we look forward to receiving future environmental documentation on this project. If we can be of further assistance, please contact Mr. William Fong of the Environmental Planning Team at (213) 217-6899.

Very truly yours,

FOR

Laura J. Simonek
Manager, Asset Management
and Facilities Planning Unit

LIM/rdl
(Public Folders/EPU/Letters/22-MAY-03C.doc – Marty Moreno)
Enclosure: Planning Guidelines

Guidelines for Developments in the Area of Facilities, Fee Properties, and/or Easements of The Metropolitan Water District of Southern California

1. Introduction

a. The following general guidelines should be followed for the design of proposed facilities and developments in the area of Metropolitan's facilities, fee properties, and/or easements.

b. We require that 3 copies of your tentative and final record maps, grading, paving, street improvement, landscape, storm drain, and utility plans be submitted for our review and written approval as they pertain to Metropolitan's facilities, fee properties and/or easements, prior to the commencement of any construction work.

2. Plans, Parcel and Tract Maps

The following are Metropolitan's requirements for the identification of its facilities, fee properties, and/or easements on your plans, parcel maps and tract maps:

a. Metropolitan's fee properties and/or easements and its pipelines and other facilities must be fully shown and identified as Metropolitan's on all applicable plans.

b. Metropolitan's fee properties and/or easements must be shown and identified as Metropolitan's with the official recording data on all applicable parcel and tract maps.

c. Metropolitan's fee properties and/or easements and existing survey monuments must be dimensionally tied to the parcel or tract boundaries.

d. Metropolitan's records of surveys must be referenced on the parcel and tract maps.

3. Maintenance of Access Along Metropolitan's Rights-of-Way

a. Proposed cut or fill slopes exceeding 10 percent are normally not allowed within Metropolitan's fee properties or easements. This is required to facilitate the use of construction and maintenance equipment, and provide access to its aboveground and belowground facilities.

b. We require that 16-foot-wide commercial-type driveway approaches be constructed on both sides of all streets crossing Metropolitan's rights-of-way. Openings are required in any median island. Access ramps, if necessary, must be at least 16-feet-wide. Grades of ramps are normally not allowed to exceed 10 percent. If the slope of an access ramp must exceed 10 percent due to the topography, the ramp must be paved. We require a 40-foot-long level area on the driveway approach to access ramps where the ramp meets the street. At Metropolitan's fee properties, we may require fences and gates.

c. The terms of Metropolitan's permanent easement deeds normally preclude the building or maintenance of structures of any nature or kind within its easements, to ensure safety and avoid interference with operation and maintenance of Metropolitan's pipelines or other facilities. Metropolitan must have vehicular access along the easements at all times for inspection, patrolling, and for maintenance of the pipelines and other facilities on a routine basis. We require a 20-foot-wide clear zone around all above-ground facilities for this routine access. This clear zone should slope away from our facility on a grade not to exceed 2 percent. We must also have access along the easements with construction equipment. An example of this is shown on Figure 1.

d. The footings of any proposed buildings adjacent to Metropolitan's fee properties and/or easements must not encroach into the fee property or easement or impose additional loading on Metropolitan's pipelines or other facilities therein. A typical situation is shown on Figure 2. Prints of the detail plans of the footings for any building or structure adjacent to the fee property or easement must be submitted for our review and written approval as they pertain to the pipeline or other facilities therein. Also, roof eaves of buildings adjacent to the easement or fee property must not overhang into the fee property or easement area.

e. Metropolitan's pipelines and other facilities, e.g. structures, manholes, equipment, survey monuments, etc. within its fee properties and/or easements must be protected from damage by the easement holder on Metropolitan's property or the property owner where Metropolitan has an easement, at no expense to Metropolitan. If the facility is a cathodic protection station it shall be located prior to any grading or excavation. The exact location, description and way of protection shall be shown on the related plans for the easement area.

4. Easements on Metropolitan's Property

a. We encourage the use of Metropolitan's fee rights-of-way by governmental agencies for public street and utility purposes, provided that such use does not interfere with Metropolitan's use of the property, the entire width of the property is accepted into the agency's public street system and fair market value is paid for such use of the right-of-way.

b. Please contact the Director of Metropolitan's Right of Way and Land Division, telephone (213) 250-6302, concerning easements for landscaping, street, storm drain, sewer, water or other public facilities proposed within Metropolitan's fee properties. A map and legal description of the requested easements must be submitted. Also, written evidence must be submitted that shows the city or county will accept the easement for the specific purposes into its public system. The grant of the easement will be subject to Metropolitan's rights to use its land for water pipelines and related purposes to the same extent as if such grant had not been made. There will be a charge for the easement. Please note that, if entry is required on the property prior to issuance of the easement, an entry permit must be obtained. There will also be a charge for the entry permit.

5. Landscaping

Metropolitan's landscape guidelines for its fee properties and/or easements are as follows:

a. A green belt may be allowed within Metropolitan's fee property or easement.

b. All landscape plans shall show the location and size of Metropolitan's fee property and/or easement and the location and size of Metropolitan's pipeline or other facilities therein.

c. Absolutely no trees will be allowed within 15 feet of the centerline of Metropolitan's existing or future pipelines and facilities.

d. Deep-rooted trees are prohibited within Metropolitan's fee properties and/or easements. Shallow-rooted trees are the only trees allowed. The shallow-rooted trees will not be permitted any closer than 15 feet from the centerline of the pipeline, and such trees shall not be taller than 25 feet with a root spread no greater than 20 feet in diameter at maturity. Shrubs, bushes, vines, and ground cover are permitted, but larger shrubs and bushes should not be planted directly over our pipeline. Turf is acceptable. We require submittal of landscape plans for Metropolitan's prior review and written approval. (See Figure 3).

e. The landscape plans must contain provisions for Metropolitan's vehicular access at all times along its rights-of-way to its pipelines or facilities therein. Gates capable of accepting Metropolitan's locks are required in any fences across its rights-of-way. Also, any walks or drainage facilities across its access route must be constructed to AASHTO H-20 loading standards.

f. Rights to landscape any of Metropolitan's fee properties must be acquired from its Right of Way and Land Division. Appropriate entry permits must be obtained prior to any entry on its property. There will be a charge for any entry permit or easements required.

6. Fencing

Metropolitan requires that perimeter fencing of its fee properties and facilities be constructed of universal chain link, 6 feet in height and topped with 3 strands of barbed wire angled upward and outward at a 45 degree angle or an approved equal for a total fence height of 7 feet. Suitable substitute fencing may be considered by Metropolitan. (Please see Figure 5 for details).

7. Utilities in Metropolitan's Fee Properties and/or Easements or Adjacent to Its Pipeline in Public Streets

Metropolitan's policy for the alinement of utilities permitted within its fee properties and/or easements and street rights-of-way is as follows:

a. Permanent structures, including catch basins, manholes, power poles, telephone riser boxes, etc., shall not be located within its fee properties and/or easements.

b. We request that permanent utility structures within public streets, in which Metropolitan's facilities are constructed under the Metropolitan Water District Act, be placed as far from our pipeline as possible, but not closer than 5 feet from the outside of our pipeline.

c. The installation of utilities over or under Metropolitan's pipeline(s) must be in accordance with the requirements shown on the enclosed prints of Drawings Nos. C-11632 and C-9547. Whenever possible we request a minimum of one foot clearance between Metropolitan's pipe and your facility. Temporary support of Metropolitan's pipe may also be required at undercrossings of its pipe in an open trench. The temporary support plans must be reviewed and approved by Metropolitan.

d. Lateral utility crossings of Metropolitan's pipelines must be as perpendicular to its pipeline alinement as practical. Prior to any excavation our pipeline shall be located manually and any excavation within two feet of our pipeline must be done by hand. This shall be noted on the appropriate drawings.

e. Utilities constructed longitudinally within Metropolitan's rights-of-way must be located outside the theoretical trench prism for uncovering its pipeline and must be located parallel to and as close to its rights-of-way lines as practical.

f. When piping is jacked or installed in jacked casing or tunnel under Metropolitan's pipe, there must be at least two feet of vertical clearance between the bottom of Metropolitan's pipe and the top of the jacked pipe, jacked casing or tunnel. We also require that detail drawings of the shoring for the jacking or tunneling pits be submitted for our review and approval. Provisions must be made to grout any voids around the exterior of the jacked pipe, jacked casing or tunnel. If the piping is installed in a jacked casing or tunnel the annular space between the piping and the jacked casing or tunnel must be filled with grout.

g. Overhead electrical and telephone line requirements:

1) Conductor clearances are to conform to the California State Public Utilities Commission, General Order 95, for Overhead Electrical Line Construction or at a greater clearance if required by Metropolitan. Under no circumstances shall clearance be less than 35 feet.

2) A marker must be attached to the power pole showing the ground clearance and line voltage, to help prevent damage to your facilities during maintenance or other work being done in the area.

3) Line clearance over Metropolitan's fee properties and/or easements shall be shown on the drawing to indicate the lowest point of the line under the most adverse conditions including consideration of sag, wind load, temperature change, and support type. We require that overhead lines be located at least 30 feet laterally away from all above-ground structures on the pipelines.

4) When underground electrical conduits, 120 volts or greater, are installed within Metropolitan's fee property and/or easement, the conduits must be incased in a minimum of three inches of red concrete. Where possible, above ground warning signs must also be placed at the right-of-way lines where the conduits enter and exit the right-of-way.

h. The construction of sewerlines in Metropolitan's fee properties and/or easements must conform to the California Department of Health Services Criteria for the Separation of Water Mains and Sanitary Services and the local City or County Health Code Ordinance as it relates to installation of sewers in the vicinity of pressure waterlines. The construction of sewerlines should also conform to these standards in street rights-of- way.

i. Cross sections shall be provided for all pipeline crossings showing Metropolitan's fee property and/or easement limits and the location of our pipeline(s). The exact locations of the crossing pipelines and their elevations shall be marked on as-built drawings for our information.

j. Potholing of Metropolitan's pipeline is required if the vertical clearance between a utility and Metropolitan's pipeline is indicated on the plan to be one foot or less. If the indicated clearance is between one and two feet, potholing is suggested. Metropolitan will provide a representative to assists others in locating and identifying its pipeline. Two-working days notice is requested.

k. Adequate shoring and bracing is required for the full depth of the trench when the excavation encroaches within the zone shown on Figure 4.

l. The location of utilities within Metropolitan's fee property and/or easement shall be plainly marked to help prevent damage during maintenance or other work done in the area. Detectable tape over buried utilities should be placed a minimum of 12 inches above the utility and shall conform to the following requirements:

1) Water pipeline: A two-inch blue warning tape shall be imprinted with:

"CAUTION BURIED WATER PIPELINE"

2) Gas, oil, or chemical pipeline: A two-inch yellow warning tape shall be imprinted with:

"CAUTION BURIED _____ PIPELINE"

3) Sewer or storm drain pipeline: A two-inch green warning tape shall be imprinted with:

"CAUTION BURIED _____ PIPELINE"

4) Electric, street lighting, or traffic signals conduit: A two-inch red warning tape shall be imprinted with:

"CAUTION BURIED _____ CONDUIT"

5) Telephone, or television conduit: A two-inch orange warning tape shall be imprinted with:

"CAUTION BURIED _____ CONDUIT"

m. Cathodic Protection requirements:

1) If there is a cathodic protection station for Metropolitan's pipeline in the area of the proposed work, it shall be located prior to any grading or excavation. The exact location, description and manner of protection shall be shown on all applicable plans. Please contact Metropolitan's Corrosion Engineering Section, located at Metropolitan's F. E. Weymouth Softening and Filtration Plant, 700 North Moreno Avenue, La Verne, California 91750, telephone (714) 593-7474, for the locations of Metropolitan's cathodic protection stations.

2) If an induced-current cathodic protection system is to be installed on any pipeline crossing Metropolitan's pipeline, please contact Mr. Wayne E. Risner at (714) 593-7474 or (213) 250-5085. He will review the proposed system and determine if any conflicts will arise with the existing cathodic protection systems installed by Metropolitan.

3) Within Metropolitan's rights-of-way, pipelines and carrier pipes (casings) shall be coated with an approved protective coating to conform to Metropolitan's requirements, and shall be maintained in a neat and orderly condition as directed by Metropolitan. The application and monitoring of cathodic protection on the pipeline and casing shall conform to Title 49 of the Code of Federal Regulations, Part 195.

4) If a steel carrier pipe (casing) is used:

(a) Cathodic protection shall be provided by use of a sacrificial magnesium anode (a sketch showing the cathodic protection details can be provided for the designers information).

(b) The steel carrier pipe shall be protected with a coal tar enamel coating inside and out in accordance with AWWA C203 specification.

n. All trenches shall be excavated to comply with the CAL/OSHA Construction Safety Orders, Article 6, beginning with Sections 1539 through 1547. Trench backfill shall be placed in 8-inch lifts and shall be compacted to 95 percent relative compaction (ASTM D698) across roadways and through protective dikes. Trench backfill elsewhere will be compacted to 90 percent relative compaction (ASTM D698).

o. Control cables connected with the operation of Metropolitan's system are buried within streets, its fee properties and/or easements. The locations and elevations of these cables shall be shown on the drawings. The drawings shall note that prior to any excavation in the area, the control cables shall be located and measures shall be taken by the contractor to protect the cables in place.

p. Metropolitan is a member of Underground Service Alert (USA). The contractor (excavator) shall contact USA at 1-800-422-4133 (Southern California) at least 48 hours prior to starting any excavation work. The contractor will be liable for any damage to Metropolitan's facilities as a result of the construction.

8. Paramount Right

Facilities constructed within Metropolitan's fee properties and/or easements shall be subject to the paramount right of Metropolitan to use its fee properties and/or easements for the purpose for which they were acquired. If at any time Metropolitan or its assigns should, in the exercise of their rights, find it necessary to remove any of the facilities from the fee properties and/or easements, such removal and replacement shall be at the expense of the owner of the facility.

9. Modification of Metropolitan's Facilities

When a manhole or other of Metropolitan's facilities must be modified to accommodate your construction or reconstruction, Metropolitan will modify the facilities with its forces. This should be noted on the construction plans. The estimated cost to perform this modification will be given to you and we will require a deposit for this amount before the work is performed. Once the deposit is received, we will schedule the work. Our forces will coordinate the work with your contractor. Our final billing will be based on actual cost incurred, and will include materials, construction, engineering plan review, inspection, and administrative overhead charges calculated in accordance with Metropolitan's standard accounting practices. If the cost is less than the deposit, a refund will be made; however, if the cost exceeds the deposit, an invoice will be forwarded for payment of the additional amount.

10. Drainage

a. Residential or commercial development typically increases and concentrates the peak storm water runoff as well as the total yearly storm runoff from an area, thereby increasing the requirements for storm drain facilities downstream of the development. Also, throughout the year water from landscape irrigation, car washing, and other outdoor domestic water uses flows into the storm drainage system resulting in weed abatement, insect infestation, obstructed access and other problems. Therefore, it is Metropolitan's usual practice not to approve plans that show discharge of drainage from developments onto its fee properties and/or easements.

b. If water must be carried across or discharged onto Metropolitan's fee properties and/or easements, Metropolitan will insist that plans for development provide that it be carried by closed conduit or lined open channel approved in writing by Metropolitan. Also the drainage facilities must be maintained by others, e.g., city, county, homeowners association, etc. If the development proposes changes to existing drainage features, then the developer shall make provisions to provide for replacement and these changes must be approved by Metropolitan in writing.

11. Construction Coordination

During construction, Metropolitan's field representative will make periodic inspections. We request that a stipulation be added to the plans or specifications for notification of Mr. _____ of Metropolitan's Operations Services Branch, telephone (213) 250-____, at least two working days prior to any work in the vicinity of our facilities.

12. Pipeline Loading Restrictions

a. Metropolitan's pipelines and conduits vary in structural strength, and some are not adequate for AASHTO H-20 loading. Therefore, specific loads over the specific sections of pipe or conduit must be reviewed and approved by Metropolitan. However, Metropolitan's pipelines are typically adequate for AASHTO H-20 loading provided that the cover over the pipeline is not less than four feet or the cover is not substantially increased. If the temporary cover over the pipeline during construction is between three and four feet, equipment must restricted to that which

imposes loads no greater than AASHTO H-10. If the cover is between two and three feet, equipment must be restricted to that of a Caterpillar D-4 tract-type tractor. If the cover is less than two feet, only hand equipment may be used. Also, if the contractor plans to use any equipment over Metropolitan's pipeline which will impose loads greater than AASHTO H-20, it will be necessary to submit the specifications of such equipment for our review and approval at least one week prior to its use. More restrictive requirements may apply to the loading guideline over the San Diego Pipelines 1 and 2, portions of the Orange County Feeder, and the Colorado River Aqueduct. Please contact us for loading restrictions on all of Metropolitan's pipelines and conduits.

b. The existing cover over the pipeline shall be maintained unless Metropolitan determines that proposed changes do not pose a hazard to the integrity of the pipeline or an impediment to its maintenance.

13. Blasting

a. At least 20 days prior to the start of any drilling for rock excavation blasting, or any blasting, in the vicinity of Metropolitan's facilities, a two-part preliminary conceptual plan shall be submitted to Metropolitan as follows:

b. Part 1 of the conceptual plan shall include a complete summary of proposed transportation, handling, storage, and use of explosions.

c. Part 2 shall include the proposed general concept for blasting, including controlled blasting techniques and controls of noise, fly rock, airblast, and ground vibration.

14. CEQA Requirements

a. When Environmental Documents Have Not Been Prepared

1) Regulations implementing the California Environmental Quality Act (CEQA) require that Metropolitan have an opportunity to consult with the agency or consultants preparing any environmental documentation. We are required to review and consider the environmental effects of the project as shown in the Negative Declaration or Environmental Impact Report (EIR) prepared for your project before committing Metropolitan to approve your request.

2) In order to ensure compliance with the regulations implementing CEQA where Metropolitan is not the Lead Agency, the following minimum procedures to ensure compliance with the Act have been established:

a) Metropolitan shall be timely advised of any determination that a Categorical Exemption applies to the project. The Lead Agency is to advise Metropolitan that it and other agencies participating in the project have complied with the requirements of CEQA prior to Metropolitan's participation.

b) Metropolitan is to be consulted during the preparation of the Negative Declaration or EIR.

c) Metropolitan is to review and submit any necessary comments on the Negative Declaration or draft EIR.

d) Metropolitan is to be indemnified for any costs or liability arising out of any violation of any laws or regulations including but not limited to the California Environmental Quality Act and its implementing regulations.

b. <u>When Environmental Documents Have Been Prepared</u>

If environmental documents have been prepared for your project, please furnish us a copy for our review and files in a timely manner so that we may have sufficient time to review and comment. The following steps must also be accomplished:

1) The Lead Agency is to advise Metropolitan that it and other agencies participating in the project have complied with the requirements of CEQA prior to Metropolitan's participation.

2) You must agree to indemnify Metropolitan, its officers, engineers, and agents for any costs or liability arising out of any violation of any laws or regulations including but not limited to the California Environmental Quality Act and its implementing regulations.

15. <u>Metropolitan's Plan-Review Cost</u>

a. An engineering review of your proposed facilities and developments and the preparation of a letter response

giving Metropolitan's comments, requirements and/or approval that will require 8 man-hours or less of effort is typically performed at no cost to the developer, unless a facility must be modified where Metropolitan has superior rights. If an engineering review and letter response requires more than 8 man-hours of effort by Metropolitan to determine if the proposed facility or development is compatible with its facilities, or if modifications to Metropolitan's manhole(s) or other facilities will be required, then all of Metropolitan's costs associated with the project must be paid by the developer, unless the developer has superior rights.

b. A deposit of funds will be required from the developer before Metropolitan can begin its detailed engineering plan review that will exceed 8 hours. The amount of the required deposit will be determined after a cursory review of the plans for the proposed development.

c. Metropolitan's final billing will be based on actual cost incurred, and will include engineering plan review, inspection, materials, construction, and administrative overhead charges calculated in accordance with Metropolitan's standard accounting practices. If the cost is less than the deposit, a refund will be made; however, if the cost exceeds the deposit, an invoice will be forwarded for payment of the additional amount. Additional deposits may be required if the cost of Metropolitan's review exceeds the amount of the initial deposit.

16. Caution

We advise you that Metropolitan's plan reviews and responses are based upon information available to Metropolitan which was prepared by or on behalf of Metropolitan for general record purposes only. Such information may not be sufficiently detailed or accurate for your purposes. No warranty of any kind, either express or implied, is attached to the information therein conveyed as to its accuracy, and no inference should be drawn from Metropolitan's failure to comment on any aspect of your project. You are therefore cautioned to make such surveys and other field investigations as you may deem prudent to assure yourself that any plans for your project are correct.

17. Additional Information

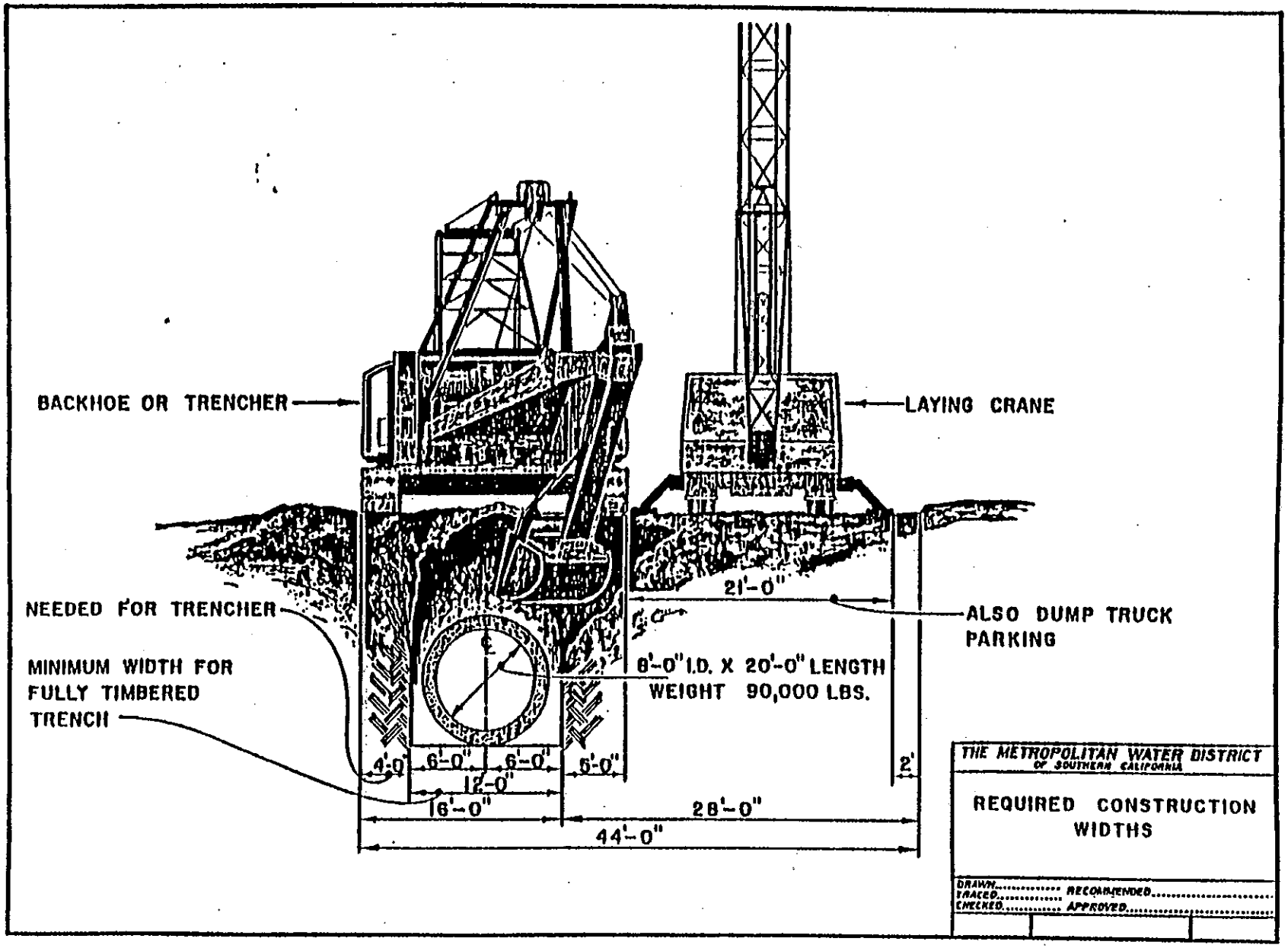
Should you require additional information, please contact:

Civil Engineering Substructures Section
Metropolitan Water District
of Southern California
P.O. Box 54153
Los Angeles, California 90054-0153
(213) 217-6000

JEH/MRW/lk

Rev. January 22, 1989

Encl.



THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

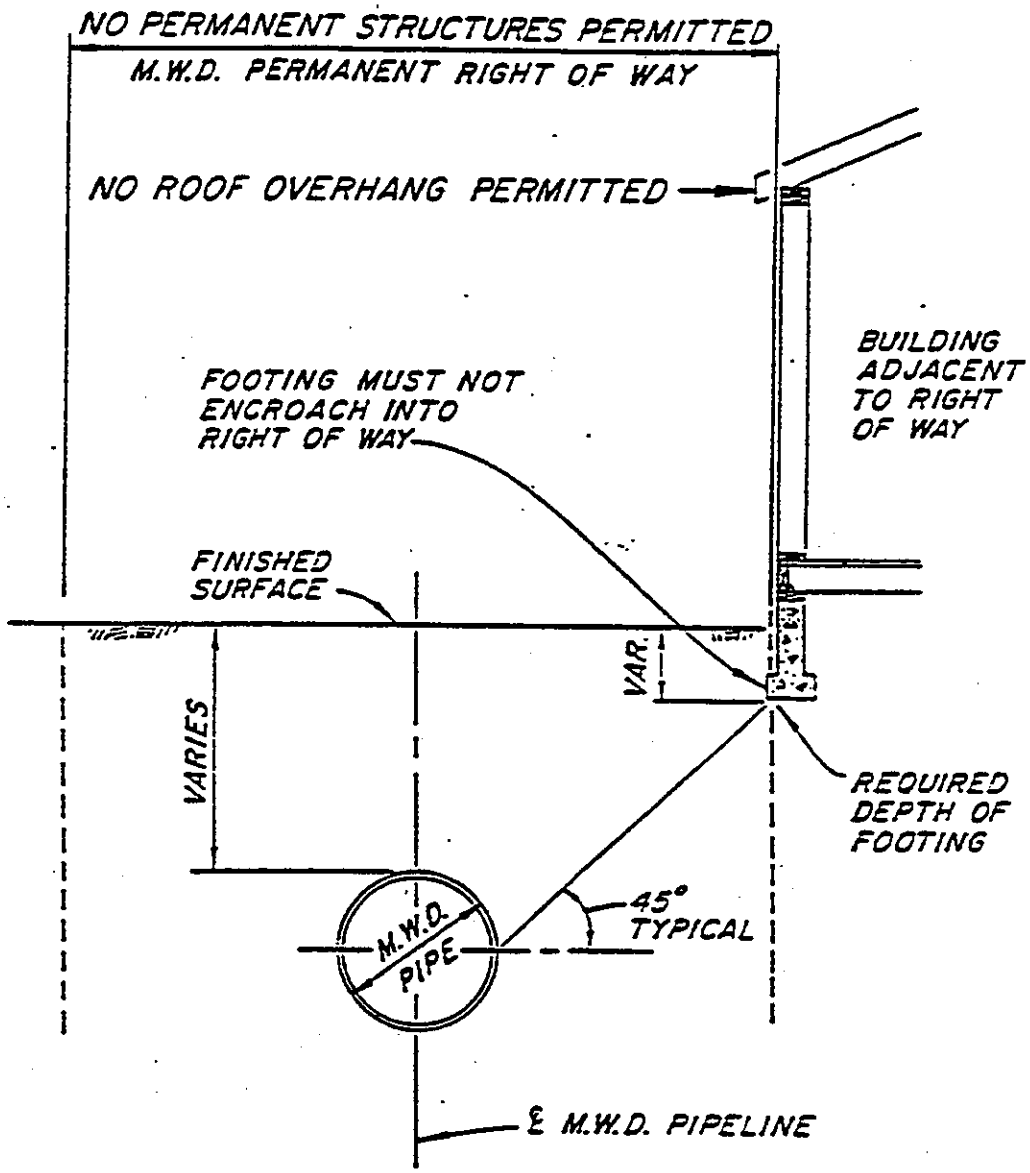
REQUIRED CONSTRUCTION
WIDTHS

DRAWN..... RECOMMENDED.....
TRACED.....
CHECKED..... APPROVED.....

FIGURE 1

DIETZGEN-POST CLEARPRINT 1025

FORM NO 30 8 1000 11-66 P.O. NO. 66-6807



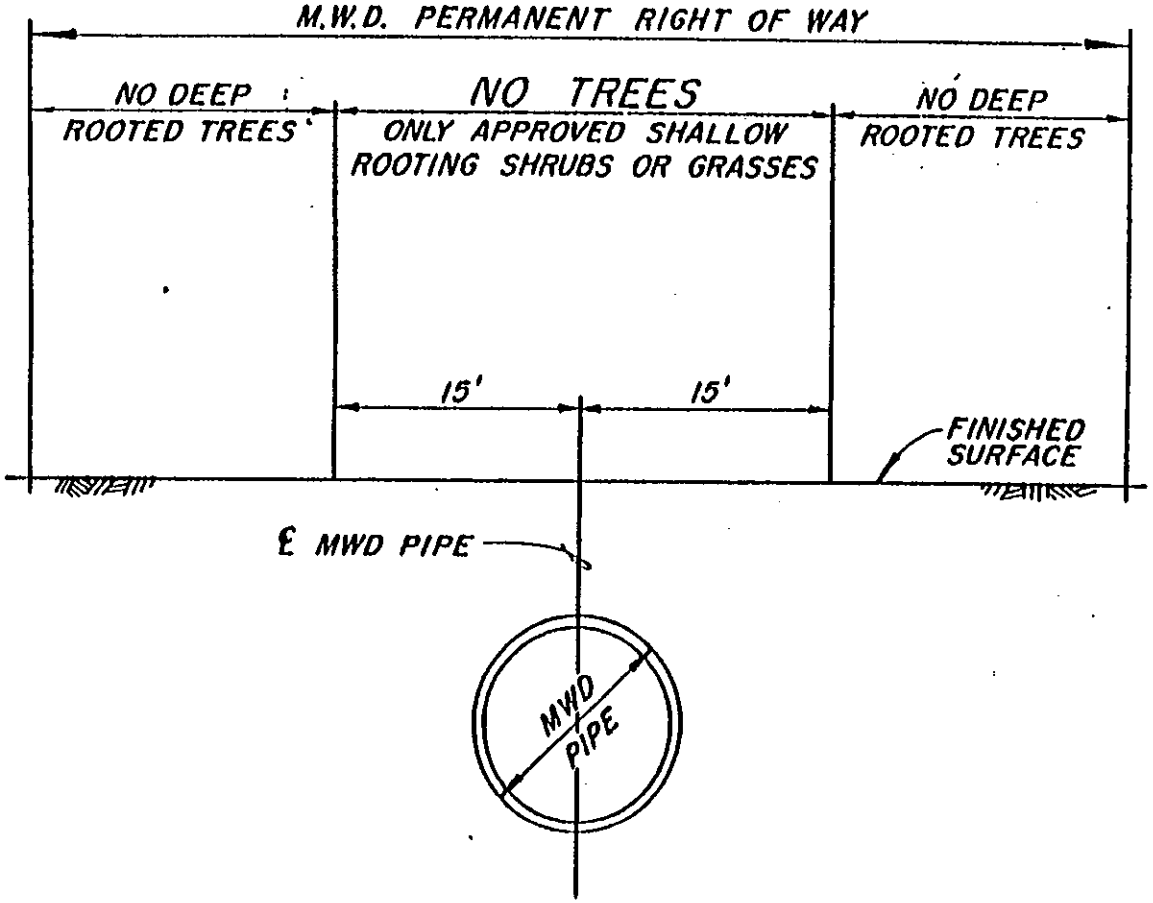
NOTE: M.W.D. PIPELINE SIZE, DEPTH, LOCATION AND WIDTH OF PERMANENT RIGHT OF WAY VARIES.

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

REQUIREMENTS FOR BUILDINGS AND FOOTINGS ADJACENT TO M.W.D. RIGHT OF WAY

DRAWN _____ RECOMMENDED _____
TRACED _____
CHECKED _____ APPROVED _____

FIGURE 2



THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

LANDSCAPE GUIDELINES FOR M.W.D. RIGHT OF WAY

DRAWN..... RECOMMENDED.....
TRACED.....
CHECKED..... APPROVED.....

FIGURE 3

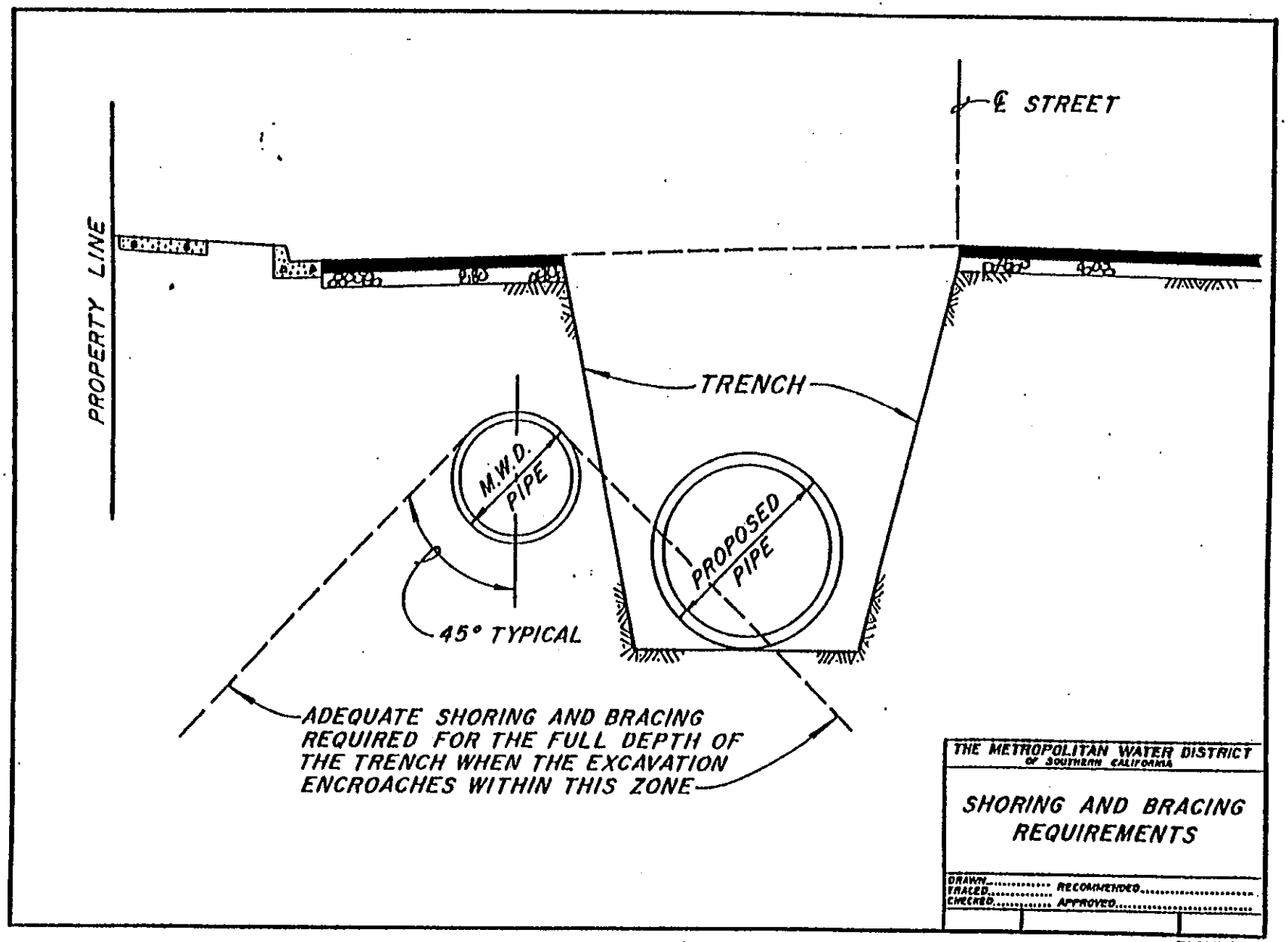
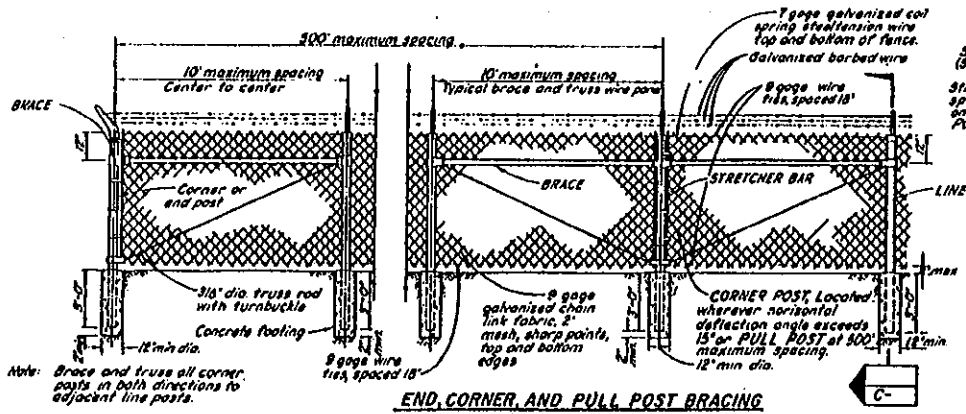


FIGURE 4

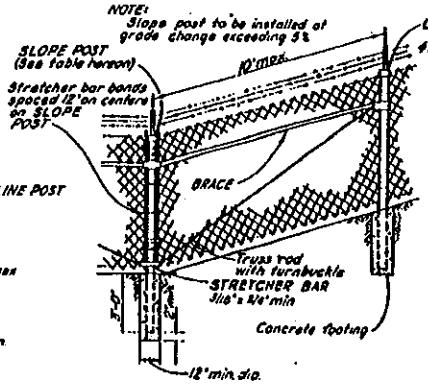
DISTRICT-POST CLEARPRINT 1023 11-48

FORM NO. 38 9 1000 11-48 P.O. NO 48-5607

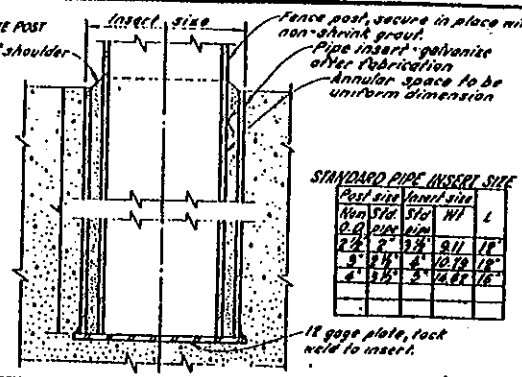
SPECIFICATIONS NO. SHEET NO.



END, CORNER, AND PULL POST BRACING
(Not to scale)



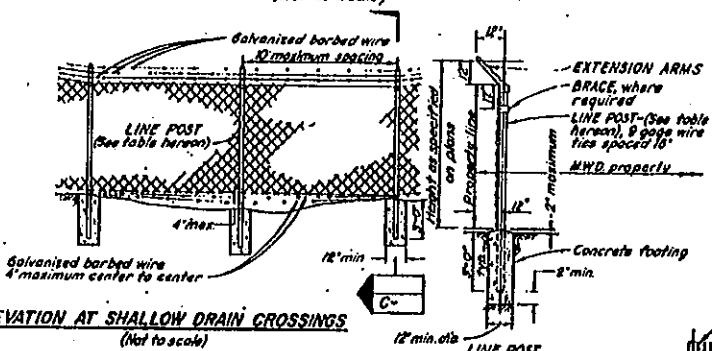
TYPICAL FENCE ON SLOPE
(Not to scale)



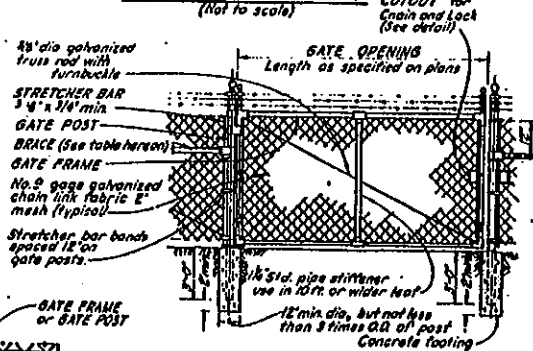
STANDARD PIPE INSERT SIZE

Post size Nom O.D.	Insert size Std. pipe	Std. o/o	W	L
2 1/2"	2"	3 1/4"	9.11	18"
3"	2 1/2"	4"	10.79	18"
4"	3 1/2"	5"	14.62	18"

FENCE POST INSERT FOR CONCRETE WALL AND CONCRETE CURB
(Not to scale)

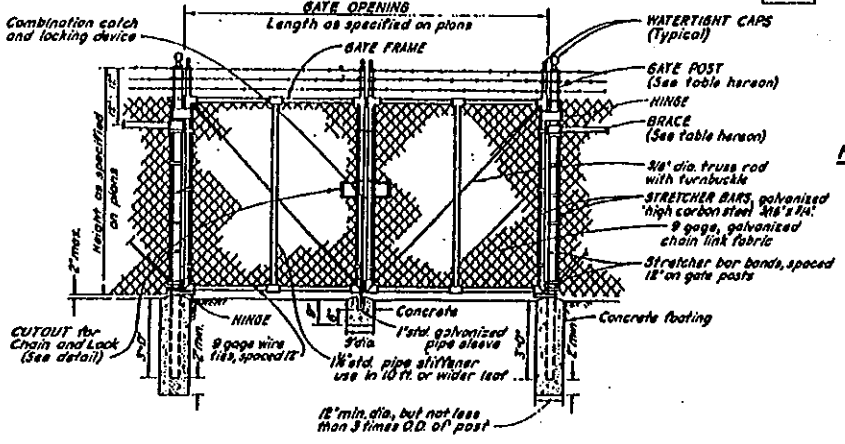


ELEVATION AT SHALLOW DRAIN CROSSINGS
(Not to scale)



SINGLE SWING GATE DETAIL
(Not to scale)

DETAIL OF CUTOUT FOR CHAIN AND LOCK
(Not to scale)



DOUBLE SWING GATE DETAIL
(Not to scale)

Use	Type	Nominal Size (Inches)	Actual O.D. (Inches)	Weight per foot (Pounds)
End, corner, slope, pull and gate posts (for single gates 6 feet or less in width and double gates 12 feet or less in width) for chain link fabric 72 inches or higher	Pipe	2 1/2	2.875	5.79
End, corner, slope, pull and gate posts (for single gates 6 feet or less in width and double gates 12 feet or less in width) for chain link fabric less than 72 inches height	Pipe	2	2.375	3.65
Gate posts for single swing gates over 6 feet but not over 13 feet in width and double swing gates over 12 feet but not over 26 feet in width.	Pipe	5 1/2	6.000	9.11
Gate posts for single swing gates over 13 feet but not over 18 feet in width and double swing gates over 26 feet but not over 36 feet in width.	Pipe	6	6.625	18.97
Gate posts for single swing gates over 18 feet in width and double swing gates over 36 feet in width	Pipe	8	8.625	24.70
Line posts for chain link fabric 72 inches or higher	Pipe	2	2.375	3.65
	H-Section	2 3/4 x 1.90		4.10
Line posts for chain link fabric less than 72 inches in height.	Pipe	1 1/2	1.900	2.72
	H-Section	1 1/2 x 1.62		2.80
Braces	Pipe	1 1/2	1.660	2.27
	H-Section	1 1/2 x 1.62		2.80
Frame for gates	Pipe	1 1/2	1.900	2.72
Stiffeners for gates	Pipe	1 1/4	1.660	2.27

GENERAL NOTES

1. All ferrous parts and materials shall be galvanized after fabrication
2. Adjustable tighteners shall be turnbuckle or equivalent, having minimum 6" take-up
3. Extension arms for barbed wire shall be steel, malleable iron or wrought iron and shall be attached to the top of the post with a 1/4 inch round head rivet. The extension arms shall carry three wires each at approximately 5 inch centers in a plane approximately 45° from the vertical.
4. All gate hinges shall be heavy duty malleable iron or steel, industrial service type, 270 degree swing, of approved quality and design.
5. Secure cap to post with 1/4 inch round head rivet

REVISION COORDINATION CHECK					
ORIGINAL RELEASE	MECH.	STRUCT.	ELEC.	CIVIL	SPECS.
INTERDEPARTMENTAL COORDINATION CHECK					DATE

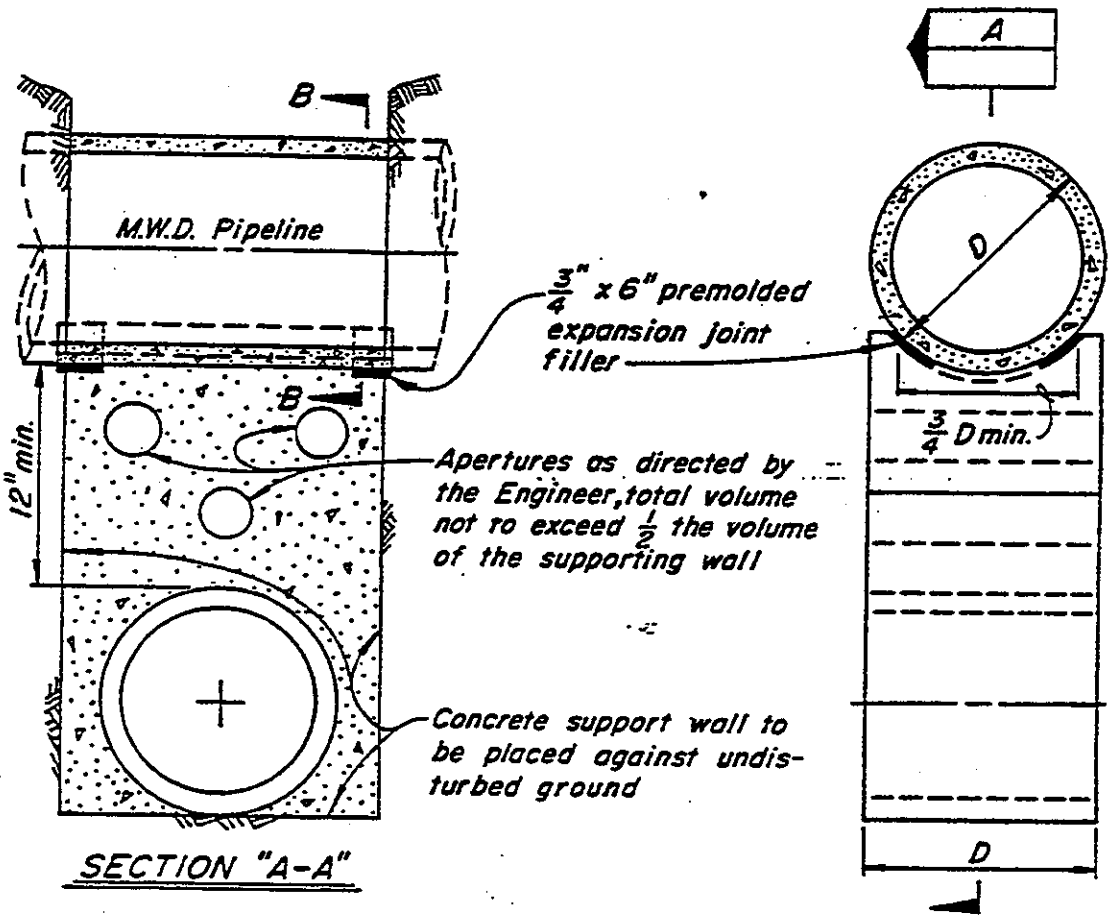
NO.	DATE	DWN.	CKD.	REVISION	REC.	APP.

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA
DISTRIBUTION SYSTEM

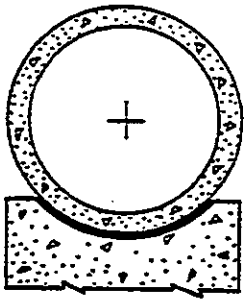
CHAIN LINK FENCE DETAILS

DESIGNED
DRAWN
CHECKED
RECOMMENDED
APPROVED
WORK ORDER NO.
LOS ANGELES

FIGURE 5



1. Supporting wall shall have a firm bearing on the subgrade and against the side of the excavation.
2. Premolded expansion joint filler per ASTM D-1751-73 to be used in support for steel pipe only.
3. If trench width is 4 feet or greater, measured along centerline of M.W.D. pipe, concrete support must be constructed.
4. If trench width is less than 4 feet, clean sand backfill, compacted to 90% density in accordance with the provisions of ASTM Standard D-1557-70 may be used in lieu of the concrete support wall.



SECTION "B-B"

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

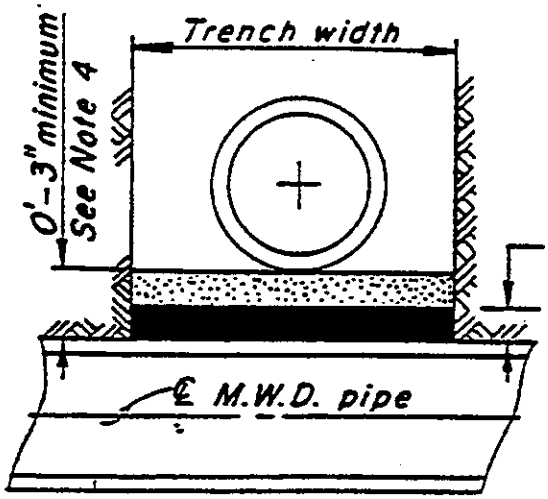
TYPICAL SUPPORT FOR M.W.D. PIPELINE

DRAWN _____ RECOMMENDED _____
TRACED _____
CHECKED _____ APPROVED _____

C-9547

FORM NO. 88-8 1000 11-67 P.O. 69-45114

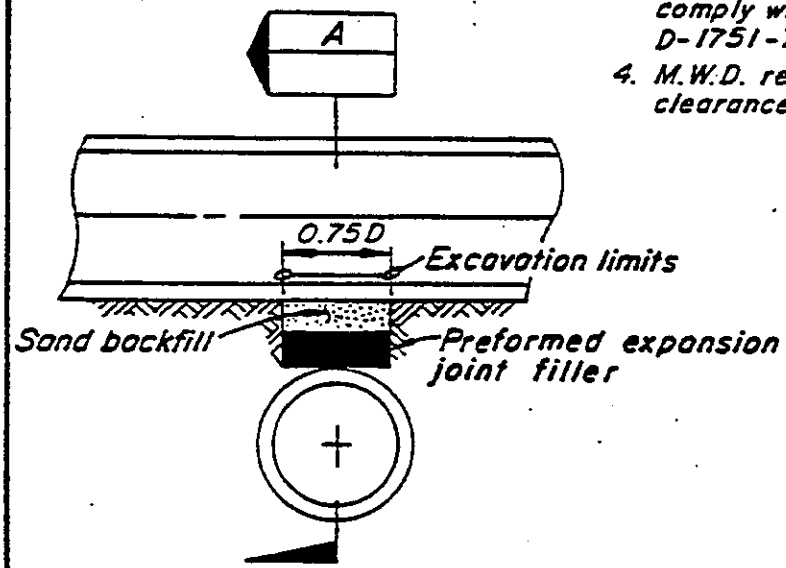
11-67 DIETERICH-POST CLEARPRINT 1023



SECTION A

NOTES

1. This method to be used where the utility line is 24" or greater in diameter and the clearance between the utility line and M.W.D. pipe is 12" or less.
2. Special protection may be required if the utility line diameter is greater than M.W.D. pipe or if the cover over the utility line to the street surface is minimal and there is 12" or less clearance between M.W.D. pipe and the utility line.
3. Preformed expansion joint filler to comply with ASTM designation D-1751-73.
4. M.W.D. requests 12" minimum clearance whenever possible.



CROSS SECTION

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

TYPICAL EXPANSION JOINT FILLER PROTECTION FOR OVERCROSSING OF M.W.D. PIPELINE

DRAWN _____ RECOMMENDED _____
TRACED _____
CHECKED _____ APPROVED _____

C-11632

FORM NO 68 B 1000 11-67 P.O. 87-9216

11-67 DIETERICH-POST CLEARPRINT 1023

VIA FIRST CLASS MAIL AND E-MAIL
TO MMORENO@ladpw.org

May 28, 2003

Mr. Marty Moreno
County of Los Angeles Department of Public Works
Watershed Management Division
P. O. Box 1460
Alhambra, CA 91802-1460

Dear Mr. Moreno:

SUBJECT: **CITY OF SEAL BEACH COMMENTS RE: NOTICE OF PREPARATION OF A DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT, SAN GABRIEL RIVER MASTER PLAN**

In February 2002, the City Council of the City of Seal Beach adopted Resolution Number 4981, A Resolution of the City Council of the City of Seal Beach Approving "*Common Ground: From the Mountains to the Sea - San Gabriel and Los Angeles Rivers Watershed and Open Space Plan*", prepared by the Rivers and Mountain Conservancy.

The City of Seal Beach sees the preparation of the San Gabriel River Master Plan Program EIR as the next step in the process of implementation of the RMC plan. The City requests that the subject EIR reflect the goals and policies of the RMC Watershed and Open Space Plan and utilize as much information as is practical.

The San Gabriel River watershed is within the boundaries of the Los Angeles and Santa Ana Regional Water Quality Control Boards, and the Program EIR should contain evaluations as to how the Master Plan will comply with and be consistent with the NPDES permit requirements of both of the Regional Water Quality Control Boards.

The City of Seal Beach has also identified several projects for potential funding under the provisions of Proposition 13, and requests that several of those identified projects be considered for "Demonstration Project" evaluation, as set forth in the NOP. The projects that the City would request for consideration of "Demonstration Project" evaluation are:

- Gum Grove Nature Park Restoration
- Hellman Wetlands Restoration
- San Gabriel River Trail Restoration

A brief project summary for these identified projects are provided as Attachment 1 to this letter.

The City also requests that the Program EIR evaluate programs and methods of reducing solid waste transport along the River to the Pacific Ocean within the analysis. The impacts upon the City of Seal Beach and also Long Beach are substantial, and create adverse environmental impacts due to wash-up of solid waste materials on the local beaches. The loss in beach availability, and the resulting adverse economic impacts of decreased visitors to the local beaches should be considered, evaluated, and mitigated within the Program EIR. One methodology of dealing with solid waste within the River is an evaluation of strategically placed debris booms along the length of the River to trap floating material and intercept that material from reaching the Ocean at various locations upstream. This type of program should specifically evaluated within the Draft Program EIR. The City has made application for such a project at the confluence of Coyote Creek and the San Gabriel River and is providing a project description of this project as Attachment 2 for your information and use in consideration this type of a program activity for other appropriate locations along the San Gabriel River.

Please contact my office at your earliest convenience if you require additional information or have questions regarding the City Council action. I can be reached at (562) 431-2527, extension 300, or by e-mail at jbahorski@ci.seal-beach.ca.us.

Sincerely,

John Bahorski
City Manager

Attachments: (2)

Attachment 1:	Project Descriptions – Potential "Demonstration Projects" for analysis in Draft Program EIR
Attachment 2:	Project Description – San Gabriel River Trash Debris Boom

Distribution: City Council

Director of Development Services
City Engineer

ATTACHMENT 1

PROJECT DESCRIPTIONS – POTENTIAL "DEMONSTRATION PROJECTS" FOR ANALYSIS IN DRAFT PROGRAM EIR

PROJECT DESCRIPTIONS:

POTENTIAL "DEMONSTRATION PROJECTS" FOR ANALYSIS IN DRAFT PROGRAM EIR

Gum Grove Nature Park Restoration:

In August of 2002, the City was deeded a 14 ½ acre nature park from the Hellman Company which is adjacent to the Hellman Ranch and the San Gabriel River. Currently, it is an open space preserve containing archaeological, cultural and historical resources, used for recreational purposes and is in need of restoration of native planting, habitat and recreational trails. It can be directly connected to San Gabriel River Trail and City is requesting funds for the restoration of the park for community and regional use.

This project will restore existing trails and bring them in compliance with current ADA standards. The Nature Park is a home for several species of birds as well as other wildlife. The City of Seal Beach is requesting $600,000 for the upgrade and restoration of the site. The park is accessible by the public from two public street locations.

The proposed project includes:

- Rehabilitation of existing trails and compliance with ADA standards;
- Installation of new signage and reflective devices on the trails and the parking lot;
- Rehabilitation of fencing along the trail;
- Installation of informational, recreational, educational or interpretive kiosks for public education of the park resources;
- Installation of picnic tables and benches bike racks;
- Landscaping with trees and native vegetation;
- Rehabilitation of the existing parking lot.

This project is feasible and a priority for the City and is consistent with the goals of the Prop 13 by providing natural, cultural and habitat resources, education, scenery, and low impact recreation. The Gum Grove Park Community Group will also be an active stakeholder in the project. The City has received $100,000 as part of the property acquisition and is requesting Prop 13 funds for additional planning, design, and construction of the project. Upon successful completion of this project, a low impact natural multiple benefit park adjacent to the San Gabriel River will be restored.

* * * *

PROJECT DESCRIPTIONS:

POTENTIAL "DEMONSTRATION PROJECTS" FOR ANALYSIS IN DRAFT PROGRAM EIR

Hellman Wetlands Restoration:

The City of Seal Beach will become an integral part of the planned wetlands restoration project in the Hellman Property. This restoration project will entail freshwater, brackish water and saltwater areas in the wetlands. The City of Seal Beach proposes to be the lead agency for the freshwater component of the project. Fresh water will be redirected from the Los Alamitos detention basin. Storm water will be pumped and deposited in the upper land areas and the water will be cleaned through a natural cleaning process such as bio-swales. This will convert the water into a valuable source of water to the lower wetland areas and it would be the first phase to bring the wetlands to its natural habitat. The City, in conjunction with the other agencies will thoroughly investigate all options to provide for the design and construction of the restored wetlands. The Hellman project site is located within a regional wetland complex, which is a significant component of the Pacific Flyway.

The Hellman Lowland area is a designated 100 acres of low lying land which historically was a wetlands area. The land is in the process of being transferred from Hellman Properties LLC to the Wildlife Conservation Board for conversion into a wetlands area. Several Federal, State and local agencies will take part in a collaborative and comprehensive effort to create a diverse and a multiple goal oriented wetlands restoration project that may include freshwater, brackish water and salt water. This project is needed because it will provide several types of water quality improvements to our beaches. The City of Seal Beach envisions several projects within the property and our goals include:

- A project designed to improve water quality at public beaches
- Make improvements to ensure public beaches meet the bacteriological standards
- A project designed to implement storm water and runoff pollution reduction and prevention programs for the restoration and protection of coastal water quality.
- A project designed to assist in the goals of the Clean Water Act.
- A project which provides education to the community and region.
- A project which provides habitat and natural resources.

Dry weather and wet weather run-off have been identified as a contributor to high bacterial levels often found in the ocean waters off the Orange County coastline. Non-point pollution conveyed by low flow urban run-off water from the watershed can be a significant contributor to poor water quality in the San Gabriel watershed. Wetlands are a

proven method to improve the quality of water as demonstrated by the Irvine Ranch Water District Project. In storm and non-storm conditions, wetlands would remove a large amount of non-point pollution, thereby reducing the amount of non-point pollution that is introduced into the San Gabriel watershed. The end result is less contamination into the San Gabriel River and an increase in water quality for the river and beaches.

This project is a priority for the City and is consistent with the goals of the Prop 13 by providing natural, cultural and habitat resources, education, scenery, reducing pollution, and protecting water quality at the beach. The City is expecting partial funding from Proposition 13 grants and is requesting Prop 13 funds for the planning and design portion of the project. With several regulatory agencies involved in this site, the planning and design costs will be extensive. Upon successful completion of this project, a wetlands area will be restored and millions of gallons of storm water and urban run-off water would have particulates removed before entering the San Gabriel River.

* * * *

PROJECT DESCRIPTIONS:

POTENTIAL "DEMONSTRATION PROJECTS" FOR ANALYSIS IN DRAFT PROGRAM EIR

San Gabriel River Trail Restoration:

North Segment:

The proposed project will restore the existing San Gabriel River Trail and the trailside facilities from Marina Drive to Pacific Coast Highway and upgrade the site to feature new amenities. This project is of regional significance because of its connection the San Gabriel River Trail upstream. The restoration will be a benefit to the community and to the general public because of its high recreation use and educational benefits.

The proposed project includes:

- Rehabilitation of the asphalt trail including new striping;
- Installation of new signage and reflective devices on the trail and the parking lot;
- Rehabilitation of fencing along the trail;
- Installation of informational, recreational, educational or interpretive kiosk;
- Install new picnic areas along the trail including benches, tables and bike racks;
- Landscaping with trees and native vegetation;

This project is feasible and a priority for the City and is consistent with the goals of the Prop 13 by providing multiple benefit natural, cultural and habitat resources, education, scenery, and low impact recreation. The project is accessible from public streets and trails. The City will recruit active stakeholders for support in the project. The City is requesting Prop 13 funds for the planning, design, and construction of the project. Upon successful completion of this project, a low impact natural multiple benefit trail and trail facility adjacent to the San Gabriel River will be restored.

South Segment:

The proposed project will restore the existing San Gabriel River Trail and the trailside facilities from the First St. Parking Lot to Marina Dr. and upgrade the site to feature new amenities. This project is of regional significance because of its connection the San Gabriel River Trail upstream. The restoration will be a benefit to the community and to the general public because of its high recreation use and educational benefits.

The proposed project includes:

- Rehabilitation of the asphalt trail including new striping;

- Installation of new signage and reflective devices on the trail and the parking lot;
- Rehabilitation of fencing along the trail;
- Rehabilitation and upgrade of existing restrooms to meet current ADA standards;
- Construction of an additional restroom;
- Installation of informational, recreational, educational or interpretive kiosk;
- Install new picnic areas along the trail including benches, tables and bike racks;
- Landscaping with trees and native vegetation;
- Rehabilitation of the existing First Street Parking Lot with open graded asphalt;

This project is feasible and a priority for the City and is consistent with the goals of the Prop 13 by providing multiple benefit natural, cultural and habitat resources, education, scenery, low impact recreation, and will improve water quality with the open graded asphalt parking lot. The project is accessible from public streets and trails. The City will recruit active stakeholders for support in the project. The City is requesting Prop 13 funds for the planning, design, and construction of the project. Upon successful completion of this project, a low impact natural multiple benefit trail and trail facility adjacent to the San Gabriel River will be restored.

* * * *

ATTACHMENT 2

PROJECT DESCRIPTION
SAN GABRIEL RIVER TRASH DEBRIS BOOM

This proposed project would provide for the construction of a trash debris boom on the San Gabriel River. This proposed collector is developed for the removal of debris that flows within the San Gabriel River watershed and is ultimately discharged into the mouth of the river. This project will remove approximately 2,800 cubic yards of trash per year. The main goal of the project is to reduce the debris load at the mouth of the San Gabriel River, and in particular to decrease the quantity of debris that is washed up onto Seal Beach and adjoining beaches.

The San Gabriel River flows from North to South, from the San Gabriel Mountains and through the eastern portions of Los Angeles and Long Beach, eventually reaching the Pacific Ocean in Seal Beach. Coyote Creek flows from the northeast to southwest and passes through a small section of Long Beach before it outlets into the San Gabriel River. By volume much of the material transported downstream is floating uncompacted Styrofoam, paper cups, plastic bottles, vegetation, cigarette butts, and other litter and waste. During large storm events, much larger and heavier trash items can be transported along the bed of the river: tires, shopping carts, and discarded furniture are all commonly found along the beaches of Seal Beach.

This proposed project would provide for a debris catching net in the River to trap debris following a rainstorm. This BMP's would remove particulate such as litter, vegetation, and other debris from the incoming water. The effluent water quality is improved and continues or its outlet in the San Gabriel River. City crews then remove the particulate by a vactor or vacuum truck and dispose of the materials at a proper facility.

Debris booms have been studied by the City of Los Angeles, the County of Orange, and the LA County and have been successful in removing particulate, which contain contaminants in storm water flow. The City of Seal Beach received a $300,000 grant from the Coastal Conservancy to prepare the planning and design of this project. Currently, a design study has been completed and design preparation is underway.

Dry weather and wet weather run-off have been identified as a contributor to high bacterial levels often found in the ocean waters off the Orange County coastline. Non-

point pollution conveyed by low flow urban run-off water from the watershed could be a significant contributor to poor water quality in the San Gabriel River watershed. This debris boom is a proven method to improve the quality of water in the San Gabriel River watershed by removing contaminated particulate from the storm water. The City of Long Beach typically collects 4,000 tons of debris annually at the mouth of the Los Angels River. In storm and non-storm conditions, this net would remove a large amount of non-point pollution, thereby reducing the amount of non-point pollution that is introduced into the watershed. The result is less contamination into the San Gabriel River and an increase in water quality for the river and beaches.

This project is a priority for the City and is consistent with the goals of the Clean Beaches Initiative by reducing pollution and protecting water quality at the beach. Upon successful completion of this project, millions of gallons of storm water and urban run-off water would have particulate removed before entering the San Gabriel River.

* * * *

WMD 075

City of Downey

FUTURE UNLIMITED

May 22, 2003

Mr. Marty Moreno
County of Los Angeles Department of Public Works
Watershed Management Division
P.O. Box 1460
Alhambra, CA 91802-1460

Subject: NOP Responses to the Program EIR for the San Gabriel River Master Plan

Dear Mr. Moreno:

Thank you circulating a copy of the Notice of Preparation (NOP) to the City of Downey for the Program EIR for the San Gabriel River Master Plan (Mater Plan). We believe the draft environmental document must identify and fully assess the potential impacts to the City of Downey of all river enhancement projects and elements of the Master Plan. That includes projects that would directly impact the City or projects that are planned upstream which could indirectly impact the community.

Other areas that we feel the draft program EIR must address include:

1. Recreational and wildlife encouraging strategies may negatively impact water quality and public health. Human and wildlife are sources of pathogens and indicator bacteria, while natural and constructed habitat areas can easily become a source of vector organisms and disease. The projects contemplated by the draft PEIR must account for their potential risk or impact on these aspects of public welfare. Perpetuity funding of vegetation maintenance and vector control activities needs to be included in project planning efforts and part of the project commitment documents.

2. Since the impacts of these projects on water quality are unpredictable, periodic up and down stream monitoring should be planned to demonstrate that the projects do not adversely impact water quality. Provisions should be made so that if and when monitoring demonstrates an adverse impact (on sediments, bacteria or other water constituent) of the project on the MS4 system, this can not be held against the MS4 conveyance agencies. In other words, project proponents should not be held responsible for the impact of wildlife in wild area.

   If my recommendations in No. 2 can not be incorporated, the proposed project should include potential treatment, regulatory or litigation costs that can be reasonably be expected by undertaking the project.

3. Exotic vegetation control measures and costs should be included; and wildlife flood refugia should be considered as part of the planning effort.

4. Native flora and fauna introduction should be considered for appropriate species. Examples could include Santa Ana Sucker, Western Toad, Pacific Treefrog and Western Fence Lizards

Again, thank you circulating a copy of the NOP to us. In addition, I am requesting that you circulate copies of the draft PEIR to me and Mr. Gerald Greene who is a Senior Civil Engineer with the City's Public Works Department.

Also, please notify us of any public meetings/hearings that are scheduled for Master Plan project or its draft Program EIR.

If you have any questions, do not hesitate to contact me at 562.904.7158.

Sincerely,

Mark Sellheim, AICP

CC: Gerald Greene, Public Works Department .

GREATER LOS ANGELES COUNTY
VECTOR CONTROL DISTRICT

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Office (562) 944-9656 Fax (562) 944-7976
Email- glacvector@mgci.com Website: www.glacvcd.org

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May 23, 2003

Mr. Marty Moreno
County of Los Angeles Department of Public Works
Watershed Management Division
Lead Agency for the Program EIR for the San Gabriel River Master Plan
P.O. Box 1460
Alhambra, CA 91802-1460

Re.: Notice of Preparation of a Draft Program EIR in Compliance with Title 14 (CEQA Guidelines), Section 10582(a), 15103 and 15375 of the California Code of Regulations.

Dear Mr. Moreno:

The Greater Los Angeles County Vector Control District (herein, "District") after carefully and thoroughly reviewing the Rivers and Mountains Conservancy's plans to transform portions of the San Gabriel River to its original pristine state, including the re-creation and generation of wetlands, has concerns regarding such action.

The consequence of creating pristine river and streambed communities and associated wetland habitat will assuredly foster ideal breeding sources for mosquitoes, black flies and midges, eventually resulting in their increased occurrence and abundance. In the densely populated and highly urbanized areas adjacent to the San Gabriel River, uncontrolled pullulations of these insects will severely annoy nearby residents, likely prevent intended recreational activities associated with the River, and increase the risk to human health from mosquitoes potentially transmitting diseases. Although it is the principal function and mission of the District to control these insects and minimize transmission of human diseases from mosquitoes, in natural or man-made aquatic habitats as envisioned and contemplated by the Conservancy, with emergent aquatic vegetation allowed to grow and develop unmanaged, that task is essentially impossible without the continuous application of adulticides, which is the least preferred method of controlling mosquitoes, particularly in habitats considered environmentally sensitive and intended for public appreciation and use.

Mosquito-borne encephalitis viruses (St. Louis encephalitis and western equine encephalomyelitis) are endemic to southern California, and, with the anticipation of West Nile virus introduction into California, planned restoration projects such as this would require a commitment to an established permanent and continuous program of aquatic vegetation and water quality management.

Without such a management program, uncontrolled mosquito, midge, and black fly populations and increased risk to human health are inevitable. The Conservancy's envisioned concept of "wildlife corridors" in reality may transform into "disease corridors", if programs aimed at perpetual management of future established aquatic habitats fail to materialize (***Attachment I*** was submitted to the San Gabriel & Lower Los Angeles Rivers & Mountains Conservancy in October 2000 and is now being once again re-submitted for consideration).

The control of nuisance aquatic insect populations, particularly mosquitoes, is accomplished using integrated mosquito management, combining the prudent and careful use of various chemical, biological, and environmental methods and techniques. This has been the operational approach of the District and the scientific basis of mosquito control adopted throughout California for nearly a century. In wetlands, deliberately environmentally well managed (i.e., long-term commitment to proper maintenance of emergent aquatic and vegetation), mosquitofish (biological) satisfactorily and effectively control mosquitoes, obviating little or no need for chemical intervention or application. Unmanaged, wetland habitats become serious public health nuisances, their resident or introduced mosquitofish cannot perform as efficient mosquito predators, and periodic and sustained chemical use becomes necessary, usually with temporary, but most often, little or no success.

The California Health and Safety Code (***Attachment II***) clearly defines and delimits the powers granted to mosquito and vector control districts, enabling them, if necessary to file abatement notices and impose punitive fines on individuals or agencies creating a public health nuisance. The establishment of wetlands associated with the River, left to the natural forces of ecological succession without the human intervention of continuous and proper management, will result in unnecessary mosquito breeding habitats and populations interacting with residents to create a public health nuisance.

Based on our knowledge and practical experience with both unmanaged and managed wetlands, and the difficult and problematic public health consequences that can occur associated with them (***Attachment III***), the District strongly urges the Los Angeles County Department of Public Works to seriously consider incorporating in their planning of aquatic habitats or ecosystems, especially the creation of extensive wetlands associated with the River, **permanent and continuous** management programs that will permit and allow for the uninterrupted maintenance of aquatic vegetation associated with these habitats or ecosystems, in the effort both to preserve and enhance the integrity of the wetlands system, and preclude the unnecessary need of the District to make chemical applications.

District staff will be available to provide consultation on mosquito and related vector problems and serve on committee/s addressing public health and safety issues relative to vector control.

Thank you for your anticipated commitment and consideration for public health-related issues.

Yours truly,

Jack E. Hazelrigg, Ph.D.
District Manager

Cc: Ray T. Smith, President, District Board of Trustees
Congresswoman Hilda L. Solis
Assemblywoman Sally Havice
L. A. City Councilwoman Janice Hahn
Belinda Faustinos, SGLLARMC

mbm/jeh

GREATER LOS ANGELES COUNTY VECTOR CONTROL DISTRICT

ATTACHMENT I

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Bill DeWitt
WHITTIER
Dave Butler

DISTRICT MANAGER
Jack Hazelrigg, Ph.D.

POSITION STATEMENT

Regarding

San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy

October 25, 2000

The efforts of the Honorable Senator Hilda L. Solis to create the San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy (herein, Conservancy), and the proposal to establish a wildlife corridor within a densely populated urbanized metropolis, is an unique, environmentally significant, and commendable effort.

However, the California Department of Health Services, Local Environmental Health Departments and Special Districts (such as the Greater Los Angeles County Vector Control District, San Gabriel Valley Mosquito & Vector Control District, Orange County Vector Control District and Compton Creek Mosquito Control District), are mandated by state law (California Health and Safety Code) to safeguard public health within their boundaries by conducting nuisance and disease mosquito surveillance and control and surveillance of other vector-borne diseases. Thus, we feel it is necessary to inform you that some of the actions of the Conservancy may affect public health.

We understand that one of the considerations of the Conservancy may be to restore natural habitat along the rivers, including establishing or reclaiming wetlands and riparian systems. Unfortunately, these habitats produce mosquitoes. They also attract wild birds and migratory fowl, which serve as hosts for viruses in the disease cycle that cause encephalitis. These viruses can cause serious diseases in humans, such as St. Louis encephalitis and western equine encephalomyelitis. The potential for emerging vector-borne infections in California, such as the recently introduced West Nile virus in New York and now spreading to other eastern States should also be considered, requiring additional efforts for mosquito surveillance, disease detection and prevention of potential outbreaks. Mosquitoes usually bite birds and cycle the viruses in the environment, but may also transmit them to humans. Implementing sound, environmentally compatible techniques such as proper water and aquatic vegetation management, reduces the potential threat of mosquito and other vector-borne diseases associated with wetlands and riparian habitats.

Should the Conservancy, in its future plans or actions, consider restoring certain portions of the rivers to create or reclaim wetland and riparian habitat, we request that the Conservancy considers the possible effects on public health. These projects should proceed only if funding is provided throughout the life of the project for continuous, proper water, vegetation and mosquito management in order to minimize the presence of mosquitoes and other vectors. If we allow "Mother Nature" to take its course, this, as well as future generations could potentially encounter maladies, such as malaria, dengue, yellow fever, encephalitis, and rodent-borne diseases, as did our forefathers.

It is our position that natural or reclaimed wetlands and other aquatic projects that benefit or enhance the environment can co-exist with the mandates of public health agencies responsible for controlling mosquitoes and vector-associated diseases. However, this can only be accomplished successfully if consideration is given to minimizing the occurrence of vectors. In addition, a successful conservancy must be funded sufficiently to ensure that mosquitoes and other vectors, and the diseases they can transmit, will always be effectively monitored for early detection, thereby, enabling preventive measures for potential outbreaks.

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NORTH HOLLYWOOD BRANCH
12741 Saticoy Street, North Hollywood, CA 91605
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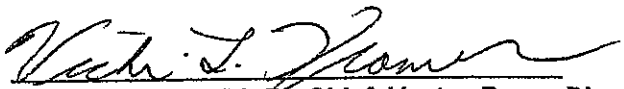
Mr. Dexter D. MacBride, the immediate Past President of the Board of Trustees, Greater Los Angeles County Vector Control District, is an Advisory Committee member for the Wildlife Corridor Conservation Authority. We are interested in helping the Conservancy achieve its goals while providing maximum protection to the public's health. We are available for consultation and request the opportunity to participate and serve on future Conservancy committees.

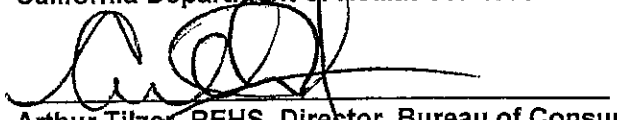
If you have any questions regarding our position or require specific information, please contact Jack E. Hazelrigg, Ph.D., Manager.

mbm/jeh

Signatory Agencies:

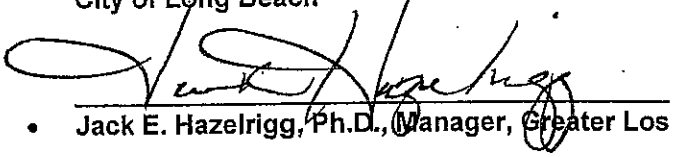


- Vicki L. Kramer, Ph.D., Chief, Vector-Borne Disease Section, California Department of Health Services

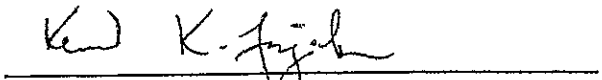


- Arthur Tilzer, REHS, Director, Bureau of Consumer Protection, Environmental Health, Los Angeles County Department of Health Services

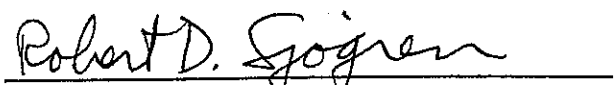
- Ron Arias, MPA, Director, Department of Health and Human Services, City of Long Beach



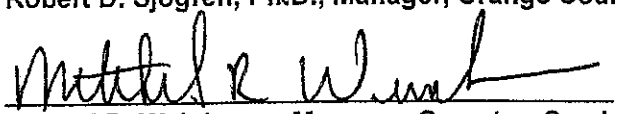
- Jack E. Hazelrigg, Ph.D., Manager, Greater Los Angeles County Vector Control District



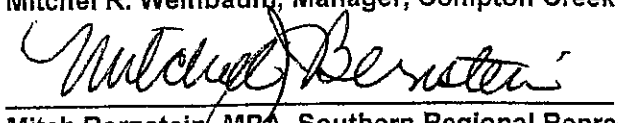
- Kenn K. Fujioka, Ph.D., Assistant Manager, San Gabriel Valley Mosquito and Vector Control District



- Robert D. Sjogren, Ph.D., Manager, Orange County Vector Control District



- Mitchel R. Weinbaum, Manager, Compton Creek Mosquito Abatement District



- Mitch Bernstein, MPA, Southern Regional Representative, Mosquito and Vector Control Association of California

ATTACHMENT II
FILE

Multipurpose Constructed Treatment Wetlands in the Arid Southwestern United States: Are the Benefits Worth the Risks?[1]

William E. Walton

Department of Entomology, University of California, Riverside, California, 92521, USA
E-mail: walton@mail.ucr.edu

Abstract

Multipurpose constructed treatment wetlands are being used increasingly in the southwestern U.S. to reclaim water, provide habitat for wetlands wildlife, educate the public on issues related to water and wildlife conservation, and fulfill other goals. Whereas, man-made wetlands have proven effective for water treatment, one serious drawback is the potential of some wetlands to produce large numbers of pathogen-transmitting and pestiferous mosquitoes. In regions of rapid human development, the juxtaposition of wetlands, which contain reservoirs and vectors of the causative agents of human disease, and human developments, which may contain avian reservoirs capable of rapid arbovirus amplification, are a concern to public health officials. Population trends of immature and adult mosquitoes differ markedly among wetlands receiving water that differs in quality and differing in coverage by vegetation. Four case studies are discussed in terms of mosquito production and control.

INTRODUCTION

Multipurpose constructed wetland technology offers many potential benefits including water quality improvement/reclamation, creation of wetland habitat, wildlife conservation, recreation, education and research, and amenities to housing developments. As compared to conventional wastewater treatment facilities, the lower construction and annual operational costs make constructed treatment wetlands a potential alternative technology for wastewater treatment (Kadlec and Knight 1996). Constructed wetland technology has a great potential for meeting the wastewater treatment needs of small communities (< 10,000 persons with flows ≤ 1 MGD) in the U.S. during a period of both reduced funding for capital improvements in existing wastewater treatment facilities and greater threats of enforcement for failure to meet wastewater discharge requirements (Bastian 2001). Facilities serving small communities with limited abilities to fund improvements in conventional wastewater treatment plants service about 72% of the U.S. population (Bastian 2001). The advances in the technology (Kadlec and Knight 1996, Vymazal et al. 1998, USEPA 2000) and the marked increase in the number (Cole 1998) of constructed wetlands attest to the utility of the technology for wastewater treatment. Despite the success of many constructed wetlands to attain multiple goals, questions remain concerning the suitability of man-made wetlands as surrogates for wetlands lost to human land use (NRC 2001) and design of treatment wetlands for multiple uses (USEPA 2000).

One drawback to multipurpose constructed wetlands primarily treating municipal wastewater is the production of mosquitoes which can be pestiferous and vectors of pathogens causing disease in humans and companion animals (Walton et al. 1998, CH2M Hill 1999, Russell 1999, Knight et al. 2001). Constructed treatment wetlands in arid regions of the U.S. may enhance and alter the seasonal phenology of mosquito populations in several ways. First, nutrient-rich municipal wastewater may

[1] INTECOL Invited Papers Symposium 30. Disease and Wetlands Thursday, August 10, 2000.

In: Pries, J. (ed.) 2002. Treatment Wetlands for Water Quality Improvement: Quebec 2000 Conference Proceedings. CH2M HILL Canada Limited, Pandora Press, Waterloo, ON, Canada. 228 pp.

enhance resources for mosquito larvae ultimately increasing adult mosquito production. Second, a continuous source of shallow standing water with emergent vegetation provides developmental sites for immature mosquitoes and resting habitats for adult mosquitoes that might not otherwise exist during particular times of the year in arid regions. Compared to a bimodal annual pattern of mosquito abundance observed for some mosquito species in the arid southwestern U.S. (Durso and Burguin 1988), a continuous supply of municipal wastewater can result in a unimodal annual pattern of mosquito abundance exhibiting (i) an earlier onset of mosquito production during each year which can be further augmented by comparatively warm water derived from bacterial metabolism in the conventional wastewater treatment process, (ii) production during the summer months when mosquito developmental sites are usually dry and mosquitoes would either not be active or occur at low abundance, and (iii) conditions favorable for mosquito production later during the year (Figure 1A). Furthermore, design features of wetlands that create intermittently flooded habitats can also create mosquitoes if standing water persists long enough for mosquitoes to complete immature development.

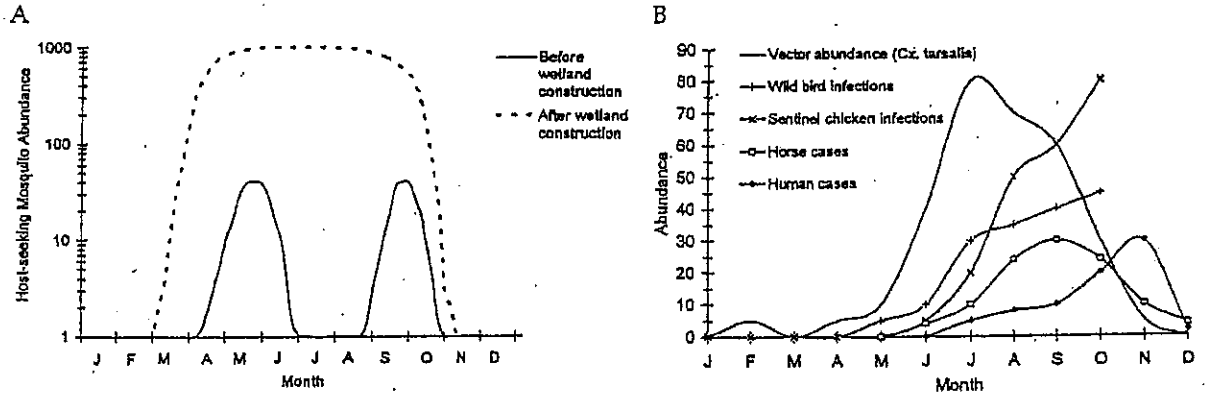


FIGURE 1
(A) HYPOTHETICAL CHANGE IN MOSQUITO ABUNDANCE IN AN ARID REGION OF THE SOUTHWESTERN U.S. FOLLOWING OPERATION OF A WETLAND PROCESSING MUNICIPAL WASTEWATER. (B) PHENOLOGY OF A WESTERN EQUINE ENCEPHALOMYELITIS OUTBREAK IN CALIFORNIA [REDRAWN FROM CH2M HILL (1999)]

Even though annual abundance patterns of mosquitoes inhabiting arid regions of the U.S. are not always bimodal (Bohart and Washino 1978), a continuous supply of nutrient-rich water cannot only increase abundance and favor enhanced activity of adult mosquitoes by providing mosquito-friendly habitat during periods of natural inactivity or low activity, it might also alter mosquito life histories (e.g., natural selection for a reduction in diapause intensity in adult mosquitoes, enhanced survivorship of adult mosquitoes). Such changes in seasonal abundance patterns and life histories can have important consequences on the potential for pathogen transmission by mosquitoes of public health significance.

The implications for public health in regions of rapid urban and suburban development are particularly acute where wetlands lie in proximity to human development. Wetland birds are reservoirs for arboviruses in an enzootic cycle involving mosquito vectors. Mosquitoes which have fed on wetland birds and acquired arbovirus infections can migrate into the surrounding region and subsequently feed and infect humans directly or infect susceptible peridomestic birds, such as house finches (*Carpodacus mexicanus*) and house sparrows (*Passer domesticus*) (Reeves 1990). Mosquitoes taking blood meals from viremic peridomestic birds can then potentially infect humans.

A typical outbreak of western equine encephalomyelitis in California would exhibit virus activity in the vector population (*Culex tarsalis*), seroconversions in susceptible wild birds and then in chickens used as sentinels for virus activity (Figure 1B). An increased incidence of avian infections would be followed by virus activity in horses and humans. The size of the vector population, the survival of infected adult mosquitoes to permit multiple blood meals, and the propensity of mosquitoes to feed on different vertebrate host species are among the important factors influencing the dynamics of disease outbreaks. Constructed treatment wetlands in arid regions have the potential to significantly influence the first two of these characteristics. An enhancement of summer mosquito populations during the period of accelerating pathogen activity has the potential to create disease outbreaks.

Mosquito populations have been studied in relatively few treatment wetlands (CH2M Hill 1999, Knight et al. 2001). This paper will highlight mosquito-related issues at four constructed treatment wetlands in California and Arizona. The difficulties for mosquito abatement posed by dense emergent vegetation used as part of the treatment process, the potential effects of water quality on mosquito abundance and the estimated costs for mosquito abatement will be briefly discussed.

CASE STUDY SITES

San Jacinto Demonstration Wetland

The 9.9 ha multipurpose demonstration wetland is located in San Jacinto, California and the site is described in detail by Sartoris et al. (2000). The wetland was configured as a marsh-pond-marsh system. The marshes were planted with *Schoenoplectus (=Scirpus) californicus* and *S. acutus* in autumn 1994 with 3 or 4 zones (12 m wide) of open water in each 0.5 m deep marsh. The central pond was 1.02 ha and 1.8 m deep. The wetland was incorporated into the Eastern Municipal Water District's Hemet/San Jacinto Regional Water Reclamation Facility's treatment train in January 1996 and, during the two year period discussed here, mean daily total inflow volume was 4542 m^3 d^{-1} of secondary treated effluent from the activated sludge process plant. Hydraulic retention time was 9-14 days. Mean concentration for constituents in the inflow water were total N 19.93 mg L^{-1} (organic N 3.3 mg L^{-1}, NH_4-N 14.5 mg L^{-1}, NO_3-N 0.6 mg L^{-1}), total P 2.5 mg L^{-1}, BOD (summer 1997 only) 46.1 mg L^{-1}. NH_4-N loading rates during the period of annual mosquito activity (1 April – 1 November) increased 3-fold in 1997 (1996: 57.5 kg d^{-1}; 1997: 152.9 kg d^{-1}). The primary functions of the wetland are nitrogen removal and fecal coliform bacteria reduction from wastewater.

Prado Wetlands

The 186 ha Prado Wetlands is located north of Corona, California in western Riverside County and consists of 50 ponds divided among three types categorized by intended vegetation cover (60, 40, 0% of surface covered by emergent vegetation) and water depth (0.45, 0.6, 2.4 m, respectively). This multipurpose wetland is operated by the Orange County Water District and the primary function of the wetlands is to remove nitrate from Santa Ana River water prior to recharge of a groundwater basin. Half of the flow (1.8 - 2.4 m^3 s^{-1}) of the Santa Ana River is diverted through the wetlands. Hydraulic retention time is 5-7 days during the summer and during this period nitrate concentration declines from approximately 10 mg L^{-1} to non-detectable levels across the wetland. Ammonium nitrogen levels are low (circa 0.12 mg L^{-1}) and phosphate-P is around 1.2 mg L^{-1}. The wetlands were rebuilt in 1997, but were scoured by high flows caused by El Niño rains in early 1998 (Keiper et al. 1999). The dominant vegetation in the wetlands is *S. californicus* and *Typha* spp.

Tres Rios Demonstration Constructed Wetlands

The Tres Rios Demonstration Constructed Wetland Project is located in Tolleson, Arizona and is operated by the City of Phoenix, Water Services Department. The major function of the wetlands was to evaluate the applicability of constructed wetland technology for large-scale wetlands for habitat enhancement. Between August 1995 and late 1998, the project received approximately 7600 m^3 d^{-1} of municipal wastewater from the 91st Avenue Wastewater Treatment Plant which utilizes an activated sludge process. During 1995 through 1998, the project consisted of three sites totaling approximately 5 ha of surface flow wetlands divided into deep open-water zones (> 1 m deep) and shallow (< 50 cm) marshes containing emergent vegetation, primarily *Schoenoplectus (=Scirpus) validus* and *S. olneyi*. The Cobble Site had a paired 0.9 ha basins located in the Salt River channel. The Hayfield Site had two 1.3 ha basins located above the Salt River channel. Each basin had 20% of its surface area as deep open-water zones. The Research Cell Site consisted of twelve 1200m^2 ponds located within the treatment plant. The basins were initially configured with varying amounts (11 to 35% of the surface area) of open water but were rapidly filled by bulrushes. Median values for constituents in the inflow water to the Hayfield and Cobble sites were total N 5.7-8.1 mg L^{-1} (organic N 1.2 mg L^{-1}, NH_4-N 2 mg L^{-1}, NO_3-N 2.4 mg L^{-1}), PO_4-P 3.3 mg L^{-1}, COD 37 mg L^{-1}, BOD 3 mg L^{-1}, TOC 8.6 mg L^{-1} (USBR 2001).

Sweetwater Wetlands

The Sweetwater Wetlands is located northwest of Tucson, Arizona and is operated by the City of Tucson Water Department. The wetlands were constructed during 1996 and shallow zones were planted with bulrush during April-May 1997. The site contains four settling basins (total surface area: 0.7 ha), two surface flow wetlands (6 ha) and four groundwater recharge basins (5.7 ha). The two 3 ha wetlands contained a mixture of open water (< 50%) and shallow emergent marshes supporting predominantly *Typha domingensis*, *S. validus* and *S. olneyi*. The primary function of the wetlands is to treat backwash water from filters used to process secondary effluent from the Roger Road Wastewater Treatment Plant. Therefore, the wetlands receive secondary treated effluent that has a high suspended solids content. The wetlands received a mixture of secondary effluent and backwash water between April and October 1998. During this time, the proportion of backwash effluent was gradually increased until only backwash water entered the wetlands after October 1998. Flow during summer 1999 was approximately 605 m^3 d^{-1}. Mean concentrations for selected constituents in the inflow water during summer 1999 were Kjeldahl N 11.9 mg L^{-1}, NO_3-N 1.0 mg L^{-1}, PO_4-P 12.9 mg L^{-1}, and BOD 117.3 mg L^{-1}.

MOSQUITO PRODUCTION AND CONTROL

The abundance of mosquitoes actively seeking blood meals at the treatment wetlands increased annually after beginning operation. Host-seeking mosquito populations were initially small because emergent vegetation was sparse and nutrient loading rates were typically low during the period that vegetation was being established. As emergent vegetation filled in the shallow zones of treatment wetlands and loading rates were increased when the wetlands were incorporated into the treatment train, mosquito abundance increased concomitantly.

At the San Jacinto demonstration wetland, host-seeking mosquito (*Culex* spp.) abundance during early summer increased approximately ten-fold annually to nearly 40,000 $trap^{-1}$ $night^{-1}$ by the third year of operation (Figure 2A). Host-seeking mosquito abundance (integrated on an annual basis:

mosquito days) increased 6-fold annually. Mean larval abundance in dip samples during summer 1997 was nearly 10 larvae dip^{-1} (Walton et al. 1998).

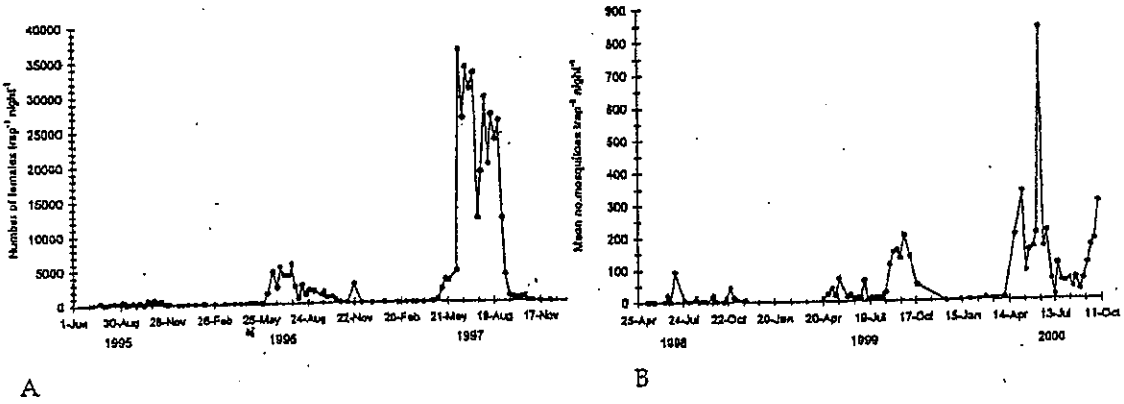


FIGURE 2
ABUNDANCE OF HOST-SEEKING MOSQUITOES COLLECTED BY CARBON DIOXIDE-BAITED SUCTION TRAPS AT THE (A) SAN JACINTO DEMONSTRATION WETLAND 1995-97 AND (B) PRADO WETLANDS 1998-2000 IN SOUTHERN CALIFORNIA

Mosquito abatement using bacterial larvicides (2 applications of *Bacillus thuringiensis* var. *israelensis* (Bti), 5 applications of *B. sphaericus* (Bs)) and an adulticide (2 applications of Pyrenone®; 6.0% pyrethrins, 60% piperonyl butoxide) was carried out by helicopter between August and mid-November 1997 (Walton et al. 1998). Early afternoon applications combining Bti and Pyrenone did not demonstrably reduce the mosquito populations during mid-August. The first treatment of *B. sphaericus* also appeared to have little effect on the mosquitoes. During late August, adult mosquito emergence across the wetland indicated that mosquito mortality in the inlet marshes was much greater than in the outlet (polishing) marshes (Walton et al. 1998). Because the bacterial larvicides were applied to the entire wetland, this mortality was unlikely to have been caused by the larvicide. Mosquito populations declined almost two orders of magnitude during September due in part to larvicides. In 1998, the wetland was reconfigured to improve water quality performance and reduce mosquito abundance.

At the Prado wetlands, mosquito populations also increased annually (Figure 2B) following damage caused by flooding from El Niño rains during early 1998. Even though the surface area of the Prado wetlands is ~20 times that of the San Jacinto wetland, mosquito abundance was considerably lower at the Prado wetlands (cf. Figure 2A and 2B). The comparatively small host-seeking mosquito population at the Prado wetlands was likely caused by the interaction of several factors such as the comparatively high water quality of the Santa Ana River, low coverage by emergent vegetation, high rates of water flow, mosquito predators occurring naturally within the river, and an excellent working relationship between wetland managers and vector control personnel which promotes immediate attention to potential mosquito problems. The compartmentalization and redundancy built into the wetland system, as well dikes that can accommodate mosquito control equipment, facilitate environmentally friendly vector control focused on small areas rather than more expensive, basin-wide applications of mosquito control agents. Mosquito production is however greatly enhanced following vegetation management (Keiper and Walton, unpublished data) and by autumnal flooding of seasonal wetlands adjacent to the Prado wetlands. Many *Culex* species readily colonize recently inundated habitats; such habitats are made more attractive to mosquitoes when harvested and dead vegetation is inundated.

Mosquito production at the two Arizona treatment wetlands followed the aforementioned interannual trends. At the Tres Rios wetlands, host-seeking mosquito populations increased appreciably during the second year of operation. By late spring 1997, host-seeking mosquito abundance was > 1400 individuals trap^{-1} night^{-1} at several trap sites (CH2M Hill 1999). Between June and August 1997, > 80,000 mosquitoes were collected over 12 nights at the three sites within the Tres Rios complex (R. Wass, personal communication). Mosquito abatement measures using mosquito-specific bacterial larvicides were implemented during 1998 and mosquito abundance was reduced but was still high (> 39,800 mosquitoes collected over 14 nights from June through August 1998). Source reduction and other mosquito abatement measures outlined in CH2M Hill (1999) were carried out in 1999 and summer host-seeking mosquito collections declined to < 4,300 females (R. Wass, personal communication).

Monthly mean host-seeking mosquito abundance (< 100 individuals trap^{-1} night^{-1}) at the Sweetwater wetlands was low during the period when emergent vegetation was being established and loading rates were low (Figure 3). During late spring 1998, mosquito abundance increased dramatically to > 5500 females trap^{-1} night^{-1}. Mosquito abatement, primarily using larvicides, began in summer 1998. Monthly mean mosquito abundance was reduced to between 500-2,000 females trap^{-1} night^{-1}, but arbovirus activity was detected in the vicinity of the wetland during autumn 1998. To reduce mosquito abundance and arbovirus activity, mosquito abatement was begun early in 1999 (Figure 3). A rotation of three larvicides at approximately biweekly intervals was carried out using a remote-controlled helicopter during spring 1999. Two mosquito-specific bacterial larvicides, (Bti and Bs), and an insect growth regulator, methoprene, were used. The rotation of the bacterial agents is a strategy to reduce the rapid evolution of resistance in mosquitoes to the more effective agent in organically enriched waters, *B. sphaericus*. Weekly applications of the bacterial agents were carried out during the summer and autumn. Malathion was applied once in August (Figure 3). Additional adulticiding was carried out weekly and then semiweekly (Figure 3: single- and double-headed arrows, respectively) using the synthetic pyrethroid sumithrin 2+2. Despite mosquito abatement efforts, arboviral activity was detected during the autumn.

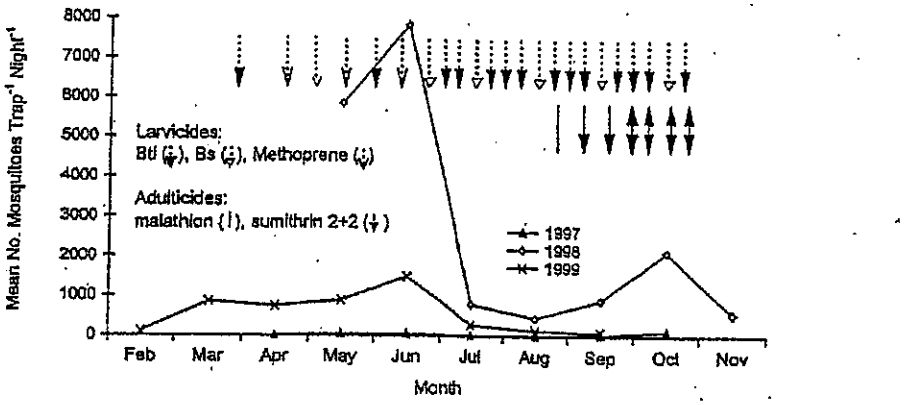


FIGURE 3
HOST-SEEKING MOSQUITO ABUNDANCE AT THE SWEETWATER WETLANDS, TUCSON ARIZONA DURING 1997-1999 AND MOSQUITO ABATEMENT CARRIED OUT DURING 1999. MOSQUITO ABUNDANCE WAS BASED ON FEMALE MOSQUITOES COLLECTED BY CARBON DIOXIDE-BAITED SUCTION TRAPS

DISPERSAL OF MOSQUITOES

Adult mosquitoes produced at a wetland can disperse in significant numbers several kilometers into the surrounding region. Mosquitoes differ appreciably in their dispersal tendencies; some container-breeding mosquitoes move < 200 meters from larval development sites whereas other mosquitoes associated with wetlands often disperse en masse tens of kilometers in search of hosts (Service 1993).

Two species commonly found at treatment wetlands in the southwestern U.S. show either strong developmental site fidelity (the tule mosquito, *Culex erythrothorax*) or a tendency to disperse (nearly 1-2 km night^{-1}; the western encephalitis mosquito, *Culex tarsalis*). More than 50% of blood-engorged *C. erythrothorax* females collected at the San Jacinto wetland contained cattle blood indicating that the mosquitoes had fed on hosts in the surrounding region and returned to the wetland to develop eggs (Walton et al. 1999). Mark-release-recapture studies (Walton et al. 1999) found that > 99% of *C. erythrothorax* were collected within 0.5 km of the wetland. The distributions of unmarked and marked individuals in a 23 km^2 region of the San Jacinto Valley were similar and showed a distinct concentration at the wetland (Figure 4A).

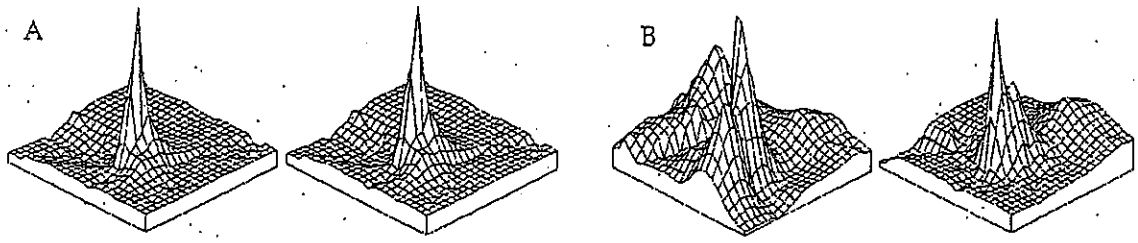


FIGURE 4
SPATIAL DISTRIBUTION OF HOST-SEEKING (A) *CULEX ERYTHROTHORAX* AND (B) *CULEX TARSALIS* IN A 23 KM^2 AREA OF THE SAN JACINTO VALLEY DURING SEPTEMBER 13-15, 1995. THE RELATIVE ABUNDANCE OF ALL INDIVIDUALS COLLECTED IN 26 CARBON DIOXIDE-BAITED SUCTION TRAPS IS SHOWN IN THE LEFT PANEL AND THE RELATIVE ABUNDANCE OF RECAPTURED INDIVIDUALS RELEASED AT THE SAN JACINTO DEMONSTRATION WETLAND (LOCATED AT THE CENTRAL PEAK IN ALL DIAGRAMS) IS SHOWN IN THE RIGHT PANEL FOR EACH MOSQUITO SPECIES

In contrast to the spatial distribution of *C. erythrothorax*, the spatial distribution of *C. tarsalis*, the predominant vector of arboviruses in the region, indicated that this species disperses widely (i.e., to the edge of the trapping grid in a single night) and occurs at three additional sites in the valley (Figure 4B). Whereas, the central peak in the *C. tarsalis* distribution is indicative of host-seeking females collected at the demonstration wetland in September 1995, as the number of host-seeking mosquitoes increased nearly two orders of magnitude during the next two years (Figure 1A) it is readily evident that the wetland would be the primary source of western encephalitis mosquitoes in region.

COST OF MOSQUITO ABATEMENT

Cost-benefit analyses for constructed treatment wetlands (Kadlec and Knight 1996) do not include the costs associated with mosquito abatement. If mosquito abatement must be carried out by helicopter, or remote-controlled helicopter, costs increase markedly. Dense emergent vegetation creates penetration problems for aerial and water-based applications of standard mosquito control agent formulations because larvicides will remain on the vegetation or vagaries in flow through vegetation often result in insufficient doses of mosquito control agents contacting or being ingested by mosquito larvae.

Annual costs for application of mosquito control agents to constructed treatment wetlands containing dense emergent vegetation ranged between $5,250 and $6,665 ha^{-1} (Table 1). Despite these expenditures and comparatively reduced adult mosquito populations, pathogen transmission and disease outbreaks are still possible. Source reduction (i.e., harvesting emergent vegetation) can be effective, but is expensive (e.g., ~ $100,000 for 9 ha) and may be contraindicated for water quality improvement.

TABLE 1
COSTS OF MOSQUITO ABATEMENT FOR THREE CONSTRUCTED TREATMENT WETLANDS IN THE SOUTHWESTERN UNITED STATES

Demonstration Wetland San Jacinto, CA (1997)		Tres Rios Wetlands Phoenix, AZ (1998)		Sweetwater Wetlands Tucson, AZ (1999)	
Larvicides	$13,664	Larvicides	$ 6,538	Larvicides	$18,500
Adulticides	$ 406	Application	$ 4,500	Adulticiding	$ 2,000
Helicopter	$12,000			Helicopter	$27,700
Total (~½ yr)	$26,070	(~½ yr)	$11,038		$48,200
Cost ha^{-1} yr^{-1}	$ 5,266		$ 5,250		$ 6,665

CONCLUSIONS

Multipurpose constructed treatment wetlands offer many potential benefits; however, production of pestiferous and pathogen-transmitting mosquitoes is one drawback. Mosquito production typically increases as water quality declines and coverage by inundated vegetation increases. Problems related to mosquito production can be acute in the arid southwestern U.S. where rapid human development, a susceptible populace unaccustomed to the presence of mosquitoes, endemic activity of arboviruses, and the presence of competent mosquito vectors of the causative agents of human diseases combine to create public health concerns. Mosquito activity is not restricted to the area circumscribed by a wetland; large-scale land use patterns should be given greater attention. Long-term planning for maintenance and mosquito abatement have been discussed in detail elsewhere (CH2M Hill 1999, Russell 1999, Knight et al. 2001) and need to be incorporated into designs and operations for multipurpose constructed treatment wetlands in order to minimize mosquito production and maximize the benefits of this important technology.

ACKNOWLEDGEMENTS

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Senate Bill No. 1588

CHAPTER 395

An act to amend Sections 25842.5, 53750, 53961, and 56036 of, and to repeal Article 4 (commencing with Section 25850) of Chapter 8 of Division 2 of Title 3 of, the Government Code, to amend Sections 101285 and 106925 of, to add Section 116111 to, to add Chapter 1 (commencing with Section 2000) to, and to repeal Chapter 5 (commencing with Section 2200) of Division 3 of, the Health and Safety Code, relating to pest abatement.

[Approved by Governor September 5, 2002. Filed with Secretary of State September 6, 2002.]

LEGISLATIVE COUNSEL'S DIGEST

SB 1588, Committee on Local Government. Mosquito abatement: pest abatement: vector control districts.

Existing law contains provisions relating to the establishment of mosquito abatement and vector control districts, including the formation of a district, the selection of a district governing board, and the powers and duties of the board. Existing law requires the State Department of Health Services to certify government agency employees who handle, apply, or supervise the use of pesticides for public health purposes as vector control technicians and to establish continuing education requirements for those employees.

This bill would repeal these provisions and would enact the Mosquito Abatement and Vector Control District Law which would specify the procedures for district formation, procedures for the selection of the district board of trustees and officers, and the powers and duties of the board. The bill would also make other conforming changes.

The bill would require the State Department of Health Services to charge and collect nonrefundable examination fees for providing examinations to certify government agency employees as vector control technicians.

This bill would incorporate additional changes in Section 53750 of the Government Code proposed by SB 1961, to be operative if SB 1961 and this bill are both enacted and become effective on or before January 1, 2003, and this bill is enacted last.

The people of the State of California do enact as follows:

SECTION 1. Section 25842.5 of the Government Code is amended to read:

25842.5. (a) The board of supervisors may provide the same services and exercise the powers of mosquito abatement districts or vector control districts formed pursuant to the Mosquito Abatement and Vector Control District Law, Chapter 1 (commencing with Section 2000) of Division 3 of the Health and Safety Code within both the unincorporated and incorporated territory of the county.

(b) Before exercising that authority within incorporated territory, the consent of the city council shall first be obtained. Before exercising the authority granted pursuant to this section, the board of supervisors shall hold a public hearing on the proposal. Notice of the hearing shall be given pursuant to Section 6061 in a newspaper of general circulation in the county.

SEC. 2. Article 4 (commencing with Section 25850) of Chapter 8 of Division 2 of Title 3 of the Government Code is repealed.

SEC. 3. Section 53750 of the Government Code is amended to read:

53750. For purposes of Article XIII C and Article XIII D of the California Constitution and this article:

(a) "Agency" means any local government as defined in subdivision (b) of Section 1 of Article XIII C of the California Constitution.

(b) "Assessment" means any levy or charge by an agency upon real property that is based upon the special benefit conferred upon the real property by a public improvement or service, that is imposed to pay the capital cost of the public improvement, the maintenance and operation expenses of the public improvement, or the cost of the service being provided. "Assessment" includes, but is not limited to, "special assessment," "benefit assessment," "maintenance assessment," and "special assessment tax."

(c) "District" means an area that is determined by an agency to contain all of the parcels that will receive a special benefit from a proposed public improvement or service.

(d) "Drainage system" means any system of public improvements that is intended to provide for erosion control, landslide abatement, or for other types of water drainage.

(e) "Extended," when applied to an existing tax or fee or charge, means a decision by an agency to extend the stated effective period for the tax or fee or charge, including, but not limited to, amendment or removal of a sunset provision or expiration date.

(f) "Flood control" means any system of public improvements that is intended to protect property from overflow by water.

property upon which a proposed property-related fee or charge is proposed to be imposed.

(i) (1) "Increased," when applied to a tax, assessment, or property-related fee or charge, means a decision by an agency that does either of the following:

(A) Increases any applicable rate used to calculate the tax, assessment, fee or charge.

(B) Revises the methodology by which the tax, assessment, fee or charge is calculated, if that revision results in an increased amount being levied on any person or parcel.

(2) A tax, fee, or charge is not deemed to be "increased" by an agency action that does either or both of the following:

(A) Adjusts the amount of a tax or fee or charge in accordance with a schedule of adjustments, including a clearly defined formula for inflation adjustment that was adopted by the agency prior to November 6, 1996.

(B) Implements or collects a previously approved tax, or fee or charge, so long as the rate is not increased beyond the level previously approved by the agency, and the methodology previously approved by the agency is not revised so as to result in an increase in the amount being levied on any person or parcel.

(3) A tax, assessment, fee or charge is not deemed to be "increased" in the case in which the actual payments from a person or property are higher than would have resulted when the agency approved the tax, assessment, or fee or charge, if those higher payments are attributable to events other than an increased rate or revised methodology, such as a change in the density, intensity, or nature of the use of land.

(j) "Notice by mail" means any notice required by Article XIII C or XIII D of the California Constitution that is accomplished through a mailing, postage prepaid, deposited in the United States Postal Service and is deemed given when so deposited. Notice by mail may be included in any other mailing to the record owner that otherwise complies with Article XIII C or XIII D of the California Constitution and this article, including, but not limited to, the mailing of a bill for the collection of an assessment or a property-related fee or charge.

(k) "Record owner" means the owner of a parcel whose name and address appears on the last equalized secured property tax assessment roll, or in the case of any public entity, the State of California, or the United States, means the representative of that public entity at the address of that entity known to the agency.

(l) "Registered professional engineer" means an engineer registered pursuant to the Professional Engineers Act (Chapter 7 (commencing with Section 6700) of Division 3 of the Business and Professions Code).

(m) "Vector control" means any system of public improvements or services that is intended to provide for the surveillance, prevention, abatement, and control of vectors as defined in subdivision (k) of Section 2002 of the Health and Safety Code and a pest as defined in Section 5006 of the Food and Agricultural Code.

(n) "Water" means any system of public improvements intended to provide for the production, storage, supply, treatment, or distribution of water.

SEC. 4. Section 53961 of the Government Code is amended to read:

53961. The governing board of a public cemetery district organized pursuant to the public cemetery district laws in Part 4 (commencing with Section 8890) of Division 8 of the Health and Safety Code or the governing board of a mosquito abatement district or a vector control district organized pursuant to the Mosquito Abatement and Vector Control District Law, Chapter 1 (commencing with Section 2000) of Division 8 of the Health and Safety Code, may by resolution provide for the establishment of a revolving fund in an amount not to exceed 110 percent of one-twelfth of the district's adopted budget for that fiscal year. This fund, which shall replace the fund authorized in Section 53952, may be used to pay any authorized expenditures of the district. The resolution that established the district revolving fund shall conform with the designations required in Section 53952.

SEC. 5. Section 56036 of the Government Code is amended to read:

56036. (a) "District" or "special district" means an agency of the state, formed pursuant to general law or special act, for the local performance of governmental or proprietary functions within limited boundaries. "District" or "special district" includes a county service area, but excludes all of the following:

(1) The state.

(2) A county.

(3) A city.

(4) A school district or a community college district.

(5) A special assessment district.

(6) An improvement district.

(7) A community facilities district formed pursuant to the Mello-Roos Community Facilities Act of 1982, Chapter 2.5 (commencing with Section 53311) of Part 1 of Division 2 of Title 5.

(8) A permanent road division formed pursuant to Article 3 (commencing with Section 1160) of Chapter 4 of Division 2 of the Streets and Highways Code.

(9) An air pollution control district or an air quality maintenance district.

procedures provided by this chapter to meet the diversity of their own local circumstances and responsibilities.

2002. As used in this chapter:

(a) "Abate" means to put an end to a public nuisance, or to reduce the degree or the intensity of a public nuisance.

(b) "Board of trustees" means the legislative body of a district.

(c) "City" means any city, whether general law or chartered, including a city and county, and including any city the name of which includes the word "town."

(d) "Control" means to prevent or reduce vectors.

(e) "Department" means the State Department of Health Services.

(f) "District" means any mosquito abatement and vector control district created pursuant to this chapter or any of its statutory predecessors.

(g) "Principal county" means the county having all or the greater portion of the entire assessed value, as shown on the last equalized assessment roll of the county or counties, of all taxable property within a district at the time of formation.

(h) "Property" means land and improvements, and includes water.

(i) "Public agency" means any state agency, board, or commission, including the California State University and the University of California, any county, city and county, city, regional agency, school district, special district, redevelopment agency, or other political subdivision.

(j) "Public nuisance" means any of the following:

(1) Any property, excluding water, that has been artificially altered from its natural condition so that it now supports the development, attraction, or harborage of vectors. The presence of vectors in their developmental stages on a property is prima facie evidence that the property is a public nuisance.

(2) Any water that is a breeding place for vectors. The presence of vectors in their developmental stages in the water is prima facie evidence that the water is a public nuisance.

(3) Any activity that supports the development, attraction, or harborage of vectors, or that facilitates the introduction or spread of vectors.

(k) "Vector" means any animal capable of transmitting the causative agent of human disease or capable of producing human discomfort or injury, including, but not limited to, mosquitoes, flies, mites, ticks, other arthropods, and rodents and other vertebrates.

(*l*) "Voter" means a voter as defined by Section 359 of the Elections Code.

2003. (a) This chapter provides the authority for the organization and powers of mosquito abatement and vector control districts. This chapter succeeds the former Chapter 5 (commencing with Section 2200) as added by Chapter 60 of the Statutes of 1939, as subsequently amended, and any of its statutory predecessors.

(b) Any mosquito abatement and vector control district formed pursuant to the former Chapter 5 (commencing with Section 2200) or any of its statutory predecessors that was in existence on January 1, 2003, shall remain in existence as if it had been organized pursuant to this chapter. Any zone of a mosquito abatement and vector control district formed pursuant to former Section 2291 to former Section 2291.4, inclusive, and any of their statutory predecessors that was in existence on January 1, 2003, shall remain in existence as if it had been formed pursuant to this chapter.

(c) Any indebtedness, special tax, benefit assessment, fee, election, ordinance, resolution, regulation, rule, or any other action of a district taken pursuant to the former Chapter 5 (commencing with Section 2200) or any of its statutory predecessors that was taken before January 1, 2003, shall not be voided solely because of any error, omission, informality, misnomer, or failure to comply strictly with this chapter.

2004. This chapter is necessary to protect the public health, safety, and welfare, and shall be liberally construed to effectuate its purposes.

2005. If any provision of this chapter or the application of any provision of this chapter in any circumstance or to any person, city, county, special district, school district, the state, or any agency or subdivision of the state, including the California State University and the University of California, is held invalid, that invalidity shall not affect other provisions or applications of this chapter that can be given effect without the invalid provision or application of the invalid provision, and to this end the provisions of this chapter are severable.

2006. (a) Any action to determine the validity of either the organization, or any action, of a district shall be brought pursuant to Chapter 9 (commencing with Section 860) of Title 10 of Part 2 of the Code of Civil Procedure.

(b) Any judicial review of an action taken pursuant to this chapter shall be conducted pursuant to Chapter 2 (commencing with Section 1084) of Title 1 of Part 3 of the Code of Civil Procedure.

2007. (a) Except as provided in this section, territory, whether incorporated or unincorporated, whether contiguous or noncontiguous, may be included in a district. Territory that is already within a mosquito abatement and vector control district formed pursuant to this chapter may not be included within another mosquito abatement and vector control district.

(b) If the local agency formation commission approves the proposal for the formation of a district, then, notwithstanding Section 57007 of the Government Code, the commission shall proceed pursuant to Part 4 (commencing with Section 57000) of Division 3 of Title 5 of the Government Code.

(c) Notwithstanding Section 57075 of the Government Code, the local agency formation commission shall take one of the following actions:

(1) If a majority protest exists in accordance with Section 57078 of the Government Code, the commission shall terminate proceedings.

(2) If no majority protest exists, the commission shall either:

(A) Order the formation without an election.

(B) Order the formation subject to the approval by the voters of a special tax or the approval by the property owners of a special benefit assessment.

(d) If the local agency formation commission orders the formation of a district pursuant to subparagraph (B) of paragraph (2) of subdivision (c), the commission shall direct the board of supervisors to direct county officials to conduct the necessary elections on behalf of the proposed district.

Article 3. Boards of Trustees and Officers

2020. A legislative body of at least five members known as the board of trustees shall govern every district. The board of trustees shall establish policies for the operation of the district. The board of trustees shall provide for the faithful implementation of those policies which is the responsibility of the employees of the district.

2021. Within 30 days after the effective date of the formation of a district, a board of trustees shall be appointed as follows:

(a) In the case of a district that contains only unincorporated territory in a single county, the board of supervisors shall appoint five persons to the board of trustees.

(b) In the case of a district that is located entirely within a single county and contains both incorporated territory and unincorporated territory, the board of supervisors may appoint one person to the board of trustees, and the city council of each city that is located in whole or in part within the district may appoint one person to the board of trustees. If those appointments result in a board of trustees with less than five trustees, the board of supervisors shall appoint enough additional persons to make a board of trustees of five members.

(c) In the case of a district that contains only unincorporated territory in more than one county, the board of supervisors of each county may

appoint one person to the board of trustees. If those appointments result in a board of trustees with less than five persons, the board of supervisors of the principal county shall appoint enough additional persons to make a board of trustees of five members.

(d) In the case of a district that is located in two or more counties and contains both incorporated territory and unincorporated territory, the board of supervisors of each county may appoint one person to the board of trustees, and the city council of each city that is located in whole or part within the district may appoint one person to the board of trustees. If those appointments result in less than five persons, the board of supervisors of the principal county shall appoint enough additional persons to make a board of trustees of five members.

2022. (a) Each person appointed by a board of supervisors to be a member of a board of trustees shall be a voter in that county and a resident of that portion of the county that is within the district.

(b) Each person appointed by a city council to be a member of a board of trustees shall be a voter in that city and a resident of that portion of the city that is within the district.

(c) Notwithstanding any other provision of law including the common law doctrine that precludes the simultaneous holding of incompatible offices, a member of a city council may be appointed and may serve as a member of a board of trustees if that person also meets the other applicable qualifications of this chapter.

(d) It is the intent of the Legislature that persons appointed to boards of trustees have experience, training, and education in fields that will assist in the governance of the districts.

(e) All trustees shall exercise their independent judgment on behalf of the interests of the residents, property owners, and the public as a whole in furthering the purposes and intent of this chapter. The trustees shall represent the interests of the public as a whole and not solely the interests of the board of supervisors or the city council that appointed them.

2023. (a) The initial board of trustees of a district formed on or after January 1, 2003, shall be determined pursuant to this section.

(b) The persons appointed to the initial board of trustees shall meet on the first Monday after 45 days after the effective date of the formation of the district.

(c) At the first meeting of the initial board of trustees, the trustees shall classify themselves by lot into two classes, as nearly equal as possible. The term of office of the class having the greater number shall expire at noon on the first Monday in January that is closest to the second year from the appointments made pursuant to Section 2021. The term of office of the class having the lesser number shall expire at noon on the

sum not to exceed one hundred dollars ($100) per month for expenses incurred while on official business. A trustee may waive the payments permitted by this subdivision.

(c) Notwithstanding subdivision (a), the secretary of the board of trustees may receive compensation in an amount determined by the board of trustees.

Article 4. Powers

2040. Within the district's boundaries or in territory that is located outside the district from which vectors and vectorborne diseases may enter the district, a district may do all of the following:

(a) Conduct surveillance programs and other appropriate studies of vectors and vectorborne diseases.

(b) Take any and all necessary or proper actions to prevent the occurrence of vectors and vectorborne diseases.

(c) Take any and all necessary or proper actions to abate or control vectors and vectorborne diseases.

(d) Take any and all actions necessary for or incidental to the powers granted by this chapter.

2041. A district shall have and may exercise all rights and powers, expressed or implied, necessary to carry out the purposes and intent of this chapter, including, but not limited to, all of the following powers:

(a) To sue and be sued.

(b) To acquire by purchase, eminent domain, or other lawful means, any real property within the district or any personal property that may be necessary or proper to carry out the purposes and intent of this chapter.

(c) To sell, lease, or otherwise dispose of any real or personal property. Every sale of property shall be to the highest bidder. The board shall publish notice of the sale pursuant to Section 6066 of the Government Code. A board of trustees may exchange equivalent properties if the board determines that the exchange is in the best interests of the district.

(d) To donate any surplus real or personal property to any public agency or nonprofit organization.

(e) To purchase the supplies and materials, employ the personnel, and contract for the services that may be necessary or proper to carry out the purposes and intent of this chapter.

(f) To build, repair, and maintain on any land the dikes, levees, cuts, canals, or ditches that may be necessary or proper to carry out the purposes and intent of this chapter.

(g) To contract to indemnify or compensate any property owner for any injury or damage necessarily caused by the use or taking of real or personal property for dikes, levees, cuts, canals, or ditches.

(h) To engage necessary personnel, to define their qualifications and duties, and to provide a schedule of compensation for the performance of their duties.

(i) To engage counsel and other professional services.

(j) To adopt a seal and alter it at pleasure.

(k) To provide insurance pursuant to Part 6 (commencing with Section 989) of Division 3.6 of Title 1 of the Government Code.

(l) To participate in, review, comment, and make recommendations regarding local, state, or federal land use planning and environmental quality processes, documents, permits, licenses, and entitlements for projects and their potential effects on the purposes and intent of this chapter.

(m) To take any and all actions necessary for, or incidental to, the powers expressed or implied by this chapter.

2042. When acquiring, improving, or using any real property, a district shall comply with Article 5 (commencing with Section 53090) of Chapter 1 of Part 1 of Division 2 of Title 5, and Article 7 (commencing with Section 65400) of Chapter 1 of Division 1 of Title 7 of the Government Code.

2043. (a) A district shall have perpetual succession.

(b) A board of trustees may, by a two-thirds vote of its total membership, adopt a resolution to change the name of the district. The name shall contain the words "mosquito abatement district," "vector control district," "mosquito and vector control district," "mosquito control district," or "vector management district." The resolution shall comply with the requirements of Chapter 23 (commencing with Section 7530) of Division 7 of Title 1 of the Government Code. Within 10 days of its adoption, the board of trustees shall file a copy of its resolution with the Secretary of State, the county clerk, the board of supervisors, and the local agency formation commission of each county in which the district is located.

(c) Unless another provision of law requires a longer retention period, a district may destroy or otherwise dispose of any paper or electronic document filed with, or submitted to, the district after one year unless the board of trustees determines that there is a need for its retention. In determining whether there is a need for retaining a document, the board of trustees shall consider future public need, the effect on statutes of limitation, and historical significance.

2044. (a) A district may cooperate with any public agency or federal agency to carry out the purposes and intent of this chapter. To that

either within the district or property that is located outside the district from which vectors may enter the district, without hindrance or notice for any of the following purposes:

(1) Inspect the property to determine the presence of vectors or public nuisances.

(2) Abate public nuisances pursuant to this chapter, either directly or by giving notice to the property owner to abate the public nuisance.

(3) Determine if a notice to abate a public nuisance has been complied with.

(4) Control vectors and treat property with appropriate physical, chemical, or biological control measures.

2054. Whenever the boundaries of a district or a zone change, or whenever the board of trustees levies a special tax or a special benefit assessment, the district shall comply with Chapter 8 (commencing with Section 54900) of Part 1 of Division 2 of Title 5 of the Government Code.

2055. (a) In any dispute between a district and another public agency over the need to prevent, abate, or control, or the methods and materials used to prevent, abate, or control vectors or vectorborne diseases, the district or the other public agency may appeal the decision to the director of the department within 10 days of the decision.

(b) Within 30 days of receiving an appeal pursuant to subdivision (a), the director of the department shall consult with the affected agencies, take written and oral testimony, decide the appeal, and convey the decision to the affected agencies. The director's decision shall be consistent with the purposes of this chapter. The decision of the director of the department shall be final and conclusive.

Article 5. Abatement

2060. (a) A district may abate a public nuisance pursuant to this article.

(b) The person or agency claiming ownership, title, or right to property or who controls the diversion, delivery, conveyance, or flow of water shall be responsible for the abatement of a public nuisance that is caused by, or as a result of, that property or the diversion, delivery, conveyance, or control of that water.

2061. (a) Whenever a public nuisance exists on any property within a district or on any property that is located outside the district from which vectors may enter the district, the board of trustees may notify the owner of the property of the existence of the public nuisance.

(b) The notice required by subdivision (a) shall do all of the following:

(1) State that a public nuisance exists on the property, describe the public nuisance, and describe the location of the public nuisance on the property.

(2) Direct the owner of the property to abate the nuisance within a specified time.

(3) Direct the owner of the property to take any necessary action within a specified time to prevent the recurrence of the public nuisance.

(4) Inform the owner of the property that the failure to comply with the requirements of the notice within the specified times may result in the district taking the necessary actions, and that the owner shall be liable for paying the costs of the district's actions.

(5) Inform the owner of the property that the failure to comply with the requirements of the notice within the specified times may result in the imposition of civil penalties of up to one thousand dollars ($1,000) per day for each day that the public nuisance continues after the specified times.

(6) Inform the owner of the property that before complying with the requirements of the notice, the owner may appear at a hearing of the board of trustees at a time and place stated in the notice.

(c) The board of trustees shall cause the notice required by subdivision (a) to be served on the owner of the property in the same manner as a summons in a civil action. If, after a diligent search, the notice cannot be served on the owner of the property, the board of trustees shall cause the notice to be posted in a conspicuous place on the property for not less than 10 days before the hearing. Not less than 10 days before the hearing, the board of trustees shall also cause a copy of the notice to be mailed by certified mail to the owner of the property at the address shown on the most recent assessment roll of the county in which the property is located.

(d) At the hearing before the board of trustees at the time and place stated in the notice, the board of trustees shall accept written and oral testimony from the property owner and other persons. At the close of the hearing, the board of trustees shall find, based on substantial evidence in the record, whether a public nuisance exists on the property. If the board of trustees finds that a public nuisance exists, the board of trustees shall order the owner of the property to abate the public nuisance and to take other necessary actions to prevent the recurrence of the public nuisance. The board of trustees shall specify a reasonable time by which the owner of the property shall comply with these requirements.

(e) If the owner of the property does not abate the public nuisance and take the necessary actions to prevent the recurrence of the public nuisance within the time specified by the board of trustees, the district may abate the public nuisance and take the necessary actions to prevent

Article 6. Finances

2070. (a) On or before August 1 of each year, the board of trustees shall adopt a final budget, which shall conform to the accounting and budgeting procedures for special districts contained in Subchapter 3 (commencing with Section 1031.1) of, and Article 1 (commencing with Section 1121) of Subchapter 4 of Division 2 of Title 2 of the California Code of Regulations. The board of trustees may divide the annual budget into categories, including, but not limited to:

(1) Maintenance and operation.
(2) Employee compensation.
(3) Capital outlay.
(4) Interest and redemption for indebtedness.
(5) Restricted reserve for public health emergencies.
(6) Restricted reserve for capital and asset preservation.
(7) Restricted reserve for contingencies.
(8) Unallocated general reserve.

(b) The board of trustees shall forward a copy of the final budget to the auditor of each county in which the district is located.

2071. (a) In its annual budget, the board of trustees may establish one or more restricted reserves. When the board of trustees establishes a restricted reserve, it shall declare the exclusive purposes for which the funds in the reserve may be spent. The funds in the restricted reserve shall be spent only for the exclusive purposes for which the board of trustees established the restricted reserve. The reserves shall be maintained according to generally accepted accounting principles.

(b) Any time after the establishment of a restricted reserve, the board of trustees may transfer any funds to that restricted reserve.

(c) Notwithstanding any other provision of this section, in a public health emergency, a board of trustees may, by majority vote of the total membership of the board of trustees, temporarily transfer funds from other restricted reserves to the restricted reserve for public health emergencies.

(d) If the board of trustees finds that the funds in a restricted reserve are no longer required for the purpose for which the restricted reserve was established, the board of trustees may, by a four-fifths vote of the total membership of the board of trustees, discontinue the restricted reserve or transfer the funds that are no longer required from the restricted reserve to the district's general fund.

2072. (a) On or before July 1 of each year, the board of trustees shall adopt a resolution establishing its appropriations limit and make other necessary determinations for the following fiscal year pursuant to

Article XIII B of the California Constitution and Division 9 (commencing with Section 7900) of the Government Code.

(b) Pursuant to subdivision (c) of Section 9 of Article XIII B of the California Constitution, this section shall not apply to a district which existed on January 1, 1978, and that did not as of the 1977–78 fiscal year levy an ad valorem tax on property in excess of twelve and one-half cents ($0.125) per one hundred dollars ($100) of assessed value.

2073. The auditor of each county in which a district is located shall allocate to the district its share of property tax revenue pursuant to Chapter 6 (commencing with Section 95) of Part 0.5 of Division 1 of the Revenue and Taxation Code.

2074. (a) A district may accept any revenue, money, grants, goods, or services from any federal, state, regional, or local agency or from any person for any lawful purpose of the district.

(b) In addition to any other existing authority, a district may borrow money and incur indebtedness pursuant to Article 7 (commencing with Section 53820), Article 7.5 (commencing with Section 53840), Article 7.6 (commencing with Section 53850), and Article 7.7 (commencing with Section 53859) of Chapter 4 of Part 1 of Division 2 of Title 5 of the Government Code.

2075. All claims for money or damages against a district are governed by Part 3 (commencing with Section 900) and Part 4 (commencing with Section 940) of Division 3.6 of Title 1 of the Government Code.

2076. (a) All claims against a district shall be audited, allowed, and paid by the board of trustees by warrants drawn on the county treasurer.

(b) As an alternative to subdivision (a), the board of trustees may instruct the county treasurer to audit, allow, and draw his or her warrant on the county treasury for all legal claims presented to him or her and authorized by the board of trustees.

(c) The county treasurer shall pay the warrants in the order in which they are presented.

(d) If a warrant is presented for payment and the county treasurer cannot pay it for want of funds in the account on which it is drawn, the treasurer shall endorse the warrant, "NOT PAID BECAUSE OF INSUFFICIENT FUNDS" and sign his or her name and the date and time the warrant was presented. From that time until it is paid, the warrant bears interest at the maximum rate permitted pursuant to Article 7 (commencing with Section 53530) of Chapter 3 of Part 1 of Division 2 of Title 5 of the Government Code.

2077. (a) Notwithstanding Section 2076, a district that has total annual revenues greater than two hundred fifty thousand dollars

(c) After adopting its resolution pursuant to subdivision (b), the board of trustees shall proceed pursuant to Section 53753 of the Government Code.

(d) The special benefit assessments levied pursuant to this section shall be collected at the same time and in the same manner as county taxes. The county may deduct an amount not to exceed its actual costs incurred for collecting the special benefit assessments before remitting the balance to the district. The special benefit assessments shall be a lien on all the property benefited. Liens for the assessments shall be of the same force and effect as liens for property taxes, and their collection may be enforced by the same means as provided for the enforcement of liens for county taxes.

2083. A district may levy special benefit assessments consistent with the requirements of Article XIII D of the California Constitution to finance capital improvements, including, but not limited to, special benefit assessments levied pursuant to:

(a) The Improvement Act of 1911, Division 7 (commencing with Section 5000) of the Streets and Highways Code.

(b) The Improvement Bond Act of 1915, Division 10 (commencing with Section 8500) of the Streets and Highways Code.

(c) The Municipal Improvement Act of 1913, Division 12 (commencing with Section 10000) of the Streets and Highways Code.

(d) Any other statutory authorization enacted in the future.

2084. Pursuant to Section 5 of Article XIII D of the California Constitution and Section 53753.5 of the Government Code, any assessment existing on November 6, 1996, that was imposed exclusively to finance the capital costs or maintenance and operation expenses for vector control shall be exempt from the procedures and approval process set forth in Section 4 of Article XIII D of the California Constitution and Section 2082. Subsequent increases in those assessments shall be subject to the procedures and approval process set forth in Section 4 of Article XIII D of the California Constitution and Section 2082.

2085. (a) A board of trustees may charge a fee to cover the cost of any service that the district provides or the cost of enforcing any regulation for which the fee is charged. No fee shall exceed the costs reasonably borne by the district in providing the service or enforcing the regulation for which the fee is charged.

(b) Before imposing or increasing any fee for property-related services, a board of trustees shall follow the procedures in Section 6 of Article XIII D of the California Constitution.

(c) Notwithstanding Section 6103 of the Government Code, a board of trustees may charge a fee authorized by this section to other public agencies.

(d) A board of trustees may charge residents or taxpayers of the district a fee authorized by this section which is less than the fee that it charges to nonresidents or nontaxpayers of the district.

(e) A board of trustees may authorize district employees to waive the payment, in whole or in part, of a fee authorized by this section when the board of trustees determines that the payment would not be in the public interest. Before authorizing any waiver, a board of trustees shall adopt a resolution that specifies the policies and procedures governing waivers.

Article 8. Zones

2090. (a) Whenever a board of trustees determines that it is in the public interest to provide different services, to provide different levels of service, or to raise additional revenue within specific areas of the district, it may form one or more zones pursuant to this article.

(b) The board of trustees shall initiate proceedings for the formation of a new zone by adopting a resolution that does all of the following:

(1) States that the proposal is made pursuant to this article.

(2) Sets forth a description of the boundaries of the territory to be included in the zone.

(3) States the different services, the different levels of service, or additional revenues which the zone will provide.

(4) Sets forth the methods by which those services or levels of service will be financed.

(5) States the reasons for forming the zone.

(6) Proposes a name or number for the zone.

(c) A proposal to form a new zone may also be initiated by a petition signed by not less than 10 percent of the registered voters residing within the proposed zone. The petition shall contain all of the matters required by subdivision (b).

(d) Upon the adoption of a resolution or the receipt of a valid petition, the board of trustees shall fix the date, time, and place for the public hearing on the formation of the zone. The board of trustees shall publish notice of the hearing, including the information required by subdivision (b), pursuant to Section 6061 of the Government Code in one or more newspapers of general circulation in the district. The board of trustees shall mail the notice at least 45 days before the date of the hearing to all owners of property within the proposed zone. The board of trustees shall post the notice in at least three public places within the territory of the proposed zone.

2091. (a) At the hearing, the board of trustees shall hear and consider any protests to the formation of a zone pursuant to this article.

The fees shall not exceed the estimated reasonable cost of providing the examinations, as determined by the director.

(g) The department shall collect and account for all money received pursuant to this section and shall deposit it in the Mosquitoborne Disease Surveillance Account provided for in Section 25852 of the Government Code. Notwithstanding Section 25852 of the Government Code, fees deposited in the Mosquitoborne Disease Surveillance Account pursuant to this section shall be available for expenditure upon appropriation by the Legislature to implement this section.

(h) Fees collected pursuant to this section shall be subject to the annual fee increase provisions of Section 100425.

(i) Employees of the Department of Food and Agriculture and county agriculture departments holding, or working under the supervision of an employee holding, a valid Qualified Applicator Certificate in Health Related Pest Control issued by the licensing and certification program of the Department of Food and Agriculture shall be exempt from this section.

SEC. 10. Section 116111 is added to the Health and Safety Code, to read:

116111. The department may provide any necessary and proper assistance and support to the vector control programs of counties, cities, cities and counties, mosquito abatement and vector control districts, and pest abatement districts.

SEC. 11. This act is based on the recommendations of the Working Group on Revising the Mosquito Abatement District Law convened by the Senate Committee on Local Government.

SEC. 12. Section 3.5 of this bill incorporates amendments to Section 53750 of the Government Code proposed by both this bill and SB 1961. It shall only become operative if (1) both bills are enacted and become effective on or before January 1, 2003, (2) each bill amends Section 53750 of the Government Code, and (3) this bill is enacted after SB 1961, in which case Section 3 of this bill shall not become operative.

O

Tallamraju, Rama

Subject: FW: Draft EIR for the San Gabriel River Master Plan

-----Original Message-----
From: Minoo Madon [mailto:mmadon@glacvcd.org]
Sent: Monday, May 05, 2003 2:37 PM
To: Moreno, Martin
Cc: kmiddleton@sgvmosquito.org
Subject: Draft EIR for the San Gabriel River Master Plan

The abovementioned Draft has not adequately addressed potential nuisance mosquito and/or mosquito-borne diseases associated with the creation of wetlands or restoring river systems to their "pristine" condition, as they may have existed originally. "Health and safety" has been casually mentioned on page 3, in the section "Potentially significant Environmental Effects". In the section entitled Project Description, the first bulleted item ought to include: "...enhance habitat systems by maintaining them mosquito-free and protecting public from nuisance and disease transmitting mosquitoes ..." The last bulleted item in the same section should include: "...through the integration with recreation, open space, and long-term maintenance for aquatic vegetation management in habitat systems." Item 5 (page 3) of the same section regarding "Bio-Engineered Wetlands should include: - stormwater-fed wetland areas that will be maintained as mosquito-free habitats;"
Saint Louis encephalitis, a mosquito-borne disease is endemic in Los Angeles County, which experienced 28 confirmed human cases in 1984. With the anticipation of West Nile virus in California, we recommend that the Rivers and Mountains Conservancy take into serious consideration (as we have on several occasions stated in the public/agency comments at previous meetings in 2001 and 2002), proposing projects that will not result in mosquito production.
Thank you.
Minoo B. Madon, Sci.-Tech. Svcs. Dir.
Greater Los Angeles Co. Vector Control Dist.
Ph.# (562) 944-9656.

WMD
756

ORANGE COUNTY
VECTOR CONTROL
District

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DISTRICT MANAGER DR. ROBERT D. SJOGREN

May 6, 2003

Mr. Marty Moreno
County of Los Angeles Public Works
Watershed Management Division
P.O. Box 1460
Alhambra, CA 91802-1460

Dear Mr. Moreno:

On behalf of the Orange County Vector Control District, I would like to express the District's concerns with the San Gabriel River Master Plan CEQA regarding Bio-Engineered Wetlands. The installation of improperly designed and maintained engineered wetlands will support the production of indigenous mosquitoes that have been associated with the transmission of mosquito-borne encephalitis viruses to humans and susceptible wildlife. This outcome will be enhanced with the inevitable arrival and establishment of the West Nile Virus.

The prime requisite for mosquito breeding is the establishment of a vegetation profile consisting of excessive growths of cattails, shoreline weeds, and grasses that "choke" the water surface and negate essential water circulation. These conditions represent environmentally optimal conditions for mosquito immatures (e.g., larvae and pupae) to establish and flourish. At the same time, conventional mosquito abatement practices of either applying environmentally safe "biorational" larvicides or planting mosquito fish are rendered ineffective.

The District has collaborated with the Irvine Ranch Water District (IRWD) in Orange County to assist with the development of model wetlands via a design application that reduces significantly mosquito breeding and local public health concerns. I would recommend that LA County Watershed review the IRWD draft EIR for the stormwater project proposed for the San Diego Creek/San Joaquin Marsh.

If you have any questions or require further information, I can be reached at (714) 971-2421, ext. 141. Thank you for your time and cooperation.

Sincerely,

Richard P. Meyer
Assistant Manager

RPM/vb

Hanson

Hanson Aggregates
Los Angeles
Sales/Administration
13550 Live Oak Avenue
Irwindale, CA 91706-7804
Tel 626-856-6700
Fax 626-962-4420

Mr. Marty Moreno
County of Los Angeles Department of Public Works
(Watershed Division)
P.O. Box 1460
Alhambra, CA 91802-1460

RE: NOTICE OF PREPARATION OF A DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT IN COMPLIANCE WITH TITLE 14, (CEQA GUIDELINES) SECTIONS 15082 (a), 15103, AND 15375 OF THE CALIFORNIA CODE OF REGULATIONS

Dear Mr. Moreno

We have received a copy of Notice of Preparation of a Draft Progress Environmental Impact Report for the San Gabriel River Master Plan, and this letter represents our response to that Notice. We understand that the County of Los Angeles Department of Public Works will be the lead agency under CEQA for the production of the draft Program EIR.

Since property owned by and operated as a sand and gravel mining resource by Hanson Aggregates West along the San Gabriel River in the city of Irwindale will be under discussion as the San Gabriel River Master Plan is completed for presentation the Los Angeles County Board of Supervisors for adoption in early 2004, we wish to have an active role in upcoming completion of the draft PEIR.

We have, in fact, been participating in the work of the San Gabriel River Master Plan Steering Committee, through our consultant, Jane Bray, since that committee's inception in 1999, and thus we are well aware of the progress that committee has made to date.

It is our view that the recent creation of a Joint Powers Authority between the County's Department of Public Works and the Rivers and Mountains Conservancy can be helpful in choosing and bringing about projects that will be of benefit not only to the cities and communities near the river, but to other citizens of the rapidly growing San Gabriel Valley.

It is, however, important to re-emphasize that Hanson Aggregates West's sand and gravel mining operations along the San Gabriel River occur on privately-owned land, conducted by a privately-owned business organization, governed by regulations promulgated by appropriate federal, state, county, and city authorities. It is also important to note that Hanson Aggregates West owns in perpetuity adjudicated water rights in the San Gabriel Basin that are protected by a judgment in an adjudication suit that remains under the continuing supervision of the Los Angeles Superior Court.

We have on file with the appropriate state agency a reclamation plan setting forth how our property along the San Gabriel River will be reclaimed when our sand and gravel operation has been concluded, but that conclusion is still many years away.

Hanson

Please be assured we will maintain a continuing and active interest in achieving a final draft of the San Gabriel River Master Plan. We will look forward to interfacing with your staff and consultants in the coming months.

Please send further communications in the matter to:

Ken Barker
Hanson Aggregates West
13550 Live Oak Avenue
Irwindale, CA 91706

Bob Warburton, alternate
Same Address

Sincerely,

Ken Barker
Environmental Manager

SAN GABRIEL VALLEY
MOSQUITO & VECTOR CONTROL DISTRICT

1145 N. Azusa Canyon Road
West Covina, California 91790
(626) 814-9466 • FAX (626) 337-5686
email: district@sgvmosquito.org

Steve West
District Manager

Kenn K. Fujioka, Ph.D.
Assistant Manager

Cities of:

Alhambra
Arcadia
Azusa
Bradbury
Claremont
Covina
Duarte
El Monte
Glendora
Industry
Irwindale
La Puente
La Verne
Monrovia
Monterey Park
Pomona
Rosemead
San Dimas
San Gabriel
Sierra Madre
Temple City
Walnut
West Covina
County of Los Angeles

May 1, 2003

Mr. Marty Moreno
County of Los Angeles Department of Public Works
Watershed Management Division
Lead Agency for the Program EIR for the San Gabriel River Master Plan
P.O. Box 1460
Alhambra, CA 91802-1460

RE: Notice of Preparation of a Draft Program Environmental Impact Report in Compliance with Title 14, (CEQA Guidelines) Section 10582(a), 15103, and 15375 of the California Code of Regulations.

The San Gabriel Valley Mosquito & Vector Control District is a special district charged with protecting public health within approximately 250 square miles of the San Gabriel Valley, encompassing the upper reaches of the San Gabriel River and its tributaries. We take this responsibility very seriously. As such, we appreciate the opportunity to comment on the Notice of Preparation for the Program EIR for the San Gabriel River Master Plan.

The San Gabriel Valley Mosquito & Vector Control District provides leading edge vector control services through an integrated pest management approach such that disease protection is maximized while the integrity of natural systems are maintained to the greatest extent possible. The complexity and success of our program stems from the diverse and highly qualified staff our District employs. With expertise in medical entomology, vector ecology, wildlife biology & ecology, biological and chemical control, and a strong emphasis on public awareness & education, we strive to provide the highest level of service to residents of the San Gabriel Valley.

Any issue relating to openspace development, wetland construction, and stormwater management along the San Gabriel River, its tributaries or environs, has the potential of impacting our ability to protect residents from

vector-borne disease. Mosquitoes and midges breed in standing and slow flowing waters commonly found in wetland habitats. Blackflies breed in faster flowing highly oxygenated waters. Both require diligent population management. *The vision of protecting and enhancing the San Gabriel River corridor must consider all implications so as to not inadvertently jeopardize public health.*

It is critical to our ability to protect public health that projects with the potential to increase the number of mosquitoes and other vectors in our communities incorporate permanent measures that will reduce or eliminate breeding; be designed to provide access for treatments when required; and identify permanent funding mechanisms for the potentially significant cost of vegetation maintenance and mosquito and vector control in project areas.

The following details our concerns:

- West Nile virus will very likely become a significant problem in California. At least 5 other encephalitis-causing viruses are currently present and capable of becoming a public health concern if mosquito control is compromised.
- Wetlands provide excellent habitat for wild birds. Mosquito-wild bird interactions in wetland habitats maintain and amplify various endemic encephalitis viruses known to infect humans.
- Wetlands in proximity to urban development greatly increase the risk of disease transmission/spillover to humans.
- Improperly designed and poorly maintained wetlands and stormwater control measures breed significant populations of mosquitoes that are competent vectors of encephalitis viruses and other diseases. Once established, cattail and tule beds require *extremely expensive* ongoing maintenance to ensure public health is protected.
- Reliance on pesticides alone to reduce vector populations will cause resistance to these products, quickly rendering them useless. Only a few environmentally sound products are currently available, heightening our concern for their potential loss.
- Modern chemical control measures require smaller quantities of highly specific products. Research and development costs for new products are prohibitive and rarely result in profit for manufacturers, thus fewer products will be available in the future. *Combined with an increased risk of resistance, treatment of poorly designed wetlands may become difficult at best.*
- Increasing connections between natural systems and residential/commercial districts increases ability of vectors (wild fleas, ticks, rodents and others) to enter and transmit disease in urban environments.
- Enhancing public visits to areas producing or harboring vector species increases the risk of vector-borne disease transmission to the public.

Civil penalties up to $1,000 per day may be assessed if abatement orders are ignored, and the cost of vector control created by other agencies may be charged thereto.

- Increasing travel and international commerce effectively remove historic geographic boundaries on the ranges of vectors and the diseases they transmit. Problems associated with emerging and re-emerging diseases will increase in the foreseeable future. Reference: The World Health Organization Fact Sheet No 97 (Revised August 1998) at: http://www.who.int/inf-fs/en/fact097.html.
- Federal and State laws may seriously impair the future ability of vector control agencies to protect public health through either physical or chemical control methods.
- The public may perceive that a disease outbreak is linked to wetlands creation or a stormwater management practice. The negative publicity can be substantial; in fact, responsible parties may face an increased risk of litigation.

The benefits of *preventive planning* far outweigh the costs of reactionary mosquito and vector control, both to public health and public financial resources. We urge the Los Angeles County Department of Public Works to incorporate clear and concise language into the Program Environmental Impact Report for the San Gabriel River Master Plan that will require this and all future projects:

- evaluate the potential impact on public health by submitting projects to the appropriate vector control district and/or the Department of Health Services for review prior to project approval
- mitigate the concerns outlined in those reviews such that mosquito and other vector-borne disease problems are not created
- establish/require a permanent funding mechanism for ongoing vegetation maintenance and vector control in projects that by nature of their implementation may enhance vector populations

The sphere of knowledge related to mosquito production in constructed wetlands and stormwater BMP's is rapidly expanding. Representatives from both public health and vector control welcome the opportunity to share this knowledge with project leaders in the earliest planning stages.

Please contact the District at (626) 814-9466 if we can be of any service.

Thank you again for your consideration.

Steve West
District Manager

CERTIFICATE

STATE OF CALIFORNIA)
) SS.
COUNTY OF LOS ANGELES)

I, Richard Barakat, President of the Board of Trustees of the San Gabriel Valley Mosquito and Vector Control District, do hereby certify that the foregoing Response to the Notice of Preparation of a Draft Program Environmental Impact Report for the San Gabriel River Master Plan, was duly approved by the Board of Trustees of said District at a public meeting held on the 9th day of May, 2003 and that it was so adopted by the following vote:

AYES:
Francisco Alonso (Monterey Park)
Dan Arrighi (Temple City)
Richard Barakat (Bradbury) – President
Robert Bruesch (Rosemead)
Mary Cammarano (San Gabriel)
Roger Chandler (Arcadia)
Boyd Condie (Alhambra) – Treasurer
Manuel R. Garcia (Irwindale)
Frank Hall (Los Angeles County)
Steve Herfert (West Covina)
Algird Leiga (Claremont)
Henry Morgan (Covina) – Secretary
Robert Neher (La Verne)
Henry Nodal (La Puente)
Dick Stanford (Azusa)
Karen Suarez (Monrovia)
Tom Sykes (Walnut)
Jeffrey Templeman (San Dimas)
Jack Thurston (El Monte)
George Vangel (Glendora)

NOES: NONE

ABSTAIN: NONE

ABSENT:
Margaret Finlay (Duarte)
Bruce Inman (Sierra Madre)
Jack Phillips (City of Industry)
Willie White (Pomona)

Richard Barakat, President of the Board
of Trustees of the San Gabriel Valley
Mosquito and Vector Control District

Vulcan
Materials Company

Western Division

STEVE CORTNER
VICE PRESIDENT, RESOURCES

3200 SAN FERNANDO ROAD
LOS ANGELES, CALIFORNIA 90065
TELEPHONE 323 474-3225
FAX 323 258-3289
E-MAIL cortners@vmcmail.com

May 13, 2003

Mr. Marty Moreno
County of Los Angeles
Department of Public Works
Watershed Management Division
P.O. Box 1460
Alhambra, CA 91802-1460

RE: NOTICE OF PREPARATION OF DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS (the DPW) FOR THE SAN GABRIEL RIVER MASTER PLAN (the "Master Plan")

Dear Mr. Moreno:

This letter is in response to your Notice of Preparation for the Master Plan. Vulcan Materials Company ("Vulcan") understands that the Master Plan includes projects along the San Gabriel River that affect cities, stakeholders and other organizations along the San Gabriel River Corridor. Vulcan also understands that the DPW will support projects that are planned and implemented along the river corridor in a manner that is consistent with the Master Plan. Vulcan has met with the Rivers Mountain Conservancy Group ("RMC") on several occasions to discuss the Master Plan. As you may know, Vulcan Materials has several operations adjacent to the 58-mile long San Gabriel River Corridor in the cities of Azusa and Irwindale. Vulcan understands that portions of the Master Plan incorporate existing sand and gravel quarries that are either active or inactive. A number of Vulcan's quarries along the San Gabriel River Corridor remain active, and will be active for the foreseeable future.

Vulcan appreciates the combined efforts of the RMC and the DPW in its efforts to enhance hiking trails, educational centers, reclamation of vacant properties and overall environmental enhancements subject to the Master Plan., but wishes to insure that the Master Plan takes into account the continuation of the mining activities in the San Gabriel River Corridor that provide sand and gravel that is essential to the Southern California building materials industry. Vulcan does not yet fully understand the impacts the Master Plan might have on its operations, but wishes to voice its concern relative to Vulcan's property rights and

extensive water rights it currently holds in the Upper San Gabriel Valley Basin and other areas. Vulcan asks that the environmental study understands the need to protect those private property interests because Vulcan's essential operations will continue for many years in the future. Vulcan's past and present reclamation efforts clearly demonstrate its interest in enhancing the riverine systems and restoration to waterways, and expects that its currently operating mining facilities will be similarly productively reclaimed after their operations cease. Accordingly, the DPW should insure that the Master Plan does not inhibit or otherwise impair Vulcan's continued mining operations.

Vulcan requests that the DPW acting as lead agency pursuant to CEQA coordinate its activities on the Master Plan with the cities that have ultimate land use control over Vulcan's mining interests (i.e., Irwindale and Azusa) to ensure that the Master Plan is consistent with the overall land uses within each city. This consistency must include, but is not limited to, end land use, the right to continue mining operations pursuant to approved land use permits and reclamation plans, and the appropriate co-existence between the Master Plan and these mining operations.

Vulcan requests that the DPW place Vulcan on the mailing list for the Master Plan to allow Vulcan to have appropriate input into this project as it moves forward. If you have any questions, please do not hesitate to contact the undersigned.

Sincerely,

Steve C. Cortner
Vice President, Resources

SCC:mx

JANE M. BRAY / Consulting

WMD 025

May 13, 2003

Mr. Marty Moreno
County of Los Angeles Department of Public Works
(Watershed Management Division)
P.O. Box 1460
Alhambra, CA 91802-1460

Dear Marty

I am pleased to express to you, on behalf of United Rock Products Corporation, Hanson Aggregates West, and myself, for the opportunity to meet with you and your staff recently to discuss the planning process for the upcoming San Gabriel River Master Plan, to be adopted by the Los Angeles County Board of Supervisors in early 2004.

It was enormously helpful to have the County's consultant for this project, Dan Iacofano, also present at the meeting. The free exchange of ideas we experienced at the meeting was very beneficial.

It is essential that the relation of the quarries along the San Gabriel River to numerous federal, state, and local regulatory agencies, as well as to the surrounding cities and communities, as embraced in the proposed Master Plan, be fully understood as we all move forward.

As the final draft for the San Gabriel River Master Plan moves ahead, we will maintain an active interest and participation. We will be available for discussion and input as the process proceeds.

Jane Bray

CC: Arnold Brink, United Rock Products Corporation
Ken Barker, Hanson Aggregates West
Steve Cortner, Vulcan Materials Company

2259 PORTOLA LANE • WESTLAKE VILLAGE, CA 91361 • (805) 494-6865 • FAX (805) 494-9938

UNITED ROCK PRODUCTS

May 21, 2003

Mr. Marty Moreno
County of Los Angeles Department of
Public Works Watershed Management Division
P.O. Box 1460
Alhambra, Ca 91802-1460

Re: Notice of Preparation of a Draft Program Environmental Impact Report in Compliance with Title 14, (CEQA Guidelines) Section 15082 (a), 15103 of the California Code of Regulations

Dear Mr. Moreno,

This letter will indicate to you the interest of United Rock Products in actively participating in the Program EIR process for the San Gabriel River Master Plan, the final draft of which will be presented to the Los Angeles County Board of Supervisors for adoption in early 2004.

It is to be noted that United Rock Products has had representation on the San Gabriel River Master Plan Steering Committee since the early formation of that Committee in 1999, has actively participated in the Committee's work, and continues to do so today.

We feel that through the recently-formed Joint Power Authority between the County's Department of Power Works and the Rivers and Mountain Conservancy, much progress can be made in choosing and implementing projects along the river system that can benefit the many cities and communities of interest that exist along the river itself, as well as other citizens of the San Gabriel Valley.

It will be helpful to note here that United Rock Products is a privately-owned and operated business, on privately-owned land and its sand and gravel mining operation contributes to the economic benefit of the entire surrounding area. In addition, United owns water rights in the Main San Gabriel Basin, which are essential to its mining operations. These water rights are secured under an adjudication lawsuit, under the continuing jurisdiction of Superior Court.

We have on file in Sacramento, as required by State law, a reclamation plan for our properties as they become mined out, which will be many years in the future.

We are presuming that the City of Irwindale, which will have final decision-making jurisdiction over the reclamation uses/plans of United's properties as they are depleted,

1245 E. ARROW HWY., IRWINDALE, CA 91706 • 626-358-4558

will also be actively involved in the draft Program EIR, as LADPW moves forward as lead agency pursuant to CEQA.

As requested, we are asking that I be added to your future mailing list in all matters pertaining to the draft Program Environmental Impact Report. We are also asking, if it can be done, that Ms. Jane M. Bray, our consultant in this matter, be added to the mailing list as well. Ms. Bray can be reached at 2259 Portola Lane, Westlake Village, CA 91361.

As the draft Program EIR process moves forward, United Rock Products will maintain an active interest and participation. We will be available for discussion and input as the process proceeds.

Sincerely,

Arnold Brink,
General Manager

1245 E. ARROW HWY., IRWINDALE, CA 91706 • 626-358-4558

Appendix C
Construction Air Emissions Evaluation

Appendix C contains the data, assumptions, and results of calculations used in estimating the air emissions associated with construction of the proposed Concept Design Studies. Air quality impacts of the proposed project are discussed in Section 4.1 of this document.

Air pollutant emissions from construction activities were estimated for each Concept Design Study by MWH, EIR consultant to LADPW. Based on the description and sizes of the proposed facilities, MWH staff experienced with construction management made assumptions about the amount of earthwork, types and number of construction equipment, duration of each phase of construction, and number of construction crew required.

Sources of emission factors and equations used in the calculation include the CEQA Handbook (SCAQMD, 1993) for construction equipment exhaust and PM10 emissions from earth moving activities and EMFAC 2002 Emission Factors for on-road vehicles (SCAQMD, 2003c).

Estimated construction duration by Concept Design Study is as follows:

- San Gabriel Canyon Spreading Grounds – 20 work days
- Woodland Duck Farm – 40 work days
- Lario Creek – 32 work days
- San Gabriel River Discovery Center – 195 work days (including the construction of the Discovery Center building)
- El Dorado Regional Park – 44 work days

Table C-1
San Gabriel Canyon Spreading Grounds – Estimated Construction Air Emissions

Emission Source	Emissions				
	CO	ROC	NOx	SOx	PM10
Grading and Excavation (lbs/quarter)	--	--	--	--	396
Construction Equipment (lbs/quarter)	229	26	517	44	34
Workers Commutes (lbs/quarter)	62	7	7	0.03	0.3
Delivery and Work Trucks (lbs/quarter)	61	75	8	0.6	1.3
Total Emissions (tons/quarter)	**0.18**	**0.1**	**0.3**	**0.02**	**0.22**
SCAQMD Threshold (tons/quarter)	24.75	2.5	2.5	6.75	6.75
Total Emissions (avg lbs/day)	**18**	**5**	**27**	**2**	**22**
Peak Day Emissions (lbs/day)	**21**	**7**	**37**	**3**	**23**
SCAQMD Threshold (avg lbs/day)	550	75	100	150	150
SIGNIFICANT?	**No**	**No**	**No**	**No**	**No**

Table C-2
Woodland Duck Farm – Estimated Construction Air Emissions

Emission Source	Emissions				
	CO	ROC	NOx	SOx	PM10
Grading and Excavation (lbs/quarter)	--	--	--	--	792
Construction Equipment (lbs/quarter)	927	102	2,087	176	135
Workers Commutes (lbs/quarter)	1,795	704	78	75	0.4
Delivery and Work Trucks (lbs/quarter)	347	424	46	3.3	7.3
Total Emissions (tons/quarter)	**1.53**	**0.6**	**1.1**	**0.13**	**0.47**
SCAQMD Threshold (tons/quarter)	24.75	2.5	2.5	6.75	6.75
Total Emissions (avg lbs/day)	**77**	**31**	**55**	**6**	**23**
Peak Day Emissions (lbs/day)	**68**	**33**	**78**	**7**	**26**
SCAQMD Threshold (avg lbs/day)	550	75	100	150	150
SIGNIFICANT?	**--**	**--**	**--**	**--**	**--**

Table C-3
San Gabriel River Discovery Center – Estimated Construction Air Emissions

Emission Source	Emissions				
	CO	ROC	NOx	SOx	PM10
Grading and Excavation (lbs/quarter)	--	--	--	--	317
Construction Equipment (lbs/quarter)	428	46	961	81	62
Workers Commutes (lbs/quarter)	273	30	29	0.2	1.2
Delivery and Work Trucks (lbs/quarter)	155	190	20	1.5	3.3
Discovery Center Bldg Const. (lbs/quarter)*	801	251	3,683	--	261
Total Emissions (tons/quarter)	**0.83**	**0.3**	**2.3**	**0.04**	**0.32**
SCAQMD Threshold (tons/quarter)	24.75	2.5	2.5	6.75	6.75
Total Emissions (avg lbs/day)	**25**	**8**	**72**	**1**	**10**
Peak Day Emissions (lbs/day)	**26**	**10**	**94**	**3**	**10**
SCAQMD Threshold (avg lbs/day)	550	75	100	150	150
SIGNIFICANT?	**--**	**--**	**--**	**--**	**--**

*** Discovery Center Building Construction**

	CO	ROC	NOx	SOx	PM10
Emission Factors - Table 9-1, Education Land Use (SCAQMD, 1993) (lbs/construction period - 1,000 sq. ft. of gross floor area)	150	47	691	--	49
Emission (avg lbs/day)	12	4	57	--	4
Emission (lbs/quarter)	801	251	3,683	--	261

Assumptions

Gross floor area	16,000	sq.ft.
Construction duration	195	work days

Note: Air emissions for the San Gabriel River Discovery Center were calculated for construction of the stormwater treatment wetlands, site disturbance during habitat restoration around the wetlands, and construction of the Discovery Center building (approximately 16,000 square-feet). Since only preliminary concept plans have been developed for the Discovery Center building, construction equipment needs for this element of the Concept Design Study could not be reliably estimated. Therefore, the air emissions for construction of the building was calculated based on the screening level emission factors for construction activities as presented in Table 9-1 of the CEQA Handbook (SCAQMD, 1993; emission factors for education land use). Table 9-1 presents emissions factors for CO, ROC, NO_x, and PM10, but does not include emission factors for SO_x. Therefore, SO_x emissions from construction of the Discovery Center building are not included in the estimated emissions shown in Table C-3 above.

Table C-4
Lario Creek – Estimated Construction Air Emissions

Emission Source	Emissions				
	CO	ROC	NOx	SOx	PM10
Grading and Excavation (lbs/quarter)	--	--	--	--	403
Construction Equipment (lbs/quarter)	307	34	692	59	45
Workers Commutes (lbs/quarter)	199	22	21	0.1	0.9
Delivery and Work Trucks (lbs/quarter)	127	155	17	1.2	2.7
Total Emissions (tons/quarter)	**0.32**	**0.1**	**0.4**	**0.03**	**0.23**
SCAQMD Threshold (tons/quarter)	24.75	2.5	2.5	6.75	6.75
Total Emissions (avg lbs/day)	**20**	**7**	**23**	**2**	**14**
Peak Day Emissions (lbs/day)	**26**	**10**	**38**	**3**	**15**
SCAQMD Threshold (avg lbs/day)	550	75	100	150	150
SIGNIFICANT?	**--**	**--**	**--**	**--**	**--**

Table C-5
El Dorado Regional Park – Estimated Construction Air Emissions

Emission Source	Emissions				
	CO	ROC	NOx	SOx	PM10
Grading and Excavation (lbs/quarter)	--	--	--	--	317
Construction Equipment (lbs/quarter)	428	46	961	81	62
Workers Commutes (lbs/quarter)	273	30	29	0.2	1.2
Delivery and Work Trucks (lbs/quarter)	155	190	20	1.5	3.3
Total Emissions (tons/quarter)	**0.43**	**0.1**	**0.5**	**0.04**	**0.19**
SCAQMD Threshold (tons/quarter)	24.75	2.5	2.5	6.75	6.75
Total Emissions (avg lbs/day)	**19**	**6**	**23**	**2**	**9**
Peak Day Emissions (lbs/day)	**26**	**10**	**38**	**3**	**10**
SCAQMD Threshold (avg lbs/day)	550	75	100	150	150
SIGNIFICANT?	**--**	**--**	**--**	**--**	**--**

Table C-6
Estimated Fugitive Dust (PM10) Emissions from Earth Moving Activities

Concept Design Study	Total Disturbed Area (acres)	Duration (days)	Area Graded (acre/day)	PM 10 Emissions	
				(lbs/day)	(lbs/quarter)
SG Canyon Spreading Grounds	15	20	0.75	20	396
Woodland Duck Farm	30	40	0.75	20	792
SG River Discovery Center	12	44	0.27	7	317
Lario Creek	15	32	0.48	13	403
El Dorado Regional Park	12	44	0.27	7	317

Constants	Amount	Unit	Reference
Emission Factor	26.4	lbs/acre	SCAQMD, 1993 Table A9-9 (p. A9-93)

Table C-7
Estimated Vehicle Exhaust Emissions from Construction Worker Commutes

Total Emissions per Quarter

Concept Design Study	No. of Workers	No. of Days	No. of Trips (Construction Worker Commutes)	Emissions (lbs/quarter)				
				CO	ROC	NOx	SOx	PM10
SG Canyon Spreading Grounds	3	20	158	62.1	6.9	6.6	0.0	0.3
Woodland Duck Farm	17	40	1,795	703.8	78.1	75.0	0.4	3.0
SG River Discovery Center	6	44	697	273.2	30.3	29.1	0.2	1.2
Lario Creek	6	32	507	198.7	22.1	21.2	0.1	0.9
El Dorado Retgional Park	6	44	697	273.2	30.3	29.1	0.2	1.2

Peak Day Emissions

Concept Design Study	No. of Workers	No. of Days	No. of Trips (Construction Worker Commutes)	Emissions (lbs/quarter)				
				CO	ROC	NOx	SOx	PM10
SG Canyon Spreading Grounds	3	1	8	3.1	0.3	0.3	0.00	0.01
Woodland Duck Farm	17	1	45	17.6	2.0	1.9	0.01	0.08
SG River Discovery Center	6	1	16	6.2	0.7	0.7	0.00	0.03
Lario Creek	6	1	16	6.2	0.7	0.7	0.00	0.03
El Dorado Retgional Park	6	1	16	6.2	0.7	0.7	0.00	0.03

Constants	Amount	Unit	Reference
Emission Factor (CO)	0.01815	lbs/mi	Emission Factor for Passenger Vehicles, Year 2003 Scenario (SCAMQD, 2004)
Emission Factor (ROC)	0.002014	lbs/mi	
Emission Factor (NOx)	0.001935	lbs/mi	
Emission Factor (SOx)	0.00001	lbs/mi	
Emission Factor (PM10)	0.00007847	lbs/mi	
Worker Trip Length	10.8	miles/one-way trip	SCAQMD, 1993 (Table A9-5-D (p. A9-24))
Worker Trip per Day	1.32	one-way trip/day	SCAQMD, 1993 (Table A9-5-A-2 (p. A9-22))

Table C-8
Estimated Vehicle Exhaust Emissions from Materials Delivery and Work Trucks

Total Emissions per Quarter

Concept Design Study	Type	No. of Trucks	No. of Days	Hours per Day	Deliveries		Work Trucks	Total Miles Travelled	Emissions (lbs/quarter)				
					No. of Trips Total	Length of Trip (mi)	Miles Per Hour		CO	ROC	NOx	SOx	PM10
SG Canyon Spreading Grounds	Materials Delivery	--	--	--	320	5	--	1,600	41	50	5.4	0.4	0.9
	Water Truck	1	20	8	--	--	5	800	20	25	2.7	0.2	0.4
Total									**61**	**75**	**8**	**0.6**	**1.3**
Woodland Duck Farm	Materials Delivery	--	--	--	2,400	5	--	12,000	306	374	40	2.9	6.5
	Water Truck	1	40	8	--	--	5	1,600	41	50	5	0.4	0.9
Total									**347**	**424**	**46**	**3.3**	**7.3**
SG River Discovery Center	Materials Delivery	--	--	--	864	5	--	4,320	110	135	15	1.0	2.3
	Water Truck	1	44	8	--	--	5	1,760	45	55	6	0.4	1.0
Total									**155**	**190**	**20**	**1.5**	**3.3**
Lario Creek	Materials Delivery	--	--	--	736	5	--	3,680	94	115	12	0.9	2.0
	Water Truck	1	32	8	--	--	5	1,280	33	40	4	0.3	0.7
Total									**127**	**155**	**17**	**1.2**	**2.7**
El Dorado Retgional Park	Materials Delivery	--	--	--	864	5	--	4,320	110	135	15	1.0	2.3
	Water Truck	1	44	8	--	--	5	1,760	45	55	6	0.4	1.0
Total									**155**	**190**	**20**	**1.5**	**3.3**

Peak Day Emissions

Concept Design Study	Type	No. of Trucks	No. of Days	Hours per Day	Deliveries		Work Trucks	Total Miles Travelled	Emissions (lbs/quarter)				
					No. of Trips Total	Length of Trip (mi)	Miles Per Hour		CO	ROC	NOx	SOx	PM10
SG Canyon Spreading Grounds	Materials Delivery	--	--	--	16	5	--	80	2	2	0.3	0.02	0.04
	Water Truck	1	1	8	--	--	5	40	1	1	0.1	0.01	0.02
Total									**3**	**4**	**0.4**	**0.03**	**0.06**
Woodland Duck Farm	Materials Delivery	--	--	--	160	5	--	800	20	25	2.7	0.19	0.43
	Water Truck	1	1	8	--	--	5	40	1	1	0.1	0.01	0.02
Total									**21**	**26**	**2.8**	**0.20**	**0.45**
SG River Discovery Center	Materials Delivery	--	--	--	32	5	--	160	4	5	0.5	0.04	0.09
	Water Truck	1	1	8	--	--	5	40	1	1	0.1	0.01	0.02
Total									**5**	**6**	**0.7**	**0.05**	**0.11**
Lario Creek	Materials Delivery	--	--	--	32	5	--	160	4	5	0.5	0.04	0.09
	Water Truck	1	1	8	--	--	5	40	1	1	0.1	0.01	0.02
Total									**5**	**6**	**0.7**	**0.05**	**0.11**
El Dorado Retgional Park	Materials Delivery	--	--	--	32	5	--	160	4	5	0.5	0.04	0.09
	Water Truck	1	1	8	--	--	5	40	1	1	0.1	0.01	0.02
Total									**5**	**6**	**0.7**	**0.05**	**0.11**

Constants	Amount	Unit	Reference
Emission Factor (CO)	0.025508	lbs/mi	Emission Factor for Delivery Trucks, Year 2003 Scenario (SCAMQD, 2004)
Emission Factor (ROC)	0.031208	lbs/mi	
Emission Factor (NOx)	0.003362	lbs/mi	
Emission Factor (SOx)	0.000241	lbs/mi	
Emission Factor (PM10)	0.000540	lbs/mi	
Number of trips per day	8	trips/day	N/A

Table C-9
Estimated Emissions from Construction Equipment Tailpipe Emissions

Total Emissions per Quarter

Concept Design Study	Equipment Type	No. of Equip.	Approx. hp	Estimated Use		CO		ROC		NOx		SOx		PM10		Emission Factor Unit
				days	hrs per day	Emission Factor	Emissions	Emission Factor	Emissions	Emission Factor	Emissions	Emission Factor	Emissions	Emission Factor	Emissions	
SG Canyon Spreading Grounds	Excavator	1	138	20	7	0.011	213	0.001	19	0.024	464	0.002	39	0.0015	29	lb/hp-hr
	Loader	1	--	4	7	0.572	16	0.23	6	1.9	53	0.182	5	0.17	5	lb/hr
Total							**229**		**26**		**517**		**44**		**34**	
Woodland Duck Farm	Excavator	3	138	24	7	0.011	765	0.001	70	0.024	1,669	0.002	139	0.0015	104	lb/hp-hr
	Loader	3	--	4	7	0.572	48	0.23	19	1.9	160	0.182	15	0.17	14	lb/hr
	Excavator	1	138	10	7	0.011	106	0.001	10	0.024	232	0.002	19	0.0015	14	lb/hp-hr
	Loader	1	--	2	7	0.572	8	0.23	3	1.9	27	0.182	3	0.17	2	lb/hr
Total							**927**		**102**		**2,087**		**176**		**135**	
SG River Discovery Center	Excavator	1	138	38	7	0.011	404	0.001	37	0.024	881	0.002	73	0.0015	55	lb/hp-hr
	Loader	1	--	6	7	0.572	24	0.23	10	1.9	80	0.182	8	0.17	7	lb/hr
Total							**428**		**46**		**961**		**81**		**62**	
Lario Creek	Excavator	1	138	27	7	0.011	287	0.001	26	0.024	626	0.002	52	0.0015	39	lb/hp-hr
	Loader	1	--	5	7	0.572	20	0.23	8	1.9	67	0.182	6	0.17	6	lb/hr
Total							**307**		**34**		**692**		**59**		**45**	
El Dorado Regional Park	Excavator	1	138	38	7	0.011	404	0.001	37	0.024	881	0.002	73	0.0015	55	lb/hp-hr
	Loader	1	--	6	7	0.572	24	0.23	10	1.9	80	0.182	8	0.17	7	lb/hr
Total							**428**		**46**		**961**		**81**		**62**	

Peak Day Emissions

Concept Design Study	Equipment Type	No. of Equip.	Approx. hp	Estimated Use		CO		ROC		NOx		SOx		PM10		Emission Factor Unit
				days	hrs per day	Emission Factor	Emissions	Emission Factor	Emissions	Emission Factor	Emissions	Emission Factor	Emissions	Emission Factor	Emissions	
SG Canyon Spreading Grounds	Excavator	1	138	1	7	0.011	11	0.001	1	0.024	23	0.002	2	0.0015	1	lb/hp-hr
	Loader	1	--	1	7	0.572	4	0.23	2	1.9	13	0.182	1	0.17	1	lb/hr
Total							**15**		**3**		**36**		**3**		**3**	
Woodland Duck Farm	Excavator	2	138	1	7	0.011	21	0.001	2	0.024	46	0.002	4	0.0015	3	lb/hp-hr
	Loader	2	--	1	7	0.572	8	0.23	3	1.9	27	0.182	3	0.17	2	lb/hr
Total							**29**		**5**		**73**		**6**		**5**	
SG River Discovery Center	Excavator	1	138	1	7	0.011	11	0.001	1	0.024	23	0.002	2	0.0015	1	lb/hp-hr
	Loader	1	--	1	7	0.572	4	0.23	2	1.9	13	0.182	1	0.17	1	lb/hr
Total							**15**		**3**		**36**		**3**		**3**	
Lario Creek	Excavator	1	138	1	7	0.011	11	0.001	1	0.024	23	0.002	2	0.0015	1	lb/hp-hr
	Loader	1	--	1	7	0.572	4	0.23	2	1.9	13	0.182	1	0.17	1	lb/hr
Total							**15**		**3**		**36**		**3**		**3**	
El Dorado Regional Park	Excavator	1	138	1	7	0.011	11	0.001	1	0.024	23	0.002	2	0.0015	1	lb/hp-hr
	Loader	1	--	1	7	0.572	4	0.23	2	1.9	13	0.182	1	0.17	1	lb/hr
Total							**15**		**3**		**36**		**3**		**3**	

Constants	Amount	Unit	Reference
Emission Factors	See Table	lbs/hr	SCAQMD, 1993 (Table A9-8-A (p. A9-82), for Diesel)
Emission Factors	See Table	lbs/hp-hr	SCAQMD, 1993 (Table A9-8-B (p. A9-83) for Diesel)

Appendix D
Cultural Resources Analysis

Appendix D contains the following:

- Cultural Resources Technical Report completed for the proposed project by Greenwood and Associates (2003). (Note: Selected map pages in the report have been omitted for public distribution.)
- California Historical Resources Information System correspondence (dated September 14, 2004) regarding the Woodland Duck Farm Project Area

SELECTED ARCHAEOLOGICAL INVESTIGATIONS FOR THE SAN GABRIEL RIVER PROJECT MASTER PLAN

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October 22, 2003

(This report contains confidential site location information and is not for public distribution)

Abstract

MWH Americas has requested an archaeological survey for selected projects for the San Gabriel River Master Plan project. The pedestrian survey of three project areas within the larger San Gabriel River Master Plan confirmed the presence of historical cultural resources in the Whittier Narrows Education/Nature Center and Lario Creek project area. Four probable historic structures, one historic gaging station, and one historic metal water tank were documented. These were recorded and may be recommended for Phase II investigations. Possible prehistoric shell beads were found in El Dorado Regional Park and raise concern, although the context is questionable. The project area is sensitive for cultural resources both prehistoric and historic, as well as the surrounding Whittier Narrows basin as confirmed by the records search. It must be emphasized that surface visibility for most of project area did not exceed 25 percent.

Since the examination of the project area was limited to surface observations, it is possible that archaeological resources may be discovered during better, less obscured ground conditions and future subsurface investigations. This would apply also to the San Gabriel Spreading Grounds and El Dorado Park project areas.

Should any subsurface disturbance be planned within the project area, it is recommended that a qualified archaeologist be present to monitor all such activity. Should any cultural resources be encountered, the archaeologist will have the authority to halt construction activities temporarily in the vicinity, to identify and evaluate the materials, and implement appropriate measures to mitigate unavoidable impacts to resources found to be significant.

Information Center:
USGS Quadrangles: Azusa; El Monte; Los Alamitos
Acreage: 100 acres; 385 acres; 458 acres
Cultural Resources:
Type of Investigation: Archaeological survey

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Cultural Resources Survey: San Gabriel River Master Plan

**San Gabriel Canyon Spreading Grounds, Azusa,
Whittier Narrows Education Center and Lario Creek, South El Monte,
El Dorado Park, Long Beach, California**

INTRODUCTION

At the request of MWH Americas, Greenwood and Associates (GandA) has completed a cultural resources records search and pedestrian survey for three areas alongside the San Gabriel River and its watershed: 1) San Gabriel Canyon Spreading Grounds, approximately 100 acres, located in the City of Azusa; 2) Whittier Narrows Education Center and Lario Creek, approximately 385 acres in South El Monte and Whittier; and 3) El Dorado Regional Park, approximately 458 acres, located in Long Beach. The project area that encompasses these three areas is a part of the larger San Gabriel River Master Plan project area that lies along 58 miles of the San Gabriel River (Figure 1).

The Master Plan and its primary objectives are to develop the San Gabriel River corridor as an integrated watershed system that enhances habitat, provides for recreational benefits (e.g., creation of a regional community park), protects open space, and maintains flood protection and water supply (San Gabriel River Master Plan Administrative Draft Program EIR 2003). A records search of maps, archaeological site and survey reports, and regional overviews covering 0.25 mile on each side of the project areas boundaries was conducted at the South Central Coastal Information Center at California State University, Fullerton. A surface survey was conducted from September 15 to September 26, 2003 by Peter Messick and Linda Rehberger, staff archaeologists with Greenwood and Associates.

PROJECT LOCATION AND DESCRIPTION

The San Gabriel River flows north to south almost entirely in Los Angeles County, from its headwaters in the Angeles National Forest, to its southern outfall into the Pacific Ocean at Seal Beach, Orange County.

The Master Plan divides the entire course geographically into seven reaches. The three that are the subject of this investigation are the Upper and Lower San Gabriel Valleys, and the Lower Coastal Plain.

1) San Gabriel Canyon Spreading Grounds – Located below the mouth of San Gabriel Canyon, the area surveyed is comprised of approximately 100 acres and is bounded on the west side by a bike trail and the San Gabriel River, the Azusa Greens Golf Course, and a residential/commercial mixed area to the south, southwest, and east. Just to the

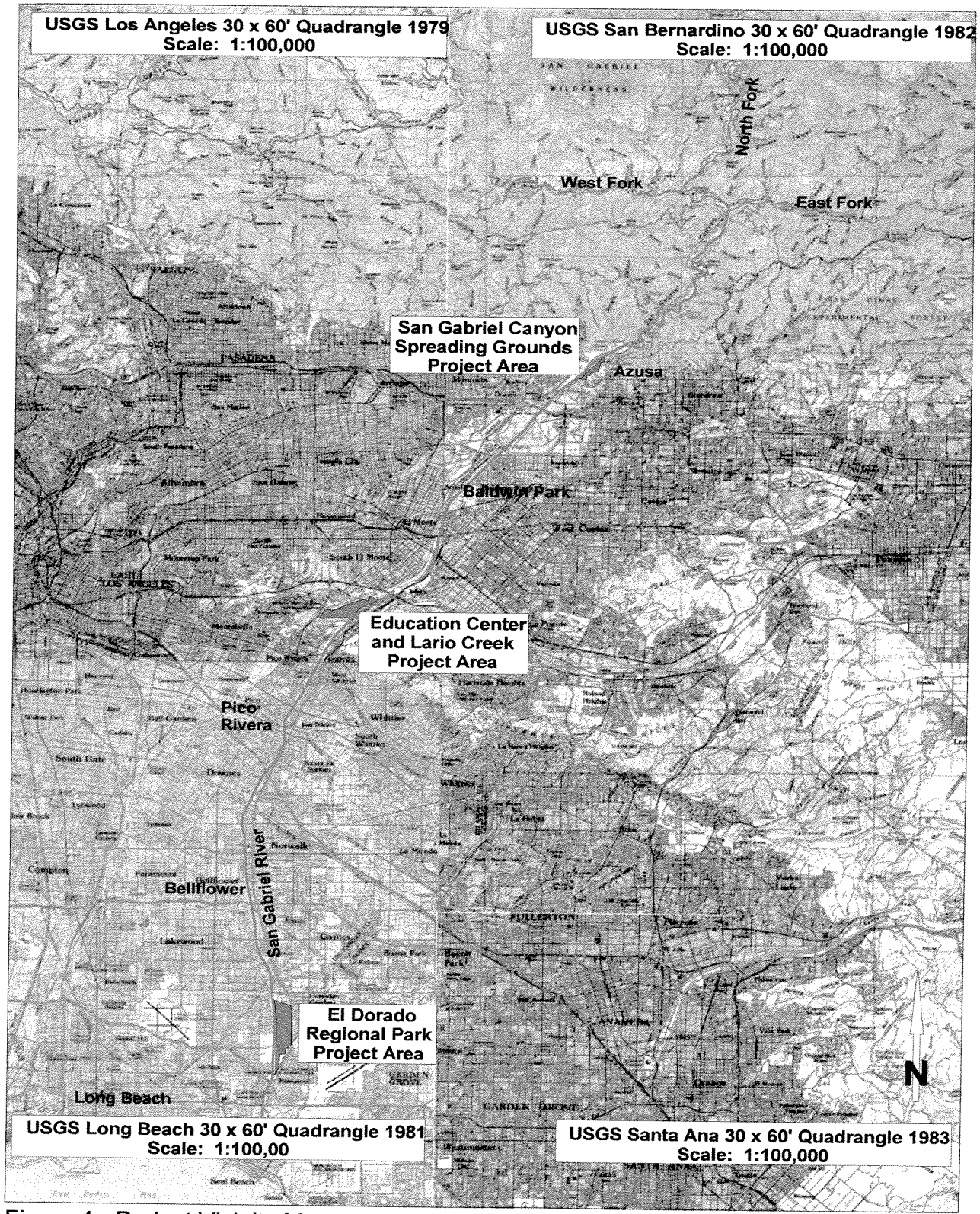

Figure 1. Project Vicinity Map

northwest are the rugged, steep slopes of the San Gabriel Mountains which are part of the Angeles National Forest. The project area is mostly flat. A chain link fence encloses two deep spreading basins that are operated by the County of Los Angeles Department of Public Works (DPW). Known as Basins I and II, these steep-sloped spreading grounds presently contain water from numerous sources including the adjacent San Gabriel River. A 14-acre triangular parcel (owned by the City of Azusa) between the two basins contains water storage tanks, wells, and pumps presently in operation and is largely without vegetation. Unpaved access roads are either dirt or crushed asphalt. A conveyor belt, part of the Azusa Rock Quarry, a large industrial mining operation located across the river, is located in the southern end of the site.

The topography is best described as alluvial canyon bottom land. The portion of the San Gabriel River and bike path that runs approximately 1.5 miles along the west side of the project area contains native vegetation of alluvial fan sage scrub and riparian habitat and is considered a Los Angeles County Significant Ecological Area. Thick and dense in many areas, the vegetation is interspersed with alluvial deposits of particularly large rocks and boulders.

2) Whittier Narrows Nature/Education Center and Lario Creek – The project area surveyed covers approximately 385 acres of natural woodland bordered by Durfee Avenue to the north, Peck Road on the west, Rosemead Boulevard on the east, and both the San Gabriel River and Lario Creek (man-made) to the south. It includes an existing nature/education center in the northeast portion of the project area, which has a museum, library, and gift shop. The project area is relatively flat open space, with the exception of a moderate, low-lying hillside that slopes upward to Durfee Ave. in the vicinity of the nature center. Meandering man-made trails and roads constructed of dirt, asphalt, and/or concrete surfaces criss-cross the project area. In addition to Lario Creek, four man-made lakes (currently dry), the San Gabriel River, and Legg Lake (just north of the project area) provide a habitat for a variety of migrating waterfowl. A raptor management area has been introduced in this park.

Located in part of unincorporated Los Angeles County, South El Monte, and Whittier, the project area takes its name "Whittier Narrows" from the southern constriction of the San Gabriel Valley, close to the confluence of the Rio Hondo and San Gabriel River. The area is characterized as riverine floodplain, with soils consisting of silt-clays and sands, from fine to coarse, of undetermined thickness. Native vegetation observed includes walnut, oak, cottonwood, and willow trees, tules, and blackberries. Palm and redwood trees are among exotic species present. Other vegetation communities present include coastal sage scrub and riparian associations with dense concentrations of wild grape vines and ruderal vegetation of non-native grasses including mustard.

3) El Dorado Regional Park – The El Dorado East Regional Park is bordered on the west by the San Gabriel River for approximately 2 miles, Coyote Creek on the south, the 605 Freeway on the east, and the Long Beach Town Center on its north side are the other

boundaries. Overhead transmission lines transect the park on its west side. Located in and operated by the City of Long Beach, the 458-acre park includes a 107.5-acre wildlife habitat and nature center. The project area surveyed included the Park and the following adjacent land: the Long Beach Police Academy (a pistol firing range) to the north; and on the south, a maintenance yard, Society for the Prevention of Cruelty to Animals (SPCA) facility, community gardens, and the Long Beach Water Reclamation Plant are located.

The reach of the San Gabriel River adjacent to the park is totally concrete lined and the berms along the river block views of the river from the park. The public park, divided into Areas 1-3, is relatively flat, open planted hybid grassland characterized by meadows and forested areas with man-made bike and jogging trails, roads, and artificial lakes. Originally fertile bean and alfalfa fields, the park was created in the 1950s. Earth from the 605 Freeway construction was used as fill to create the present landscaped park, particularly the wildlife habitat and nature center (Blackburn, personal communication 2003). The nature center, a minimally maintained existing ecosystem within the park, consists mostly of non-native, introduced vegetation, quite dense and thick in many areas. Efforts are presently underway to reintroduce native plant species and eventually to restore the area to its former riparian habitat.

The area south of the nature center below Willow Street is the location of the Long Beach Water Reclamation Plant. Portions of El Dorado Park are irrigated by reclaimed water from this facility. The property at the south end is at the confluence of the San Gabriel River and Coyote Creek. Outside the landscaped plant facility, the acreage is mostly level, undeveloped land with dense ruderal vegetation with some slight riparian habitat observed.

PREHISTORIC AND HISTORICAL BACKGROUND

A. Ethnography

The Native American people described as inhabiting the region surrounding the project area are known as the Gabrieliño. These people were hunters and gatherers with permanent villages, specialized processing sites, formal cemeteries, and trade networks with local and non-local groups. It is believed that they initially practiced a seasonal strategy, moving from location to location exploiting various food resources, but with technological advances they were able to maintain permanent year round villages with reliance on acorns and marine resources. At the time of European contact, they occupied an area that included portions of western San Bernardino, Los Angeles, and Orange counties (Kroeber 1953).

B. Prehistory

The archaeological record indicates that sedentary populations occupied the coastal and inland regions of California more than 9,000 years ago. Early periods were characterized

by the processing of hard seeds with the mano and milling stone and the use of the atlatl (dart thrower) to bring down large game, e.g., deer. Villages in the Los Angeles area were typically near permanent water sources that allowed exploitation of a variety of different habitats for food. In the later periods, prior to the arrival of Europeans, the bow and arrow was in use, beads were used as money, trade and social networks had evolved, and the mortar and pestle were used to process acorns.

C. History

1. Spanish Period (1769 - 1821)

California was claimed by Spain during the sixteenth century as part of the empire it was establishing in the New World. Europeans arrived in Los Angeles in 1769 with the Gaspar de Portolá expedition. Portolá's objective was to locate potential mission sites and to establish an overland route between the first Franciscan mission, established by his party at San Diego, and Monterey Bay. To solidify their claims, the Spanish government fortified San Diego and Monterey and started to establish Mission outposts. San Gabriel Mission was founded in 1771 and by the early 1800s, most of the Gabrieliño population, with the exception of those who had fled into the interior mountains and valleys, had come into the Mission system.

2. Mexican Period (1821-1846)

Mexico declared independence from Spain in 1821. A city council was formed in 1822 for Los Angeles, and Alta California became a State with Monterey as the capital. During this period the Gabrieliño Indian population declined due to disease, disruption of ancient lifeways, and excessive toil.

With Mexican independence from Spain came conflict over the disposition of mission lands in Alta California. A series of laws, culminating with the Secularization Act of 1833, stripped the missions of their land and power. The Missions were secularized in 1834, and eventually the surviving Native Americans were forced out of the area and into a marginalized existence. The vast holdings of the Franciscans were opened for acquisition by private citizens. Grants were made to individuals willing to work to make the land productive, and were often used to stimulate settlement of under populated areas. The number of grants rose markedly in the mid-1840s as the Mexican government acted to place as much of its California territory into private ownership as possible prior to the imminent takeover by the United States. More than 600 rancho grants were made between 1833 and 1846.

3. American Period

The United States took control of California after the Mexican-American War of 1846. The discovery of gold in northern California created a boom in the cattle industry which fed the

hordes of miners searching for gold. During the 1860s, the American population grew rapidly, partly because many of the old rancho families lost title to their land, leaving a vacuum which was promptly filled by settlers from central and eastern United States.

4. History of Selected Cities and Communities

Long Beach

Long Beach occupies land ceded in 1784 to Manual Nieto, a former soldier, whose claim originally extended from the Santa Ana River to the San Gabriel River and from the San Diego-San Gabriel Road to the sea. Later it was split into five ranchos (Robinson 1954:2). When Nieto died in 1804, his children divided their inheritance with Juan José getting Los Alamitos, and Manuela the adjoining Los Cerritos. In these two ranchos lies the City of Long Beach. Los Alamitos lies southeast of the present Alamitos Avenue, and Los Cerritos is northwest of this avenue. Most of the original townsite of Long Beach lies within the former rancho Los Cerritos.

The drought of the early 1860s caused the death of thousands of cattle, and both John Temple and Abel Sterns lost their ranchos. Los Alamitos had become the property of Michael Reese, a San Francisco money lender, when Reese foreclosed the mortgage which Stearns put on the ranch to complete the building of his Arcadia Block in Los Angeles. Jotham Bixby, John W. Bixby, and I.W. Hellman purchased the rancho from the heirs of Reese.

Thus the whole of what is now Long Beach came into the Bixby family, with the two ranchos devoted to sheep raising. William Willmore, an Englishman, secured an option from Jotham Bixby on four thousand acres to establish a subdivision called the "American Colony." He planned and filed the first survey for Willmore City in 1882. The city quickly failed and in 1887 the Long Beach Land and Water Company was organized. The colony was revived as "Long Beach" and in 1887 recorded the first official map of the present city. With the boom of the eighties sweeping over California, Long Beach became an established seaside resort. The Terminal Railroad in 1891 gave direct tourist and freight connections with Los Angeles, but when the Pacific Electric extended to Long Beach in 1902, the city's population began to increase tremendously.

In 1911, the State of California granted to the City of Long Beach, in trust for harbor and other public purposes, the tidelands and submerged lands bordering upon and below the mean high tide line.

Los Alamitos

Los Alamitos, meaning little cottonwoods, lies southeast of the present Alamitos Avenue, and Los Cerritos, meaning little hills, lies northwesterly of this avenue. Juan José Nieto

sold his rancho for $500.00 to José Figueroa, governor of California, in 1834. Abel Stearns then purchased the ranch in 1842.

Lakewood

Lakewood was a part of the Los Cerritos Rancho which was sold by the Bixby Investment Company in 1897 to William Clark of Montana for $349,950.00. Clark used the area for crops, including hay, sugar beets, and alfalfa. By the 1930s portions of the property were subdivided into residential units. It has been suggested that Bouton Lake, located on the golf course and formed when drilling operations opened an artesian well, is the source for the name Lakewood (Lakewoodcity.org 2002).

Cerritos

John Temple, an American who became a Mexican citizen, married Rafaela Cota, daughter of Dona Manuela Nieto de Cota. Rafaela was one of 12 children and heirs of the owner of Los Cerritos. Temple bought out his brothers and sisters-in-law for $3,025.00. The deed was executed in 1843.

Formerly an agricultural center, the community was known as Dairy Valley until 1967. The city then was renamed Cerritos (Spanish, "little hills") after a ranch established here in the 1780s. The city was incorporated in 1956.

Bellflower

What is now Bellflower was one of the land grants that were given to some Spanish soldiers in 1784 so they could graze livestock. The name comes from the Bellefleure apple. One of the early settlers, William Gregory, had an orchard of these variety of tree. The name, translated from French, means "beautiful flower" (Greatestcities.com 2003). The City of Bellflower was incorporated on Sept. 3, 1957.

Norwalk

Norwalk is a residential community in the southeastern portion of the Los Angeles metropolitan area. A junior college, the Norwalk Arts and Sports Complex, and Sproul Museum are in the city. The settlement, established in 1868 as Corvallis, became known as Norwalk Station in the 1870s because the railroad tracks crossed the "north walk." In 1877 the name was shortened to its present form. Norwalk first prospered as a shipping center for the surrounding agricultural and lumbering area. It incorporated as a city in 1957.

Downey

The community, laid out with the arrival of the railroad, was an agricultural center until the late 1940s (Greatestcities 2003). Originally part of the Los Nietos township, Downey was

started as a 126 acre lot formed by the Downey Land Association. The townsite was named after John G. Downey, California Civil War governor and president of the land company. In 1874 the first Southern Pacific train reached the area. Downey took possession of the St. Gertrude's Rancho, northeast of what is now Long Beach, and proceeded to subdivide it in smaller communities, one of which he named "Downey."

Pico Rivera

The City of Pico Rivera traces its beginnings to the 1870s when the Atchison, Topeka and Santa Fe and the Union Pacific completed rail lines throughout the area. Both of the country towns of Pico and Rivera grew slowly as agricultural centers until the 1950s. By the mid-1950s, leaders from both communities started to voice strong support for incorporation and in 1958, the name Pico Rivera was chosen as the name of the 61st city in Los Angeles County (Pico-Rivera. Ca.us 2003).

Between the San Gabriel River and the Rio Hondo, it is an industrial suburb of Los Angeles. The major manufactures include transportation equipment, chemicals, metal and wood products, and processed food.

Whittier

Whittier was incorporated as a city in 1898. The community was founded by members of the Society of Friends (Quakers) in 1887 and named for the poet John Greenleaf Whittier. A residential and commercial community at the foot of the La Puente Hills near Los Angeles, the city lies in a petroleum, citrus fruit, avocado, and walnut producing area with some light industry. Major manufactures include oil field supplies, refined petroleum, motor vehicle parts, and aerospace equipment. Whittier College (founded in 1887), a junior college, and the adobe mansion of the last Mexican governor of California are here. President Richard M. Nixon attended college and practiced law in Whittier.

El Monte

The city is located in the San Gabriel Valley, in the Los Angeles metropolitan region. Manufactures include plastic, glass, and electronic equipment. It is the site of the El Monte Historical Society Museum. The name El Monte, given by Spanish explorers, is derived from the word meaning "woodland." The city is the oldest settlement in the San Gabriel Valley; it was founded in the early 1850s around the western terminus of the Santa Fe Trail. The first public school and Protestant church in southern California were built in El Monte.

El Monte was first settled in 1851 by the pioneer family of Thompsons. The proximity of the San Gabriel and Rio Hondo Rivers provided water and rich agricultural lands for the newcomers. The area had long been a watering hole for immigrants and over time others

settled in the area. The newcomers proposed Lexington as the name of their village, but this was eventually set aside and El Monte was formally adopted.

In the early twentieth century field crops were replaced by fruit orchards, walnut groves, and a growing dairy industry. By 1906, the Pacific Electric had established a line through El Monte and the city was incorporated in 1912. Lion tamers, Mr. and Mrs. Charles Gay, opened a lion farm and at its peak in the 1930s, had more than 200 lions in residence. The City of El Monte designated a statue of one of the lions as an official Historical Monument (Barton 1988).

Baldwin Park

Baldwin Park is primarily a residential community for the nearby industrial centers of Irwindale and City of Industry, with some diversified light industry. In the mid-19th century it was cattle-grazing land for the nearby San Gabriel Mission and was settled by homesteaders about 1875. The community was established in 1906 by Elias J. Baldwin, a wealthy landowner for whom the town is named. It was incorporated as a city in 1956.

Arcadia

Arcadia, at the foot of the San Gabriel Mountains, incorporated in 1903. Primarily residential, it has some light industry. The area was initially part of a land grant to Hugo Reid, a Scot who became a Mexican citizen and petitioned for the Rancho Santa Anita, a tract of more than 13,000 acres. In 1845 he was granted full title from Pio Pico, last Mexican governor. During the next 30 years Rancho Santa Anita changed ownership five times, until finally, Elias J. Baldwin purchased 8,000 acres of the old rancho in 1875 and subsequently subdivided it. The city was laid out in 1888 and named for the region of ancient Greece that was known for its pastoral character. The Santa Anita Park racetrack and the Los Angeles Arboretum are in Arcadia.

Irwindale

The city was named for a citrus grower in the area. The post office was established in May 1899, and the city was incorporated in 1957 (Gudde 1969:153).

Azusa

The city's name might be derived from that of a Shoshonean village, *Asuksa-gna*, formerly located nearby. Another interpretation is that it represents everything from A to Z in the U.S.A.

In 1841, an area of land some three miles square was granted to Luis Arenas by the Mexican government. Arenas built an adobe home on the hill in the eastern part of the City, did farming and stock raising, and called his newly acquired possession EL Susa

Rancho. In 1844 Arenas sold his holdings to Henry Dalton, an Englishman who acquired his wealth by buying and shipping foods from Peru to Wilmington Harbor, now Los Angeles harbor, and San Francisco. Dalton planted a vineyard and built a flour mill.

During 1854, gold was discovered in the San Gabriel Canyon and a town named El Doradoville was built at the fork of the San Gabriel to take care of the 2,000 miners who had filed gold claims along the east fork of the canyon. The town was destroyed by floods in 1861 and 1862. Dalton became involved in property disputes about the size of his holdings and after 24 years of litigation, he turned over his property to Jonathon Slauson who had loaned him the money to fight the Federal government.

In 1887, Mr. Slauson laid out the town of Azusa and as lots were graded Indian tools and artifacts were unearthed. In 1898, the City was incorporated (Mutschler 1996). Manufactures in the city include aerospace equipment, chemicals, and plastics. Azusa Pacific University (1899) and a junior college are in Azusa.

Angeles National Forest

In 1841, Henry Dalton paid Luis Arenas $7,000 and for the purchase of the 4,400 acre Mexican rancho, the Azuza de Dalton. Dalton built his adobe near the mouth of the San Gabriel Canyon. The east and west branches of the San Gabriel River attracted settlement. H. Roberts built a frame house and general store on the east fork of the San Gabriel River, meeting the needs of miners during the gold rush then under way. A settler on the west side of the San Gabriel River in 1880 was George Islip after whom Mt. Islip was named. El Doradoville was located on the east fork of the San Gabriel River where miners built shacks and stone cabins in 1860. To protect the watershed of the Los Angeles, San Gabriel, and other rivers in the Sierra range, President Benjamin Harrison signed the forest into being as San Gabriel Timberland Reserve, changed in 1907 to San Gabriel National Forest, and then in 1908 renamed the Angeles National Forest.

San Gabriel River

The waters of the Los Angeles, San Gabriel, and Santa Ana Rivers often mingled on the coastal plain in times of flood. Flood waters from these rivers deposited the rich soil that helped make Los Angeles County the most productive agricultural county in the United States until the 1950s (Gumprecht 1999:9). The San Gabriel River once emptied into the ocean at San Pedro Bay, along a course later occupied by the Los Angeles River. The Los Angeles River joined the San Gabriel River seven miles north of its ocean terminus; the combined flow of the two streams reached the ocean through the Wilmington Lagoon. Both the Santa Ana and the San Gabriel posed greater flood risks in their uncontrolled states than did the Los Angeles River because they spread over wide areas as soon as they left the mountains. Other than the Los Angeles River, most of the rest of the irrigated farmland in Los Angeles County was located along the San Gabriel and Santa Ana Rivers (Gumprecht 1999:79).

The floods of 1868 caused the San Gabriel River to cut a new course to the sea. Until that time, the San Gabriel and Los Angeles Rivers had joined north of the present location of Long Beach. Surging waters that winter, though, forced the San Gabriel to leave its bed farther upstream, where its channel turned southwest after emerging between two hills south of El Monte, a gap known as Whittier Narrows. Flood waters washed away the town of Galatin, settled a few years earlier near the present site of Downey, and dug an entirely new channel south to Alamitos Bay, at the boundary between Los Angeles and Orange counties. This new channel, initially known as New River, is approximately the course of the San Gabriel River today. Water continued to flow in the river's former channel, which became known as Rio Hondo. The last seven miles of the old San Gabriel channel, downstream from its meeting wi th the Los Angeles River, meanwhile, gradually assumed the name of that river (Gumprecht 1999:148).

The overflow of the San Gabriel River during a storm in March 1911 awakened fears of more flooding. Gravel extraction companies had removed so much of the River's bed near Duarte that nearly all the flow of the San Gabriel River had been forced back into its former channel, now the Rio Hondo, and had washed away bridges and destroyed valuable farmland during the flood. Studies conducted two years later showed that more than 90 percent of the water carried by the upper San Gabriel flowed west through the Rio Hondo and reached the ocean via the Los Angeles River at San Pedro Bay. Little water flowed in the main channel of the San Gabriel River below Whittier Narrows.

Supervisors hired a former Santa Fe railroad engineer named Frank H. Olmstead to prepare a comprehensive plan for to control of the San Gabriel River. In 1913 he proposed $1.5 million in additional work. He suggested that the banks of the San Gabriel be reinforced and that the stream channels be kept clear of brush and rubbish. During this time, more than 2 million people moved to Los Angeles County during the first three decades of the twentieth century, transforming it from largely agricultural region with a population of Abilene, Texas, into a major metropolitan area (Gumprecht 1999:198).

Flood control hinged upon passing of Bond measures but these were defeated. The Federal government acted to take over and in 1935 Franklin D. Roosevelt allocated 13.9 million in Works Progress Administration funds to finance 14 of the most urgent projects in the comprehensive plan, and Congress authorized a preliminary examination of the Los Angeles and San Gabriel rivers. This was the first step toward creating a more comprehensive federally funded Flood Control Program. The United States Army Corps of Engineers (USACE) became the agency delegated to study flood control issues and implement measures to prevent flood events. Flood control plans were completed in 1938 for the San Gabriel River which are still in place today.

METHODS

Record Search

Archaeological site records, survey and excavation reports, historic maps, and landmark lists were examined for any cultural resource data within a 0.5-mile radius of each of the three project areas. Two surveys had slightly overlapped the project boundaries at the San Gabriel Canyon Spreading Grounds (Farnsworth 1989; Owl Rock Products Co. 1988) with no cultural resources identified within the project area. Five surveys and one archaeological investigation overlapped the project boundaries at Whittier Narrows Nature/Education Center and Lario Creek (Greenwood, Foster, and Duffield 1989; Love 1980; Roberts and Brock 1987; RMW Paleo Associates 2000; Romani 2000; Sundberg and Whitney-Desautels 1991). No cultural resources were identified within the project area. The archaeological investigation resulted in the discovery of stone foundations and features associated with the La Merced Adobe, a late nineteenth century historic structure, located in the project area near the intersection of Rosemead Blvd. and Durfee Ave. Sampled and believed to be significant in 1989 (Greenwood, Foster, and Duffield 1989), the site is identified as CA-19-002583. Eight surveys have overlapped the project boundaries at El Dorado East Regional Park (Allen and Jones 1993; Demcak 1997; Dibble and Cottrell 1987; Duke 2000, 2002; McKenna et al. 2001; Ward and Del Chario 1990) with no cultural resources reported within this project area.

Survey

Each of the three project areas was inspected on foot, with the exception of areas of exceptionally thick and overgrown vegetation. Two archaeologists walked the parcels in parallel transects spaced approximately 10 meters apart, examining all visible ground surface and subsurface wherever revealed. Numerous animal trails, rodent burrows, erosion gulches, and several dirt roads throughout each of the project areas afforded some subsurface visibility.

RESULTS

Record Search

San Gabriel Canyon Spreading Grounds

No Sites in Project Area

Two Sites in Search Area: Site Records. 19-002777. Alexandrowicz 1999a; 19-186107. Alexandrowicz 1999b

Table 1. Summary of Archaeological Investigations, San Gabriel Canyon Spreading Grounds, Project Area				
Reference Number	Name of Project	Type of Investigation	Author/Date	Results
L-2111	Azusa Quarry	Linear Survey	Farnsworth 1989	Negative for Project Area
L-3797	National Guard Armory, Azusa	Survey	Ashkar 1997	Negative
L-391	Army Owl Rock Facility	Survey	de Barros 1988	Negative

Table 2. Summary of Archaeological Investigations, San Gabriel Canyon Spreading Grounds, Search Area				
Reference Number	Name of Project	Type of Investigation	Author/Date	Results
L-1283	Foothill Dairy EIR, Azusa	Survey	Zahneiser 1983	Unrecorded Dairy Site
L-4723	Tract No. 52800, Azusa	Survey	Alexandrowicz 1999	19-002777 19-186107
L-2076	24 Acre Parcel, Duarte	Survey	Singer 1977	Negative

USGS Azusa 7.5' Quadrangle Map, scale 1:24,000, 1966 (photorevised 1972)

Sites in search area: 2

Alexandrowicz, J. S., and T. L. Bell

1999a Site Record, CA-LAN-2777 (19-002777). On file, South Central Coastal Information Center, California State University, Fullerton. 2 concrete-lined irrigation ditches, poss. 1844, certainly pre-1894.

1999b Site Record, building, 19-186107. On file, South Central Coastal Information Center, California State University, Fullerton. 1930s residence 1750 and 1770 Azusa and San Gabriel Canyon Road.

Historical maps consulted:

USGS Azusa 6' Map, 1939: no structures

Whittier Narrows Education Center and Lario Creek

One Site in Project Area: Site Record. 19-002583. Owen and Foster 1997

Two Sites in Search Area: Site Records. 19-001311. Brock and Elliott 1986; 19-000858. Jones et al. 1988

Brock, J., and J. Elliott
1986 Site Record, CA-LAN-1311H (19-001311). On file, South Central Coastal Information Center, California State University, Fullerton. 2 components: historical refuse and prehistoric lithics.

Jones, J., et al.
1976 Site Record, CA-LAN-858H (19-000858). On file, South Central Coastal Information Center, California State University, Fullerton. Historical refuse.

Table 3. Summary of Archaeological Investigations, Whittier Narrows Education Center and Lario Creek, Project Area

Reference Number	Name of Project	Type of Investigation	Author/Date	Results
L-358	Los Angeles, Rio Hondo and Whittier Narrows	Records Search	Stickel 1976	19-002583, 19-001311, 19-000858
L-828	Part of Whittier Narrows	Survey	Love 1980	Negative
L-1648	Whittier Narrows	Records Search	Roberts and Brock 1987	19-002583, 19-001311, 19-000858
L-2970	Cajon Pipeline	Linear Survey	City of Adelanto 1992	Negative in Project Area
L-4659	Whittier Narrows	Records Search	Maxwell 1993	19-002583, 19-001311, 19-000858
L-5455	Whittier Narrows	Review of Previous Research	Maxwell 1994	19-002583, 19-001311, 19-000858
L-5456	Whittier Narrows	Survey	Department of Parks and Recreation, Los Angeles County	19-002583, 19-001311, 19-000858
L-5475	Whittier Narrows	Survey	Miller 2000	19-002583, 19-001311, 19-000858
L-5476	San Diego Fiberoptic, Segment	Linear Survey	Romani 2000	Negative for Project Area

Table 3. Summary of Archaeological Investigations, Whittier Narrows Education Center and Lario Creek, Project Area				
Reference Number	Name of Project	Type of Investigation	Author/Date	Results
L-3509	Los Angeles County Drainage	Survey	Cottrell et al. 1985	19-002583, 19-001311, 19-000858
L-2649	Los Angeles County Drainage	Records Search	MITECH 1989	19-002583, 19-001311, 19-000858
no #	Whittier Narrows	Excavation Report	Greenwood et al. 1989	19-002583, 19-001311

Table 4. Summary of Archaeological Investigations, Whittier Narrows Education Center and Lario Creek, Search Area				
Reference Number	Name of Project	Type of Investigation	Author/Date	Results
L-1221	Whittier Narrows	Excavation Report	Schwartz 1982	19-000858
L-6299	NEXTEL CA-8028B, South El Monte	Records Search	McKenna 2002	Negative
L-4880	Route 605	Records Search	Smith and Sriro 2000	Negative
L-2667	Whittier Narrows	Partial Survey	Lindsey and Schiesel 1976	Negative in Project Area
L-2237	Whittier Narrows	Records Search	Sundberg and Whitney-Desautels 1991	19-002583, 19-001311, 19-000858
L-182	Whittier Narrows	Survey	Clewlow 1976	Negative
L-2882	Cajon Pipeline	Linear Survey	McKenna 1993	Negative in Project Area
L-4883	Route 60	Partial Survey	Storey 2000	Negative

Historical map consulted:

USGS Pasadena 15' Quadrangle Map, 1900: 3 or 4 structures

El Dorado Regional Park

Historical maps consulted:

USGS Downey 15' Quadrangle Map, 1896 – no structures

USGS Downey 15' Quadrangle Map, 1941 – 5+ structures
USGS Downey 15' Quadrangle Map, 1943 – 5+ structures

No Sites in Project Area

No Sites in Search Area

Table 5. Summary of Archaeological Investigations, El Dorado Regional Park, Project Area

Reference Number	Name of Project	Type of Investigation	Author/Date	Results
L-2067	Family Sports Complex, Long Beach	Survey	Ward and del Chario 1990	Negative
L-4090	6-Acre Parcel, Long Beach	Survey	Demcak 1997	Negative
L-83	Sewer Treatment Plants	Linear Survey	Rosen 1975	Negative for Project Area
L-6168	AT&T Wireless Facility 05114A-01	Records Search	Duke 2002b	Negative
L-2068	26-Acre Parcel, Long Beach	Survey	Dibble and Cottrell 1987	Negative
L-5718	Long Beach Reclaimed Water	Monitor Report	Demcak n.d.	Negative

Table 6. Summary of Archaeological Investigations, El Dorado Regional Park, Search Area

Reference Number	Name of Project	Type of Investigation	Author/Date	Results
L-2843	Naval Hospital Site	Survey	Allen and Jones 1993	Negative
L-983	7.2 Acres, Lakewood	Survey	Rangel 1977	Negative
L-3649	Lot 36, Tract 9265, Long Beach	Survey	Cottrell 1976	Negative
L-6162	AT&T Wireless Facility 05292B	Records Search	Pletka 2002	Negative
L-4880	Route 605	Records Search	Smith and Sriro 2000	Negative
L-5312 & L-6173	AT&T Wireless Facility C783.1	Records Search	Duke 2000	Negative
L-6088	AT&T Wireless Facility 05292A	Records Search	Duke 2002a	Negative
L-5215	Long Beach Desalination	Linear Survey	McKenna 2001	Negative for Project Area

Survey

The following is an inventory of the cultural resources encountered and recorded within each project area during the survey. Documentation included a site record/description, plan view map, and photographs.

San Gabriel Canyon Spreading Grounds

Ground surveillance at the San Gabriel Canyon Spreading Grounds (Figure 2) was quite low along a strip between the bike path and the DPW property enclosing the spreading basins. Alluvial and riparian habitat vegetation was extremely thick here, and many areas were covered with rock and boulder-size alluvium. Much of the surface within the DPW property was open dirt but several paved roads and crushed asphalt surfaces reduced surface visibility to zero. Total ground surface visibility was approximately 80 percent of the project area.

Whittier Narrows Nature/Education Center and Lario Creek

At the Whittier Narrows Nature/Education Center and Lario Creek project area (Figure 3), vegetation is extremely thick and overgrown with ruderal varieties of grasses/weeds especially with the non-native mustard species. Dense concentrations of native grapes have virtually taken over many low lying shrubs and many trees as well, observed as high as 30 feet. Much of the perimeter of the parcel is thick with low-lying brush and shrub undergrowth within stands of trees. With the artificial lakes dry, drought conditions presently exist and much of the vegetation is dead and dry, waist and shoulder high in most areas, making surface visibility virtually impossible. Even the mowed grasses/weeds in the raptor management area did not measurably improve surface visibility due to the accumulation of the cut and uncleared vegetation. Several dirt trails and roads criss-cross the project area, and a proliferation of rodent burrows throughout the parcel offered some surface and subsurface visibility. Overall, total ground surface visibility probably did not exceed 25 percent of the project area. A recent fire in a small area in the south portion of the parcel afforded the best visibility during the survey.

El Dorado East Regional Park

With the exception of the wildlife habitat and nature center, visual surveillance within El Dorado East Regional Park was excellent (Figure 4). The paved roads and parking lots, concrete pad picnic areas, and park facility structures were the major impediments to pedestrian survey. Thick low-lying brush, shrub undergrowth, and trees are present along much of the park's perimeter. Although not as dry, the vegetation growth of the wild habitat and nature center was quite similar to that of the Whittier Narrows project area. The nature center's dirt trails and roads and a few areas adjacent to these offered maximum surface visibility. Heavy and thick weed and shrub undergrowth within stands of trees made these forested areas inaccessible.

SURVEY RESULTS

San Gabriel Canyon Spreading Grounds:

No cultural resources, prehistoric or historic, were observed.

Whittier Narrows Nature/Education Center and Lario Creek:

Structure 1 – The complex included a concrete floor pad and remains of a concrete pool, located between a medium-size alder and the Lario Creek channel (on the north side). Just south of the "600" area, the remains of a concrete slab lay buried beneath a dirt access road that angles across the south side of both features. The concrete pad is parallel to and 15 feet north of the pool. It now measures at least 15 feet wide x 35 feet long and may have been larger. Several whole, thin, and warped red tiles of a composite material represent remains of flooring. These are 0.06 to 0.08" thick and 9" square. No makers' marks were observed. Faded tile fragments were scattered over a red painted concrete surface. Where one area was exposed adjacent to a chain link fence that borders the channel, corners of both the flooring and pool edges had been removed for installation of the fence, evidence that they predate its construction.

Rectangular in shape, the pool measures 26 feet wide x 44.5 feet long (inside) with a depth of 24 inches measured at the southwest corner. The pool may be deeper on the other side but the fill of soil prevented further measurements. Faded light blue paint was observed over white paint on portions of the inside walls. The pool's concrete rim extends out for approximately 36 inches, with a beveled edge and smooth finished surface, apparently not painted. A whole red brick embossed "SIMONS" was found in the soil fill inside the pool in the southwest corner. The date of construction for both the pool and floor and their historical significance are presently unknown.

Structure 2 – Remains of a concrete, red brick and mortar foundation were found in the eastern half of the nature area beside a dirt trail that circumscribes one of the dry lakes

south of the "Blue" gate off of Durfee Ave. The remains of Structure 2 are located approximately 150 feet north of the Lario Creek channel and were virtually hidden from view by the thick weedy overgrowth off of the trail and the encroaching branches of a medium size elderberry. After clearing the surrounding vegetation, a red brick and mortar foundation was exposed approximately 14 feet long x 8 feet wide.

The foundation appears to be solidly built. One north-south wall is almost 3 feet wide and extends at least 24 inches below the surface. This foundation wall continues another 3 feet west (for a total length of 6 feet), with a 2 foot gap, ending with the remains of a stucco wall finish of chicken wire and mortar which may indicate a larger structure may have existed. Several bolts were set in concrete on top of the foundation, presumably to anchor a wood framed superstructure. At what seems to be the southwest corner of the foundation, part of a brick exposed on the top surface revealed a partial makers' mark indicating "SIMONS" as the manufacturer.

Structure 3 – A concrete and rebar foundation was encountered beside a dirt access road in a relatively flat area in the eastern half of the nature area, approximately 210 feet north of the Lario Creek channel. Overgrown with mustard weed, the outside foundation and floor remains measure 24 feet east-west x 22 feet north-south. It is approximately 8 to 9 inches thick and reinforced with rebar (5/8" diameter sample collected). A foundation wall divides the structure into two rooms with inside dimensions of 13 feet x 20.5 and 9 feet x 20.5 feet. The exposed concrete floor is a smooth finished surface that appears to have been painted green and subsequently red. Lots of small concrete and mortar fragments are strewn about all over the floor surface. Several large concrete saw cut "cubes" and "cylinders" were observed on the floor and on the adjacent ground (Figure 5).

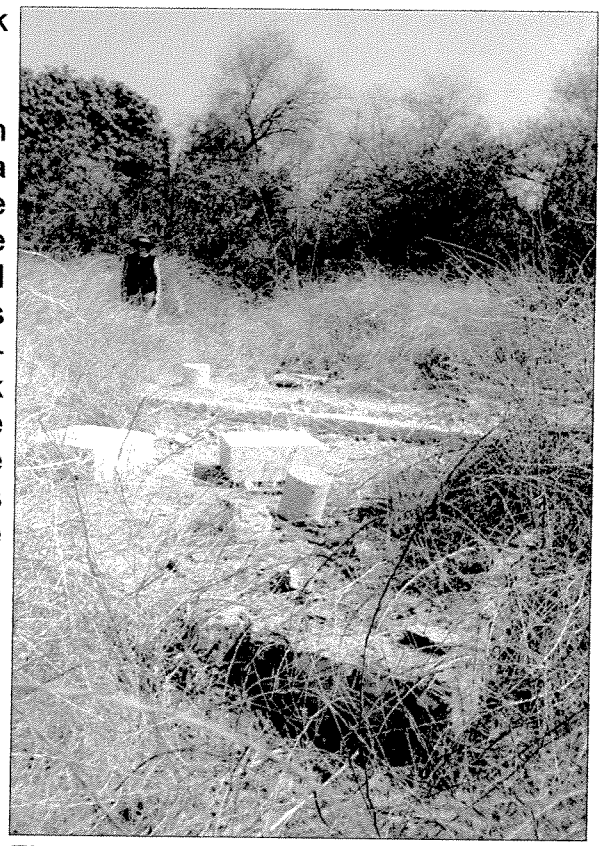

Figure 5. Structure 3

It appears that Structure 3 had utility services at one time with a gas pipe (1 5/16" diameter) and water pipe (1" diameter) on the northeast corner of the foundation. A utility pole some 50 feet to the east indicates telephone or electrical service. Structures 2, 3, and 4 are all in the same vicinity (within 250 feet of each other), and may be associated.

Figure 6. Structure 4

Structure 4 – Another concrete pad or floor and an inlet/outlet water pipe were located north of Structures 2 and 3. Discovered in an area overgrown with mustard weed and set back away from any trail or road, the remains are almost totally covered with weeds and duff. After clearing, the rectangular slab measured >32 feet east-west x 13 feet north-south, most of the surface appearing like a smooth finished floor. Where this finish was broken up into thin (1/4" thick) pieces, with some missing, a rough concrete surface was exposed underneath.

About 5 feet in from the north edge of the pad is a concrete ledge or "curb", 4 inches wide x 6 inches high that extends east-west approximately12.5 feet parallel to the edge (Figure 6). Approximately 20 feet east of Structure 4, a 9 inch diameter metal pipe or casing emerges from the ground to a height of 10 inches. Rising from the casing is a 3.25 inch diameter metal pipe (inside dia.) which may possibly represent an inlet/outlet water pipe. Its association with Structure 4 is unclear.

Historic Gaging Station: Located in the western half of the nature area approximately 100 feet south of Durfee Ave. by the "Green" gate, the gaging station structures are quite overgrown with wild grape vines, presumably abandoned for some time. A small structure associated with the station existed here at one time (Jallo, personal communication 2003; Figure 7).

Figure 7. Gaging Station

Historic Metal Water Tank: Located about 145 feet south of the intersection of Durfee Ave. and Santa Anita Ave. near the "Yellow" gate, an

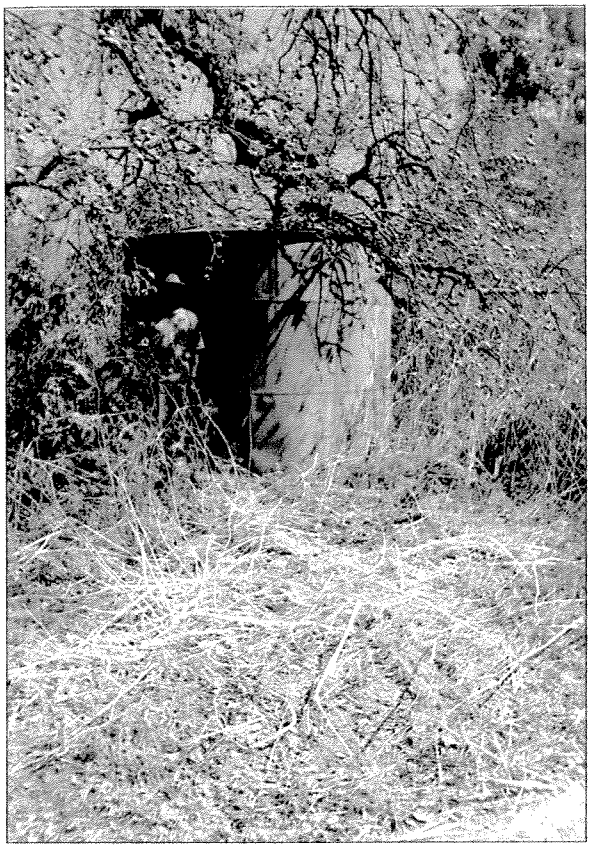

Figure 8. Water Tank

abandoned rusted metal water tank lies on the surface just east of a dirt access road. Measuring approximately 7 feet 7 inches in height and 10 to 12 feet in diameter with a slightly conical roof, the tank is constructed of metal panels that have been riveted together. This probably is not the tank's original location and the tank may have been raised on an associated structure or tower (Figure 8).

Driveways 5, 6, 7, 8: During the survey along the dirt access road that parallels Durfee Ave. between the "Yellow" and "Red" gates, four former "driveways" were observed as we crossed them. Three are asphalt and one is concrete, and they were labeled D5-D8 for purposes of documentation. All are perpendicular to Durfee Ave. and appear to represent access to residences that were located in the project area before its conversion to the nature center. Measurements of width and length, from the property fence line on the south side of Durfee Ave. were made by probing to determine, if possible, the length of each driveway. Driveway 5 is of concrete construction, 10 feet wide x 70+ feet long. In the heavy undergrowth, a mound containing some exposed red roof tile, bottles, and cans was observed on the west side of the driveway approximately 85 feet south of the fence line. Driveway 6 is of asphalt construction, 76 feet east of D-5, and is 8 feet wide x 75+ feet long. A mound east of the driveway and a scatter of concrete rubble were observed. Driveway 7 is asphalt with concrete curbs, 154 feet east of D-6, and 13 feet wide x 75+ long. The vegetation was so thick and dense that no associations were visible. Driveway 8 is also of asphalt, 395 feet east of D-7 and 180 feet west of the "Yellow" gate. It is 8 feet wide x 65+ long. The vegetation here was thick and dense and quite impenetrable.

El Dorado East Regional Park: Eight shell beads were found on the surface on a slight knoll within a common public picnic area in Area II, approximately 91 feet west of the paved asphalt park access road. Each has a single conical drilled perforation with one appearing to be biconically drilled. They are square to slightly rectangular in shape averaging approximately 5 mm in length and 2 mm thick. The area where the shell beads were found appears heavily trafficked and three concrete pads (8 feet x 12 feet) with picnic tables surrounded with tree cover provide the setting with non-native hybrid grass ground cover interspersed with patches of open dirt. The beads were clustered within a 50 cm radius

in a patch of open dirt that appeared to have been recently fertilized. The ground was moist from recent watering.

The origin of the beads is questionable. They do appear Native American in manufacture, yet their context on the surface in a public park raises questions about their age. It is not evident whether the beads are *in situ* or were imported from fill or other means from a source outside the park. They could be modern copies. The pedestrian survey in the surrounding area and in other sections of the park revealed numerous shell fragments found on open dirt surfaces and in spoil from rodent burrows, particularly in Area III just west of the pistol firing range. Whole shells, both *Argopecten circularis* (scallop) and *Chione undatella* (clam), were observed on the surface in another part of Area II, west of this location, behind the archery range and are attributed to recent barbecue or picnic activities. The park grounds have undergone many changes over the years from the original flat agricultural fields to the modified topography of the lakes and landscaped areas that characterize the park today. The utilization of imported landfill in the early development of the park seems a reasonable conclusion for the presence of shell throughout the park.

CONCLUSIONS

The pedestrian survey of three project areas within the larger San Gabriel River Master Plan confirmed the presence of historical cultural resources in the Whittier Narrows Education/Nature Center and Lario Creek project area. Four probable historic structures, one historic gaging station, and one historic metal water tank were documented. These were recorded and may be recommended for Phase II investigations. The shell beads raise concern, although the context is questionable. The project area is sensitive for cultural resources both prehistoric and historic, as well as the surrounding Whittier Narrows basin as confirmed by the records search. It must be emphasized that surface visibility for most of project area did not exceed 25 percent.

Since the examination of the project area was limited to surface observations, it is possible that archaeological resources may be discovered during better, less obscured ground conditions and future subsurface investigations. This would apply also to the San Gabriel Spreading Grounds and El Dorado Park project areas.

SIGNIFICANCE

In 1992, the California legislature established the California Register of Historical Resources based on the federal model which established the National Register of Historic Places (National Historic Preservation Act of 1966). The California Register is to be used as a guide by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change. The California Register, as instituted by the California Public Resources Code (PRC), includes all California properties

already listed in the National Register and those formally determined to be eligible, as well as specific listings of State Historical Landmarks and State Points of Historical Interest (Public Resources Code [PRC] Section 5024.1[d]). The California Register may also include various other types of historical resources which meet the criteria for eligibility.

As defined by Section 15064.5(a) of the State CEQA Guidelines, the term "historical resource" shall include the following:

A. A resource listed in, or determined eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (PRC Sections 5024.1);

B. A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the PRC or identified as significant in an historical resource survey meeting the requirements Section 5024.1(g) of the PRC, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant;

C. Any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the lead agency's determination is supported by substantial evidence in light of the historical record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources (PRC Section 5024.1[a]) including the following:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

2. Is associated with the lives of persons important in our past;

3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

4. Has yielded, or may be likely to yield, information important in prehistory or history.

Significance, as measured by eligibility to the California Register, has not been formally determined for any of the cultural resources.

PROJECT IMPACTS

Proposed Project. Under the proposed project, the existing Nature Center will be replaced with a new San Gabriel River Education Center. The project leads are the Sierra Club and the Upper San Gabriel Valley Municipal Water District.

The new San Gabriel River Education Center will be a regional indoor/outdoor museum and conference center. The project includes a new Education Center building (approximately 10,000 square feet), modifications to the site entrance and parking area, and improvements to the surrounding Nature Area including a constructed stormwater treatment wetland. The Education Center programs will focus on watershed and water-related topics. The Education Center will include indoor and outdoor exhibits and a museum, a reception area, orientation center, sales/retail area, auditorium, restrooms, meeting room, library, kitchen, offices, and a theater. The parking lot will be expanded to accommodate 170 staff and visitors.

The Nature Area surrounding the Education Center will be enhanced to provide native habitat. A constructed treatment wetland could replace areas currently dominated by ruderal (low-value) vegetation. The treatment wetland could treat urban runoff from upstream areas. Removal of invasive species and streamlining of the trail system will provide enhanced opportunities for wildlife foraging and nesting. Removal of redundant trails and improved trail signage would further improve the native habitat (BonTerra, 2003).

The Whittier Narrows Dam Master Plan prepared by USACE (1996) lays out a number of recreation and environmental resource objectives for the Whittier Narrows Dam Recreation Area. The Education Center project should reinforce these recreation and environmental resource objectives.

Proposed Project. North East Trees, a non-profit organization, is the project lead for Lario Creek, and DPW is a project partner. The project proposes to increase the capacity of Lario Creek and improve the surrounding Nature Area. Proposed improvements to the Nature Area include trails, signage, channel modification, stormwater treatment wetlands, and removal of exotic species.

An upstream rubber dam on the San Gabriel River at Valley Boulevard has a valve that can release up to 400 cfs (Gomez, 2003). Increasing the capacity of Lario Creek from the existing 250 cfs up to 400 cfs would allow more flexibility for DPW in its groundwater recharge operations. A minimum increase to 300 cfs is currently envisioned by DPW.

There are two alternatives for modifying the Lario Creek channel -- a dual flow model and a dual channel model. The dual flow model is a stepped channel design with a deep and

narrow low flow channel and a wider high flow channel. The high flow channel would be designed to meet the capacity requirements of DPW with vegetation in the channel. The dual channel model utilizes two parallel channels, one for conveyance, and one for habitat and aesthetic enhancements. The conveyance channel would not be vegetated. The habitat channel would be vegetated and meandering to resemble a natural creek. The habitat channel could potentially provide a water source for the dry lake beds and treatment wetlands to be located near the proposed San Gabriel River Education Center. Currently, DPW's preferred option is the dual channel model.

Southeast of the existing Nature Center is an area dominated by weedy vegetation that could be replaced with a constructed wetland designed to treat urban runoff. The wetland may be supplied by water from Lario Creek during periods of dry weather. Another potential year-round water source is Whittier Narrows WRP effluent. The wetland would be a continuous flow-through system that delivered water for downstream uses.

The project could remove exotic and invasive non-native species from areas directly adjacent to Lario Creek and within the project area. The area at the north end of Lario Creek west of the San Gabriel River is significantly degraded, and could be improved with plantings of native species. The removal of exotics and extension of the natural habitats would provide enhanced opportunities for wildlife foraging and nesting, and potentially attract species such as the willow flycatcher and the yellow-billed cuckoo (BonTerra, 2003).

Proposed trail improvements aim to improve the experience for trail users (cyclists, horses, and pedestrians) as well as to protect high quality habitats.

Proposed Project. The project, proposed by the City of Long Beach, will provide an opportunity to connect users of El Dorado Park with the San Gabriel River. Potential elements include the following:

1. Construct stormwater treatment wetlands at the north and south ends of the park and adjacent to power lines

2. Replace the water supply for the lakes with a non-potable source

3. Replace exotic plant species with native species

4. Create riparian habitat

5. Replace concrete bottom with soft bottom in San Gabriel River adjacent to site. Increase width of river and integration of river with park

This project will create wetlands and/or riparian habitat adjacent to the San Gabriel River in the northern half of the park. The wetlands would be designed to create habitat and treat river water and stormwater runoff. Potential water sources are runoff from the Long

Beach Town Center and the upstream urban areas of the City of Lakewood, San Gabriel River, and Coyote Creek. It may be necessary to pump water from these sources if current topography would not allow gravity flow. Reclaimed or potable water may be used to supplement these water sources during dry periods. The construction of wetlands in Area 3 can be an opportunity to redesign the existing lakes to improve their function.

Wetlands or riparian habitat are also proposed in the South of Willow area. The wetlands could be used to treat urban runoff from Coyote Creek. The habitat areas can be designed to meet the access requirements of Southern California Edison and promote the Master Plan objective of multiple uses of utility corridor rights of way.

The project also proposes to replace the current potable water source for the lakes with either San Gabriel River water or reclaimed water to in order to promote water conservation. Water quality will have to be sufficient to support the fish in the stocked lakes.

The project will also enhance passive recreation within the regional park and increase educational opportunities at the existing El Dorado Nature Center. Trail signage, artwork and shade trees will improve the trail experience and emphasize the connection to the San Gabriel River Trail. Overlook and vista points of the San Gabriel River can be highlighted. The water quality and water conservation aspects of the park can be used as additional educational opportunities. A debris boom on Coyote Creek is one of the proposed projects in the Project Action Grid. If the project is implemented adjacent to El Dorado Park, it could be another topic for educational programs.

The project may include phasing out existing ornamental landscaping and replacing it with a native drought-tolerant plants. Potential habitat changes could involve revegetating the land directly adjacent to the eastern bank of the San Gabriel River by adding native trees and understory such as gooseberry and mule fat, which can attract numerous bird species. Proposed wetlands and mudflats could also attract bird species and provide more foraging habitat for shorebirds. Although the land on the western bank of the San Gabriel River is not owned by the City of Long Beach, stakeholders proposed replacing the current nursery land use with a mosaic of upland scrub vegetation.

Removing the concrete from this reach of the river is long-term goal that would require extensive modeling of the river corridor. However, El Dorado park is a unique opportunity where there is a long stretch of open space along a concrete lined section. Concrete removal would require a larger channel to have the same flood control capacity as the existing design. If concrete is to be removed and the channel widened, modifications to the bridges at Willow Street, Spring Street and Wardlow Street would be required.

Impacts Upon Cultural Resources

It does not appear from the project description that any of the resources will be impacted by virtue of project related activities.

MASTER PLAN

There are a number of potential projects that are considered for the San Gabriel River Master Plan. It is not within the scope of this investigation to consider each of these proposals, but the type of project can be categorized into potential effects on cultural resources. There are eight categories under consideration and include:

1. Habitat Enhancement. These project would involve revegetation, planting of trees and scrubs, removal of non-native species, possibly the installation of irrigation systems.

2. Parks and Open Space. Types of impacts for this category may vary widely, from grading, plantings, installation of irrigation, building of structures and other features, to removal of non-native species.

3. Water Quality and Supply. Activities that might be associated with water quality and supply may vary from massive construction projects, to canals, to channel dredging.

4. Trail Enhancement. This particular effort may involve cutting trails, construction of retaining walls, installation of signage and benches, irrigation, parking facilities, and other forms of impacts.

5. Bridges and Gateways. In this type of impact, there may be widening of approaches, drilling of soldier piles, channel widening, grading, construction of parking lots, and other types of disturbance.

6. Education Center. Construction of buildings and related elements would involve grading, irrigation facilities, and other forms of disturbance.

7. Land Reclamation. This type of project may involve a wide variety of issues, including the removal of building ruins (potential historical sites), grading, creation of berms, dredging, and other types of impacts.

8. Studies. Most studies don't tend to be intrusive, but geologic testing through drilling or trenching has been known to affect archaeological sites as well as the grading of access roads to such locations.

RECOMMENDATIONS

Project Specific

Should any subsurface disturbance be planned within any of the project areas, it is recommended that a qualified archaeologist be present to monitor all such activity. Should any cultural resources be encountered, the archaeologist will have the authority to halt construction activities temporarily in the vicinity, to identify and evaluated the materials, and implement appropriate measures to mitigate unavoidable impacts to resources found to be significant. Additional survey will be required if project plans are changed to include areas not previously surveyed.

Overall Project

There are more than 150 projects in various phases of planning for the San Gabriel River Master Plan. There are a minimum of eight categories of projects, most of which entail three or more types of impacts. A review of the San Gabriel River and surrounding communities suggest that there is the potential for encountering elements of Spanish Period occupation, e.g., the Ontiveros Adobe in Santa Fe Springs, Mexican Period ranchos, e.g., Azusa, Long Beach, numerous agricultural related buildings and structures during the early American Period, and residential development in later years which would include historical transit systems, e.g., Pacific Electric light rail.

While project specific impacts are, as yet, undeveloped, there are certain basic recommendations that can be made in regard to cultural resources. The first is historical research, record search at the California State Information Center, contact with local historical societies, and the Native American Heritage Commission. These steps will provide the minimal information necessary to conduct field reconnaissance of each of the project areas. Some of these projects may have had cultural resource investigations in the past, but it should be noted that cultural resource studies become obsolete after five years. This time limit recognizes that historical resources age and eventually become more than 50 years of age which will trigger more intensive study.

Cultural resources are subject to direct and indirect effects. Direct effects such as grading, drilling, and even capping are potential forms of impacts. Construction of new buildings, berms, channels, may create indirect effects on both historical structures and archaeological sites. If cultural resources are to be affected, then the significance of the resource will need to be determined if not already done so. The evaluation phase for archaeological sites will consist of excavation, research, and laboratory analysis. For the built environment, evaluation will consider historical research, field examination, and report documentation.

Mitigation of impacts will depend on the nature and type of resource, level of impact, and other factors. Site specific planning will be necessary.

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Ventura
Los Angeles
Orange

September 14, 2004 SCCIC #4599.2124

Mr. Glenn Howe
County of Los Angeles
Department of Public Works
Watershed Management Division
900 S. Fremont Avenue
Alhambra, CA, 91803-1331
626.458.5100

RE: Woodland Duck Farm Project Area – PQ528073

Dear Mr. Howe,

As per your request received on August 29, 2004, an expedited records search was conducted for the above referenced project. This search includes a review of all recorded archaeological sites within a 1/2-mile radius of the project site as well as a review of cultural resource reports on file. In addition, the California Points of Historical Interest (PHI), the California Historical Landmarks (CHL), the California Register of Historic Places (CR), the National Register of Historic Places (NR), the California State Historic Resources Inventory (HRI), and the City of Los Angeles Historic-Cultural Monuments listings were reviewed for the referenced project site. The following is a discussion of the findings.

Due to the sensitive nature of cultural resources, archaeological site locations are not released.

El Monte, CA. USGS 7.5' Quadrangle

ARCHAEOLOGICAL RESOURCES:

No archaeological sites have been identified within a 1/2-mile radius of the project site. This does not preclude the potential for archaeological sites to be identified during project activities. No isolates have been identified within a 1/2-mile radius of the project site.

HISTORIC RESOURCES:

One additional cultural resource (19-186112) has been identified within a 1/2-mile radius of the project site. This resource is not located within the project site.

A review of the historic map(s) – El Monte (1948) 15' USGS - indicated the presence of the place name "Bassett", Workman Mill Road, Valley Boulevard, the Southern Pacific Railroad, and the San Gabriel River within a 1/2-mile radius of the project area. Also noted, were the presence of a network of roads and structures within a 1/2-mile radius of the project area.

The California Point of Historical Interest (2004) of the Office of Historic Preservation, Department of Parks and Recreation, lists no properties within a 1/2-mile radius of the project site.

The California Historical Landmarks (2004) of the Office of Historic Preservation, Department of Parks and Recreation, lists no properties within a 1/2-mile radius of the project site.

The California Register of Historic Places (20004) lists no properties within a 1/2-mile radius of the project site.

The National Register of Historic Places lists no properties within a 1/2-mile radius of the project site.

The City of Los Angeles Historic-Cultural Monuments lists no properties within a 1/2-mile radius of the project site.

The California Historic Resources Inventory (2004) lists no properties that have been evaluated for historical significance within a 1/2-mile radius of the project site.

PREVIOUS CULTURAL RESOURCES INVESTIGATIONS:

Fifteen studies (LA1220, LA2823, LA2882, LA2894, LA2970, LA3295, LA4117, LA4527, LA4528, LA4835, LA4880*, LA4883, LA4889, LA6310, LA6809) have been conducted within a 1/2-mile radius of the project site. Of these, one is located within the project site. There are 11 additional investigations located on the El Monte 7.5' USGS Quadrangle that are potentially within a 1/2-mile radius of the project site. These reports are not mapped due to insufficient locational information.

RECOMMENDATIONS

Based on the results of the records search and the details provided for the project site, no further archaeological work is recommended. However, in order to avoid damaging any previously unidentified cultural resources, a halt-work condition should be in place during all ground disturbing activities. In the event that cultural resources are encountered, all work within the vicinity of the find should stop. A professional archaeologist should be retained to assess such finds and make recommendations.

Additionally, if the Original Ranch House or any adjacent structure is 45 years and older, our office recommends that the building be assessed and evaluated for potential historical significance by a professional architectural historian.

The professional archaeologist / architectural historian you retain may request the records search map, archaeological site records, and bibliography from the Information Center referencing the SCCIC number listed above for a fee (per the fee schedule).

If you have any questions regarding the results presented herein, please contact the office at 714.278.5395 Monday through Thursday 8:00 am to 3:30 pm.

Should you require any additional information for the above referenced project, reference the SCCIC number listed above when making inquiries. Requests made after initial invoicing will result in the preparation of a separate invoice.

Sincerely,
SCCIC

Stacy St. James

Stacy St. James
Assistant Coordinator

Enclosures:

(X) Invoice #2124 Sent to pobox 1460

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Appendix E
Woodland Duck Farm Access Analysis

Appendix E contains the traffic access analysis conducted for the Woodland Duck Farm by Kaku Associates (2003).

KAKU ASSOCIATES
A Corporation
Transportation Planning
Traffic Engineering
Parking Studies

MEMORANDUM

TO: Frank Simpson, Rivers and Mountains Conservancy

FROM: Pat Gibson
Chris Munoz

SUBJECT: Woodland Duck Farm Passive Recreation Area
Access Analysis

DATE: April 16, 2003 **REF:** 1607

Kaku Associates, Inc. has been asked to evaluate the points of access to the Woodland Duck Farm, which the Rivers and Mountains Conservancy (RMC) is considering purchasing as a passive recreation site.

The former Woodland Duck Farm site is located along the I-605 Freeway south of Valley Boulevard in Los Angeles County. As illustrated in Figure 1, the site is bisected by I-605 and bordered on the west side by the San Gabriel River. The level of visitor activity generated by the passive open space has not yet been fully programmed, but it is anticipated that a 50, 75, or 100-space visitor parking lot could satisfy the anticipated visitor levels. For the purposes of this analysis, the most intense activity level (i.e., the development of a 100-space parking lot) is evaluated.

PRIMARY ACCESS

The primary access point is through a gate located at the west end of Proctor Street, south of Valley Boulevard, as shown in Figure 2. This driveway connects the east and west portions of the site via a one-lane underpass under the I-605 Freeway. Employees and visitors could both use this entrance.

Capacity of One-Lane Underpass

One lane of a roadway has a physical capacity to accommodate a maximum of 1,800 vehicles per hour per direction of travel.

In the case of the one-lane underpass, the eastbound and westbound traffic must share the same roadway and therefore the capacity of the underpass would be one-half of the 1,800 vehicles per hour capacity discussed above. The one-lane under pass would have a capacity of 900 vehicles per hour, 450 vehicles per direction.

1453 Third Street, Suite 400
Santa Monica, CA 90401
(310) 458-9916 Fax (310) 394-7663

The existing underpass provides more than enough capacity to accommodate even the largest visitor parking lot under consideration (i.e., the 100-space parking lot). Even if 50% of the spaces turned over in an hour (50 vehicles in and 50 vehicles out), the vehicle activity generated by the passive recreation would not come close to the physical capacity of the underpass.

Because the existing underpass provides only one lane of travel, some system would have to be implemented to assign right-of-way in the underpass. A simple traffic signal could be installed at the both entrances to the one-lane underpass to control drivers entering and leaving the site. This would provide safety for the visitors and sufficient capacity would still be available to allow the underpass to operate at a good level of service.

Impacts on Proctor Street

Traffic destined to the main gate to the site driveway would traverse two blocks of Proctor Street between San Angelo Avenue and the gate. Proctor Street is a two-lane local street with residential units on the south side of the street and a Los Angeles County park on the north side.

Existing traffic counts on Proctor Street were taken on Thursday, April 10 and Friday, April 11, 2003. The results of the traffic counts show Proctor Street carries approximately 1,674 vehicles per day. During the morning and evening peak hours, Proctor Street has a total of 133 and 137 vehicles per hour, respectively. These volumes are very low and result in a Level of Service (LOS) A. See Table 1 for a description of Level of Service operations.

In order to determine if the project will impact Proctor Street, the Los Angeles County Department of Public Works impact criteria for new projects on two-lane roadways will be utilized. There are two criteria for determining impacts. First, a project is deemed to have a significant impact on a two-lane roadway if the proposed project increases the number of cars per hour by more than 4% when the two-lane street is operating at Level of Service C (or 2% at LOS D or 1% at LOS E or F). Secondly, a project is considered to have a significant impact if the project-generated traffic significantly increases on a residential street and alters its residential characteristic.

The existing volume of traffic and the current Level of Service on Proctor are below the range of the significant impact criteria. Proctor is operating at LOS A, while the impact criteria begin at LOS C. As mentioned above, the proposed open space project would contain a maximum 100-space parking lot. Assuming that 50% of the parking spaces turned over in an hour, this is equivalent to 50 vehicles in and 50 vehicles out – or approximately one vehicle per minute in each direction. This traffic level will in no way change the residential character of Proctor Street, and therefore will not create a significant impact.

SECONDARY ACCESS

There are two secondary access points to the site. Figure 2 illustrates the location of these access points. One is located off Rall Avenue and could be reached via Proctor Street or San Angelo Avenue. This driveway connects to the driveway off Proctor, east of the one-lane underpass. Except for the rare occasion when emergency vehicles would need to utilize this driveway, we do not expect that any significant amount of project traffic would be utilizing this access point. The majority of project traffic will stay on Proctor, traveling directly to the site, rather than diverting to this driveway.

The other access point to the site is located off Temple Avenue just north of Valley Boulevard in the vicinity of the I-605/Valley Boulevard interchange. This access point is farther away from the site and, because of its proximity to the railroad tracks north of Valley Boulevard, it is limited to right turns in and out only. Traffic approaching the site from the I-605 Freeway would have to travel north on Temple Avenue and make a u-turn at the signalized intersection of Temple/Perez Place and then return southbound to make a right turn into the project driveway. Because of this circuitous route, we believe that most RMC staff and visitors would use the Proctor driveway to access the farmhouse site.

A review of the parcel maps at the Los Angeles County Assessor's Office showed that Los Angeles County owns all of the land parcels along this driveway. The parcel maps did not indicate any easements or restrictions that would preclude the continued use of the Temple gate for access to the west side of the site. Both autos and trucks from the current lease holders (a nursery and a tree trimming operation) utilize this entry/exit today. Southern California Edison (SCE) maintenance trucks also use this entry for maintenance of their towers along the west side of the site.

Emergency Access

The Los Angeles County Fire Department typically requires two points of emergency access to every development or public assembly place. The access off Temple Avenue, which is currently accommodating trucks accessing the nursery and tree trimming company as well as SCE maintenance trucks, can be used for emergency access. Although there is only one access to the west side of the site that is capable of accommodating large trucks, the land area along the Temple driveway is wide enough that it would be very difficult for the entire driveway to be blocked. Thus, the Temple driveway can clearly accommodate emergency vehicles, and it provides sufficient emergency vehicle access to the west end of the site.

Currently, Los Angeles County is planning a bicycle/pedestrian bridge over the San Gabriel River at Rush Street, as shown in Figure 2. This bridge project is scheduled to be constructed and open by 2006. RMC should work with the County to ensure that the Rush Street overpass is designed to accommodate emergency vehicles. This overpass could then serve as the second emergency access route to the west side of the site.

The Proctor Street and Rall Avenue access points can also be used for emergency access to the east side of the site. Both access driveways can accommodate emergency vehicles. These driveways meet the LA County requirements for dual emergency vehicle access routes to the east side of the site. Emergency access to the west side of the site would be limited through these two access points. The current one-lane underpass cannot accommodate large emergency vehicles due to the height constraints of the underpass. As described above, the Temple driveway would provide the emergency access to the west side of the site.

Alternative Access Points

Other possible access points have been explored. Due to the physical constraints adjacent to the site, the I-605 Freeway, San Gabriel River, and the Metrolink tracks, there are no other viable or feasible access points. Constructing an additional freeway underpass or vehicular river crossing would be cost-prohibitive and unnecessary.

SPECIAL EVENTS

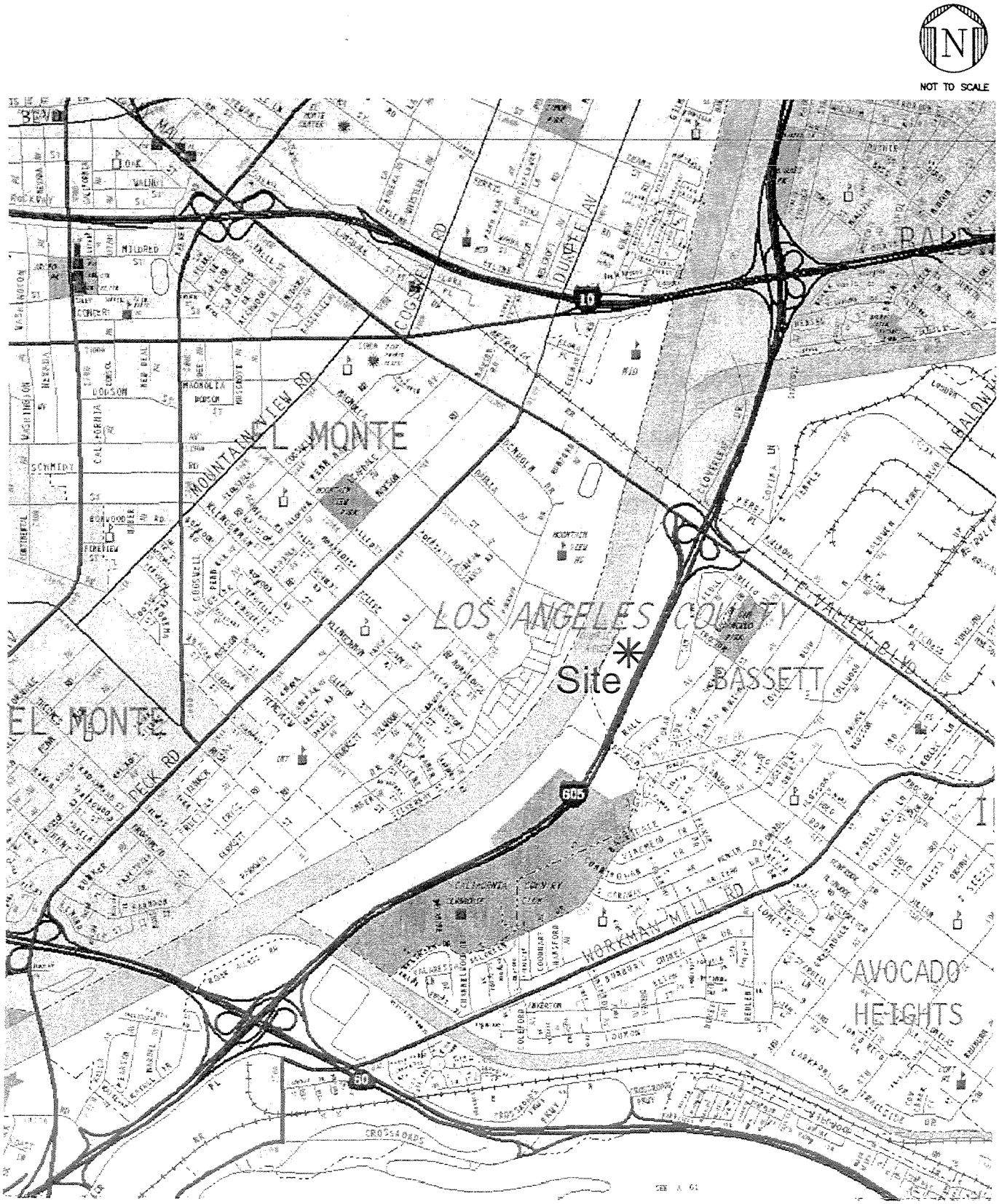
If there are any special events at the site that attract large crowds, special directional signing would be used to direct some of the traffic to the Rall Avenue access point and even to the Temple access drive.

The site could provide temporary event parking on the east side of the I-605 Freeway between the Proctor and the Rall driveways. Visitors could park on the east side of the freeway and be transported to the event on the west side on a tram or other similar vehicle.

CONCLUSIONS

The site currently has sufficient capacity to accommodate the anticipated staff and visitor demand through the Proctor gate. The Temple access route provides a secondary visitor access route if needed in an emergency, and the Temple gate provides emergency vehicle access to the west side of the site. The Proctor and Rall access points provide sufficient emergency vehicle access to the east side of the site.

The proposed passive recreation area will not generate enough visitor traffic to create any access constraints at the site. The three available access points can accommodate the anticipated project traffic. The future Rush Street overpass could also provide a second emergency vehicle access to the west side of the site.



KAKU ASSOCIATES

FIGURE 1
PROJECT LOCATION

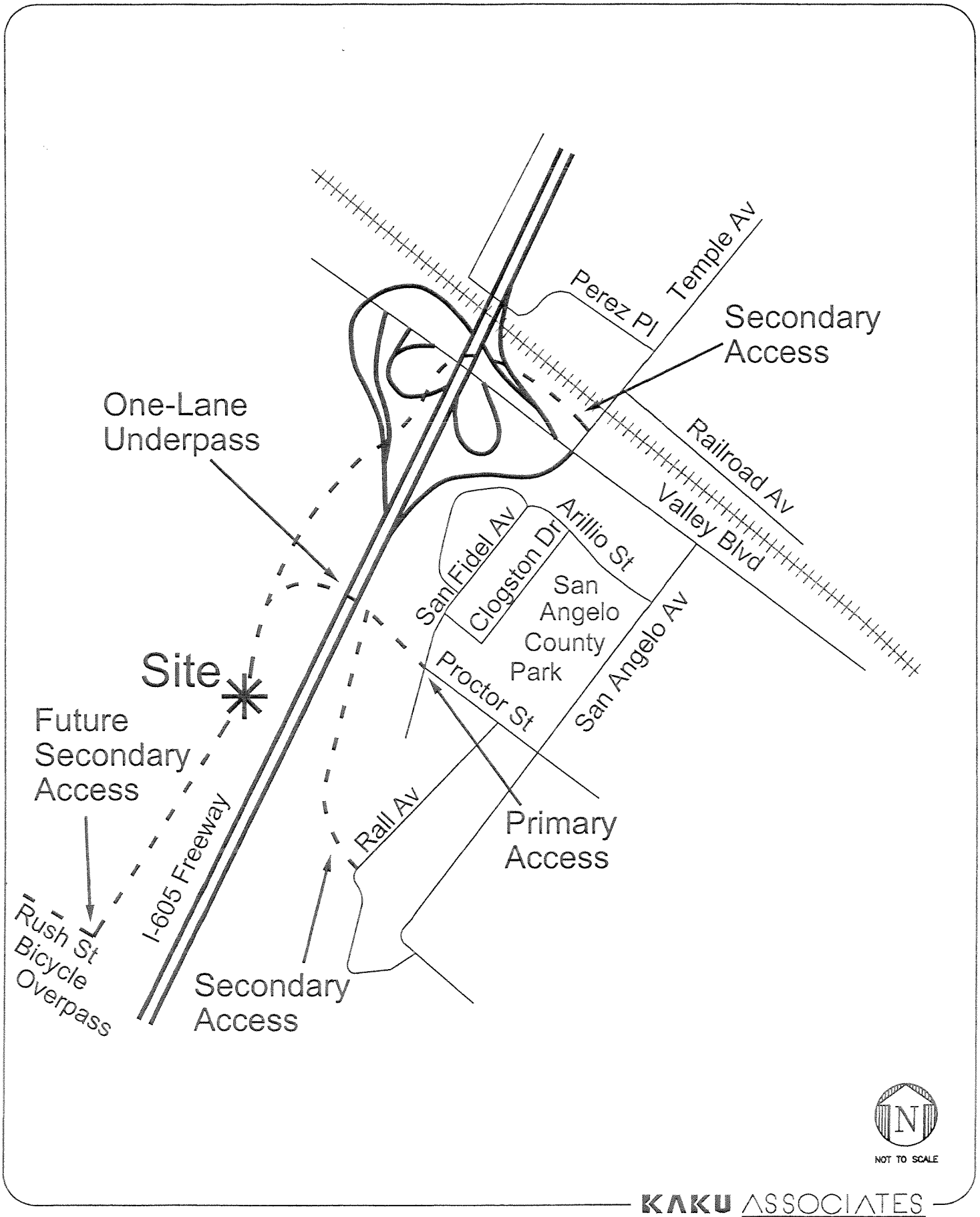


FIGURE 2
SITE ACCESS

TABLE 1
LEVEL OF SERVICE DEFINITIONS FOR ARTERIAL STREET SEGMENTS

Level of Service	Volume/Capacity Ratio	Definition
A	0.00 - 0.60	EXCELLENT. Primarily free-flow conditions at about 90 percent of free-flow speed. Vehicles are completely free to maneuver within the traffic stream. Stopped delay at signalized intersections is minimal.
B	0.61 - 0.70	VERY GOOD. Reasonably unimpeded flow at about 70 percent of free-flow speed. Ability to maneuver is only slightly restricted and delay at intersections is not bothersome.
C	0.71 - 0.80	GOOD. Stable operations at about 50 percent of free-flow speed. Ability to maneuver and change lanes may be restricted at mid-block locations. Motorists will begin to experience tension while driving.
D	0.81 - 0.90	FAIR. Small increases in flow begin to cause substantial increases in intersection approach delay. Ability to maneuver becomes more difficult, with speeds about 40 percent of free-flow speed.
E	0.91 - 1.00	POOR. Characterized by significant delays at intersection approaches and travel speeds about one-third of free-flow speed. Ability to maneuver is severely restricted and driver tension is high.
F	>1.00	FAILURE. Extremely low travel speeds and unstable traffic flow. Characterized by long delays at intersection approaches, severe difficulty in maneuvering between lanes, and extremely high driver tension.

Source: Adapted from Transportation Research Board, *Highway Capacity Manual, Special Report 209*, 1985.

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Appendix F
Comments and Responses

Table F-1 lists the agencies and organizations who provided written comments on the Draft Program EIR for the San Gabriel River Corridor Master Plan. This section presents the comments followed by the County's responses to those comments.

Table F-1
List of Comment Letters

Letter Number	Organization	Commentor
1	California Department of Conservation Division of Oil, Gas, & Geothermal Resources	Mr. Paul Frost, Associate Oil & Gas Engineer
2	California Department of Fish and Game	Ms. Leslee Newton-Reed, Habitat Conservation Planning Mr. Donald R. Chadwick, Habitat Conservation Supervisor
3	California Department of Transportation	Mr. Robert Joseph, Chief IGR/Community Planning Branch
4	Central and West Basin Municipal Water Districts	Ms. Jennifer Bender, Water Quality Scientist
5	City of Cerritos	Mr. Torrey N. Contreras, Director of Community Development
6	City of Santa Fe Springs	Mr. Robert G. Orpin, Director of Planning and Development
7	City of Seal Beach	Mr. Paul Yost, Mayor Mr. Phil Ladner, Chairman Planning Commission Mr. Mario Voce, Chairman Environmental Quality Control Board
8	County of Orange Resources & Development Management Department	Mr. Ronald L. Tippets, Chief, Environmental Planning Division
9	Fly Fishers Club of Orange County	Mr. David M. Long
10	Law Offices of Susan M. Trager	Ms. Susan M. Trager
11	Main San Gabriel Basin Watermaster	Ms. Carol Thomas Williams, Executive Officer
12	Metropolitan Water District of Southern California	Ms. Laura J. Simonek, Manager, Environmental Planning Team
13	Puente Hills Landfill Native Habitat Preservation Authority	Ms. Andrea Gullo, Executive Director
14	San Gabriel River Water Committee	Mr. Don Berry, Administrator
15	San Gabriel River Watermaster	Mr. Richard A. Rhone

Table F-1 (Continued)
List of Comment Letters

Letter Number	Organization	Commentor
16	San Gabriel Valley Mosquito and Vector Control District	Mr. Steve West, District Manager Mr. Minoo Madon, Scientific Technical Services Director, Greater Los Angeles Vector Control District Mr. Charles Myers, Supervisor, California Department of Health Services, Vector-Borne Disease Section
17	Sanitation Districts of Los Angeles County	Mr. Christian Alarcon, Civil Engineer, Monitoring Section
18	Southern California Association of Governments	Ms. April Grayson, Associate Regional Planner, Intergovernmental Review
19	Southern California Edison	Ms. Maryann Reyes, Director of Public Affairs
20	Southern Council of Conservation Clubs, Inc.	President
21	United Rock Products	Mr. Ken Barker, Environmental & Regulatory Affairs Manager
22	Vulcan Materials Company Western Division	Mr. Steve C. Cortner, Vice President
23	--	Mr. Robert Dale
24	--	Mr. Lester Kau

WMD 337

DEPARTMENT OF CONSERVATION

STATE OF CALIFORNIA

Comment Letter No. 1

DIVISION OF OIL, GAS, & GEOTHERMAL RESOURCES

5816 CORPORATE AVE.
SUITE 200
CYPRESS
CALIFORNIA
90630-4731

PHONE
714/816-6847

FAX
714/816-6853

INTERNET
consrv.ca.gov

ARNOLD SCHWARZENEGGER
GOVENOR

April 4, 2005

Mr. Marty Moreno
County of Los Angeles, Department of Public Works
P.O. Box 1460
Alhambra, California 91802-1460

Subject: Notice of Preparation of Draft Environmental Impact Report for the San Gabriel River Corridor Master Plan, SCH #2003041187

Dear Mr. Moreno:

The Department of Conservation's (Department) Division of Oil, Gas, and Geothermal Resources (Division) has reviewed the above referenced project. The Division supervises the drilling, maintenance, and plugging and abandonment of oil, gas, and geothermal wells in California.

1-1 The proposed project is located within the administrative boundaries of several oil and gas field. There are numerous wells within the project boundaries. The wells are identified in Division records and on Division maps. The Division recommends that all wells within or in close proximity to project boundaries be accurately plotted on future project maps.

1-2 Building over or in the proximity of plugged and abandoned wells should be avoided if at all possible. If this is not possible, it may be necessary to plug or re-plug wells to current Division specifications. Also, the State Oil and Gas Supervisor is authorized to order the reabandonment of previously plugged and abandoned wells when construction over or in the proximity of wells could result in a hazard (Section 3208.1 of the Public Resources Code). If reabandonment is necessary, the cost of operations is the responsibility of the owner of the property upon which the structure will be located. Finally, if construction over an abandoned well is unavoidable an adequate gas venting system should be placed over the well.

Furthermore, if any plugged and abandoned or unrecorded wells are damaged or uncovered during excavation or grading, remedial plugging operations may be required. If such damage or discovery occurs, the Division's district office must be contacted to obtain information on the requirements for and approval to perform remedial operations.

RECEIVED
DEPT. OF PUBLIC WORKS
2005 APR 20 PM 2:02
MAIL CENTER
900 S. FREMONT AVE.

1-2 (cont'd)

To ensure proper review of building projects, the Division has published an informational packet entitled, "Construction Project Site Review and Well Abandonment Procedure" that outlines the information a project developer must submit to the Division for review. Developers should contact the Division's Cypress district office for a copy of the site-review packet. The local planning department should verify that final building plans have undergone Division review prior to the start of construction.

Thank you for the opportunity to comment on the Notice of Preparation for the Draft Environmental Impact Report. If you have questions on our comments, or require technical assistance or information, please call me at the Cypress district office: 5816 Corporate Avenue, Suite 200, Cypress, CA 90630-4731; phone (714) 816-6847.

Sincerely,

Paul Frost

Paul Frost
Associate Oil & Gas Engineer

State of California – The Resources Agency ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF FISH AND GAME
http://www.dfg.ca.gov
4949 Viewridge Avenue
San Diego, CA 92123
(858) 467-4201

Comment Letter No. 2

April 22, 2005

RECEIVED
APR 22 2005
STATE CLEARING HOUSE

Clear 4-18-05 late

Mr. Marty Moreno
County of Los Angeles Department of Public Works
Watershed Management Division
P.O. Box 1460
Alhambra, CA 91802-1460

Comments on the Draft Program Environmental Impact Report for the San Gabriel River Corridor Master Plan, Orange County (SCH# 2003041187)

Dear Mr. Moreno:

The Department of Fish and Game (Department) has reviewed the above-referenced Environmental Impact Report (DEIR). The following statements and comments have been prepared pursuant to the Department's authority as Trustee Agency with jurisdiction over natural resources affected by the project (CEQA Section 15386) and pursuant to our authority as a Responsible Agency under CEQA Section 15381 over those aspects of the proposed project that come under the purview of the California Endangered Species Act (Fish and Game Code Section 2050 et seq.) and Fish and Game Code Section 1600 et seq. The Department also administers the Natural Community Conservation Planning Program (NCCP).

The proposed project area is a 1-mile wide corridor along 58 river miles on the San Gabriel River from its headwaters in the San Gabriel Mountains to its terminus at the Pacific Ocean between Long Beach and Seal Beach. The project area includes 19 cities as well as unincorporated areas of Los Angeles and Orange Counties. The San Gabriel River Corridor Master Plan is a consensus-based document that recognizes and addresses a renewed interest in recreation, open space, and habitat, while also seeking to enhance and maintain flood protection, water conservation benefits, along with existing water rights. The Master Plan identifies over 130 projects along the San Gabriel River that are visions of cities and other stakeholder organizations and incorporate one or more of the Master Plan goals. The Master Plan provides policies and guidelines that help coordinate these independent projects and to facilitate the achievement of the shared vision and goals for the San Gabriel River corridor. This Program EIR is intended to be a model to guide further project-level CEQA review and streamline the environmental review and documentation for Steering Committee members proposing projects in the river corridor.

The Department offers the following preliminary comments and recommendations; we reserve the right to make further comments on second-tier CEQA documents.

2-1 1. The Department recommends the following revision to Construction impacts on nesting

raptors, CD-B4, on Table 1-3, Summary of Concept Design Study Impacts and Mitigation Measures:

CD-B4 Nesting Raptors – The following mitigation measure shall be implemented to avoid raptor impacts:
~~No earlier than 45 days and no later than 20 days~~ One week prior to construction ~~or grading/site preparation~~ and clearing activities that would occur during the nesting/breeding season of native bird species potentially nesting on the site (typically February through August), a survey shall be conducted by a qualified biologist to determine if active nests of bird species protected by the Migratory Bird Treaty Act and/or the California Fish and Game Code are present ~~in the construction zone or within 100 feet (200 feet for raptors)~~ within 300 feet (within 500 feet for raptors) of the construction zone. Construction can proceed if no active ~~raptor~~ avian nests are located during this survey. If an active nest is found during the survey, a 500-foot (this distance may vary depending on the bird species and construction activity, as determined by the biologist) fence barrier shall be erected around the nest site. Clearing and construction within the fenced area shall be postponed or halted, at the discretion of the biologist, until the nest is vacated and juveniles have fledged, as determined by the biologist, and there is no evidence of a second attempt at nesting. The biologist shall serve as a construction monitor during those periods when construction activities may occur near active nests to ensure that no inadvertent impacts on these nests occur. Results of the raptor survey and any subsequent monitoring shall be provided to the CDFG and any other appropriate agency.

2-1
(Cont'd)

Thank you for the opportunity to comment on the DEIR. The Department finds that the project would be de minimis in its effects on fish and wildlife per section 711.4 of the California Fish and Game Code. Questions regarding this letter and further coordination on these issues should be directed to Leslee Newton-Reed at (858) 467-4281.

Sincerely,

Donald R. Chadwick
Habitat Conservation Supervisor

cc: State Clearinghouse

LNR:lnr
San Gabriel River Corridor Master Plan DEIR

0221805

STATE OF CALIFORNIA

Governor's Office of Planning and Research

State Clearinghouse and Planning Unit

Arnold Schwarzenegger
Governor

Sean Walsh
Director

April 25, 2005

Marty Moreno
Los Angeles County Department of Public Works
P.O. Box 1460
Alhambra, CA 91802-1460

Subject: San Gabriel River Corridor Master Plan
SCH#: 2003041187

Dear Marty Moreno:

The enclosed comment (s) on your Draft EIR was (were) received by the State Clearinghouse after the end of the state review period, which closed on April 18, 2005. We are forwarding these comments to you because they provide information or raise issues that should be addressed in your final environmental document.

The California Environmental Quality Act does not require Lead Agencies to respond to late comments. However, we encourage you to incorporate these additional comments into your final environmental document and to consider them prior to taking final action on the proposed project.

Please contact the State Clearinghouse at (916) 445-0613 if you have any questions concerning the environmental review process. If you have a question regarding the above-named project, please refer to the ten-digit State Clearinghouse number (2003041187) when contacting this office.

Sincerely,

Terry Roberts

Terry Roberts
Senior Planner, State Clearinghouse

Enclosures
cc: Resources Agency

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044
TEL (916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

DEPARTMENT OF TRANSPORTATION
District 12
3337 Michelson Drive, Suite 380
Irvine, CA 92612-8894
Tel: (949) 2724-2267
Fax: (949) 724-2592

Comment Letter No. 3

Flex your power!
Be energy efficient!

FAX & MAIL

April 13, 2005

Mr. Martin Moreno
County of Los Angeles,
Watershed Management Division
P.O. Box 1460
Alhambra , California 91802-1460

File: IGR/CEQA
SCH#: 2003041187
Log #: 1248-A
SR #: SR-1, I-405,I-605

Subject: San Gabriel River Corridor Master Plan

Dear Mr. Moreno,

Thank you for the opportunity to review and comment on the **Draft Program Environmental Impact Report for the San Gabriel River Corridor Master Plan Project.** This Master plan proposes an integrated watershed system achieving various goals and providing a wide variety of activities including open space and habitat protection, water conservation benefits, flood safety, water supply and water quality, and economic development. The nearest state facilities to the project site Interstates 405, 605 and SR-1.

Caltrans District 12 status is a reviewing agency on this project and has the following comments:

3-1 1. Please refer to our comments in our previous correspondence dated May 23, 2003 (copy attached). In the event of any activity in Caltrans' right-of-way, an encroachment permit will be required. Applicants are required to plan for sufficient permit processing time, which may include engineering studies and environmental documentation.

3-2 Please continue to keep us informed of this project and any future developments, which could potentially impact the transportation facilities. If you have any questions or need to contact us, please do not hesitate to call Maryam Molavi at (949) 724-2267.

Sincerely,

ROBERT F. JOSEPH, Chief
IGR/Community Planning Branch

C: Terry Roberts, Office of Planning and Research
Terri Pencovic, Caltrans HQ IGR/Community Planning
Gale McIntyre, Deputy District Director
Isaac Alonso Rice, Traffic Operations

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Comment Letter No. 4

Rydman, Rama

From: Jennifer Bender [jenniferb@wcbwater.org]

Sent: Wednesday, May 04, 2005 11:41 AM

To: Rydman, Rama

Subject: Additional Comments to the SGR Master Plan

Rama,

Apologize for not attending the meeting Monday - I myself am wrapped up in Prop 50 and was just too swamped to make it.

Although I submitted a few comments last December to the Master Plan, I took another read through and would like to add the following comments. I'm not sure if you are the specific person to send these to, but I thought you could at least forward them on if you weren't.

4-1 1. Overall comment - sometimes the West Coast Basin is referred to as just the West Basin (referring to groundwater basins). It should be consistently called the West Coast Basin throughout the entire document.

4-2 2. Overall comment - sometimes the Metropolitan Water District of Southern California has the word "Southern" left out of their name in the text. They are truly called the Metropolitan Water District of Southern California. It should be consistent throughout.

4-3 3. Overall comment - sometimes even after the phrase "Water Reclamation Plant" has been defined and the acronym used, the phrase is continually used in the document rather than the acronym. It should be one or the other.

4-4 4. Overall comment - sometimes the Sanitation Districts of Los Angeles County are mis-named in the text as County Sanitation Districts, or Sanitation District (singular). Their name "Sanitation Districts of Los Angeles County" should be consistent throughout.

4-5 5. Overall comment for Chapters 2 and 3 - when discussing water supply and adjudication rights on the San Gabriel River, there are points of confusion. In some places it describes how the River is the primary source of local water supply in Southern California (ignoring the groundwater basins all together). In other places it talks about how every single drop of water in the River is adjudicated and/or percolated into the ground (which is not evenly distributed into every groundwater basin). Also, it mentions that the River carries a lot of reclaimed water and rainfall to waste to the ocean. I don't get a consistent message on how the River in fact contributes to all of the underlying groundwater basins, how adjudication rights are impacted by the excess recycled water and rainfall in the river, and how it can all percolate when it's consistently flowing toward the sea. Perhaps some clarification may help?

4-6 6. Overall comment for Chapters 2 and 3 - when discussing water supply, the sections frequently itemize local water supply sources as imported, reclaimed, and rainfall. This list leaves off groundwater, which is a crucial source for water supply. Most rainfall is not captured and added into the groundwater basins, and even if it was, it's only a small component of the groundwater aquifer as a source in and of itself. It might be good to clarify the role of rainfall to groundwater basins, and use the more appropriate term of groundwater as a local water supply source.

4-7 7. Page 3-10. Last sentence of the only paragraph on the page. It should read "The Central Basin Watermaster and West Coast Basin Watermaster have the same....."

4-8 8. Page 2-34. Under the subsection "Central and West Basins" (which will be changed to West Coast Basin per comment #1). The third sentence should read "The Water Replenishment District (WRD) is responsible for recharging water to the basins"

4-9 9. Page 2-38. Under the subsection "Imported Water", the Delta is improperly referred to as the San Joachin, when it should be San Joaquin.

Thank you very much. Please let me know if you have any questions,

Jennifer Bender
Water Quality Scientist
Central and West Basin Municipal Water Districts
17140 South Avalon Blvd, Suite 210
Carson, CA 90746
310-660-6253 (office)
213-200-7233 (cell)
310-217-2414 (fax)
jenniferb@wcbwater.org
www.centralbasin.org
www.westbasin.org

CITY OF CERRITOS

CIVIC CENTER • 18125 BLOOMFIELD AVENUE
P.O. BOX 3130 • CERRITOS, CALIFORNIA 90703-3130
PHONE: (562) 860-0311 • FAX: (562) 916-1371
WWW.CI.CERRITOS.CA.US

May 2, 2005

Comment Letter No. 5

Mr. Marty Moreno
County of Los Angeles Department of Public Works
Watershed Management Division
P.O. Box 1460
Alhambra, CA 91802-1460

Subject: **DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT – SAN GABRIEL RIVER CORRIDOR MASTER PLAN**

Dear Mr. Moreno:

Thank you for providing the City of Cerritos with an opportunity to review and comment on the Draft Program Environmental Impact Report for the San Gabriel River Corridor Master Plan ("Master Plan"). City staff has reviewed the Draft Program EIR and the proposed Master Plan and has determined that the Master Plan's five proposed Concept Design Studies would not generate any significant impacts to the City of Cerritos. However, the City is concerned about potential impacts resulting from the Master Plan's proposed River Enhancement Concepts.

5-1 While the proposed San Gabriel River Corridor Master Plan is generally consistent with the goals and policies of the City of Cerritos General Plan Open Space/Recreation Element, any proposal for increasing the amount of existing recreational or open space adjacent to the San Gabriel River within the City of Cerritos would be in direct conflict with the Cerritos General Plan Land Use Element. The San Gabriel River Corridor Master Plan cites the acquisition of additional land adjacent to the River for recreation purposes as a long-term goal. The City of Cerritos already maintains a plentiful amount of recreational open space along the River via its award-winning parks and recreational facilities, including Iron-Wood Nine Golf Course, Westgate Park, and Liberty Park, which has been recently renovated to meet the objectives described in the Liberty Park Improvement Project section of the Master Plan.

In addition to these facilities, there exist several residential and commercial developments adjacent to the San Gabriel River that have been developed in a manner consistent with the Cerritos General Plan and with the high-quality design standards required by the Cerritos Municipal Code. Therefore, the City of Cerritos will oppose the conversion of existing residential and commercial developments along the River to other uses, given their importance to the wellbeing of the City and the fact that the City already maintains more than a sufficient amount of recreational open space in the River Corridor area.

5-2 Another long-term project prescribed by the Master Plan is the installation of gateways to visually identify the River and its connection to adjacent cities. As this proposed project promotes aesthetic enhancements, the City of Cerritos would support this project in concept. However, all improvements will be required to comply with the Cerritos Municipal

JOHN F. CRAWLEY, MAYOR | PAUL W. BOWLEN, MAYOR PRO TEM | JIM EDWARDS, COUNCILMEMBER | GLORIA A. KAPPE, COUNCILMEMBER | LAURA LEE, COUNCILMEMBER

5-2 (Cont'd) Code and are subject to the review and approval of the Cerritos City Council and respective Commission prior to their final design and installation.

5-3 According to the Master Plan, the City of Cerritos is located in a portion of the River Corridor that has "very low potential" for the conversion of the existing concrete channel into a more natural habitat setting. It is our expectation that, should such a project be proposed in the future, a separate and more comprehensive Environmental Impact Report will be prepared. The existing Draft Program EIR lacks in detail with respect to this proposed undertaking.

5-4 The City of Cerritos would like to receive any future updates regarding this project. We look forward to working with the County of Los Angeles Department of Public Works in the future. Thank you again for including the City of Cerritos in your planning and review process. Should you have any questions, please do not hesitate to contact me at (562) 916-1201.

Sincerely,

Torrey N. Contreras
Director of Community Development

cc Art Gallucci, City Manager
Vince Brar, Assistant City Manager/Public Works
Mike O'Grady, Environmental Services Manager
Robert A. Lopez, Associate Planner

City of Santa Fe Springs
11710 Telegraph Road • CA • 90670-3679 • (562) 868-0511 • Fax (562) 868-7112 • www.santafesprings.org

May 13, 2005

Comment Letter No. 6

Rama Rydman
Watershed Management Division
County of Los Angeles Dept. of Public Works
900 South Fremont Avenue, 11th Floor
Alhambra, CA 91803

Subject: Comments on the Draft Program EIR for the San Gabriel River Corridor Master Plan, SCH No. 2003041187

Dear Rama:

On behalf of the City of Santa Fe Springs, please consider the following comments:

Transportation:

6-1 The trails along and connecting to the San Gabriel River are a key part of the regional transportation system in providing alternatives to vehicles. The improvements and impacts to the trail/bikeway system should be addressed. The Los Angeles County Metropolitan Transportation Authority ("MTA") is currently updating their countywide Bicycle Transportation Strategic Plan ("BTSP") and considers the San Gabriel River trail as a major regional transportation spine. Therefore the MTA BTSP and related bicycle information should be incorporated. An example of minimum information that should be incorporated is all existing and proposed bikeway connections to the SGR trails.

Water:

EIR Section 4.6 – Hydrology and Water Quality, Page 4.6-23

6-2 1. A statement is made in the second paragraph that states "The major point source dischargers that are potentially contributing to these water quality impairments include: five WRP's located on the River or its tributaries (Table 4.6- 4); including facilities (the Alimitos and Haynes generating stations and Santa Fe Springs Refinery);"

Comment: There is no refinery in the City of Santa Fe Springs named "Santa Fe Springs refinery." All previously operated refineries in Santa Fe Springs have not been in operation for over ten years. The refineries have been removed with soils remediated to state standards, except the former Powerine refinery, which is

Betty Putnam, Mayor • Louie González, Mayor Pro-Tempore
City Council
Ronald S. Kemes • Joseph D. Serrano, Sr. • Gustavo R. Velasco
City Manager
Frederick W. Latham

6-2 (Cont'd) currently being removed and remediated. The former Powerine refinery has approval of an interim use for wastewater treatment, but our understanding is that it does not discharge into the storm drain system.

2. The last sentence states" These future TMDL's will most likely include requirements for municipalities to reduce pollutant loads from stormwater runoff."

6-3 Comment: We feel that the statement should be changed to not single out municipalities as the only entity that will most likely be required to implement Best Management Practices to comply with future TDML's. We feel that point sources and non-point sources that discharge to the target water body should be responsible for the implementation of TDML's and should not exclude Federal and State agencies.

The EIR and the Master Plan should consider and clearly explain the responsibilities that Federal, State, and Local agencies will share in the implementation of present and future Total Maximum Daily Loads (TMDL's).

We appreciate the opportunity to comment on the EIR and Master Plan and look forward to the implementation of the common visions developed by the Master Plan.

Sincerely,

Robert G. Orpin
Director of Planning and Development

Cc: Fred Latham, City Manager; Ana Alvarez; Don Jensen; Marina Sueiro; Steve Masura; Tony Olmos

City of Seal Beach

CITY HALL 211 EIGHTH STREET
SEAL BEACH, CALIFORNIA 90740
(562) 431-2527 • www.ci.seal-beach.ca.us

April 25, 2005

DN / MMD

Comment Letter No. 7

Mr. Marty Moreno
County of Los Angeles Department of Public Works
Watershed Management Division
P. O. Box 1460
Alhambra, CA 91802-1460

Dear Mr. Moreno:

SUBJECT: **CITY OF SEAL BEACH COMMENTS RE: "*DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT - SAN GABRIEL RIVER CORRIDOR MASTER PLAN*"**

The City Council, Planning Commission and Environmental Quality Board of the City of Seal Beach have reviewed the "*Draft Program Environmental Impact Report - San Gabriel River Corridor Master Plan*" ("DPEIR"). Our staff has been working closely with the Department of Public Works and the San Gabriel Rivers and Mountains Conservancy for several years in a cooperative manner to ensure that the concerns, goals and aspirations of Seal Beach are properly set forth both within the "San Gabriel River Corridor Master Plan" ("Master Plan") and the subject DPEIR. Our staff has also reviewed the various components of the DPEIR to ensure that the document accurately reflects, at the program level of environmental analysis, the anticipated beneficial and adverse impacts of the adoption of the Master Plan and this DPEIR both to our community and to other areas of a local concern to our community.

7-1 The document provides an adequate level of environmental analysis of the beneficial, potentially adverse, and neutral impacts on the environment of the proposed Master Plan. The areas of environmental concern reviewed in the DPEIR do not fully include all areas of concern as was addressed in our letter of May 28, 2003 on the "Notice of Preparation" for this DPEIR. It was requested at that time that the "*Program EIR should contain evaluations as to how the Master Plan will comply with and be consistent with the NPDES permit requirements of both of the Regional Water Quality Control Boards.*" In our review of the areas of environmental concern discussed within the DPEIR, this does not appear to have been accomplished.

7-1 (Cont'd) The San Gabriel River watershed is within the boundaries of the Los Angeles and Santa Ana Regional Water Quality Control Boards, and the Program EIR should contain evaluations as to how the Master Plan will comply with and be consistent with the NPDES permit requirements of both of the Regional Water Quality Control Boards. In accordance with Santa Ana Regional Water Quality Control Board permit requirements, local agencies within Orange County are also required to evaluate the following areas of concern in a CEQA document relative to "Hydrology" or "Utilities and Service Systems" that have not been evaluated in the DPEIR document:

7-2 "Potentially impact stormwater runoff from construction activities?

Potentially impact stormwater runoff from post-construction activities?

Result in a potential for discharge of stormwater pollutants from areas of material storage, vehicle or equipment fueling, vehicle or equipment maintenance (including washing), waste handling, hazardous materials handling or storage, delivery areas, loading docks or other outdoor work areas?

Result in the potential for discharge of stormwater to affect the beneficial uses of receiving waters?

Create the potential for significant changes in the flow velocity or volume of stormwater runoff to cause environmental harm?

Create significant increases in erosion of the project site or surrounding areas?"

Would the project include a new or retrofitted storm water treatment control Best Management Practice (BMP), (e.g. water quality treatment basin, constructed treatment wetlands), the operation of which could result in significant environmental effects (e.g. increased vectors and odors)?

7-3 The City also requested in our May 28, 2003 comment letter on the "Notice of Preparation" that the Program EIR evaluate programs and methods of reducing solid waste transport along the River to the Pacific Ocean within the analysis. The impacts upon the City of Seal Beach and also Long Beach are substantial, and create adverse environmental impacts due to wash-up of solid waste materials on the local beaches. During the first three months of 2005 Seal Beach removed in excess of 540 tons of debris for our beaches that had been washed down the San Gabriel River during the storm season. The loss in beach availability, and the resulting adverse economic impacts of decreased visitors to the local beaches should be considered, evaluated, and mitigated within the Program EIR. One methodology of dealing with solid waste within the River is an evaluation of strategically placed debris booms along the length of the River or other appropriate best management practices to trap floating material and intercept that material from reaching the Ocean at various locations upstream. This type of program should specifically be evaluated within the Draft Program EIR.

Further, several of the proposed "Mitigation Program Measures" require language clarification as indicated below:

7-4
- ❑ Cultural Resources:

7-4 (Cont'd)

- ❑ **MP-C1** – Item 3 should be revised to require all field reconnaissance activities to also include the presence of a "qualified Native American Monitor".

7-5

- ❑ Geology and Soils:
  - ❑ **MP-G1** – the last sentence should be expanded on to indicate that any stormwater not infiltrated due to high groundwater levels that "*would be diverted to storm drains or onto street surfaces or routed to other stormwater management facilities as applicable*" will be required to include best management practices (BMPs) as part of the proposed diversion system to comply with the relevant stormwater discharge permits of the appropriate agency responsible under the applicable Regional Water Quality Board (Los Angeles or Santa Ana Regional Board).

7-6

- ❑ Hazards and Hazardous Materials:
  - ❑ **MP-H2** – The last sentence should also include Los Alamitos Joint Forces Training Base for notification.

The Planning Commission and the Environmental Quality Control Board (EQCB) considered and discussed the DPEIR document on April 6 and April 13 2005, respectively, and the City Council considered the DPEIR document on April 25, 2005. The City Council, Planning Commission, and the EQCB authorized the Mayor and the respective Chairs to sign this letter indicating the official comments of the City of Seal Beach.

7-7

Upon the preparation of the Final Program EIR for this project, please send 4 hard copies and a digital copy, if available, to Mr. Lee Whittenberg, Director of Development Services, City Hall, 211 Eighth Street, Seal Beach, 90740. Thank you for your consideration of the comments of the City of Seal Beach. If you have questions concerning this matter, please do not hesitate to contact Mr. Whittenberg at telephone (562) 431-2527, extension 313, or by e-mail at lwhittenberg@ci.seal-beach.ca.us.

Sincerely,

Paul Yost, Mayor
City of Seal Beach

Phil Ladner, Chairman
Planning Commission

Mario Voce, Chairman
Environmental Quality Control Board

Distribution:

Seal Beach City Council
Seal Beach Environmental Quality Control Board

Seal Beach Planning Commission

City Manager
Director of Development Services
Director of Public Works/City Engineer

COUNTY OF ORANGE

RESOURCES & DEVELOPMENT MANAGEMENT DEPARTMENT

Bryan Speegle, Director
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Santa Ana, CA

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WMD 085

NL 05-004

Comment Letter No. 8

May 4, 2005

Mr. Marty Moreno
County of Los Angeles Department of Public Works
Watershed Management Division
P.O. Box 1460
Alhambra, CA 91802-1460

SUBJECT: DPEIR for the San Gabriel River Corridor Master Plan (SGRCMP)

Dear Mr. Moreno:

The above referenced item is a Draft Program Environmental Impact Report (DPEIR) for the County of Los Angeles Department of Public Works (LACDPW). The proposed project area is a 1-mile wide corridor along 58 river miles of the San Gabriel from its headwaters in the San Gabriel Mountains to it terminus at the Pacific Ocean between Long Beach and Seal Beach. The project area includes 19 cities as well as unincorporated areas of Los Angeles and Orange counties, and encompasses a total of approximately 58 square miles. The Master Plan (SGRCMP) is a consensus-based document that recognizes and addresses a renewed interest in recreation, open space, and habitat while also seeking to enhance and maintain flood protection, water conservation benefits, along with existing water rights.

The County of Orange has reviewed the DPEIR and offers the following comments:

FLOOD

Our review was limited to regional surface hydrologic issues impacting facilities that are operated and maintained by the Orange County Flood Control District (OCFCD).

1. Several OCFCD facilities such as Coyote Creek Channel (A01), Los Alamitos Channel (C01), Los Alamitos Retarding Basin (C01B01), Rossmoor Retarding Basin (C01B02), Los Alamitos Pump Station (C01PS1) and Rossmoor Pump Station (C01P02) are within the project area. Consequently, any modifications to flood control facilities, operated and maintained by OCFCD need to be accomplished only after detailed engineering analyses of hydrologic, hydraulic and structural issues have been made; the potential impacts on

8-1

8-1 (Cont'd) OCFCD's facilities have been assessed; and all impacts including impacts to upstream and downstream properties appropriately mitigated to the satisfaction of the County's Manager of the Flood Control Division (FCD).

2. 8-2 Project ID Number R7.04 suggests that a wetland will be created within the Los Alamitos Channel to treat Coyote Creek flows. The use of any OCFCD flood control facility for purposes other than flood control needs to be coordinated with the County's Flood Control Division Manager and must receive his approval before proceeding. We recommend that this project be coordinated with an ongoing U.S. Army Corps of Engineers (ACOE) Coyote Creek Watershed Study.

3. 8-3 Project ID Number R7.08 suggests that wetlands or a new retarding basin will be constructed near the end of the Los Alamitos Channel to expand flood control capabilities. Instead of a new basin, what is currently being designed is a modification of existing Los Alamitos basin and pump station. As previously mentioned, the use of any flood control facility for purposes other than flood control needs to be coordinated our Flood Control Division Manager and must receive his approval prior to implementation. Similarly, we recommend that this project be coordinated with an ongoing ACOE Coyote Creek Watershed Study.

4. 8-4 All work within or adjacent to OCFCD right-of-way should be conducted so as to not worsen OCFCD facilities' structural integrity and hydraulic flow conditions including OCFCD's ability to access facilities for maintenance, repair, and reconstruction. All work within, over and under OCFCD and County of Orange right-of-way should be conducted only after encroachment permits for the proposed work have been obtained from the County.

WATERSHED

5. 8-5 The County of Orange, along with the ACOE and the County of Los Angeles Department of Public Works is currently in the initial stages of the Coyote Creek Watershed Management Plan and Feasibility Study (Watershed Plan). Our planning team recognizes the importance of building off of and dovetailing with existing plans and the SGRMP is no exception. The SGRMP is a model project for collaborative efforts on multiple-objective plans and projects. Its' stakeholder-driven approach to planning is one which our Watershed Plan will continue, and projects identified in the SGRMP will be assessed during this study.

6. 8-6 The following comments pertain to specific projects identified in the <u>San Gabriel River Master Plan, Chapter 3:</u>

a. Project R7.01 - Coyote and Carbon Creeks Watershed Management Plan: The County of Orange and the ACOE are currently developing project R7.01, listed as the "Coyote and Carbon Creeks Watershed Management Plan." The project has since been split into two separate phases with different names. Phase 1, currently now in development is called the "Coyote Creek Watershed

Management Plan" headed by the County of Orange. All interested stakeholder are invited to attend the initial public meeting, Wednesday, May 11, Brea City Hall, either 2:00pm-4:00pm OR 6:00pm-8:00pm. Phase 2, the "Coyote Creek-Lower San Gabriel River Watershed Feasibility Study" in its early stages pending increased funding for the ACOE.

b. The Phase 1 Management Plan will identify and prioritize potential projects for implementation through stakeholder input and spatial analysis using Geographic Information System (GIS) mapping. The San Gabriel River Master Plan Projects that will be addressed include:

R6.11 – West Branch Greenway Rails-to-Trails

R6.21 – El Dorado Regional Park Wetlands

R6.22 – El Dorado Nature Center Master Plan

R7.03 – Coyote Creek Debris Boom

8-6 (Cont'd)

R7.04 – Los Alamitos Channel Treatment Wetland

R7.05 – Proposed Confluence Bridge

R7.07 – Los Cerritos Wetland Restoration (Bryant & Bixby)

7.08 – County of Orange Flood Control Basin

7.09 – Trail Connections Between Wetlands

7.10 – Hellman Ranch Wetlands Freshwater Marsh Restoration.

c. Project R7.02 – Coyote Creek Bike Trail Enhancements:
The County of Orange is currently partnering with local non-profit organization Trails4All to request funding from the San Gabriel and Lower Los Angeles Rivers & Mountains Conservancy to develop the renamed "Coyote Creek Regional Bikeway Improvements" project. This project would involve a Working Group of all landowners along Coyote Creek, including several Cities, the Counties of Los Angeles and Orange, and other key stakeholders to develop a regional Bikeway signage programs and to develop a long-term Trails Needs Assessment and Master Plan.

WATER QUALITY

7. **8-7** Section 4.6 Page 20 – The National Pollutant Discharge Elimination System (NPDES) Stormwater Program section should include a discussion of the County of Orange 2003

8-7 (Cont'd) Drainage Area Management Plan (DAMP), which will apply to any projects conducted within Orange County.

8. 8-8 Section 4.6.5.2 Construction Impacts on Surface Water Quality Page 39 – The discussion of CD-W1 should include reference to compliance with the County of Orange 2003 DAMP. Water quality impacts of projects conducted within Orange County should be evaluated in accordance with the provisions outlined in Exhibit 7-1 of the 2003 DAMP.

9. 8-9 Section 4.6.6 Mitigation Measures for Concept Design Studies Page 42 – The discussion of CD-W1 should include reference to compliance with the County of Orange 2003 DAMP. Water quality impacts of projects conducted with Orange County should be evaluated in accordance with the provisions outlined in Exhibit 7-1 of the 2003 DAMP.

Thank you for the opportunity to respond to the DPEIR. If you have any questions, please contact Charlotte Harryman at (714) 834-2522.

Sincerely,

Ronald L. Tippets, Chief
Environmental Planning Division

P.O. Box 23005
Santa Ana, CA 92711-3005

Comment Letter No. 9

May 3, 2005

Mr. Marty Moreno
San Gabriel River Watershed Manager
County of Los Angeles Department of Public Works
Post Office Box 1460
Alhambra, CA 91802

Subject: Comments to San Gabriel River Master Plan EIR – SCH No. 200304117

The Fly Fishers Club of Orange County (FFCOC) is pleased to submit the following comments to the San Gabriel River Master Plan's Environmental Impact Report. While many of these comments are identical to those submitted in response to the draft Master Plan, the FFCOC believes that it is important to reiterate them formally through the EIR process, as we have found no evidence that our earlier comments have been addressed in the Plan. If there are questions, concerning these comments, please contact Mr. David M. Long, FFCOC's representative on the Stakeholders Committee. Mr. Long can be contacted at (714) 578-0422.

9-1

1. The FFCOC proposed three projects for the Master Plan (Chapter 3.). The Plan shows these as studies only. The FFCOC originally notified the County staff of the need to show these as full projects in August 2003. While it is recognized that initial studies will be needed for each project, and the FFCOC had funded the initial studies, the project definitions and descriptions are for implementation of the projects and not studies alone. The three projects were originally identified in a FFCOC sponsored study to identify recreational opportunities (fishing) in the upper river corridor. That report, provided to the County and MIG should have been included in the recent reports for the river. The identified FFCOC projects are:
   A. Establishing a "Fisherman's Trail" around or across the LACPWD controlled property at Cogswell Dam – The trail is needed to access the West Fork of the San Gabriel River above the dam. It is noted that the recent closure of the existing access across Cogswell Dam (post 9/11 security claims by County staff) has also cut off access to the Devil's Canyon area and that canyon's stream. A Fisherman's Trail might be able to provide access to both the West Fork and to the existing Forest Service trail into Devil's Canyon. A second trail might be necessary to solve this further access restriction to areas adjacent Cogswell Dam.

9-2

Dedicated to the enhancement of Flyfishing through Conservation, Education, & Fellowship.

B. Fishing on Morris Dam Reservoir and San Gabriel Dam Reservoir – This FFCOC proposed project consists of providing public access to the reservoirs, by allowing float tubes and un-motorized boats onto the waters and shoreline of these two water bodies.

C. Establishing minimum in-stream flows below Morris Dam. This project consists of establishing a year round stream with minimum flows from Morris Dam, augmented by delivery of water from MWD into the stream below Morris Dam. The initial study commissioned by FFCOC is in final draft form, and available for review. The study recommends additional evaluation of dam operations (both San Gabriel and Morris) to determine how best to achieve the stated project objective. The study does not resolve the question concerning whether the operations of these two dams are in compliance with State regulations concerning flows allowing the passage of fish.

9-2 (Cont'd)

9-3 The specific issues this raises for the adequacy of the EIR is in the need to evaluate the impacts from implementation of the proposed projects rather then impacts from a study. Clearly the possibility for implementation of the proposed projects would be greatly improved if they were included in this EIR, and not at some later date having to show conformance with Master Plan and EIR.

9-4 2. Policy Recommendations. The FFCOC was very pleased that this section has been developed and placed into the Master Plan. Clearly a number of overarching policies covering habitat, open space and recreation within the river corridor need to be adopted and approved to assure that opportunities are identified and implemented. The FFCOC had suggested the following: A. Any project or maintenance work within the river proper should include a component that improves or enhances the movement of fish & wildlife and distribution of native plants within the corridor. Low flow channels, changes in the design of drop structures, and permitted development of native riparian plants within the channel proper, plantings on and adjacent to flood protection structures (as examples) should be a component of any activity done to maintain flood protection and water distribution. B. Any changes to San Gabriel River's water movement, water storage capacity or water usage (irrigation to potable use or surface water flows converted to ground water storage as examples) should be a required to provide a percentage allotment to maintain or enhance in-stream habitat, wildlife, or recreational opportunities. These habitat/recreation offsets should be maintained within the San Gabriel River system and not transferred to other streams. C. A formal administrative review panel, that includes non-governmental/agency individuals needs to be established, and tasked with review and approval of river corridor projects to verify compliance with Master Plan objectives, and if necessary negotiate changes (or cancellation) to proposed projects/programs if such projects/programs do not adequately address habitat and recreational enhancement opportunities.

9-5 Again with respect to the EIR some evaluation as to the environmental adequacy of current operations and policies needs to be addressed. The FFCOC's sponsored legal opinion (provided by to the County) indicated that the County's current operation of releases from Morris Dam are not consistent with mandated legal requirements for maintaining fish and wildlife. We are confident that this is a correct and reasonable conclusion that the Plam's

9-5 (Cont'd)

EIR must address. Similarly we are equally confident that if the EIR was to address other county run operations within the River corridor, other such infractions of environmental requirements would also be found (as an example passage requirements at the County's inflatable dams.

4. Comments on Chapter I – The San Gabriel River. The FFCOC suggests that the EIR specifically address:

9-6

A. That for sections 1.4 and 1.5 - a discussion on the conversion of river water from a free flowing natural stream, to increased water usage for agriculture (first cattle/sheep then to crops), to potable uses and associated impacts to native habitats within the corridor.

9-7

B. It is essential that the EIR for this initial section, provide a concise and accurate description of the water rights to surface and groundwater sources emanating from the River. While admittedly complicated, this component must be described to provide an overlay of water controlling agencies within the basin, and which agency/water district may be impacted from any specific project proposed for implementation within the Plan.

As mentioned in our comments to the master Plan the FFCOC believes that the planning process was purposefully designed to exclude many groups and organization from full participation. We are of the opinion that that the plan process should have been expanded to provide greater access for non-profit volunteer, and private citizen participation in Plan development. The following observations and recommendations are provided:

9-8

The original process of meetings every other month for 4 hours per session, while conducive to agency, municipal, and industry involvement (regular business hours in large blocks of time) - and reduces consultant travel expenses, effectively excludes active, frequent participation by the volunteers of many non-profit or recreational groups, who would prefer evening meetings. Members of these latter groups typically are working during the day and therefore cannot participate. The change to longer sessions further alienates these volunteer based organizations that may have at least a few individuals able to attend meetings by taking a "late lunch". It is observed that the number of volunteer based organizations, and the number of representatives from those organizations attending individual meetings has diminished, while participation by city, county, and special districts has increase with the change to longer sessions. It is also observed, that in other venues where evening meetings are used to discuss recreational issues large numbers of people and organizations show up and provide significant input to the planning process.

Specific groups that might have been expected to participate regularly in the planning process need to be identified and an outreach effort made to include these groups in the plan review process, and a mechanism developed to incorporate any new perspectives or initiatives. Examples of disenfranchised or under represented organizations (though nowhere complete) are. Boys/Girls Clubs, YMCA/YWCA, Boys/Girl Scouts, Audubon, Native Plant Society, Surf Rider Foundation, area hiking clubs, area biking clubs (notable by absence from the plan process), after school programs from any school district in the corridor, area historical societies, State and County Park volunteer organizations, organizations that

9-8 (Cont'd) currently use local parks, Forest Service volunteer organizations, and area fishing organizations.

9-9 Lastly, while it is appreciated that the County of Los Angeles Department of Public Works has made an effort to reduce the use of paper in dissemination and review of both the Master Plan and EIR, it is noted that reliance on electronic formats is another example of limiting access to those groups with adequate computer capabilities. It is further noted that the format selected is not easily navigated, further limiting access and input into the plqnning review process.

We believe that the EIR must address these inadequacies and reopen the planning process to address these issues.

Sincerely,

David M. Long
Post Office Box 5102
Fullerton, CA 92838

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OF COUNSEL
FRANCIS D. LOGAN, JR.

May 5, 2005

Comment Letter No. 10

VIA FACSIMILE AND US MAIL
Mr. Jerry Burke
County of Los Angeles
Department of Public Works
Watershed Management Division
P.O. Box 1460
Alhambra, CA 91802-1460

Re: Draft Program Environmental Impact Report for the San Gabriel River Corridor Master Plan

Dear Mr. Burke:

This letter sets forth the comments of Rose Hills Memorial Park & Mortuary ("Rose Hills") with regard to the Draft Program Environmental Impact Report ("Draft EIR") for the San Gabriel River Corridor Master Plan ("Master Plan") and the Master Plan itself recently circulated by the County of Los Angeles Department of Public Works ("County").

10-1 (Cont'd)

Rose Hills applauds the County's goals to increase the open space, habitat and recreation opportunities in the San Gabriel River Corridor. Rose Hills writes only to request that the County consider more closely the possible impacts on Rose Hills of two particular projects set forth in the Master Plan and analyzed in the Draft EIR – the San Gabriel River Discovery Center at Whittier Narrows and the Lario Creek Project. Rose Hills also notes that a number of projects relating to recharge in the Master Plan were not studied in this Draft EIR and that these projects including the Whittier Narrows Dam Water Conservation Pool and the Whittier Narrows Nature Center Ecosystem Restoration projects could potentially have very significant environmental effects. Rose Hills requests therefor that the impacts of these recharge projects on Rose Hills and its neighbors are fully studied in the next level of analysis under the California Environmental Quality Act, Public Resources Code section 21000, et seq. ("CEQA").

Interest of Rose Hills

Rose Hills owns and operates a 1,400 acre cemetery in the Puente Hills at the foot of the San Gabriel Mountains. Located southeast of the Interstate 605 freeway near the Whittier Narrows, the cemetery is partially included in the 0.5 mile study area of the Master Plan and Draft EIR. A small portion of the cemetery can be seen, in the lower

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right-hand corner of Figure 3-9: "Preliminary Concept Design - Lario Creek". A satellite map which more clearly shows the cemetery and its proximity to the Lario Creek project is attached.

The Rose Hills cemetery is one of the largest in the world. The size of the facility, coupled with its breathtaking views over the Los Angeles basin, allows Rose Hills to offer solitude, tranquility and beauty to people during emotionally trying times. Rose Hills is committed to ensuring that it can continue to offer this experience to its clientele for many years to come. Rose Hills would oppose any aspect of the Master Plan which would interfere with the expectation of its clients, particularly aspects which might diminish the tranquil setting.

10-1 (Cont'd)

Rose Hills operates in a challenging regulatory environment. It holds permits from virtually every single regulatory agency in the Los Angeles Basin, allowing it to engage in the various functions of a cemetery, including cremation and internment. Rose Hills would object to any project which would make its regulatory compliance more difficult.

<u>The Draft EIR Fails to Consider the Impacts of the Discovery Center and Lario Creek Projects on Rose Hills</u>

Rose Hills notes that the only two projects in the Master Plan and analyzed in the Draft EIR appear to affect it due to their proximity to the cemetery: the Discovery Center and the Lario Creek projects.

10-2

The Draft EIR appears to be inadequate due to its failure to analyze the impacts of the contemplated projects beyond the 1-mile study area. CEQA and its implementing regulations, Cal. Code Regs., tit. 14, section 15000 et seq. ("CEQA Guidelines") do not allow the County to select an arbitrary boundary of 0.5 miles on either side of the San Gabriel River as the limit of the study area.

> An EIR shall identify and focus on the significant environmental effects of the proposed project. ... Direct <u>and indirect</u> significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects.

(CEQA Guidelines, § 15126.2, emphasis added.) The Draft EIR fails in its analysis of the indirect effects of the planned projects, including the possible indirect effects on the operation of Rose Hills.

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10-2 (Cont'd)

The analyses of the Discovery Center project and Lario Creek projects are silent on their regional impacts. But Rose Creek is a special place, requiring quiet and clean air. Both the Discovery Center and Lario Creek projects contain at least the possibility of imposing significant environmental effects on Rose Hills. Possible environmental impacts include the following: noise pollution carrying over to Rose Hills, from increased vehicle traffic and increased human use; air pollution adversely affecting the views available from Rose Hills; and growth-inducing impacts leading to a regional environment inconsistent with Rose Hills' land use. This is not a case in which the analysis in the Draft EIR is inadequate; the analysis is instead completely absent. This is a straightforward CEQA violation requiring revision and recirculation of the Draft EIR.

In the preparation of a revised Draft EIR, the County at a minimum should conduct acoustic studies, viewshed impact studies, air pollution studies and traffic studies to evaluate the impacts of the proposed projects on Rose Hills.

Deferring Analyses to Subsequent Environmental Studies Is Not Acceptable

10-3

It appears that the Draft EIR tries to accommodate the lack of analysis by asserting that later project proponents will prepare second-tier EIRs. (See Draft EIR, §1-5, at p. 1-6.) The County should not condone such slipshod practice. CEQA and the CEQA Guidelines allow for "program" EIRs, in connection with the issuance of regional plans. (CEQA Guidelines, § 15168.) But the County cannot duck its responsibility to analyze the impacts of the Discovery Center and Lario Creek projects simply because they are part of a larger program. (*Stanislaus Natural Heritage Project v. County of Stanislaus* (1996) 48 Cal.App.4th 182 [55 Cal.Rptr. 625].) The Discovery Center and Lario Creek projects are far enough along in their planning to obligate the County to engage in a complete CEQA analysis at this stage of analysis.

The CEQA Guidelines point out the need for program level EIRs to be sufficiently detailed. The CEQA Guidelines state:

> A program EIR will be most helpful in dealing with subsequent activities if it deals with the effects of the program as specifically and comprehensively as possible. With a good and detailed analysis of the program, many subsequent activities could be found to be within the scope of the project described in the program EIR, and no further environmental documents would be required.

(CEQA Guidelines, § 15168(c)(5).)

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A PROFESSIONAL CORPORATION

10-3 (Cont'd)

The CEQA Guidelines go on to state:

> If a later activity would have effects that were not examined in the program EIR, a new Initial Study would need to be prepared leading to either an EIR or a Negative Declaration.

(CEQA Guidelines, § 15168(c)(1).)

10-4

Given this regulatory view of program EIRs, the Draft EIR fails to serve any real purpose. With regard to the Discovery Center and Lario Creek projects alone, the County has failed to study any regional or growth-inducing impacts. All of these impacts will need to be analyzed in a project-level EIR when they should be analyzed in the Draft EIR.

10-5

It appears to Rose Hills that the Draft EIR is not adequate even as a program EIR. However, to the extent that the County ends up certifying the Draft EIR as the program EIR for the Master Plan, Rose Hills requests that the project-level EIRs for all projects which could affect Rose Hills, including the Discovery Center and Lario Creek projects, fully comply with CEQA. Rose Hills asks to be notified of the intent to undertake CEQA analysis for both of those plans monitoring of impacts, and possible offsetting mitigation may be required.

<u>The Recharge Projects, Including Whittier Narrows Dam Water Conservation Pool and the Whittier Narrows Nature Center Ecosystem Restoration Projects, Potentially Have Significant Impacts</u>

10-6

Rose Hills is extremely concerned about the possible impacts of a rising water table on cemetery operations and on regional soil stability. Liquefaction, leading to landslides; contamination of the groundwater and interference with internment operations are all possible consequences of a recharge program.

The water supply and water quality analysis within the Hydrology section of the Draft EIR does not contain any analysis of the possible environmental impacts caused by a high water table beneath the cemetery. This failure will require that later EIRs for any recharge project go through extensive analysis to ensure that those possibly significant environmental effects are fully mitigated.

10-7

The needs of the community for the services provided by Rose Hills and the unique environment offered by the Rose Hills facility, should be respected by the County.

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10-7 (Cont'd) We ask that the County take all appropriate steps to preserve the tranquil atmosphere of Rose Hills Memorial Park.

Sincerely,

LAW OFFICES OF SUSAN M. TRAGER
A Professional Corporation

Susan M. Trager

SMT:my

Attachment

Google Maps BETA

1000 N Durfee Ave South El Monte, CA 91733

WMD 337

Main San Gabriel Basin WATERMASTER

April 27, 2005

Comment Letter No. 11

Mr. Marty Moreno
Los Angeles County Department
of Public Works
Watershed Management
P.O. Box 1460
Alhambra, CA 91802-1460

RE: Draft Program Environmental Impact Report
for the San Gabriel River Corridor Master Plan
(SCH No. 2003041187)

Dear Mr. Moreno:

Thank you for providing the Main San Gabriel Basin Watermaster (Watermaster) with a copy of the document entitled "Draft Program Environmental Impact Report for the San Gabriel River Corridor Master Plan" (Draft Program EIR) dated February 2005. Previously, the Watermaster provided the County of Los Angeles Department of Public Works (LACDPW) with comments dated May 8, 2003 for the Notice of Preparation, November 3, 2003 for the San Gabriel River Master Plan Project Policy and Program Categories, and November 25, 2003 for the San Gabriel River Master Plan Project Administrative Draft. After reviewing the Draft Program EIR, Watermaster has the following comments.

11-1 Table 2-1, Organizations Involved, Page 2-2 lists the San Gabriel River Water Committee under both Water Districts/Agencies and Organizations. It appears that perhaps the San Gabriel River Watermaster is the agency that should be listed under Water Districts/Agencies.

11-2 Table 3-7, Master Plan Concept Design Studies, Page 3-15 lists the five Concept Design Studies and summarizes CEQA project objectives for each of the five studies. The Concept Design Studies should not diminish existing Flood Protection/Water Supply/Water Quality and, wherever possible, should enhance these components.

11-3 Table 4.6-2, Dams on the San Gabriel River, Page 4.6-6 lists the capacity of San Gabriel Reservoir as 41,549 AF, and Morris Reservoir at 39,300 AF. Are these current or original capacities? The data appears to be inconsistent with the LACDPW Hydrologic Reports (HR) for years 1994-97. In HR 1994-96 Morris is listed as having a 21,800 AF capacity and in HR 1996-97 San Gabriel is listed as having 53,344 AF capacity.

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http://www.watermaster.org

11-4 Section 3.3.1.2 River Corridor Policies and Programs, Page 3-12.
The policy as listed, "Create opportunities for stormwater infiltration," should add the phrase "...without adding contamination." As noted in our November 3, 2003 response, creating opportunities for stormwater retention/infiltration through devices such as bio-engineered wetlands, infiltration swales, porous pavement and/or other Best Management Practices may result in unintended groundwater contamination. Until identification and fate of pollutants which would be infiltrated are completely known, caution should be used until protection of the groundwater is assured. Petroleum hydrocarbons and MTBE could contaminate groundwater. Although percolation may be minimal, such projects should be closely monitored and should not interfere with groundwater cleanup activities. Also, the potential impacts of Nitrate contamination should be analyzed, especially at the Woodland Duck Farm site.

11-5 Section 3.3.3.1 San Gabriel Canyon Spreading Grounds, Page 3-20.
Watermaster remains concerned about the potential inclusion of a floating island in the San Gabriel Spreading Grounds. As noted in our November 25, 2003 response, constructing a floating island may negatively impact maintenance and operations of the spreading grounds, and these impacts and conflicts should be addressed before adding this component to the project. Ideally, no proposed project should include components that are located within the perimeter of existing spreading facilities. In addition, any project near the spreading grounds must assure security, preserve historic percolation capacity, and ensure no contaminants are introduced to the area.

11-6 Section 3.3.3.4, Lario Creek, Page 3-29.
"...flows can vary at different times from close to zero to over 100 cfs." A cursory review of flow data in Lario Creek, recorded at stream gaging station F313B-R, indicates flows on many days were significantly above 100 cfs and on some days exceeded 200 cfs. The statement should be modified to accurately reflect potential flows. Also, any proposed modification of Lario Creek should include a component to preserve a stream gaging station at all times with accuracy equal to or greater than F313B-R. This station is critical to the analysis of flows between the San Gabriel River and Rio Hondo as part of the Long Beach Judgment.

11-7 Section 4.6.1.1, Surface Water Features, Page 4.6-5.
"Average flows range between 40 and 100 cfs..." The study period includes primarily years with below average rainfall and runoff, so the evaluation of flows may be distorted. During water year 2004-05 flows have been in the 1,000's of cfs.

11-8 Section 4.6.1.1, Other Discharges, Page 4.6-8.
The San Gabriel Valley Municipal Water District's outlet discharges directly into the northern pit of the San Gabriel Canyon Spreading Grounds and not downstream of the spreading grounds.

11-9 Section 4.6.1.3, Water Rights, Page 4.6-13 states, "SWRCB...has declared the San Gabriel River fully appropriated, i.e. no new users can file for a share of the river water." However, throughout the Draft Program EIR reference is made to capturing and reusing storm runoff. For example page 4.6-32 notes, "...wetlands may be designed with retention, reuse, and/or infiltration of storm water." Capturing and reusing storm water runoff for a beneficial use other than groundwater recharge would be viewed as an appropriation of surface water flow. The San Gabriel River system is fully appropriated and no proposed project should include a direct reuse option. The water rights owned by the San Gabriel Valley Protective Association are used to spread surface water flow in the San Gabriel River Watershed to recharge adjudicated groundwater basins. The water is subsequently produced by groundwater rights holders. The proposed Draft EIR Program projects should not interfere with the fully appropriated surface water rights, although the Draft Program EIR acknowledges the potential impact on surface and ground water rights associated with actions involving groundwater recharge or surface diversions as an "Area of Known Controversy".

11-10 Section 4.6.1.3 Water Rights, Main San Gabriel Basin Watermaster, Page 4.6-14. The list of parties that pump more than 5,000 acre-feet should also include the cities of Alhambra, Azusa and Monterey Park; and delete Pellissier. Also, the Main San Gabriel Basin Watermaster annual Operating Safe Yield is based on a number of factors, including rainfall, groundwater levels, water held in storage, and various other considerations.

11-11 Section 4.6.1.3 Water Rights, San Gabriel Valley Protective Association, Page 4.6-16. The members listed should also include Cadway Inc., East Pasadena Water Company, and Valley County Water District.

11-12 Section 4.6.1.4 Water Quality, Page 4.6-25.
Portions of the South El Monte Operable Unit also overlap the Master Plan study area.

Please call me or Anthony Zampiello at (626) 815-1300 if you have any questions.

Sincerely,
MAIN SAN GABRIEL BASIN WATERMASTER

Carol Thomas Williams
Executive Officer

cc: Stetson Engineers Inc.
San Gabriel Valley Protective Association
San Gabriel River Water Committee

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WMD 085

MWD
METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Executive Office

Comment Letter No. 12

May 4, 2005

VIA FACIMILE

Mr. Marty Moreno
County of Los Angeles Department of Public Works
Watershed Management Division
P.O. Box 1460
Alhambra, California 91802-1460

Dear Mr. Moreno:

Draft Program Environmental Impact Report for the San Gabriel River Corridor Master Plan

The Metropolitan Water District of Southern California (Metropolitan) has reviewed a copy of the Draft Program Environmental Impact Report (Draft PEIR) for the San Gabriel River Corridor Master Plan (Master Plan). Metropolitan provided a comment letter dated May 22, 2003 (attached), in response to the Notice of Preparation for the Draft PEIR. Metropolitan appreciates your efforts to address our concerns; however, the following issues have not been adequately addressed in the Draft PEIR.

12-1 Habitat restoration and enhancement is a major objective of the Plan, as shown in Table 3-1 of the Draft PEIR. Specifically, the San Gabriel Canyon Spreading Grounds - Preliminary Concept Design, proposes floating islands in the spreading basins for habitat and educational purposes that could be connected by a cable and weight system to the bottom of the basin, and planted with wetland vegetation providing habitat for breeding and migrating bird species. The Draft PEIR acknowledges potential conflicts between groundwater recharge activities and habitat as an issue requiring further investigation. However, it does not identify potential impacts or mitigation measures stemming from this conflict. Habitat restoration and its consequences could significantly impact Metropolitan's ability to deliver Replenishment Service to recharge basins, and seriously impact water resources and water supply in the Master Plan area.

Increased vegetation in the channels would increase the amount of time that the County would have to devote to brush clearing operations. Such activities are normally undertaken in the late summer and early fall in preparation for the winter storm season. Metropolitan can not deliver Replenishment Service while work is occurring in the channels, and channel clearing activities often coincide with the availability of Replenishment Service. The more time spent in the channel engaging in this activity, the smaller the window of time available for delivery of Replenishment Service.

700 N. Alameda Street, Los Angeles, California 90012 • Mailing Address: Box 54153, Los Angeles, California 90054-0153 • Telephone (213) 217-6000

12-1 (cont'd)

As stated in our May 22, 2003 letter, "It is imperative that Metropolitan's member agencies' ability to take imported water for groundwater replenishment is not impacted. Imported water for replenishment is generally available on a seasonal basis and the ability to deliver water to these agencies on short notice can be important both to Metropolitan's operations and the member agencies receiving the imported water." "Deliveries through these connections are often problematic, because the downstream facilities operated and maintained by the County are not always available for the delivery of water to our member agencies. Sometimes when water is available to Metropolitan, the County is unable to facilitate deliveries due to maintenance or basin conditions. Therefore, when water is available and the County has the ability to move the imported water, it is imperative that the water be moved or the opportunity may be lost." Metropolitan again requests that the County ensures Metropolitan's operations are not impacted by the Master Plan.

Habitat restoration might further limit Metropolitan's ability to deliver Replenishment Service by introducing species requiring special protection measures that conflict with Metropolitan's spreading operations. This concern was addressed in our May 23, 2003, letter, as follows: "In order to avoid conflicts with Metropolitan facilities, provisions to allow emergency excavation and repair must be included in the Master Plan. Also, creation of wetland and sensitive habitat within and adjacent to Metropolitan facilities must be avoided and any sensitive habitat and/or revegetation processes must be carefully planned to avoid conflicts with Metropolitan facilities." The Draft PEIR does not include any such provisions; Metropolitan requests that this issue be addressed in the document.

The potential impacts on water supply resulting from limitations of replenishment delivery stemming from this Master Plan should be identified in the Draft PEIR. Water supply in areas overlying the Main San Gabriel Basin and Central Basin is highly dependent on the delivery of imported replenishment water. Replenishment Service often becomes available on very short notice making its delivery to the Main San Gabriel Basin and Central Basin highly dependent on close cooperation between Metropolitan, its member agencies, basin groundwater managers, and the County. Until the recent rains, groundwater levels in these basins were becoming precariously low, further underscoring the importance of delivering Replenishment Service as it becomes available. Any restrictions in Replenishment Service could seriously impact water supply in these areas.

As stated in our May 23, 2003 letter, "...Metropolitan is required to coordinate any activities that might affect groundwater with its member agencies that receive groundwater recharge. The Draft PEIR must include measures to ensure that imported groundwater replenishment operations by Metropolitan's member agencies are not negatively impacted." The Draft PEIR does not include any such provisions; Metropolitan again requests that this issue be addressed in the document.

12-2 Lastly, Metropolitan has the following request regarding the Master Plan Program Mitigation Measure, Section 4.9.5.3 Utilities, MP-P4. Please change this mitigation measure to require geotechnical investigations during design of stormwater infiltration facilities in the vicinity of Metropolitan facilities to ensure that their integrity is not impacted by changes in soil conditions. If results of the investigation indicate that stormwater infiltration may saturate the soil and may affect the integrity of our pipelines, appropriate mitigation measures would need to be included during the design phase to ensure our pipelines are not compromised.

We appreciate the opportunity to provide input to your planning process and we look forward to receiving a copy of the Final PEIR. If we can be of further assistance, please contact Mr. William Fong at (213) 217-6899.

Very truly yours,

Laura J. Simonek
Manager, Environmental Planning Team

LIM/rdl
(Public Folders/EPU/Letters/27-APR-05C.doc – Marty Moreno)

Enclosure: Metropolitan letter dated May 22, 2003

Cc: Rama Rydman
County of Los Angeles
Department of Public Works
Watershed Management Division
P.O. Box 1460
Alhambra, California 91802-1460

MWD
METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

COPY

May 22, 2003

Mr. Marty Moreno
County of Los Angeles Department of Public Works
Watershed Management Division
P.O. Box 1460
Alhambra, CA 91802-1460

Dear Mr. Moreno:

Notice of Preparation of a
Draft Program Environmental Impact Report for the San Gabriel River Master Plan

The Metropolitan Water District of Southern California (Metropolitan) has received a copy of the Notice of Preparation (NOP) of a Draft Program Environmental Impact Report (Draft PEIR) for the San Gabriel River Master Plan (Master Plan). The County of Los Angeles Department of Public Works (LADPW) is the lead agency for this project. The proposed project will be a consensus-based document that will recognize and address a renewed interest in recreation, open space, and habitat, while also seeking to enhance and maintain flood protection, and water conservation benefits, along with existing water rights. The proposed project will focus on the 58-mile long San Gabriel River (River) from Cogswell Dam in the San Gabriel Mountains to the Pacific Ocean. The River corridor is primarily located within Los Angeles County; the mouth of the river is bordered by land within both Los Angeles and Orange counties. This letter contains Metropolitan's response to the Notice of Preparation as both a Responsible Agency and potentially affected agency.

Metropolitan owns and operates various facilities within the boundaries of the proposed Master Plan. The Metropolitan facilities include the following: Old Navy Peninsula, Foothill Feeder-Service Connection USG-3, Fish Canyon Adit to Monrovia Tunnel No. 3 of the Upper Feeder Pipeline, Upper Feeder Pipeline, Middle Feeder Pipeline, Lower Feeder Pipeline, and Second Lower Feeder Pipeline.

These Metropolitan facilities are described as follows:

- Old Navy Peninsula - Metropolitan owns property known as the Old Navy Peninsula on Morris Reservoir. The Peninsula is located on the west side of the reservoir, approximately 500 yards north of the Morris Dam.

- The Foothill Feeder-Service Connection USG-3 has a 200-foot wide permanent easement and is located in Los Angeles County south of Morris Dam. Water is discharged from a 78-inch pipe and provides recharge for the Central and West Basin Municipal Water Districts.

- The Fish Canyon Adit to Monrovia Tunnel No. 3 of the Upper Feeder Pipeline is approximately two miles west of Morris Dam and Metropolitan has an access right-of-way that extends from the adit into the River.

- The Upper Feeder Pipeline is a ten-foot inside diameter pipeline with a 200-foot wide permanent easement and approximately 15 to 20 feet of cover at the River invert. It is located in Los Angeles County, just south of Morris Dam and traverses the River in an easterly to southwesterly direction.

- The Middle Feeder Pipeline is a 73-inch inside diameter pipeline with a 50-foot wide permanent easement and approximately 20 feet of cover at the River invert. The Middle Feeder traverses the River in an easterly to southwesterly direction at Ramona Boulevard, located within the cities of Irwindale and El Monte.

- The Lower Feeder Pipeline is a 70-inch inside diameter pipeline with a 40-foot wide permanent easement and approximately 15 to 20 feet of cover at the River invert. The Lower Feeder Pipeline traverses the River in an easterly to westerly direction just south of Firestone Boulevard in the city of Downey.

- The Second Lower Feeder Pipeline is a 78-inch inside diameter pipeline with a 30-foot wide permanent easement and approximately five to ten feet cover at the River invert. The Second Lower Feeder Pipeline traverses the River in an easterly direction from Keynote Street in the city of Long Beach.

Metropolitan is concerned with potential impacts to these facilities that may occur as a result of implementation of the proposed Master Plan. Metropolitan requests that the LADPW consider these facilities in its planning and analyze in the Draft PEIR potential impacts to these facilities that may occur as a result of implementation of the proposed Master Plan.

In order to avoid potential conflicts with Metropolitan's rights-of-way, we request that any design plans for any activity in the area of Metropolitan's pipelines or facilities be submitted for our review and written approval. Metropolitan must also be allowed to maintain its rights-of-way and access to its facilities at all times in order to repair and maintain the current condition of those facilities. The applicant may obtain detailed prints of drawings of Metropolitan's pipelines and rights-of-way by calling Metropolitan's Substructures Information Line at (213) 217-6564. To assist the applicant in preparing plans that are compatible with Metropolitan's facilities and easements, we have enclosed a copy of the "Guidelines for Developments in the Area of Facilities, Fee Properties, and/or Easements of The Metropolitan Water District of Southern

California." Please note that all submitted designs or plans must clearly identify Metropolitan's facilities and rights-of-way.

It is imperative that Metropolitan's member agencies ability to take imported water for groundwater replenishment is not impacted. Imported water for replenishment is generally available on a seasonal basis and the ability to deliver water to these agencies on short notice can be important both to Metropolitan's operations and the member agencies receiving the imported water. The following service connections can deliver water to the River:

- USG-03 Glendora Tunnel: Capacity maximum is 400 cubic feet per second (cfs); source of imported water is generally the State Water Project (SWP).

- CENB-48 La Verne Pipeline: Capacity maximum is 300 cfs; deliveries can be made to USG through this connection; source of imported water is generally the SWP.

- CENB-28 Upper Feeder Pipeline: Capacity maximum is 120 cfs; source of imported water is mostly a blend of the SWP and Colorado River Water.

- PM-26 Glendora Tunnel: Capacity is 20 cfs; source of imported water is the SWP.

Deliveries through these connections are often problematic, because the downstream facilities operated and maintained by the LADPW are not always available for the delivery of water to our member agencies. Sometimes when water is available from Metropolitan, LADPW is unable to facilitate deliveries due to maintenance or basin conditions. Therefore, when water is available and LADPW has the ability to move the imported water, it is imperative that the water be moved or the opportunity may be lost.

Metropolitan's facilities may also be used to dewater pipelines (blow-offs, pump wells, pressure relief valves) for maintenance or inspection. In addition, facilities along or adjacent to the River may contain pressure relief valves which operate automatically to relieve the pressure on a pipeline to ensure that Metropolitan's distribution system is not damaged by hydraulic transients that can occur due to pressure fluctuations arising from agency service connection problems, system malfunctions, or operator error. In these cases, water is automatically discharged from Metropolitan's system either directly into the River, or into a channel or flood control facility, which interconnects with the River. In the case of dewatering for a pipeline outage, the treated water in the pipeline is mixed with a chemical upon discharge to remove the residual from the disinfectant. When the pressure relief valve(s) open, treated water is discharged. The appropriate Regional Water Quality Control Board is notified in either case. LADPW needs to ensure that Metropolitan's operations (imported water deliveries, normal pipeline operations, and emergency discharge) are not impacted by the Master Plan.

Also, Metropolitan is required to coordinate any activities that might affect groundwater with its member agencies that receive groundwater recharge. The Draft PEIR and Master Plan must

include measures to ensure that imported groundwater replenishment operations by Metropolitan's member agencies are not negatively impacted. The Draft PEIR must also include measures to ensure that recycled water replenishment operations by Metropolitan's member agencies at the Montebello Forebay spreading grounds, near Interstates 605 and 60, are not negatively impacted. Additionally, Metropolitan must be allowed to maintain discharge and other facilities (i.e., service connection USG-3, blow-off structures, air-vacuum valves, etc.) and 24-hour patrol access. The Draft PEIR and Master Plan must clearly and properly address these Metropolitan requirements.

In order to avoid conflicts with Metropolitan facilities, provisions to allow emergency excavation and repair must be included in the Master Plan. Also, creation of wetland and sensitive habitat within and adjacent to Metropolitan facilities must be avoided and any sensitive habitat and/or revegetation processes must be carefully planned to avoid conflicts with Metropolitan facilities. Additionally, engineered protections (i.e., protective slabs) to prevent erosion must be provided in any areas along the River that may be converted to greenbelt areas.

Metropolitan requests that the LADPW analyze the consistency of the proposed Master Plan with the growth management plan adopted by the Southern California Association of Governments (SCAG). Metropolitan uses SCAG's population, housing and employment projections to determine future water demand.

Additionally, Metropolitan encourages projects within its service area to include water conservation measures. Water conservation, reclaimed water use, and groundwater recharge programs are integral components to regional water supply planning. Metropolitan supports mitigation measures such as using water efficient fixtures, drought-tolerant landscaping, and reclaimed water to offset any increase in water use associated with the proposed project.

We appreciate the opportunity to provide input to your planning process and we look forward to receiving future environmental documentation on this project. If we can be of further assistance, please contact Mr. William Fong of the Environmental Planning Team at (213) 217-6899.

Very truly yours,

Original Signed By
Marty Meisler

for Laura J. Simonek
Manager, Asset Management
and Facilities Planning Unit

LIM/rdl
(Public Folders/EPU/Letters/22-MAY-03C.doc – Marty Moreno)
Enclosure: Planning Guidelines

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622 / WMD

Puente Hills Landfill
Native Habitat Preservation Authority

April 28, 2005

Comment Letter No. 13

Mr. Marty Moreno
County of Los Angeles Department of Public Works
Watershed Management Division
P.O. Box 1460
Alhambra, CA 91802-4119

Re: County of Los Angeles Department of Public Works, Draft Program EIR for the San Gabriel River Corridor Master Plan

Dear Mr. Moreno:

The Puente Hills Landfill Native Habitat Preservation Authority (Habitat Authority) appreciates the opportunity to comment on the San Gabriel River Corridor Master Plan.

The Habitat Authority is a joint powers authority established pursuant to California Government Code Section 6500 *et seq.* with a Board of Directors consisting of the City of Whittier, County of Los Angeles, Sanitation Districts of Los Angeles County, and the Hacienda Heights Improvement Association. The purpose of the Habitat Authority is to acquire, restore and maintain open space in the Puente Hills as a permanent protection for the native habitat. Currently the Habitat Authority manages and/or owns 3,814 acres of open space. Properties owned and managed by the Habitat Authority lie within the Cities of Whittier and La Habra Heights, as well as in the County unincorporated area of the Puente Hills known as Hacienda Heights and Rowland Heights.

13-1 The Habitat Authority understands the project area includes the length of the San Gabriel River and one-half mile on either side of the river. It is unclear whether or not the lands owned and/or managed by the Habitat Authority are included in this project area. However, in reading the text and viewing the maps, it appears that our lands do have the potential to be affected.

Overall, there are many benefits that can result from the implementation of the River Master Plan such as increasing biodiversity for the region, however below are comments for your consideration:

13-2 Section 2- Introduction, page 2-2, Table 2-1, Draft Program EIR
The Habitat Authority should be reclassified as a County/Regional Government. It currently is categorized as a private organization.

A Joint Powers Agency created pursuant to California Government Code §6500 *et seq.*
7702 Washington Avenue, Suite C, Whittier, California 90602 • Phone: 562 / 945 - 9003 • Fax: 562 / 945 - 0303

Printed on recycled paper

13-3 Section 3 – Project Description, Table 3-1, Draft Program EIR
Under Objective H4, *Maintaining and enhancing wildlife corridors and linkages*, it is unclear how the Performance Criteria H4.3, *Maintains or reduces populations of wildlife meso-predators…and rodents that may transmit vector-borne diseases…*, is consistent with the objective. Although overabundance of mesopredators and mammalian vector species are valid concerns in the urban-wildland interface, consideration needs to be given to the role these species may assume in the larger ecosystem. For example, normal rodent and mesopredator population fluctuations should not always be interpreted as a problem requiring management. The response to undesired numbers of small mammals often includes the use of anticoagulant poisons. These poisons have the potential to harm predators up the food chain, often resulting in the death of large mammals and raptors. Therefore, we recommend that the Master Plan will suggest less toxic approaches, with the goal of a sustainable reduction in pest species achieved through healthy populations of top predators and responsible actions by local property owners to reduce opportunities for pest species. Additional comments about wildlife corridors are provided below.

13-4 Chapter 3, page 3-28, and Chapter 4, page 4-4, Map 4-1, Master Plan:
The suggestion of the R4-23 Puente Hills Western Wildlife Corridor project, which proposes to connect the Puente Hills to the San Gabriel River, needs to have further analysis from wildlife movement experts before consideration of implementation. A study designed and conducted by a biological research institute is recommended before terrestrials are reintroduced to the river area. We agree the connection has the potential to increase biological diversity for the area. However, this project also has the potential to create human wildlife interactions that could result in the euthanization of small mammals such as skunks, coyotes or raccoons. The precautions mentioned on page 4-4 such as wildlife-proofing trash cans, creating buffers and dispersing educational materials are good suggestions, but more needs to be done to prevent coyotes and other wildlife from being invited into picnic areas or other public recreational areas. Educational materials about co-existing with wildlife also need to be made available to park visitors, in addition to local residents as suggested. Littering, unkempt picnic areas, and dogs off leash all have the potential to generate unfortunate human-wildlife interactions. It is unclear from Map 4-1 how the wildlife movement from the Puente Hills would be northbound only and not southbound. If the route of travel was north, measures would need to be taken to ensure that wildlife would have not only a wildlife movement corridor available to them but also core habitat areas for their use along the way until the Angeles National Forest is reached 12 miles away.

13-5 Chapter 3, page 3-28, Master Plan:
In regards to R4.24 Equestrian Facilities Enhancement project which involves water quality runoff mitigation measures, we recommend that a situation not be created that will negatively impact wildlife. For instance, if wetland habitat is created, wildlife would be attracted. If the habitat consists of vegetated wetland, there is the potential that certain bird species may utilize the area for nesting. A situation could inadvertently be created where vector control or whoever is managing the wetland may need to disturb or clear the

13-5 (Cont'd) habitat for public safety reasons. If this occurred, the wildlife would be negatively affected if it occurred during nesting season.

13-6 Chapter 4, Map 4-9, page 4-23, Master Plan:
According to Map 4-9, the Groundwater Recharge Opportunities project has the potential to impact lands the Habitat Authority manages. The area known as Sycamore Canyon, which is owned by the Habitat Authority, is highlighted on the map as being a possible location for this project. Implementation of any project of this nature would need to be coordinated with this agency to avoid impacts to park operations and wildlife, and to avoid conflicts with utility or conservation easements in the area with possible surface area recharge activities. Recharge into the existing creek is a more feasible option which would require further analysis such as with the level of pollution found in the water or rate of water flow for consideration.

The Habitat Authority is in the process of preparing a Resource Management Plan with long-term goals for habitat restoration, wildlife connections, trails, education and overall management of our jurisdiction. It is expected to be completed in the year of 2006. This document can be made available for your future reference. Also, enclosed is the brochure, Western Puente Hills Access Guide, for background information about the Habitat Authority.

Thank you for your consideration of these comments. Feel free to contact me at (562) 945-9003 to answer any questions or for discussion.

Sincerely,

Andrea Gullo
Executive Director

Enclosure

Cc: Board of Directors
Advisory Committee

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SAN GABRIEL RIVER WATER COMMITTEE
729 N. Azusa Ave. #5
Azusa, CA 91702-2528
(COMMITTEE OF NINE) *FOUNDED 1889*

April 29, 2005

Comment Letter No. 14

AZUSA AGRICULTURAL WATER COMPANY

AZUSA VALLEY WATER COMPANY

CALIFORNIA AMERICAN WATER COMPANY

COVINA IRRIGATING COMPANY

MONROVIA NURSERY COMPANY

Mr. Marty Moreno
Los Angeles County Dept. of Public Works
Watershed Management Division
P.O. Box 1460
Alhambra, CA 91802-1460

Re: Draft EIR San Gabriel River Corridor Master Plan

Dear Mr. Moreno:

Thank you the opportunity to respond to the draft EIR. San Gabriel River Water Committee has had a representative attend County Master Plan meetings for years, in fact from the Master Plan's inception. We would like to think that comments made in the meetings have been recognized and incorporated into the Master Plan. Main San Gabriel Basin Watermaster has also had representatives in attendance at almost all meetings and their comments have been greatly appreciated. Following review of the draft EIR the Committee has the following comments:

14-1 On page 3-12 Section 3.3.1.2 It should be noted that storm water infiltration should only be considered if it can be shown that this process will not add contamination to the underground water supply. Also see Page 4.6-32 Projects that increase impervious surfaces or change drainage patterns encourage onsite collection of storm water for irrigation and percolation must be **consistent with water rights**.

14-2 On page 3-15 Table 3-7 Concept design studies should enhance Water Supply, Water Quality, Ground Water Recharge, Water Conservation and Flood Protection per Page 1-2 Section 1.2 Project Objectives, Executive Summary.

14-3 On page 3-20 Section 3.3.3.1 San Gabriel Canyon Spreading Grounds plans to include a floating island should proceed through a study and review period to assure no negative impacts to current operations.

14-4 On page 4.6-5 the average flow at Foothill Blvd. is listed as between 40 cfs and 100 cfs. This data may be accurate, but it should also be stated that there are storm release flow rates, such as this current winter, that exceeded 20,000 cfs. This information should be included so that plans can be formulated from actual flows, not just average figures.

14-5 On page 4.6-8, Section 4.6.1.1 Other discharges lists San Gabriel Valley Municipal Water District's diversion as downstream of the spreading grounds, but in fact, the discharge point is into the northerly spread pit.

14-6 On page 4.6-14 Section 4.6.1.3 Water Rights, Main San Gabriel Basin Water master lists parties who pumped in excess of 5,000 ac.ft. in fiscal year 2001-2002. City of Azusa has not been included on this list so please verify this info with Watermaster.

Sincerely,
SAN GABRIEL RIVER WATER COMMITTEE

Don Berry

Don Berry, Administrator

SAN GABRIEL RIVER WATERMASTER

FOR
CITY OF LONG BEACH ET AL VS SAN GABRIEL VALLEY WATER CO. ET AL
CASE NO. 722647-LOS ANGELES COUNTY

WATERMASTERS
GLENN A. BROWN
RICHARD A. RHONE
THOMAS M. STETSON

MAILING ADDRESS:
225 WEST BROADWAY
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GLENDALE, CA 91204-1331
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April 19, 2005

Comment Letter No. 15

Mr. Marty Moreno
County of Los Angeles Department of Public Works
Watershed Management Division
P. O. Box 1460
Alhambra, CA 91802-1460

Subject: Draft Program Environmental Impact Report for the San Gabriel River Corridor Master Plan

Dear Mr. Moreno:

The San Gabriel River Watermaster has participated in the planning process for the San Gabriel River Corridor Master Plan. We offer the following comments regarding the EIR.

1. We note the EIR recognizes the importance of existing use of the conveyance and conservation system for water supplies in the form of water rights, the need to make proper arrangements regarding the acquisition of water for new projects and protection of existing flood control capacities.

15-1

2. **Water Rights**. The EIR indicates existing water rights will be protected. What is not conveyed in the document is that the great majority of the water rights are held by water purveyors who provide municipal water service in the region. Thus, this water is currently managed for the direct use of the people of the area. This water is stored in the groundwater basins and withdrawn at time of water demand by the purveyors for delivery to the users. The local water supplies provide less than half of the total municipal water use in the San Gabriel River area. Additional water is imported through statewide importation conveyance facilities. The value of this local water source cannot by underestimated in risk management of the local municipal water supplies. In a land of earthquake and drought, the availability of this local source of stored potable groundwater is of immense value.

15-2

3. **Lario Creek**. The EIR should state that the existing gaging station on the Zone 1 Ditch must be maintained or replaced by a suitable station. This gaging station is extremely important in the operations of the San Gabriel Watermaster. 15-3

4. The groundwater spreading grounds need to be maintained. Maintenance requires periodic cleaning, clearing, disking and silt removal. We are concerned that development of the adjacent areas will reduce or prohibit the ability of the County to maintain the spreading grounds so that the existing percolation rates can be maintained. 15-4

We commend you on the preparation of the EIR document, especially considering all of the stakeholders and interests.

Very truly yours,

Richard A. Rhone
for San Gabriel River Watermaster

cc. Glen Brown
Steve Johnson
Tom Stetson

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SAN GABRIEL VALLEY
MOSQUITO & VECTOR CONTROL DISTRICT

1145 N. Azusa Canyon Road
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Steve West
District Manager

Kenn K. Fujioka, Ph.D.
Assistant Manager

Cities of:

Alhambra
Arcadia
Azusa
Bradbury
Claremont
Covina
Duarte
El Monte
Glendora
Industry
Irwindale
La Puente
La Verne
Monrovia
Monterey Park
Pomona
Rosemead
San Dimas
San Gabriel
Sierra Madre
Temple City
Walnut
West Covina
County of Los Angeles

Comment Letter No. 16

April 25, 2005

Mr. Marty Moreno
County of Los Angeles Department of Public Works
Watershed Management Division
P.O. Box 1460
Alhambra, CA 91802-1460

RE: DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT FOR THE SAN GABRIEL RIVER CORRIDOR MASTER PLAN

The San Gabriel Valley Mosquito & Vector Control District is a special district charged with protecting public health within approximately 250 square miles of the San Gabriel Valley, encompassing the upper reaches of the San Gabriel River and its tributaries. We take this responsibility very seriously. As such, we appreciate the opportunity to comment on the Draft Program EIR for the San Gabriel River Corridor Master Plan.

16-1 We were pleased to note that our concerns relating to habitat enhancement that may encourage or facilitate the reproduction of mosquitoes and other vectors capable of endangering public health were addressed in this document. As this is a Program EIR, project developers will be encouraged to coordinate with the vector control districts in their jurisdiction – a critical first step!

After careful review of the Draft EIR, we ask consideration of the following points: *(for ease of description, some sections have been reproduced below. Requested additions are typed in bold, text removals in strikeout, and notes to EIR editors in italics)*

16-2 **SECTION 1 EXECUTIVE SUMMARY**

Many significant points of clarification and requested amendments to **Section 2 – Section 5** are listed below. It is imperative that any changes to those sections are reflected in **Section 1.8** and **Tables 1-2 and 1-3** respectively.

16-3 **SECTION 2 INTRODUCTION**

Several agencies that have been participants in the Stakeholder process for the San Gabriel River Master Plan were inadvertently left off of **Table 2-1.**

Please add: **California Department of Health Services** under State Government
Please add: **Greater Los Angeles County Vector Control District** under County/Regional Governments

16-4 **SECTION 2.7 AREAS OF KNOWN CONTROVERSY**

The implementation of habitat enhancement projects along the San Gabriel River have the potential to increase risks to public health from a variety of vectors – not just mosquitoes (i.e. fleas, ticks, black fly, midges, and rodents) *(please note: the common name of the insect is correctly written as two separate words)* In addition, improving habitat for wildlife in close association to urban development increases the risk of vector-borne disease transmission to the public. *Please amend the third bullet point to read:*

- Potential impact on public health from increase in mosquito **and other vector** breeding conditions associated with the creation of constructed wetlands**, surface or underground stormwater capture/treatment devices,** other ~~surface~~ water features**, and corridor enhancement projects in close vicinity to urban development.**

16-5 **SECTION 4.5 HAZARDS AND HAZARDOUS MATERIALS**

As above, the introductory paragraph should be *amended to read:*

> "Hazards and hazardous materials… public health hazards from insect **and other vector species**, …"

16-6 **SECTION 4.5.1.4 INSECT VECTORS**

As above, many other arthropod and vertebrate species can be vectors of human disease or a source of significant discomfort. *Please amend this title to read:*

> **4.5.1.4 Vectors of Public Health Concern**

The informational overview for this section inadequately addresses the seriousness of vector-borne disease transmission. *We recommend the text be amended as follows:*

~~Uncontrolled~~ Populations of ~~insect~~ vectors such as mosquitoes ~~can~~ pose a public health hazard by transmitting viruses and other disease-causing agents. In addition, ~~uncontrolled populations of~~ vectors can be a nuisance or source of **significant** discomfort for humans.

Division 3, Chapter 1 of the California Health and Safety Code defines a vector as any animal capable of transmitting the causative agent of human disease or capable of producing human discomfort or injury, including, but not limited to, mosquitoes, flies, mites, ticks, other arthropods, and rodents and other vertebrates.

California Health & Safety Code §2000-2067 gives mosquito and vector control agencies broad authority and substantial powers aimed at protecting public health. Parties responsible for any activity that supports the development, attraction, or harborage of vectors, or that facilitates the introduction or spread of vectors may be liable for civil penalties up to $1,000 per day plus the cost of abatement.

16-6 (Cont'd)

The Master Plan Concept Design Studies and other future projects may include new or modified water features such as stormwater treatment wetlands. Mosquitoes are the vector of primary concern for the Master Plan, since they require aquatic habitats ~~for breeding~~ **to complete their lifecycle** and are known to transmit agents that cause disease in humans **and other animals. Wetlands attract mosquitoes as well as resident and migrant bird species perpetuating bird-mosquito disease transmission cycles. Infected mosquitoes can disperse up to ten miles (depending on species) from these aquatic habitats into adjacent residential neighborhoods thereby increasing disease risks to surrounding communities and the visiting public.**

Additional **aquatic** vectors of concern for the Master Plan are **black flies** and midges, which also require aquatic habitats for breeding and ~~can be~~ **are** a **public** nuisance. ~~However,~~ In the U.S., **black flies** do not generally carry disease-causing agents **to humans, however painful bites from some species can cause extensive swelling, allergic reaction, and secondary infection. Most** midges do not bite, **however, large populations are known to cause allergic reactions and have negative economic impacts on local residents and businesses.**

Finally, various rodent and larger wildlife species and the parasites they harbor can cause disease in humans and other animals. In California, over 45% of human diseases reportable to the California Department of Health Services are diseases of animals transmissible to people (zoonoses) (Los Angeles Department of Health Services *Zoonoses Manual* Updated: 1/6/2005, available at:

http://search.ladhs.org/vet/guides/vetzooman.htm#Zoonoses%20Wildlife). **Increasing corridor/habitat connections will, by design, increase movement and dispersion of wildlife adjacent to and into urban areas thereby increasing human-wildlife interactions and disease transmission risks to the public.**

Vector control **and disease surveillance** in the Master Plan study area is carried out by three vector control districts, ~~and~~ **the City of Long Beach Vector Control Program, and Los Angeles County Department of Health Services, Vector Management Program**. ~~which are agencies created under the California Health and Safety Code.~~ The vector control agencies and their respective service areas within the Master Plan study area are listed below and shown in **Figure 4.5-1**:

Please include the following agency in table 4.5-1

- **County of Los Angeles Vector Management Program – entire county area.**

16-6 (Cont'd)

(the information below relating to WNV has been updated)

Mosquitoes. In California, there are several species of mosquitoes known to transmit agents that cause mosquito-borne diseases, such as **West Nile virus**, western equine encephalomyelitis, St. Louis encephalitis, and malaria. **The primary mosquito species in urban Los Angeles County responsible for disease transmission to humans (*Culex spp.)* are also the most abundant and are considered 'bridge vectors' due to their predilection for biting both birds and humans thereby serving to vector avian encephalitis-causing viruses to humans.**

Since the introduction of the West Nile virus into the Western Hemisphere in 1999, this mosquito-borne virus has spread ~~to most of~~ **throughout** the continental United States, with human cases detected in 47 states and the District of Columbia (CDC, 2004). According to the California Department of Health Services (CDHS), ~~612~~ **830** human cases ~~have been~~ **were** reported in California in 2004, ~~(as of **March 17, 2005**),~~ including ~~245~~ **331** cases in Los Angeles County and ~~36~~ **64** cases in Orange County. **In 2004, t**here ~~have been 17~~ were 28 West Nile virus-related fatalities ~~to date~~ in California (in Los Angeles, Orange, San Bernardino, Riverside, Glenn, **Kern, and Tehama** counties) (CDHS, 2004). According to the ~~CDHS~~ **CDC** (2004), Most people who are bitten by a mosquito ~~with~~ **carrying** the West Nile virus will not become ill. People who do ~~become ill~~ may experience ~~mild to~~ moderate **to significant** ~~flu-like~~ **illness exhibiting** symptoms such as fever, rash, headache and body ache **with symptoms lasting a few days to several weeks**. It is estimated that less than 1 percent of the people who are infected with the virus become severely ill and require hospitalization. **Severe illness often results in long-term or permanent neurologic**

damage and can be fatal. The elderly and people with compromised immune systems are particularly susceptible to severe illness caused by the virus. **West Nile virus and other encephalitis-causing viruses are endemic to California and will continue to be transmitted and cause disease in humans and other animals.**

Mosquitoes require standing water to breed and complete the life cycle, which takes about 7 days during warm weather. Mosquito control methods include elimination of potential breeding sources through water and vegetation management, **public education and source reduction**, ~~and~~ **the** use of biological controls and chemical insecticides, **and legal abatement (California Health & Safety Code §2000-2067).**

16-6 (Cont'd)

Water and Vegetation Management. Water and vegetation management to minimize areas of stagnant water **and improve water quality are** the first considerations for mosquito control in constructed wetlands and other water features. Overgrowth of emergent vegetation (e.g., cattails), which can create stagnant water around the margins of constructed wetlands and lakes, can be prevented by periodic removal of vegetation, **the use of herbicides**, and/or by managing water depth and flow patterns. In addition, water motion can be encouraged by allowing the water to be exposed to wind, altering water depth, and/or by controlling flow patterns.

For example, the 45-acre San Joaquin Marsh on San Diego Creek (Orange County) was designed so that portions of the marsh can be drained selectively, and a system of water pumps and weirs are used to manage the water levels for mosquito control (Denger and Brandt, pers. comm., 2003). At the Rio Hondo Coastal and San Gabriel Coastal Spreading Grounds, LADPW removes vegetation periodically to minimize areas of stagnant water. **While helpful, these solutions do not mitigate all mosquito problems and routine mosquito surveillance and control is required. In addition, densely vegetated areas (such as the San Joaquin Marsh) often require adult mosquito suppression due to the large numbers of mosquitoes produced (pers. comm. Richard Meyer, OCVCD, 2005).**

Mosquitofish. Mosquitofish (*Gambusia affinis*) are small, guppy-like fish that feed on mosquito larvae, and are stocked in ponds, lakes, and other water features as a safe and effective **biological** ~~mosquito~~ control **method**. ~~However,~~ **Some research indicates that** mosquitofish may disrupt ~~the~~ aquatic ecosystems if introduced into natural streams, lakes, or ponds, **however the alternative need for increased chemical control measures must be weighed if their use is questioned.**

Enhancing populations of natural aquatic mosquito predators (dragonfly & damselfly larvae, aquatic beetles, native fish) in lieu of mosquitfish, although beneficial, will not suffice to mitigate mosquito concerns. Although mosquitofish are present throughout the U.S. in natural bodies of water, many Districts advocate only placing mosquitofish in closed systems to alleviate potential concerns.

Bti/Bs. *Bacillus thuringiensis* var. *israelensis* (Bti) **and *Bacillus sphaericus* (Bs)** ~~and is a~~ **are naturally occurring soil-borne** bacteria that affect the digestive systems of mosquito larvae, and ~~is a~~ **are** commonly used larvicides. Bti/**Bs** can be broadcast onto the water surface by a hand crew or from a vehicle **or** boat, depending on environmental conditions and site access. Bti/**Bs** is ~~species~~-highly specific and does not pose risks to wildlife, non-target species, or the environment (EPA, 2002a).

Methoprene. **Methoprene is a mosquito juvenile growth hormone mimic that artificially extends the larval stage of mosquitoes and prevents normal maturation to adulthood. Methoprene is often used in larval mosquito control (sometimes in combination with Bti) and is a highly specific, targeted option for mosquito control. Methoprene has the added benefit of maintaining mosquito larvae as a food source for native fish and invertebrates while still fulfilling public health objectives.**

Although other products are available for immature mosquito control, the above are the most environmentally sensitive and most likely to be used in naturalized systems in the Los Angeles basin.

16-6 (Cont'd)

Adult Mosquito Control. When the above ~~non-chemical~~ control measures are infeasible or ineffective for reducing the adult mosquito population, adulticides (chemicals used to control adult mosquitoes) may be used. Chemical adulticides are applied by **hand-held,** truck-mounted**,** or aircraft-mounted sprayers ~~near population centers~~. Chemical adulticides are not species-specific and can have adverse effects on non-target insects. In addition, **both larvicide and adulticide** applications ~~of chemical agents~~ can lead to resistance in the vector population. A **sometimes suggested** biological control method for adult mosquitoes is installation of nesting or roosting houses to attract insectivorous bats or birds that feed on adult mosquitoes. **This option has very limited overall value and may artificially increase bat populations risking rabies transmission in Los Angeles and Orange Counties.**

Black flies. Black flies are common in the San Gabriel Valley, but are not known to transmit **human** disease locally. They can, however, be a nuisance by causing **allergic reaction,** discomfort and irritation to humans due to their biting habits and/or presence in large numbers (i.e., flying into eyes, ears, and noses). In two of the three species that are locally present, females will bite mammals, including humans. Black flies breed in oxygenated, flowing water, such as dam spillways, rivers and streams with rocky beds, and pipe seepages. Black fly populations are present ~~during spring, summer, and fall,~~ **throughout the year,** peaking in late spring and summer.

Black fly control is typically performed on ~~larvae~~ **immature stages** rather than adults. The primary method is to interrupt the flow of water for 24 to 48 hours so that the larvae are deprived of oxygen and/**or** desiccate. If this is not feasible or

ineffective, Bti may be applied. For example, at the San Gabriel Canyon Spreadin Grounds, the SGVMVCD works with LADPW to periodically shut off the outflo from Morris Dam during weekends to dry out black fly larvae. This allows the District to minimize the need to apply Bti (Fujioka, pers. comm., 2003). Black fly adults tend to be difficult to **control** ~~eradicate because they resist airborne pesticid~~ (SGVMCD, 2003a).

Midges. Midges are widespread in the San Gabriel Valley. Though they are often confused with mosquitoes, midges do not bite ~~or cause disease~~ **but may contribu to allergies and large populations can result in economic impacts**. Midges can found hovering in swarms on warm summer evenings. ~~Like black flies,~~ They bree **standing and** flowing waters, and ~~prefer the water~~ **can often be found in watercourses and** storm drain systems. ~~In the San Gabriel Valley~~, **Throughout t Master Plan area,** control measures are undertaken when there are ~~extremely~~ hig numbers of adult insects. The larvicidal agents used for mosquito control are ~~also~~ **generally** effective for midges (SGVMCD, 2003a).

We request the addition of the following section:

16-6 (Cont'd)

Fleas, Ticks, and other Vectors of Concern. Changes in vertebrate and invertebrate populations through either natural or man-made perturbations threaten to increase public health risks. In California, 45% of the 83 human diseases reportable to the California Department of Health Services are zoon (animal diseases transmittable to people). Many of these diseases are present southern California, require diligent monitoring, and in many instances have resulted in human disease.

High raccoon densities in urban environments (a result of abundant anthropogenic food sources) increase the risk of transmission of raccoon roundworm (*Baylisascaris procyonis).* This is a density dependent disease an the cause of serious or fatal larval migrans in humans and animals.

Lyme disease (LD) is a significant vector-borne disease in California, and although rare in Los Angeles County, has been identified (LACDHS, 2004). tick species responsible for its transmission is found in our local foothills. Th predominant host of larval ticks (*Peromyscus spp.)* commonly inhabit disturb or transitional coastal sage scrub habitat. Both larval and adult ticks are capable of traveling into urban areas via animal movements. Researchers in Maryland found a strong correlation between increased LD risk and vegetate corridors through urban development (Frank, et.al, 2002).

(Reference: Frank C, Fix AD, Peña CA, Strickland GT. 2002. Mapping Lyme Disease Incidence for Diagnostic and Preventive Decisions, Maryland. Emergin

Infectious Disease, April 2002 Vol.8, No.4: 427-429. Available at URL: www.cdc.gov/eid.)

Probably of greater concern is the risk of plague and murine typhus in southern California. Plague is detected in Los Angeles County wildlife nearly every year with ground squirrels (and their associated fleas) being the most important source of human exposure. Although rare, human plague cases do occur in this area (LACDHS, 2000). A suburban cycle of murine typhus has been identified involving opossums, rat fleas, and cats that is readily transmittable to humans. Ten human cases were reported on average each year from 1993-2002 (Ramirez, 2003).

16-6 (Cont'd)

(Reference: Ramirez, Joe. 2003. Murine (Endemic) Typhus in Los Angeles County. Mosquito & Vector Control Association Southern Region Continuing Education Program: #03-00240).

Increasing interactions (and disease transmission) between wildlife, domesticated animals, and humans is of growing concern in urban and suburban areas. Surveillance and control methods vary and are typically undertaken if disease activity is detected and the public's health is at risk. Reducing human-wildlife interactions are best accomplished by discouraging overpopulation due to abundant food and water resources and with extensive educational outreach geared towards reducing "keeping wildlife wild".

4.5.2 SIGNIFICANT CRITERIA

Please edit the last bullet point to read:

16-7

- Created ~~insect~~ vector breeding conditions in an amount that would require increased levels of mosquito **and other vector** abatement ~~programs~~ to **control** ~~maintain~~ ~~mosquito~~ **vector** populations ~~at pre-project~~ **below** levels **at which public health may be at risk**

4.5.3 IMPACTS OF ADOPTING THE MASTER PLAN ELEMENTS

16-8 In the second paragraph, second sentence, *please edit to read* "mosquito **and other vector** breeding ~~areas~~ **habitats and creation of ecological habitats conductive to mosquito-borne disease propogation**... that retain water (...) **or increase animal movements into urban areas**"

16-9 *** Please Note: Although we truly appreciate the considerations in the current Draft EIR to the public health issues raised, we are concerned that any and all mitigation*

16-9 (Cont'd)

measures still may not reduce potentially significant impacts to less than significant as outlined. In addition, environmental conditions beyond our control routinely increase risks of vector-borne disease to humans and can not be truly factored into this equation.

Table 4.5-2
Habitat Element section: the "Potentially Adverse:" section *must be updated* to identify the other vector-borne disease and corridor enhancement concerns noted above.

Also add: **Under the California Health and Safety Code Division 3, Chapter 1 §2000-2067, parties responsible for any activity that supports the development, attraction, or harborage of vectors, or that facilitates the introduction or spread of vectors may be liable for civil penalties up to $1,000 per day plus the cost of abatement.**

In addition, the information related to vector potential should be a separate and distinct paragraph not tied to the bird/wildlife strike hazard information.

16-10

Open Space Element: *please incorporate the following information* into the "Potentially Adverse" section:

> **Increasing open space elements within the urban matrix has the potential to increase vector populations and human-wildlife interactions within and surrounding these projects.**

Flood Protection Element: *please incorporate the following information* into the "Potentially Adverse" section:

> *Please edit* the first sentence in the third paragraph to read: "Projects with constructed wetlands… and other **above and below ground** facilities designed…~~could~~ **would** impact ~~on~~ public health **in violation of California Health and Safety Code §2000-2067."**

Water Supply and Water Quality Element: *please incorporate the following information* into the "Potentially Adverse" section:

> The second sentence of the second paragraph should be *amended to read*: "Maintenance activities…sediments **and potentially large amounts of aquatic vegetation…"**

16-11

4.5.4.1 HAZARDOUS MATERIALS
Disposal of Sediments…

> *Please amend* sentence three to read: "Maintenance activities…removal of sediments **and aquatic vegetation…"**

16-12

4.5.4.2 BIRD/WILDLIFE AIRCRAFT STRIKE HAZARD

The assumption that bird populations would not substantially increase in areas where wetland habitat is created must be reevaluated. Birds, especially migratory waterfowl, will take advantage of newly created habitat due to the critical foraging opportunities they will afford. One needs only review data for the Salton Sea, and Whittier Narrows areas for examples.

16-13

4.5.4.3 INSECT VECTORS

Please amend this heading to read: "**Vectors of Public Health Concern"** for uniformity with **Section 4.5.1.4**

This section discusses only "uncovered" stormwater detention devices that may be utilized at project sites. *This EIR must also specifically address "covered" or underground stormwater capture and treatment devices* as they are a very commonly selected in urban development and may be considered for many projects incorporating buildings and facilities into their project. These units additionally pose risks to public health as many are designed to hold water in a vault or sump unit indefinitely until pumped annually or bi-annually during routine maintenance. These devices have the potential to breed tremendous numbers of mosquitoes and pose significant risks to public health.

In addition, although your review found that many of these "uncovered" stormwater retention facilities pose low risks for mosquito reproduction, we ask you to review the following documents.

Managing Mosquitoes in Stormwater Treatment Devices, Publication 8125, 2004.

Managing Mosquitoes in Surface-Flow Constructed Treatment Wetlands, Publication 8117, 2003.

Both are available online at http://anrcatalog.ucdavis.edu.

Supporting research can also be provided that shows many devices *designed* to drain rapidly, or rarely hold water, often fail to drain as designed and breed tremendous numbers of mosquitoes as a result of the routinely high nutrient/organic content of stormwater runoff. We ask you to seriously reconsider the vector potentials of both covered and uncovered stormwater treatment devices.

16-14

Catch Basins. *Please edit* the second sentence to read: "Catch basins ~~are typically~~ **must be** designed so that **all** runoff…"

16-15

Shallow depressions… *Please edit* the third sentence to read: "During large storms… ~~but would likely~~ **must be designed to infiltrate into the ground**

16-15 (Cont'd)

within 72 hours~~. In addition, stormwater would be present primarily in winter, when mosquitoes are less active~~. *(note: we have various species of mosquitoes that breed and appear to transmit WNV year-round in southern California)* **Irrigation in the vicinity has the potential to maintain standing water in these basins for extended periods of time.**

Please replace the last sentence with: **Improperly constructed or poorly managed depressions have the potential to create mosquito-breeding conditions.**

16-16

Retention Basins. *Please remove* the second and third sentences as this is often not the case. The next sentence should read: "In the event… periods. ~~depending on the basin capacity~~ **Additionally, inadequately sloped edges have the potential to support dense growths of emergent vegetation unless properly maintained.**" In the last sentence, please replace "some" with "**the**".

16-17

Stormwater Wetlands. *Please amend the* second sentence to read: "~~However, in some areas,~~ **Regardless, …** wetland vegetation, **pump failure, or problems with design or maintenance.** Therefore, stormwater wetlands have ~~some~~ **significant** potential…"

16-18

Permanent Lakes. *Please add* the following sentence to the end of paragraph one: "**Lakes and ponds with shallow sloped edges will support vegetation which is conducive to mosquito reproduction and can make control measures ineffective if too dense."**

16-19

*** Please Note: Any and all possible mitigation measures still may not reduce potentially significant impacts to less than significant as outlined. In addition, environmental conditions beyond our control routinely increase risks of vector-borne disease to humans which can not be truly factored into this equation (i.e. new pathogen introductions such as WNv, and weather).*

16-20

Please remove sentence two in paragraph three and replace with: **Breeding of any vectors of public health significance as defined in California Health and Safety Code Division 3, Chapter 1 §2000-2067 is a public nuisance.**

16-21

In the final paragraph in this section, it might be good to note yellow jackets, fleas, ticks, and wild rodents into the list of wildlife hazards.

4.5.5.2

16-22

INSECT VECTORS. *Please amend this heading to read: "***Vectors of Public Health Concern"** for uniformity with **Section 4.5.1.4**

16-23 In the last sentence of the introductory paragraph, *Please replace* "insect" with "**all**"

MP-H1 please replace "district" with the more appropriate term "**agency**" in the first sentence.

- *Please amend bullet one to read:* "Design to… stagnant water **as specified by the vector agency. Ensure slope characteristics are such that dense stands of emergent vegetation will not develop.** (Perhaps a reference here to *Managing Mosquitoes in Surface-Flow Constructed Treatment Wetlands* referenced above)
- *Please amend bullet three to read:* "Work with… mosquito-**eating** fish…"
- *Please amend bullet four to read:* "Provide… site access **to vector control agency specifications…"**

16-24

- *Please eliminate this bullet.* This is an unsound solution that may in itself pose public health risks from diseases such as rabies. Enhancement of habitat quality will result in increased natural predator populations that are within the carrying capacity of the environment to support.
- *Please add a bullet to read:* **"Stormwater retention facilities/devices must be designed to drain completely within 72 hours and be equipped with the ability to be dewatered rapidly if needed."**
- *Please add a bullet to read:* **"Incorporate measures into project designs that serve to educate the public about wildlife safety and vector-borne disease issues, prevent wildlife-human interactions, and prevent wildlife access to trash and unnatural food and water sources that are likely to result in unnatural population levels.**
- *Please edit the last bullet to read*: "Incorporate… project funding or ~~develop a plan for~~ **implement a secure and** reliable funding source for vector management activities **through the life of the project."**

CD-H1 *Please amend bullet points as in **MP-H1**.*

SECTION 4.6 HYDROLOGY AND WATER QUALITY

16-25 As noted above, any project utilizing stormwater capture devices or treatment options that hold water longer than 72 hours risk breeding mosquitoes and endangering public health. The California Health and Safety Code Division 3, Chapter 1 §2000-2067, states that parties responsible for any activity that supports the development, attraction, or harborage of vectors, or that facilitates the introduction or spread of vectors may be liable for civil penalties up to $1,000 per day plus the cost of abatement. These concerns should be addressed or cross referenced with the information provided above.

16-26

SECTION 4.9 PUBLIC SERVICES AND UTILITIES

Implementation of projects in the Master Plan will impact mosquito and vector control districts in the following way:

- Underground utility vaults (for cable, telephone, & electricity) mandated by current FCC regulations often retain standing water and breed mosquitoes thereby risking public health (pers. comm. Charles Myers, CA DHS, 2005*) (I also have a CA DHS study from 1975(?) that I can provide as reference).* This concern must be addressed in this section.

16-27

SECTION 5.3 CUMULATIVE IMPACTS

The recent increase in both public support and funding to restore watersheds, increase open space, and improve habitat connectivity has triggered interest in a regional approach to planning and project implementation often spanning various jurisdictions and involving many entities. These efforts will most certainly result in more successful projects but will require a more thorough evaluation of all possible implications.

- **Section 5.3.2.4** incorrectly states that none of the related projects (not included in the Master Plan) identified would create mosquito habitat. Projects (outlined in the Master Plan, and related) will incorporate either above ground water features and/or below ground stormwater treatment devices (as required by law for projects larger that 1 acre). *Therefore, there is a potential for cumulatively considerable risks to the public's health due to vector reproduction and disease transmission resulting form the implementation of the Master Plan.*

- In California, over 45% of human diseases reportable to the California Department of Health Services are diseases of animals transmissible to people (zoonoses). Increases in habitat quality and connectivity may pose *cumulatively considerable risks to public health resulting from increased animal movement into and through densely populated urban areas.*

As requested in the Notice of Document Availability, the contact for further inquiries related to the above mentioned Comments on the Draft EIR for the San Gabriel River Corridor Master Plan is:

Kelly Middleton
Public Information Officer
San Gabriel Valley Mosquito & Vector Control District
1145 N. Azusa Canyon Road
West Covina, CA 91790
626.814.9466
kmiddleton@sgvmosquito.org

DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE SAN GABRIEL RIVER CORRIDOR MASTER PLAN

SIGNATURE PAGE

I, Steve West, District Manager of the San Gabriel Valley Mosquito and Vector Control District, do hereby certify the foregoing Response to the Draft Environmental Impact Report for the San Gabriel River Corridor Master Plan.

We are interested in assisting the County of Los Angeles Department in achieving its goals while providing maximum protection to the public's health. We appreciate the opportunity to provide input in this process and are available for consultation and request the opportunity to participate and serve on future committees

Steve West
District Manager

05/04/05
Date

Minoo Madon
Scientific Technical Services Director
Greater Los Angeles County Vector Control District

05/05/05
Date

Charles Myers
Supervisor
California Department of Health Services
Vector-Borne Disease Section

4/29/05
Date

Rydman, Rama

From: Alarcon, Christian [CAlarcon@lacsd.org]
Sent: Thursday, May 05, 2005 2:02 PM
To: Moreno, Martin
Cc: Rydman, Rama; Rincon, Martha; Gasca, Monica
Subject: Comments on Draft San Gabriel River Corridor Master Plan

Marty,

Comment Letter No. 17

The following presents the Districts' comments on the Draft San Gabriel River Corridor Master Plan and Draft Program Environmental Impact Report.

Comments on Draft San Gabriel River Corridor Master Plan

17-1 The Districts request that the plan refer to the "County Sanitation Districts of Los Angeles County" or "Sanitation Districts".

Section 2.3.1 Biological and Physical Resources

17-2
- Page 2-34: The second paragraph under the Spreading Grounds heading states that "the quantity of reclaimed water used for recharge each year is governed by waste discharge permits." This statement should be corrected to say that recharge is governed by water reclamation requirements.

17-3
- Page 2-37: The Districts believe that the available reclaimed water flow shown on Map 2-11 should be corrected for the Pomona WRP. As discussed on Page 2-38, nearly 100% of the reclaimed water is used either for direct reuse or for groundwater recharge. The Pomona WRP flow should be listed as zero to be consistent with the flow shown for the Whittier Narrows WRP, which also reuses nearly 100% of the flow. Also, the spreading ground should be labeled on the map.

17-4
- Page 2-38: The Districts would like to clarify that the Pomona WRP discharges to the South Fork San Jose Creek, which is tributary to the San Jose Creek.

17-5
- Page 2-42: The beneficial uses for the Main Stem of the San Gabriel River (Unit 405.43) in Reach 2 do not include the Wetlands Habitat use. It should be changed to Spawning use.
- Page 2-42: The beneficial uses for the San Gabriel River (Unit 405.41) in Reach 4 should include the Warm Freshwater Habitat use as an intermediate use.
- Page 2-42: The beneficial uses listings are not consistent with Table 4.6-9 of the Draft Program Environmental Impact Report (page 4.6-18).
- Page 2-44: The impaired reaches listings are not consistent with Table 4.6-13 of the Draft Program Environmental Impact Report (page 4.6-24).

Section 3.7.2 River Corridor Policies and Programs

17-6
- Page 3-40: The Districts request that the caption for Figure 3-48 be corrected. It should read, "San Jose Creek Water Reclamation Plant".

Section 3.8.2 Woodland Duck Farm

- Page 3-59: The Districts request that Map 3-13 be corrected. The label referring to the use of reclaimed water at the golf course should read, "San Jose Creek Water Reclamation Plant".

Section 3.8.4 Lario Creek/Zone 1 Ditch

17-7
- Page 3-64: The second paragraph under the Opportunities heading describes the Zone 1 Ditch as "a functional, human made 85-mile waterway." The Districts do not believe that the waterway is 85-miles long and should be corrected.

17-8
- Page 3-65: The second paragraph under the Design Concepts heading should include a reference to the "San Jose Creek Water Reclamation Plant".

17-9
- Pages 3-66 and 3-67: The Districts request that Maps 3-16 and 3-17 for the Lario Creek Concept Design include the Whittier Narrows WRP discharge pipeline from the treatment plant to the San Gabriel River. The construction plans showing the location of this pipeline have been presented to North East Trees.

Section 3.8.5 El Dorado Regional Park

17-10
- Page 3-69: The last paragraph under the Challenges heading states that "using reclaimed water coming directly from the treatment plant is not acceptable for lakes that are stocked with fish, according to U.S. Department of Fish and Game standards." The Districts are unsure as to what Department of Fish and Game guidelines the document is referencing and request that this be clarified.

17-11
- Page 3-69: The second paragraph under the Design Concepts heading states that "reclaimed water would need to be pumped up into the wetlands area to be cleansed of nutrients before flowing into the second lake." The WRPs consistently comply with NPDES limits for nutrients, which are intended to protect all beneficial uses. Wetlands do provide additional nitrogen removal that could improve water quality but not because it is necessary.

Section 4.9 Flood Channel Enhancements

17-12
- Page 4-21: The first paragraph under the Spreading Grounds heading should clarify that the San Gabriel Canyon Spreading Grounds are located in Azusa.

Comments on Draft Program Environmental Impact Report

17-13
The Districts maintain facilities along the San Gabriel River that may be affected by individual projects proposed in the Draft San Gabriel River Corridor Master Plan. Approval to construct improvements within a Districts' sewer easement and/or over a Districts' sewer is required before construction may begin. The Districts request to review proposed projects in order to determine whether or not Districts' truck sewers will be affected.

Section 4.6.1.1 Surface Water Features

17-14
- Page 4.6-9: The Districts request that Table 4.6-4 be corrected. The Pomona WRP permitted capacity should be identified as 15 MGD and not 13 MGD. The Pomona WRP discharges to South Fork San Jose Creek, which is tributary to San Jose Creek. The San Jose Creek WRP can also discharge to the San Gabriel River, downstream of the confluence with San Jose Creek, as well as in San Jose Creek. Footnote 1 for Table 4.6-4 should also be corrected to state that the San Jose Creek WRP can discharge to the San Gabriel River.

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085

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Orange County Transportation Authority: Lou Correa, County of Orange

Riverside County Transportation Commission: Robin Lowe, Hemet

Ventura County Transportation Commission: Keith Millhouse, Moorpark

May 6, 2005

Mr. Marty Moreno
County of Los Angeles Department of Public Works
Watershed Management Division
P. O. Box 1460
Alhambra, CA 91802-1460

Comment Letter No. 18

RE: SCAG Comments on the Draft Program Environmental Impact Report for the San Gabriel River Corridor Master Plan - SCAG No. I 20050137

Dear Mr. Moreno:

Thank you for submitting the Draft Program Environmental Impact Report for the San Gabriel River Corridor Master Plan to the Southern California Association of Governments (SCAG) for review and comment. SCAG's responsibility as the region's clearinghouse per Executive Order 12372 includes the implementation of California Environmental Quality Act (CEQA) §15125 [d]. This legislation requires the review of local plans, projects and programs for consistency with regional plans.

It is recognized that the proposed project area is a 1-mile wide corridor along 58 river miles of the San Gabriel River that includes 19 cities as well as unincorporated areas of Los Angeles and Orange counties, and encompasses a total of approximately 58 square miles. The Master Plan is a consensus-based document the recognizes and addresses a renewed interest in recreation, open space, and habitat, while also seeking to enhance and maintain flood protection, water conservation benefits, along with existing water rights.

18-1

SCAG staff has evaluated your submission for consistency with the Regional Comprehensive Plan and Guide (RCPG) and the Regional Transportation Plan (RTP). Section 6.3 of the DEIR provides a thorough discussion of the proposed Project's lack of conflict with the Air Quality Management Plan, and its consistency with local zoning and general plans, and the SCAG Regional Comprehensive Plan and Guide (RCPG). In addition, Table 6-3 cites SCAG's RCPG policies with side by side corresponding project consistency statements.

We sincerely appreciate your thorough review of SCAG's regional guidelines and the accompanying discussion of your project's consideration as well. This approach to discussing consistency or support of SCAG policies is commendable and we appreciate your efforts.

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18-1 (Cont'd)

Based on the information provided in the Draft EIR, we have no further comments. A description of the proposed Project was published in the April 1-15, 2005 Intergovernmental Review Clearinghouse Report for public review and comment.

If you have any questions, please contact me at (213) 236-1852. Thank you.

Sincerely,

April Grayson
Associate Regional Planner
Intergovernmental Review

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Maryann Reyes
Director of Public Affairs

May 4, 2005

Comment Letter No. 19

Mr. Marty Moreno
Watershed Management Division
Department of Public Works
County of Los Angeles
900 South Fremont Ave.
Alhambra, CA 91803

SUBJECT: Southern California Edison Company Comments on the San Gabriel River Corridor Master Plan Draft Program Environmental Impact Report (March 2005)

Dear Mr. Moreno:

On behalf of Southern California Edison Company (SCE), I am pleased to submit the comments contained herein in response to Los Angeles County's San Gabriel River Corridor Master Plan Draft Program Environmental Impact Report (DEIR) dated March 2005. We appreciate the opportunity to submit comments on this important effort.

19-1 SCE, the County of Los Angeles, and other involved parties have worked well together over the years on projects of mutual interest along the river corridor and SCE rights-of-way and which are compatible with SCE's vital operating system requirements. SCE owns or controls a significant portion of the property along the entire San Gabriel River corridor; its primary use is for SCE's operating systems, transmission lines and related facilities. Just as with critical lands the County owns and manages for important public facilities and infrastructure, SCE must be equally protective of its critical operating system property.

SCE is committed – in the future as it has been in the past – to working closely with the County and other parties to consider compatible and appropriate uses within its rights-of-way. Some projects (described below) are viable and fit well with SCE's system operating requirements. Other projects, however, may not be suitable for or compatible with SCE's property and its operating requirements. In either case, SCE urges project proponents to communicate early in the conceptual planning stage to ensure a project is appropriate for the site, and work in close collaboration with SCE thereafter to ensure a successful outcome for all involved parties.

SCE's comments to the Master Plan and DEIR are divided into three sections: 1) SCE's Operating System and Secondary Land Use Program Objectives, provided for background; 2) SCE's and Los Angeles County's Shared Goals for a Balanced River Plan; and 3) SCE's Recommended Revisions to specific sections of the Master Plan

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and DEIR. The comments contained herein supersede those SCE submitted on any previous documents related to the Master Plan or related environmental documents. We anticipate that comments SCE submits to either the Master Plan or DEIR will be reflected consistently in the final versions of both documents.

1) SCE's Operating System Needs and Secondary Land Use Program Objectives.

SCE's rights-of-way along the San Gabriel River corridor and throughout its entire 50,000-square-mile central, coastal, and southern California service territory are the backbone of its electrical power operation and transmission system and are vital to providing electric service to hundreds of communities and millions of customers. The safe and reliable operation of its electrical system is SCE's paramount responsibility and obligation. With demand for electricity increasing throughout southern California and the entire state, and with increasing state legislative and regulatory requirements imposed upon us to meet that increasing demand, SCE must meet its stewardship and regulatory obligation to ensure that its existing rights-of-way corridors are available for safe and efficient operation of these transmission lines and future expansion of its facilities and electric transmission lines.

19-2

SCE is committed to a balance of uses within our rights-of-way to help SCE and the County achieve our respective goals. SCE's Secondary Land Use Program – where certain low-intensity, non-utility uses are allowed in compatible locations within our rights-of-way – has been in existence for over 50 years. Though it involves a relatively small proportion of SCE's total operating property, this program was established to benefit our ratepayers by lowering our operating costs and, where possible, to produce from third parties extra revenue that may offset still more costs, and thereby help keep SCE's electric rates lower than they otherwise could be.

SCE's Secondary Land Use Program objectives are designed to achieve a balance of uses, in particular low-intensity, green/passive recreational uses, and low-intensity economic development uses that can provide desirable and viable benefits for local residents, neighborhoods and communities, as well as to SCE and its ratepayers. SCE's Secondary Land Use Program is guided by California Public Utilities Commission regulations (General Order No. 69-C), which define the need to protect utility system operations, and provide guidance on overall uses of the right-of-way, the types of agreements allowed, and related provisions.

2) SCE and Los Angeles County's Shared Goals Support a Balanced San Gabriel River Master Plan.

SCE and Los Angeles County share many common goals for secondary uses of SCE's property along the San Gabriel River. The County has articulated a number of proposed projects in the draft Master Plan and DEIR, many of which are compatible with SCE's requirements, but some of which may not be suitable and are described in the next section. To ensure full understanding and further the spirit of cooperation, SCE and the County should discuss why certain projects may not be compatible.

19-3

Based on SCE's operating requirements and obligations, appropriate and compatible uses generally include the following:

- Low-Intensity, Green/Passive Recreational Uses, such as horticultural and agricultural; parks; and hiking and non-motorized biking trails
- Low-Intensity Economic Uses, such as vehicle, boat and recreational vehicle parking; material, equipment and self-storage; and light industrial facilities

In addition to SCE's approach, key elements of the County's Master Plan and DEIR support this collaborative and balanced approach. That language states that the "Master Plan was intended to respond to three major goals of habitat, recreation and open space identified by the County of Los Angeles Board of Supervisors...as well as the need for economic development..."

19-3 (Cont'd)

There are approximately 393 acres of property along the river corridor that SCE owns in fee or for which it has acquired an easement. It is important to note that the terms of our easements usually impose restrictions on the other uses to which the property's fee owner may put that property, again to preserve SCE's operational access to the property and the potential need to develop new facilities. According to the County's draft Master Plan and DEIR, SCE owns or leases approximately 85 percent of the open space land along the San Gabriel River. Certain sites on SCE's rights-of way may be compatible with and appropriate for low-intensity, green/passive recreational uses, while others may be compatible with and appropriate for low-intensity economic uses, which can also possibly include some limited portion of the property for hiking and biking trails, trail access points and other green/recreational uses where appropriate and compatible.

To assist in project conceptual design and planning, and moreover to ensure projects are compatible with SCE's rights-of-way and system operating requirements, SCE has developed the document enclosed with this letter entitled, "Southern California Edison Rights-of-Way Constraints Guidelines." The Guidelines are designed to provide overall guidance and specific design criteria that should be factored into any proposed project. SCE encourages those who wish to propose projects within SCE rights-of-way to review the Guidelines early; SCE further requires that project proponents meet with SCE early in the project conceptual stage. Such an early collaborative approach will help in the planning and project development process and will also more likely ensure project success.

SCE has been working for many years with various local jurisdictions and communities on master planning appropriate uses within its rights-of-way. Such an approach enables a balance of uses to be achieved, and ensures involvement by the local jurisdiction and local residents and community organizations in helping to plan balanced uses and achieve important mutual objectives. It's a winning approach for all involved.

19-3 (Cont'd)

For example, SCE has been working with the City of Long Beach and other interested parties on a package of three sites along the river, two of which would be mitigation sites and devoted to City parkland expansion while the other site would be used for a self-storage project. This approach enables the City to achieve its objective of parkland expansion and for SCE to achieve economic development value for its ratepayers with an appropriate and compatible use. In addition, SCE has been working with the County and other interested parties on the Woodlands Duck Farm property to address access and compatible use matters, which are important issues to SCE due to their potential impacts on its rights-of-way and system operations. SCE has also been working with the cities of Lakewood, Bellflower, Pico Rivera and others on similar balanced uses that help achieve mutual objectives.

19-4

3) SCE's Recommended Revisions to the Draft San Gabriel River Master Plan. SCE and the County share many common goals that are consistent in most areas. In addition, both parties are committed to working in collaboration to achieve a balance of compatible uses along the San Gabriel River. There are certain recommendations proposed in the draft Master Plan and DEIR that pose potential problems and impacts to, and may not be compatible with SCE's rights-of-way and operating system. SCE proposes revisions to these sections to remove and/or mitigate potentially adverse impacts to its system operations. Moreover, with these proposed projects and others in the future, early communication with SCE is essential and will greatly enhance the project planning process, and the likelihood for SCE approval and project success.

19-5

SCE's two overriding requirements relate to any project proposed on its property that might impact its operating system or emergency response capability:

- SCE requires ongoing, complete access to its rights-of-way in order to perform routine maintenance and any required emergency repair or restoration of the facilities located there. No project, facility or operation can be allowed within its rights-of-way that would limit or impede such essential access or impact SCE's existing and future operating systems whether in the immediate project area or anywhere else in our rights-of-way and operating system.
- Establishing new wetlands or other similar natural habitat, vegetation or related natural plant areas within SCE's rights-of-way may be incompatible with SCE's operational requirements because they impede access to our operating systems and potentially impact the integrity of electric system operations. Such projects should be sited elsewhere in more appropriate locations. Prior to planning such projects, proponents must discuss any such proposals with SCE. SCE reserves the right of final approval for any projects utilizing SCE rights-of-way.

Following are comments addressing specific sections of the draft Master Plan that SCE believes need to be clarified or revised, discussed through our on-going collaborative process, or that SCE believes are incompatible with its system operating needs and responsibilities:

19-6

A. **Wilderness Park Reclaimed Water & Open Space Park/City of Downey.** Six acres of land SCE leases to the City of Downey are identified for passive recreational use, using plants that are native habitat species. County, City and SCE need to continue to work on specific details to ensure compatibility with SCE operating requirements.

19-7

B. **H. Byrun Zinn Park Improvements/City of Bellflower.** Four acres of existing parkland located adjacent to the San Gabriel River and within the SCE right-of-way are identified for passive, low-impact recreation use, including pedestrian paths, trees and benches. The County, City and SCE will continue to work together on specific details to ensure compatibility with SCE operating requirements.

19-8

C. **El Dorado Regional Park Wetlands & Master Plan Update/City of Long Beach.** SCE has three sites in this project area and has been working in collaboration with the City and other interested parties on the use of two of the most accessible sites, located adjacent to the City's existing park, for use as expanded passive City parkland. The third site, farther south and on the east side of the river, has been identified for a self-storage facility given its limited access, distance from parkland, compatible use within the right-of-way and other related factors. This approach is a good example of a balanced approach to uses of SCE property. Two other proposals related to this area include possible use of some of SCE's land on the east side of the river for wetlands and related habitat areas and relocating SCE power lines further into El Dorado Park. Such proposals may be incompatible with SCE's right-of-way system requirements, as described above, and must be discussed with SCE early in the project conceptual stage..

19-9

D. **Habitat Restoration and Linkages Opportunities.** The County and SCE will need to work on specific details related to proposed habitat restoration opportunities in the Reach 4 area, especially as it relates to any potential development of open space as a habitat easement within SCE's rights-of-way. SCE does not believe such uses are completely compatible with its operating obligations, nor does it believe that proposed "safe harbor agreements" provide sufficient legal or operational safeguards essential to SCE's operating requirements. Further discussion is required with SCE prior to the County or anyone else making any commitment of resources and SCE approving any project proposals.

19-10

E. **Trail Enhancement Opportunities.** Trail enhancements, in particular for hiking and non-motorized biking, are feasible in many locations within SCE's rights-of-way and collaborative efforts have been and will continue to be pursued as appropriate and viable. In terms of the Master Plan's proposal for additional lighting, fencing and screening and other related security measures

19-10 (Cont'd)

for both open space and economic development projects within SCE rights-of-way, it will be important for SCE, property users, local jurisdictions and others to address such needs on a project-specific basis based on need, viability and compatibility.

19-11

F. **Open Space Opportunities.** SCE does in fact own in fee or has acquired an easement affecting approximately 85 percent of the land along the river corridor described as open space in the Master Plan. This property is in fact SCE developed operating property. SCE has a responsibility and obligation to manage it in an appropriate manner to ensure the integrity of its operating system. SCE is also committed to achieving a balance of uses within its rights-of-way, including economic uses such as light industrial and storage facilities, which then allows SCE to offer the use of other portions of its property for green/passive recreational uses. In certain instances green/passive recreational use sites are viable only if they are able to compete economically with identified and desirable economic uses. Such a balanced approach is important and helps achieve the mutual goals of all involved parties. Protecting existing available green/passive recreational uses and creating new opportunities through acquisition and land use conversion projects, as described in the draft Master Plan, is an important objective shared by both the County and SCE. This objective can best be achieved through the balanced approach SCE has been pursuing working with the County, local jurisdictions, communities and others and that the County has articulated in its draft plan. However, commitment of any SCE rights-of-way property for use as wetlands or other significant habitat or natural vegetation areas may be incompatible with its system operating requirements, as described above. Conservation easements and "safe harbor agreements" may also not be suitable with SCE's system operating requirements, as described above. These issues must be addressed by the County and SCE prior to SCE making any final decision or approving any proposed project.

19-12

G. **Flood Control Enhancement Opportunities.** SCE has been working with the City of Long Beach and other interested parties on three sites in the El Dorado Regional Park area, as identified above. SCE has provided for expanded hiking and non-motorized biking trail use opportunities along the site slated for self-storage, the so-called south of Willow site on the east side of the river. However, there are limitations on the amount of additional SCE land available for expansion of river corridor-related projects at that site due to an existing power line that runs adjacent to the river and trail. In addition, any proposal for wetlands projects, as indicated elsewhere in this document, may be incompatible with SCE's operating requirements. SCE and the County must work closely together on any proposed plans related to proposed expansion of the channel, removal of concrete from the river channel or any other activities that may impact SCE's system operations and the structural integrity of its land and operating systems.

19-13

H. **Bio-Engineered Wetlands Opportunities.** As described above, proposed wetland uses within SCE rights-of-way may be incompatible with its operating system requirements since they may adversely impact SCE's operations and access. Such projects on nearby or adjacent property, while utilizing SCE property for supported and expanded green/passive recreational uses, where appropriate and viable, are an option that SCE may consider. Given the amount of SCE property along the river, SCE is committed to working with the San Gabriel Mountains Regional Conservancy and others as the Watershed Management Plan above Whittier Narrows and other plans are prepared, to identify possible areas where SCE can be of assistance. It is essential that project proponents contact SCE early in the planning stage, before a commitment of resources is made, to ensure the Plans are compatible with SCE's system operating requirements.

19-14

I. **River Corridor Policies and Design Guidelines.** SCE is committed to working closely with the County on policies related to design and uses that are compatible with SCE's operations and do not impose unnecessary operational or financial burdens on the company or the users of its property. To the extent appropriate and feasible, SCE and its users will collaborate with the County on reasonable and necessary guidelines and policies.

19-15

J. **Woodland Duck Farm.** SCE has had extensive discussions with the County and other interested parties on appropriate uses of its rights-of-way within the Woodland Duck Farm property. SCE will continue to collaborate to ensure compatible and viable use of this important property and to ensure there are no adverse impacts to SCE operations and access. As identified earlier, wetlands and related habitat areas may be incompatible uses, and this issue must be addressed early in these discussions. More appropriate locations for wetlands and related uses may be on adjacent or nearby property. In addition, "safe harbor agreements" may not necessarily be adequate mechanisms to ensure SCE preserves its essential open access to its operating property, as described in earlier sections of this letter. SCE looks forward to continued dialogue on these important matters.

19-16

K. Lario Creek Project. The currently proposed rendering of the alignments for Lario Creek depicts several meandering stream crossings over SCE's rights-of-way. These proposed designs impose a greater burden on SCE's existing rights-of-way and accompanying access roads in comparison with the existing river alignment. The existing alignment must be maintained with SCE's rights-of-way area in order to ensure SCE's ability to maintain, operate, and possibly expand its existing facilities in a safe, expeditious and cost-effective manner. SCE also has concerns that the proposed increase in the stream's volume and velocity will pose added safety risks to the visiting public. These additional potential risks need to be address with appropriate safety

19-16 (Cont'd)

measures. Once the County provides more complete information and plans for this project, SCE will proceed with reviewing hydrology reports and design of the stream (including the proposal to substantially increase its width) regarding impact to SCE's rights-of-way.

19-17

In addition to the specific projects and issues mentioned above, SCE will require additional information for all areas where proposed developments cross SCE's rights-of-way. Based on the information provided, it is unclear what impacts the proposed projects, including such projects as the Discovery Center and San Gabriel Canyon Spreading Grounds, will have on SCE's facilities, access, and rights-of-way, SCE cannot consider any project proposal that may impose additional constraints on its ability to maintain and operate its facilities and that may interfere with any future facility expansion. Finally, in working together to address project requests and proceeding with approved projects, it is essential that the County understands and agrees that SCE project administration and related costs will be applicable and will be addressed and agreed to early in the discussion phase.

19-18

Conclusion

SCE believes there are many areas where the County and SCE can continue to collaborate on a balance of desirable and appropriate uses along the San Gabriel River and where SCE can offer the use of needed property to the County and other involved parties to help achieve many of the goals described in the draft Master Plan. SCE is committed to continue its collaborative work with the County to address these matters and retain the shared vision and objectives important to this Master Plan and SCE's operational and maintenance requirements and responsibilities for existing and future facilities. However, as described herein, there are some recommendations in the draft plan that are not compatible with SCE's utility rights-of-way and may adversely impact SCE's operations. It is imperative that SCE's critical operational and maintenance requirements are recognized by all parties and are not interfered with, lest our ability to provide safe, reliable electric service be impaired. SCE appreciates the County's understanding of these critical requirements and obligations.

Thank you for the opportunity to provide comments on the County's draft Master Plan for the San Gabriel River Master Plan. We look forward to our continued work together.

Sincerely,

Maryann Reyes
Director of Public Affairs

Attachment: Southern California Edison Company Rights-of-Way Constraints Guidelines

Southern California Edison Right-of-Ways
Constraints Guidelines

Objectives

- Ensure SCE's system operating requirements remain the primary priority of its right-of-way and related operating property. This means access to our facilities for maintenance and system restoration following natural disasters affecting those facilities.
- Where appropriate, provide opportunities for secondary land uses, and compatible with SCE's system operating requirements, within its right-of-way property, as long as SCE is engaged by the project proponent early in the proposed project concept design and planning process.
- Establish a collaborative process where SCE and interested parties can work together to explore project options and provide general parameters helpful to all involved.

Transmission Corridors are Vital

SCE owns transmission corridors for the purpose of locating current and planned electrical facilities – towers, wires, substations and related equipment. The need for new transmission corridors is very high right now and for the foreseeable future because of increased electricity demand and usage in SCE's service territory, and the accompanying need to build new power plants and enhance electricity transmission facilities in California. Acquiring new land for transmission lines is increasingly difficult because of the dwindling availability of land, environmental requirements, and the costs and perceived impacts on adjacent property uses. Thus, though this is not the sole answer, SCE will likely be relying more than ever on locating new and upgraded facilities in our current transmission corridors to serve the growing demand for electricity.

Expanded Use of SCE Property

There are some constraints on additional use of the lands where SCE facilities are located, based on who owns them. Some of the property is owned in fee by SCE; the remaining property is held in exclusive easements. These easements frequently impose restrictions on other uses to which the owner of the underlying fee interest can put the land. In both cases, the use of all the SCE's transmission corridor property is regulated by the California Public Utilities Commission since the CPUC oversees the spending of ratepayers' money. To minimize this ratepayer expense, SCE's usual practice is to buy the minimum amount of land necessary for electric system operating and support purposes. This typically means there is no excess land available for other uses in these corridors.

Property that SCE owns outright is under the scrutiny from the CPUC, which has the authority to approve additional secondary uses under Public Utilities Code Section 851. Some of the property currently under contract includes sites used for nurseries, self-storage, and boat and RV storage. In these projects there is more flexibility with possible secondary land uses.

For property which SCE has purchased in exclusive easements, secondary land use is more problematic may not be allowable. For each piece of property there is a separate easement agreement with various terms and conditions agreed to by the parties at purchase that stay with the property in perpetuity. These easement agreements can include restrictions on the secondary land uses to which the property's underlying fee owner can put that land. Each transmission corridor is a patchwork of these agreement-governed lands, and so any project for secondary land use must be evaluated on a project-by-project basis. As such, each project must be consistent with regulatory constraints and the rights SCE purchased under the terms and conditions of the easement agreement.

SCE has a number of agreements with companies, individuals and government agencies for secondary land uses. These agreements may vary in length depending on the use and type of contract. License Agreements, typically are shorter terms, while Lease Agreements are longer in term, if the CPUC approves them. Sometimes these agreements are renewable, but often they are not. The ultimate decision is based on SCE's electric operating system needs for that property.

Constraints on SCE Land Uses

Highlighted below are some general guidelines that are intended to be helpful in considering possible project concepts. They are intended to assist those parties interested in pursuing possible projects in the early stages to save time and resources:

- SCE's access to its property and facilities must be maintained and cannot be encumbered, in order to ensure SCE's access for system operations, maintenance and emergency response.
- Adequate clearance around SCE towers and poles shall be maintained:
    - 50- or 100-foot radius from tower footings (depending on type of tower)
    - 10-foot radius around anchors/guy wires, tubular steel poles and wood poles
- Adequate clearance from overhead lines (conductors) to the ground.
- Access roads must be fully available with a minimum of 16 feet usable width and capable of supporting 40-ton, three-axle trucks:
    - All curves shall have a radius of not less than 50 feet measured at the inside edge of the usable road surface
    - Maximum cross slope for all access roads shall not exceed 2% and shall slope to the inside
- Limitations on landscaping, including the size and location of trees, bushes and other vegetation shall be followed.
- Restrictions on any underground facilities, such as irrigations systems, with any proposed facility required to have a minimum cover of three feet from the top of the facility and be able to withstand a gross load of 40 tons.

Wetlands or other similar natural habitat, vegetation or related natural plant areas within SCE's Right of Way are incompatible with SCE's operational requirements and should be sited elsewhere in more appropriate locations.

The use of SCE's property is guided by California Public Utilities Commission regulations (General Order No. 69-C) which define the need to protect utility system operations, and provide guidance on overall uses of the right-of-way, the types of agreements allowed, and related approval processes.

Project Proposals

On a case-by-case basis, SCE will consider compatible, low-intensity secondary uses that do not impose additional constraints on SCE's ability to maintain and operate its current facilities and that do not interfere with any future operating facility needs. Examples of possible low-intensity uses include bicycling and hiking trails, landscaping, and park and similar green use.

It is essential and most productive for all involved parties to contact SCE as soon as possible in the project concept stage. SCE must approve any proposed project design and construction plan in writing before the project can proceed. Jose Ulloa, SCE's Manager of Right of Ways (714-895-0367), should be contacted with all requests. Depending on the nature and scope of the project, SCE may require fees to be paid to cover planning, research and other project-related costs. In addition, a license or consent agreement and related fee will be required for any secondary use. All details and questions can be addressed during the project concept and approval process.

Note: The following three-page document entitled "Southern California Edison Rights-of-Way Constraints Guidelines (June 2005)" was submitted by Southern California Edison (SCE) to the County of Los Angeles Department of Public Works in June 2005 after the public review period for the San Gabriel River Corridor Master Plan Draft Program EIR. This document supersedes the previous three pages, which was attached to SCE's comment letter on the Draft Program EIR (dated May 4, 2005).

Southern California Edison Rights-of-Way
Constraints Guidelines
(June 2005)

Objectives

- Ensuring that SCE's system operating requirements are met remains the primary priority for its right-of-way and related operating property. This means access to our facilities for maintenance and system restoration following natural disasters affecting those facilities.
- Where appropriate, SCE is committed to providing opportunities for secondary land uses, compatible with SCE's system operating requirements, within its right-of-way property, as long as SCE is engaged by the project proponent early in the proposed project concept design and planning process.
- SCE is interested in establishing a collaborative process where SCE and interested parties can work together to explore project options and provide general parameters helpful to all involved.

Transmission Corridors are Vital

SCE owns transmission corridors for the purpose of locating current and planned electrical facilities – towers, wires, substations and related equipment. The need for new transmission corridors is very high right now and for the foreseeable future because of increased electricity demand and usage in SCE's service territory, and the accompanying need to build new power plants and enhance electricity transmission facilities in California. Acquiring new land for transmission lines is increasingly difficult because of the dwindling availability of land, environmental requirements, and the costs and perceived impacts on adjacent property uses. Thus, though this is not the sole reason, SCE will likely be relying more than ever on locating new and upgraded facilities in our current transmission corridors to serve the growing demand for electricity.

Expanded Use of SCE Property

There are some constraints on additional use of the lands where SCE facilities are located, based on who owns them. Some of the property is owned in fee by SCE; the remaining property is held by way of easements and other property rights. These easements frequently impose restrictions on other uses to which the owner of the underlying fee owner's use of the land. In both cases, the use of all the SCE's transmission corridor property is regulated by the California Public Utilities Commission (CPUC) to protect the interests of SCE customers. To minimize the expense to its customers, SCE's usual practice is to buy the minimum amount of land necessary for its electric system operating and support purposes. This typically means SCE has no excess land available for other uses in these corridors.

Property that SCE owns outright is under the scrutiny of the CPUC, which has the authority to approve additional secondary uses under Public Utilities Code Section 851. Some of the properties that SCE currently has under contract include sites for nurseries, self-storage, and boat and RV storage. SCE has more flexibility with possible secondary land uses on property it owns.

For property which SCE has purchased easements, secondary land use is more problematic and may not be allowable. For each piece of property there is a separate easement agreement with various terms and conditions agreed to by the parties at the time of purchase that stay with the property in perpetuity. These easement agreements can include restrictions on the underlying fee owner's permissible land uses.

Each transmission corridor is a patchwork of fee owned property and other rights and so any project for secondary land use must be evaluated on a project-by-project basis. As such, each project must be consistent with regulatory constraints and the rights SCE purchased.

SCE has a number of agreements with companies, individuals and government agencies for secondary land uses. These agreements may vary in length depending on the use and type of contract. License Agreements typically are for shorter terms, while Lease Agreements are longer in term, if the CPUC approves them. Sometimes these agreements are renewable, but often they are not. The ultimate decision on whether to allow secondary land uses, and if so, under what terms and conditions, is based on SCE's electric operating system needs for that property.

Constraints on SCE Land Uses

Highlighted below are some general guidelines that are intended to be helpful in considering possible project concepts. They are intended to assist those parties interested in pursuing possible projects in the early stages to save time and resources:

- SCE's access to its property and facilities must be maintained and cannot be encumbered, in order to ensure SCE's access for system operations, maintenance and emergency response.
- Adequate clearance around SCE towers and poles shall be maintained:
    - 50- or 100-foot radius from tower footings (depending on type of tower)
    - 10-foot radius around anchors/guy wires, tubular steel poles and wood poles
- Adequate clearance from overhead lines (conductors) to the ground.
- Access roads must be fully available with a minimum of 16 feet usable width and capable of supporting 40-ton, three-axle trucks:
    - All curves shall have a radius of not less than 50 feet measured at the inside edge of the usable road surface
    - Maximum cross slope for all access roads shall not exceed 2% and shall slope to the inside
- Limitations on landscaping, including the size and location of trees, bushes and other vegetation shall be followed so as not to interfere with SCE operating facilities; specific information will be provided during initial meetings.
- There are restrictions on underground facilities, such as irrigations systems, with any proposed facility required to have a minimum cover of three feet from the top of the facility and be able to withstand a gross load of 40 tons.

Wetlands or other similar natural habitat, vegetation or related natural plant areas within SCE's Right of Way may be incompatible with SCE's operational requirements because they impede access to our operating systems and potentially impact the integrity of electric system operations. Such projects should be sited elsewhere in more appropriate locations. Prior to planning such projects, proponents must discuss any such proposals with SCE. SCE reserves the right of final approval for any projects utilizing SCE rights-of-way.

The use of SCE's property is guided by California Public Utilities Commission regulations (General Order No. 69-C) which define the need to protect utility system operations, and provide guidance on overall uses of the right-of-way, the types of agreements allowed, and related approval processes.

Project Proposals

On a case-by-case basis, SCE will consider compatible, low-intensity secondary uses that do not impose additional constraints on SCE's ability to maintain and operate its current facilities and that do not interfere with any future operating facility needs. Examples of possible low-intensity green/passive recreational uses include horticultural/agricultural; parks; and hiking and non-motorized biking trails. Examples of possible low-intensity economic uses include vehicle, boat and recreational vehicle parking; and material, equipment and moveable self-storage facilities.

It is essential and most productive for all involved parties to contact SCE as soon as possible in the project concept stage. SCE must approve any proposed project design and construction plan in writing before the project can proceed. Contact Jose Ulloa, SCE's Manager of Right of Ways (714-895-0367), with all requests. Depending on the nature and scope of the project, SCE may require fees to be paid to cover planning, research and other project-related costs. In addition, a license or consent agreement and related fee will be required for any secondary use. All details and questions can be addressed during the project concept and approval process.

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Comment Letter No. 20

Southern Council of Conservation Clubs, Inc.

"IN UNITY THERE IS STRENGTH"

THE SAN GABRIEL RIVER REPORT WAS WELL DONE. WE AGREE WITH

20-1 1.2, 1.3, 1.4, 1.5, 1.6 - MAXIMUM HABITAT ALTERNATIVE AND WHAT HUNTERS AND FISHERMEN INVOLVED

Lynn F. Hedds DDS.
PRESIDENT

20-2 P.S. WHAT A THANK YOU. MUST BE ADDRESSED IS THE 10 ROBLES TRAIL BIGHORN SHEEP, HAVE WITH MOUNTAIN LIONS!

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UNITED ROCK PRODUCTS

Comment Letter No. 21

May 4, 2005

Martin Moreno
L.A. County Dept. of Public Works
900 South Fremont Ave.,11th Floor
Alhambra, CA 91803-1331

RE: San Gabriel River Corridor Master Plan Draft Program Impact Report

Dear Mr. Moreno,

21-1 As a quarry owner that has participated in this process, we request that we be notified, as projects that affect our quarries are advanced. We wish to be included at the inception of these activities so that we may have full participation in the development of these important projects. As you know, many of the proposals will have a direct impact on the way in which we conduct our business. It is imperative that our mining concerns be accommodated as projects are being developed.

United Rock Products appreciates having been included in the development of the San Gabriel River Master Plan. We look forward to working with the County Department of Public Works in the future. Thank you for giving us the opportunity to comment.

Best regards,

Ken Barker

Ken Barker
Environmental & Regulatory Affairs Manager
United Rock Products Corporation

Copy: Rama Rydman, L.A. County Dept. of Public Works
Jerry Burke, L.A. County Dept. of Public Works
Daniel Iacofano, Moore Iacofano Goltsman Inc

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Vulcan
Materials Company
Western Division

May 4, 2005

Comment Letter No. 22

Ms. Rama Rydman
County of Los Angeles
Department of Public Works
Watershed Division
900 S. Freemont, 11th Floor
Alhambra, CA 91802-1460

RE: DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT FOR THE SAN GABRIEL RIVER CORRIDOR MASTER PLAN REQUEST FOR COMMENTS.

Dear Ms. Rydman,

This letter is in response to your Request for Comments on the above referenced Environmental Impact Report for the San Gabriel River Corridor and Master Plan. Vulcan Materials Company, Western Division ("Vulcan") has several operations adjacent to the 58-mile long San Gabriel River Corridor in the cities of Azusa and Irwindale. We understand that portions of the Master Plan incorporate existing sand and gravel quarries that are either active or inactive. A number of our quarries along the San Gabriel River Corridor remain active, and will be for the foreseeable future.

22-1 Vulcan's main concern is that the Master Plan is consistent with the overall land uses within each city. The consistency must include end land use, the right to continue mining operations pursuant to approved land use permits and reclamation plans, and the appropriate co-existence between each project in the Master Plan and these mining operations.

As stated in previous communications it is important to re-emphasize that Vulcan's sand and gravel mining operations along the San Gabriel River occur on privately-owned land, conducted by a privately-owned business organization, governed by regulations promulgated by appropriate federal, state, county and local authorities. Also, Vulcan holds extensive water rights in the San Gabriel Valley Basin and other areas which might adversely affect the stated projects.

22-2 It is apparent by Vulcan's past and present mining reclamation projects that we have clearly demonstrated our commitment to enhancing the river system and restoration of the waterways and plans to continue with this enhancement once our mining operations cease along the San Gabriel River.

22-3 On November 23, 2003, Steve C. Cortner, Vice President, Resources for Vulcan Materials, Western Division submitted comments on the Master Plan; we are again submitting them for inclusion into the official comments.

3200 San Fernando Road, Los Angeles, CA 90065
Phone: (323) 258-2777 FAX: (323) 258-3289

22-4 Vulcan request that we be placed on the mailing list for all projects contained in the Draft Environmental Impact Report and Master Plan.

Sincerely,
VULCAN MATERIALS COMPANY, WESTERN DIVISION

Angela Driscoll,
Principle Government and Permitting Analyst

attachments

Vulcan
Materials Company

Western Division

STEVE CORTNER
VICE PRESIDENT, RESOURCES

3200 SAN FERNANDO ROAD
LOS ANGELES, CALIFORNIA 90065
TELEPHONE 323 474-3225
FAX 323 258-3289
E-MAIL cortners@vmcmail.com

November 24, 2003

Mr. Daniel Iacofano
Moore Iacofano Goltsman Inc.
800 Hearst Avenue
Berkeley, CA 94710

RE: SAN GABRIEL RIVER DRAFT MASTER PLAN

Dear Mr. Iacofano:

CalMat Co. dba Vulcan Materials Company, Western Division ("Vulcan") owns and operates various quarries in close proximity to San Gabriel River or its tributaries thereto. Vulcan is the nation's largest producer of construction aggregates, a leader in production of other construction materials, and a manufacturer of chemicals. Vulcan is an S&P 500 company and is listed and traded in the New York Stock Exchange under the symbol VMC. Vulcan has over 10,000 employees nationwide.

Based on my meetings between you, Martin Moreno Senior Civil Engineer Watershed Management Division County of Los Angeles, Department of Public Works and Rama Tallamraju Watershed Management Division of Los Angeles, Department of Public Works, I will reduce to writing those issues and comments that Vulcan has with the above-mentioned Draft Master Plan. I request that these comments be incorporated into the draft document prior to this draft going to the general public for its review. Before I get into the text of the Draft Master Plan, I would like to discuss some mining history of the San Gabriel Valley.

As you may know, the San Gabriel Valley has been the "mother lode" of Southern California's richest aggregate. Early in the 20th Century, local rock, sand and gravel producers realized that the aggregates found in the area comprises the cities of Azusa, Duarte, Irwindale and Baldwin Park has the perfect combination of minerals for the use in construction. The San Gabriel River at the base of the 9,399 foot elevation Mt. Baden Powell peak of the San Gabriel Mountain Range, has for centuries transported an abundant amount of construction grade aggregates resources (more commonly known as rock, sand and gravel) from a 439 square mile watershed area of rugged mountainous terrain to the valley floor after completing a 20-mile course through the mountains.

The aggregate rich "San Gabriel River Alluvial Fan," is the State of California's, and some say the world's greatest and most abundant aggregate resources. It is comprised of material from the Holocene and Pleistocene era, which aggregate is very durable and perfect for making concrete and asphalt. In the headwater area of the San Gabriel River, where most of the aggregate production sites are located, the larger of the natural gravel is about 6 feet in diameter huge boulder-sized gravel.

Since those days in the early 1900s, Vulcan and its predecessor companies and competitors have produced well over a billion tons of aggregate for the general Los Angeles area. These materials were the basis for the development of not only our local San Gabriel communities, but the entire Los Angeles region as well. Virtually all of our most famous local landmarks in our area including the Los Angeles Memorial Coliseum, the Los Angeles Harbor, and our extensive networks of freeways could not have been built without the local aggregates that the San Gabriel Valley plants produced.

As a major participant in the growth of the San Gabriel Valley, Vulcan and its predecessors have seen the area change from a community of sleepy citrus-growing private landowners to vibrant cities. As our communities evolved, Vulcan has become much more involved in partnering with our neighbors to achieve shared goals. In the early days, our involvement was primarily comprised of providing jobs and supporting the growth of communities through property taxes and excavation fees. Today we understand that partnering with our communities is a corporate and civic mission. By partnering with the communities in the San Gabriel Valley, Vulcan is better able to responsibly reclaim its production sites when mining is complete. For example, Vulcan's current Fish Creek restoration project will permanently restore a previously mined portion of Fish Creek to its original pre-mining location while at the same time recreating a high-quality aquatic and riparian habitat.

Clearly the early aggregate producers anticipated that the San Gabriel area was going to grow and develop due to its location, one of California's greatest resources, however, none of them realized how important their role would be in the San Gabriel Valley to support the very backbone of our infrastructure in the greater Los Angeles area.

WHAT IS AGGREGATE?

The average person typically does not give much thought to the subject of aggregate and its value. In fact, the United States Geological Survey has stated that "natural aggregate is one of the nation's most poorly understood resources." Yet, aggregate resources are required by all urbanites as modern construction techniques rely heavily on a wide variety of products made from these materials.

Aggregate is different types of rock fragments, such as rock, sand and gravel. These materials are obtained from the earth through a process called "surface mining," or otherwise called "open-pit mining." After these materials are mined, they are usually washed and sorted by size before they are sold to the market.

"Gravel" refers to all sizes of natural aggregates larger than sand or any rock larger than "quarter inch." Gravel is generally divided into 1½, 1", 3/8" nominal sizes. Cobble gravel is generally 2.5" to 10" and boulders are anything larger than 10". Sand sizes are between ¼" and finer. "Rock" is a general term and does not have a size range. However, most crushed rock used in aggregate base and asphalt are ¾" in size and smaller.

In cases where natural sand and gravel are unavailable, commercial aggregate is created by crushing large stones or by drilling and blasting massive rock formations and producing them into various sizes of rock and manufacture of sand. This process is called "quarrying," when drilling and blasting of massive rock formation is required to produce aggregate and all the materials produced by this process are called "crushed stone." Unlike smooth, natural aggregate, crushed stone tend to be angular with sharper edges.

In Southern California, natural aggregate deposits are formed by the erosion of bedrock and the subsequent transport, operation and deposition of these rock fragments by the waters of the creeks, streams and rivers flowing from the local mountains and valleys. Commercial quality and quantity of aggregate resources are generally abundant within and around natural river and stream courses as well as in the alluvial fans of these rivers and streams which tend to form at the base of mountains and hills. Accordingly, natural aggregates must be obtained from these naturally occurring locations such as rivers, streams and alluvial fans.

WHY DO WE NEED AGGREGATES?

Aggregate resources are used to make many features of the urban landscape that we depend on in our daily lives. For instance, rock, sand and gravel are each an integral component of "Portland Cement Concrete" (PCC) which is used to build houses, schools, churches, sidewalks, water and sewer systems, bridges, airport runways, commercial buildings, streets, highways and other common projects. Aggregate resources are also a key ingredient of asphalt concrete (AC), as well as the base and fill material required to repair and build streets, highways and parking areas. Portland Cement is a mixture of rock, sand, gravel, cement, water and other "ad mixtures." Asphaltic Concrete is a mixture of crushed rock, manufactured natural sands and hot, liquid asphaltic oil.

In California, the supply and demand for aggregate resources are tracked by the California State Department of Conservation's "Division of Mines and Geology" (DMG). The DMG regularly analyzes the supply and demands of aggregates in California and publishes special reports indicating the past and anticipated future needs for regional aggregate supplies.

The DMG has found that each Los Angeles resident, including every man, woman and child, requires approximately 3.7 tons of new aggregate resources per year for the construction of streets, schools, shopping centers, homes and all other basic structures that our society uses. The entire Los Angeles region consumes about 48 million tons of aggregate per year. By

comparison, the entire State of California consumes more than 180 million tons of aggregate per year. Our society simply has a tremendous need for aggregates!

VULCAN'S PREDECESSORS SINCE THE EARLY 1900s

Vulcan has operated within the San Gabriel Valley since the 1900s. (Vulcan's predecessors and subsidiary companies are listed below.)

1. Vulcan Materials Company, Western Division
2. CalMat Co.
3. Conrock Co.
4. Consolidated Rock Products Company
5. Union Rock Company
6. Reliance Rock Company
7. Russell Green Foell Corporation
8. Southern California Rock and Gravel Company
9 Los Angeles Rock and Gravel Company
10. Azusa Rock Products
11. Kirst Construction
12. Pacific Rock and Gravel Company

After a brief review of the construction aggregates' long history in the San Gabriel Valley, one should give credence to its extreme importance in supplying the backbone of the infrastructure for the greater Los Angeles area notwithstanding its past, present and continued use in and around the San Gabriel riverine system.

The following comments will focus on the draft master plan specific to language found within the plan's text. A very important point to understand when addressing the numerous quarry locations contained in the draft document is that the gravel quarries are located on private property. More specifically the quarries are owned by the operators, operating under various entitlements such as CUPs, vested rights, reclamation plans and other ancillary permits required for the lawful operation of such quarries. The future of sand and gravel operations throughout the San Gabriel Valley is projected to continue for the next 30 to 40 years. Some operations will exhaust their resources prior to other operations. Clearly, mining activity will exist at least three to four decades from the date of this San Gabriel River Master Plan. Additionally, most operators are undergoing negotiations with the respective cities of Azusa and Irwindale on changes to their reclamation plans and potential changes to their operational permits. These changes may reflect different pit configurations, greater depth or changes to the end-use called out in the existing reclamation plans. Past reclamation plans represent end uses that will not be the ultimate end use due to changes in population, geographic area and property values, as some reclamation plans were originally created years ago. Local cities, such as the City of Irwindale, have a keen interest in development for commercial and industrial property and to some extent residential development in areas of exhausted pits or ones that will be exhausted sometime in the

future. Because negotiations continue today, Vulcan cannot indicate the precise use of any of its quarries until agreements are finalized within our operating areas.

3.5.3 Reach No. 3 – Upper San Gabriel Valley – R3-09-Pedestrian Bridge

The City of Azusa has indicated to Vulcan that they would like to investigate the use of the conveyor belt that traverses across the San Gabriel River as a potential bicycle and/or pedestrian bridge. Although Vulcan does not have any objections to the use of this bridge at some point when mining is completed, Vulcan has not engaged in negotiations with the City to discuss potential liability and cost relative to the conversion of this conveyor crossing to a bicycle and/or pedestrian bridge overcrossing.

R3.10 – West River Bank Tree Planning Project at the San Gabriel Valley Gun Club

Current negotiations are ongoing with the San Gabriel Valley Gun Club to mitigate noise emanating from the Club into residential receptors. These negotiations are not complete but involve individuals from the City of Azusa, representatives of Vulcan and representatives from the San Gabriel Valley Gun Club. Accordingly, Vulcan has not included these trees as potential mitigation to noise impacts.

R3.11 - Azusa Rock Quarry Restoration

Vulcan is currently pursuing a revised reclamation plan for the Azusa Rock Quarry. The existing reclamation plan is a subject of negotiations between Vulcan and the City of Azusa. A revised reclamation plan would change the quality of reclamation that currently exist at this quarry site.

R3.12 – Fish Creek Restoration and Public Access

Vulcan is currently working with the City of Duarte and discussing with the City of Azusa a limited public access through the Azusa Rock Quarry along Fish Creek. This access could occur on a limited basis, potentially on weekends and holidays. Due to safety and liability reasons, Vulcan will have to limit access to daylight hours and non-operational hours of the quarry operation. These discussions are ongoing and no agreement has been reached to date between the City of Azusa, the City of Duarte and Vulcan. There has been no discussion nor does Vulcan have any knowledge of any bicycle and pedestrian connection to Fish Creek from the San Gabriel bike trail and City of Azusa. Accordingly, the first part of the sentence in the provision of bicycle and pedestrian connection to Fish Creek from San Gabriel bike trail and the City of Azusa is speculative at best and Vulcan knows of no way of providing access across the river that would be safe and appropriate for such a crossing. It would best be left out of the text.

R3-16 – Azusa – Largo Pit

The Azusa Largo Pit appears to be in reference to Vulcan's quarrying operation north of Foothill Blvd. This pit houses our current aggregate production facility as well as shop facilities and asphalt plant production facilities. The plant at the Azusa Largo Pit produces material from the area in which it exists as well as material that is transported via conveyor system from Azusa Rock Quarry. The existence of this operation will exceed 40 years. Although the ultimate reclamation plan is under consideration between the City of Irwindale and Vulcan, this operation will supply aggregate, construction grade materials as well as asphalt materials to the general area for over 40 years. Ultimate end land use post-mining will be determined at a later date subject to negotiations between the City of Irwindale and Vulcan.

R3.17 – Reliance Pit No. 2

The reference of this pit appears to be the existing landfill located south of Foothill Blvd. bordered by the 210 Fwy. and bounded to the east by Irwindale Avenue. This operation is currently being used to facilitate silt deposition from the existing Reliance Plant and operating as a landfill facility to ultimately fill and use for some commercial activity. Currently, the Reliance No. 2 Pit is a subject of negotiations between the City of Irwindale and Vulcan in determining potential ultimate land use and other issues surrounding this pit. The time to complete the landfill is unknown at this time.

R3.20 – Route 66/Foothill Blvd. Gateway

Vulcan is unclear as to what this gateway means to the San Gabriel River post-mining and what river landscape enhancements are currently underway. Vulcan is assuming that this is the area that borders the Azusa Largo Pit extending to the reaches of the confluence of Fish Creek. Vulcan would appreciate understanding what is meant by "a potential future city of Duarte gateway to the San Gabriel River after mining is complete and river landscape enhancements are underway."

3.5.4 Reach No. 4 – Lower San Gabriel Valley

R4-01 Multi-Objective Gravel Quarry Reclamation Study

The Multi-Objective Gravel Quarry Reclamation Study has not come to any conclusions nor has it analyzed the feasibility of using gravel pit quarries for multiple purposes which would include storm water capture and cleanup, recharge of storm and imported water, flood reduction, recreation and habitat restoration, as well as aesthetic appearances. The study has not reached a point where any conclusions can be drawn nor have the study proponents had any meaningful or substantive conversations with the mine operators to get the mining communities' input on such

a study. Vulcan requests that this multi-objective gravel quarry reclamation study be removed or at least explained that this study is not complete and any implementation of this study into the San Gabriel River Master Plan would require future environmental review and cannot be analyzed under the existing environmental review of this document. Clearly, Vulcan is unable to comment on a study that has not occurred, a study that has not come to any conclusions, and a study that is not understood as to its impacts or effects it will have on any of Vulcan's properties.

R4-07 Durbin Quarry

The Durbin Quarry is an ongoing mining operation owned and operated by Vulcan. The Durbin Quarry is undergoing negotiations between the City of Irwindale and Vulcan as to final reclamation and landform. Irwindale is keenly interested in the potential of its economic development opportunity, however, Vulcan and Irwindale have not come to any conclusions as to the final land use development for this property. Clearly, the Durbin Quarry will be an ongoing operation for the next three to four decades. Any opportunities at the Durbin Quarry will have to be negotiated with Vulcan after mining is exhausted. Development of the Durbin Quarry would occur significantly subsequent to the cessation of mining due to the extensive fill requirements necessary to bring the Durbin Quarry back up to a developable level.

3.6.1 Habitat Restoration and Linkages Opportunities

Future Opportunities

Fish Creek Restoration and Public Access (R3.11)

Vulcan has recently implemented restoration of Fish Creek on approximately the upper one third of Fish Creek in the area that is owned by Vulcan. The restoration was extensive and brought the creek back to its estimated original location prior to the commencement of mining. The subsequent plan Vulcan is working on with the City of Azusa in creating new mining and reclamation efforts at the Azusa Rock Quarry will incorporate restoration of the remaining portions of Fish Creek existing on Vulcan's site. The ultimate restoration of Fish Creek will be incorporated into the reclamation plan phasing under discussion between Azusa and Vulcan.

3.6.2 Trail Enhancement Opportunities

Future Opportunities

Under this broad category, fencing is discussed throughout this area of text. Understanding that fencing can take on many different appearances certainly should be considered when trying to enhance the overall aesthetic value of the river system. Vulcan would like to remind you that some fencing that aesthetically enhances the overall riverine system may not serve to be the

appropriate fencing for Vulcan's purpose. Fencing must provide safety to the general public from certain conveyor systems and other operations Vulcan may have along the river adjacent to or contiguous with the river. Accordingly, Vulcan would request that the author of this master plan would understand that certain fencing desires would not be appropriate as the mining companies must protect themselves from liabilities resulting from trespass onto their property.

3.6.3 Bridges, Gateways, and Connections Opportunities

Future Opportunities

Under Reach 3 again there is a discussion of future pedestrian bridge (R3.9) at site of the existing Vulcan Materials conveyor belt. I would like to refer to the discussion on (R3.9) in that Vulcan Materials has no issue with this concept, however, no final negotiations or agreements are entered into between the City of Azusa and Vulcan relative to the use of said conveyor belt.

Under the same Reach 3 area, a paragraph discussing the Vulcan conveyor belt operation for another three decades should be corrected and replaced with four decades.

3.6.4 Interpretive (Education) Center Opportunities

Future Opportunities

In the text exists a discussion of geology, mining and quarry operations which could be a significant interpretive theme in Reach 3. Vulcan has always been proactive in education and the promotion and understanding of mining and its host of ancillary uses. Although the scheme of an "interpretive theme" is nebulous at best, Vulcan would be interested in looking at the concept of such an interpretive theme or center to gain a better understanding of same.

3.6.5 Park Development Opportunities

Future Opportunities

There is a discussion on Reach 3 on future park development and discussion that quarry reclamation offers huge potential for new parks. It further discusses the balance between economic development opportunities with the local municipalities. Examples given, however not exhaustive, are the Azusa Rock Quarry Restoration (R3.10) and Fish Creek Restoration and Public Access (R3.11). Clearly, there is a potential that Azusa Rock Quarry Restoration and the ultimate Fish Creek Restoration and Public Access are a function of the ongoing negotiations Vulcan is engaged with Azusa. The proposed amendments to that operation would provide for such potential. To reiterate, this quarry area is a subject of current negotiations between the City of Azusa and Vulcan and its final outcome and reclamation plan/end land use will not be determined prior to the creation of this document.

3.6.6 Open Space Opportunities

Future Opportunities

Discussion under future opportunities again in Reaches 3 and 4 discuss gravel quarry land reclamation representative of significant opportunities to create additional open space that might be used for recreation and habitat purposes. Some examples given in this text, but not limited to, are Azusa Rock Quarry restoration (R3.10) and the Durbin Quarry (R4.04). Discussion is given to the Azusa Rock Quarry mentioned above and earlier in the explanation of the potential future for Durbin Quarry. Notwithstanding the fact that both quarries are in a state of flux due to ongoing negotiations with the respective cities in which these quarries operate and exist, it is important to understand that these quarries are private property and certain quarries such as the Durbin Quarry exist in very valuable commercial and industrial areas. Local cities are extremely interested in the development of property that will create a tax base and offer legitimate and appropriate highest and best use for the property considering the geographic area in which it exists.

3.6.7 Land Reclamation

Future Opportunities

Acknowledgment in your text is given to the gravel quarries constituting the most significant land reclamation opportunity in San Gabriel River corridor. Further discussion is the quarry reclamation development study (R4-01) being conducted to more precisely determine the land use, land reclamation potential of these projects. Again, four of Vulcan's projects are discussed; the Azusa Rock Quarry Restoration (R3.11), the Azusa Largo Pit (R3-16), the Reliance Pit No. 2 (3.17) and the Durbin Quarry (R4.07). The gravel quarry reclamation development study has reached no conclusions. I believe very little activity has occurred to affect the ultimate results of this study. Certain quarries that Vulcan owns may fit in the overall scheme of the land reclamation opportunity for the San Gabriel River Corridor. However, it is clear that the Azusa Largo Pit, the Reliance Pit No. 2 and Durbin Quarry have much less potential to offer land reclamation that would complement the desire of this master plan, e.g. to enhance the river corridor. Azusa Largo, Reliance and Durbin will ultimately be developed into commercial or industrial type uses.

3.6.8 Flood Channel Enhancement Opportunities

Future Opportunities

Text in the section on quarry reclamation uses San Gabriel spreading grounds in Azusa as an example for re-use or retention/detention areas for floodwaters and include various quarries

along the river. I believe that the Azusa Rock Quarry Restoration (R3.10) would not serve as a good spreading ground or water detention or retention type facility due to its mountainous terrain and lack of alluvial deposition that would be useful for capture of storm water and the recharge into the local groundwater basin. The Durbin Quarry (R4.04) is also slated for potential commercial development due to the interest that the City of Irwindale has relative to use for the property being the highest and best use along the 605 corridor.

In the same section, discussions of stream restoration projects that can serve multiple purposes including providing habitat, improving water quality and reducing peak flows give examples one of which is at Fish Creek Restoration Public Access (R3.11). As to the Fish Creek area that exists on the Vulcan property, no public access has been negotiated at this time, however, Vulcan is working with the cities of Duarte and Azusa to accomplish some type of limited access by the public through the Vulcan properties, more generally along the stream thalwag of Fish Creek. However, Fish Creek does not offer reduction in peak flows but does however offer increased habitat and a potential for public access if Vulcan reaches an agreement between the cities of Duarte and Azusa.

Under bridge project opportunities, maps XX depict a future pedestrian bridge. Again, Vulcan has no objection with the concept of allowing the City of Azusa to provide pedestrian traffic over the conveyor section that crosses the San Gabriel River. However, it is important to understand that certain modifications will have to take place to create a pedestrian bridge versus the use for a conveyor system. Accordingly, Vulcan and the City of Azusa will have to negotiate the use thereof. Any discussion on this pedestrian bridge in the future or otherwise should have a caveat that it is a potential but it does not exist at this time.

The map of interpretive centers, map XX discusses the Vulcan Quarry interpretive exhibit on the San Gabriel River. Again, Vulcan has no objection to the concept of an interpretive exhibit but would like to further understand what that exhibit is, what it represents and the location of the interpretive exhibits' existence. Under the map XX of the San Gabriel canyon spreading grounds, top right hand corner is an arrow that depicts future reclamation connects to Fish Canyon trails. I am assuming that the future reclamation connect to Fish Canyon trails means that there will be a connection and the trail itself will follow Fish Creek through the Vulcan operation. Again, this is subject to the approval of Vulcan and the negotiations between the cities of Duarte and Azusa. Vulcan would appreciate you putting future reclamation connecting Fish Canyon trail subject to ultimate Vulcan approval.

Vulcan appreciates the opportunity to comment on this draft document. It is my understanding from you, Martin Moreno and Rama Tallamraju that you will incorporate my comments in this letter and include Vulcan on the mailing list when the Master Plan draft goes out to the public. Vulcan desires to work with the County of Los Angeles, Department of Public Works on this Master Plan in hopes that when the Master Plan comes to the public, Vulcan can respond in an affirmative posture rather than a negative position.

Vulcan also wishes to have you incorporate into the body of this San Gabriel Master Plan certain land use designations for mining that were created and mandated by the state of California,

Department of Mines and Geology. The Department of Mines and Geology is required by statute to incorporate land use designations that have proven mineral deposits that are to be used for the development of aggregate resource. The Surface Mining and Reclamation Act ("SMARA") provides for mineral land classification in Sections 2711, 2712, 2761, 2762, 2763 and 2764 of the Public Resources Code. Accordingly, we have incorporated maps depicting the Mineral Land Classification areas within the San Gabriel Valley. Hopefully these maps will be helpful to the County when implementing this master plan and its incorporation of mining within the plan.

Additionally, I have enclosed mineral land classification of the Fish Canyon Quarry, Azusa Quarry, Azusa Quadrangle, Los Angeles County, California. This mineral classification was added December 1988 which includes the entire area in the Fish Canyon area owned by Vulcan.

Vulcan appreciates the opportunity to comment and would welcome any questions that you or the County Department of Public Works may have relative to any of the issues discussed within the contents of this letter or otherwise.

Sincerely,

Steve C. Cortner
Vice President, Resources

SCC:mx

Enclosures: Maps

Copy: Rama Tallamraju, L.A. County Dept. of Public Works
Martin Moreno, P.E. Senior Civil Engineer, Watershed Management Division, County of L.A. Dept. of Public Works, 900 South Fremont Ave., 11th Floor, Alhambra, CA 91803-1331

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4/28/05

www. sangabrielriver.com

WMD 8

Department of Public Works
County of Los Angeles
Po Box 1460
900 S. Fremont Ave.
Alhambra, Ca 91802-1460

Comment Letter No. 23

Re: 1. San Gabriel River Corridor Master Plan, Public Comments
2. E.I.R. File: WM-6, Public Comments

Dear Department of Public Works:

Thank you for the opportunity to comment on the San Gabriel River Corridor Master Plan and Environmental Impact Report.

First, I'd like to support any and all efforts to improve and enhance the 58 mile, San Gabriel River Corridor's environmental quality and recreational opportunities. Also, that the E.I.R. is adequate and meets C.E.Q.A. requirements.

23-1 The River Corridor has regional importance. Three million urban weary residents seek the best of what is left of the San Gabriel River Corridor. While I live in the City of La Habra, in Orange County, I utilize the San Gabriel River Corridor for recreation, biking and hiking.

As all of the town of La Habra is in the San Gabriel River Watershed, I am very concerned about storm water pollution of the river and ocean by inland cities, especially the Coyote and La Mirada Creeks in La Habra which drain into the San Gabriel River.

23-2 Second, improving the aesthetics and environmental quality of the Corridor is a high priority. I support the reclamation and remediation of surface mining operations. I also support the return of the River Corridor to a more natural flood control channel where feasible, utilizing the latest in natural flood control engineering techniques. Improving the riparian habitat is a priority. Adding new, and improving existing educational nature centers is a great idea.

23-3 Third, I would like to support improving and enhancing the River Corridor Bike Lane and support development of regional bike trail linkages. Utilizing the old Huntington "Redcar" Railroad Corridor for a bike lane from the town of Brea, west, through downtown La Habra and Whittier to the River Corridor Bike Trail should become a major east-west bike trail connection. The city of La Habra is currently working on this issue. Please add the historic "Redcar" Train Depot in La Habra to your plan. Extending the Coyote Creek Bike Lane north to La Habra is a priority. Bike lane improvements should include landscaping, many shade trees, and rest areas where possible. Increasing access is a priority.

23-4 Fourth, Land Use regulations need to be implemented to enhance the River Corridor's natural character and protect it from further urban deterioration.

Sincerely,

RD

Robert Dale
1401 Sierra Vista Dr.
La Habra, CA 90631

cc City of La Habra; Orange County Trails Advisory Committee.
La Habra Historical Society.

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Rydman, Rama

From: townsquare@migcom.com
Sent: Friday, March 11, 2005 8:19 AM
To: info@sangabrielriver.com
Subject: SGRMP: General Comments

Comment Letter No. 24

Comment Submitted by:

Lester Kau
Residents of Azusa
lk@ecoplanet.com

Subject:

SGRMP: General Comments

Comment:

Hello,

24-1 The city of Azusa has recently rezoned the property that the San Gabriel Valley Gun Club sits on to open space. This property is right along the San Gabriel river. Part of the land is owned by Vulcan Materials (who supports Azusa's decision) and another portion of the property is owned by some Federal Organization. I think that it may be the Army Corp of Engineers. But I'm not sure. This land is right against the San Gabriel river, if not partially in the river bed. The corridor plan is designed to encourage more people to enjoy the natural beauty of the river as well as to protect a natural resource. Having a gun club next to the river increases the risk of lead pollution, as well as the problems with the noise pollution. I ask that you openly support the city of Azusa's plan to rezone the land to open space.

In additon, there are approximately 15 homeless people living in that area of the riverbed and there is concern that a stray bullet may hit them, or one of the people walking along the bike path along the river.

The gun club will be fighting to stay and the city needs all the support it can get. We would appreciate it if you could offer some kind of support of the zoning change to open space in writing.

One of the gun clubs plans is to try and move all of it onto the federal land, which is in the riverbed area. There are other gun clubs in the area, including Burro Canyon, which these gun members can use. They just don't want to bother with driving a little farther and would rather fight the city.

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Responses to Comment Letter No. 1
California Department of Conservation Division of Oil, Gas, & Geothermal Resources

1-1 Maps for future Master Plan projects will identify oil and gas wells on or in close proximity to project boundaries. As noted in Mitigation Measure MP-W8 (page 4.6-41), a Phase I ESA shall be completed for all projects involving substantial ground disturbance where prior land use is unknown and the potential for soil contamination from previous land uses exists. MP-W8 has been revised to state that the Phase ESA would specifically include review of California Oil and Gas Well Locations as documented by the Department of Conservation.

1-2 Per your comments, Mitigation Measure MP-W8 has been revised to incorporate the Division's procedures for project site review and well abandonment. In addition, Table 2-2 (page 2-6) (List of Permits, Approvals, and Coordination Potentially Relevant to Future Projects in the Master Planning Area) has been revised to reference the Division.

Responses to Comment Letter No. 2
California Department of Fish and Game

2-1 Per your comment, Mitigation Measure CD-B4 (page 4.2-46) has been revised to require a survey for nesting/breeding native bird species one week prior to construction and clearing activities. The measure has been further modified to extend the survey zone to within 300 feet (within 500 feet for raptors) of the construction zone. It is also noted that construction can proceed if no active avian nests are located during this survey. The Final EIR contains the revised text for Mitigation Measure CD-B4.

Responses to Comment Letter No. 3
California Department of Transportation

3-1 As relevant, project proponents for future Master Plan projects will be responsible for obtaining encroachment permits for activities in Caltran's rights-of-way. Please note that Table 2-2 (page 2-6, List of Permits, Approvals, and Coordination Potentially Relevant to Future Projects in the Master Planning Area) identifies Caltrans as a potentially applicable permit agency.

3-2 Your agency's e-mail address will be added to the Master Plan mailing list so that your agency will be informed of Steering Committee meetings, project website updates (www.sangabrielriver.com) and future CEQA notices for second-tier environmental documentation.

Responses to Comment Letter No. 4
Central and West Basin Municipal Water Districts

4-1 Per your comment in reference to the groundwater basin, "West Basin" is now consistently referred to as the "West Coast Basin" throughout the Master Plan.

4-2 Per your comment, the "Metropolitan Water District" is now referred consistently throughout the Master Plan as the "Metropolitan Water District of Southern California."

4-3 Per your comment, "Water Reclamation Plant" is now used consistently throughout the Master Plan instead of the acronym WRP.

4-4 Please see response to comment 17-1. The Sanitation Districts requested that the Master Plan refer to the agency either as the "County Sanitation Districts of Los Angeles County" or "Sanitation Districts. " The Master Plan has been revised accordingly.

4-5 In response to your comment, text in the Master Plan on page 2-32 has been revised to clarify the relationship between the San Gabriel River and the groundwater basins as a water supply source. Text revisions and additions on pages 2-39 and 3-10 clarify the nature of adjudicated water rights and the relationships between the different groundwater basins. Revisions on page 2-30 modify text that may have given the impression that all stormwater is lost to the sea before it has a chance to percolate into the soil.

4-6 In response to your comment, the Master Plan has been revised to clarify the role of rainfall to groundwater basins, and groundwater is identified as a local water source. In the "Water Supply" section beginning on page 2-32, "surface and groundwater supplies" replace "rainfall" as one of the three main water supply sources, with reclaimed and imported sources as the other two. The Master Plan goes on to explain, "the local water supply begins as rainfall that percolates naturally into the underlying groundwater basins, or results in surface runoff." Similar changes were made elsewhere in the Master Plan to clarify the relationship between rainfall and the groundwater basins.

4-7 Per your comment regarding Master Plan page 3-10, the correction has been made so that the sentence reads the "Central Basin Watermaster and the West Coast Basin Watermaster have the same…."

4-8 Per your comment, under the newly revised subsection heading "Central and West Coast Basins" the third sentence has been corrected.

4-9 Per your comment on Master Plan page 2-38 under the subsection "Imported Water", the spelling for San Joaquin Delta has been corrected.

Responses to Comment Letter No. 5
City of Cerritos

5-1 Table 4.7-1 (page 4.7-4) has been revised to add the City of Cerritos determination of Master Plan consistency with the City's General Plan Land Use Element. The Master Plan does not include any specific plans for land acquisitions or land use conversions in City of Cerritos. Land acquisitions or land use conversions for enhancement and/or protection of open space are envisioned to occur at abandoned or under-utilized properties (not at existing commercial or residential developments). The Master Plan Open Space element includes Performance Criteria O1.1 (Establishes priorities for land acquisition, coordinating targeted land acquisitions with land use planning), which is intended to encourage future project proponents to coordinate and prioritize efforts in areas that currently lack or are deficient in open space and recreational facilities. Please also note that the Master Plan goals, objectives, and performance criteria are not intended to amend or replace any existing land use regulations established by the local municipalities.

5-2 As noted in Table 2-2 (page 2-7), future Master Plan projects (including aesthetic enhancement projects such as gateways) may require various land use approvals (e.g., Conditional Use Permits, architectural reviews, building permits, and grading permits) from the relevant local municipality with jurisdiction over the project site. Individual project proponents would be responsible for obtaining the necessary approvals prior to final design and installation.

5-3 As noted in Mitigation Measures MP-W1 (page 4.6-39), MP-W3 (page 4.6-40) and MP-W5 (page 4.6-40), future projects that propose modifications to an existing flood control channel will include detailed engineering studies and agency consultations to assess potential impacts on flood control and water quality during construction and operation and identify mitigation measures as applicable; the results of these evaluations would be included in second-tier CEQA documentation prepared by the project proponent.

5-4 Your agency's e-mail address will be added to the Master Plan mailing list so that your agency will be informed of Steering Committee meetings, project website updates (www.sangabrielriver.com) and future CEQA notices for second-tier environmental documentation.

Responses to Comment Letter No. 6
City of Santa Fe Springs

6-1 A description of the trails along and connecting to the San Gabriel River is provided in Section 4.10.1.1 (page 4.10-2, Recreation), and a map of bike trails and trail connections is provided in the Master Plan (Chapter 2, Map 2-3). Per your comment, Section 4.10.1.1 (page 4.10-2) has been revised to incorporate information on MTA's Bicycle Transportation Strategic Plan that is currently in preparation. The Master Plan includes the Recreation objective RC-2 (Connect open space and recreation areas with a network of trails). Implementation of future Master Plan projects in a manner consistent with this objective would result in improved bike trails, development of regional bike trail linkages, and increased access, a beneficial impact on recreation (see Sections 4.10.3 and 4.10.4.2). Per your comment, Section 4.11.4 (page 4.11-14) has been revised to describe the potential for new or improved bike trails to promote bicycling as an alternative to vehicles, a beneficial impact on transportation.

6-2 Per your comment, Sections 4.6.1.1 and 4.6.1.4 (pages 4.6-8 and 4.6-23) have been revised to delete references to the refinery as a discharger to the River. The former refinery has ceased discharges to Coyote Creek, and the Regional Board rescinded the NPDES permit in March 2004 (LARWQCB, 2004). (The name "Santa Fe Springs Refinery" was used in the NPDES permit to refer to the refinery, which was formerly owned by Powerine Oil Company and is now owned by Cenco Refining Company.)

6-3 Per your comment, Section 4.6.1.4 (page 4.6-23) has been revised to indicate that dischargers other than municipalities would also be considered in future TMDLs. A summary of the responsibilities of state and federal agencies regarding TMDLs is also provided in Section 4.6.1.4 (page 4.6-23).

Responses to Comment Letter No. 7
City of Seal Beach

7-1 The Master Plan is an overall conceptual plan that focuses primarily on developing the river corridor as an integrated watershed system that enhances habitat, provides recreational benefits, and protects open space, while maintaining and enhancing flood protection and water resources. The Master Plan was not developed as a regional strategy for NPDES or TMDL compliance. However, the Master Plan goals include improvements to surface water quality including stormwater flows, consistent with the goals of the municipal NPDES permits. Section 4.6.1.4 (page 4.6-20) describes the three applicable NPDES stormwater municipal permits for the project area. In response to your comment, Table 2-2 (page 2-7) has been revised to identify that review of the existing NPDES stormwater municipal permits would be required to determine if future Master Plan projects trigger the implementation of BMPs.

7-2 Regarding project-related impacts from stormwater runoff during construction activities, please see Section 4.6.3 (beginning on page 4.6-27). Please also note that Mitigation Measures MP-W2 (page 4.6-39) and CD-W1 (page 4.6-42) require preparation and implementation of Stormwater Pollution Prevention Plans. Please note that future Master Plan projects could result in a reduction of impervious surfaces thus reducing urban runoff and stormwater pollutant discharges to surface waters, a beneficial impact.

Regarding potential increases in vectors or odors from Master Plan projects, please see Sections 4.5.3, 4.5.4.3 and 4.1.4.3.

7-3 Debris wash-down from the San Gabriel River to Seal Beach beaches is an existing problem. The loss of beach availability and resulting adverse economic impacts are not project-related impacts to be considered, evaluated and mitigated within the Program EIR. Future Master Plan projects are anticipated to reduce trash and other stormwater pollutants, a beneficial impact on downstream beaches. A debris boom is one of the potential best management practices for the control of solid waste within the river. The Master Plan is intended to encourage implementation of projects that would improve water quality. However, the Master Plan does not prescribe or mandate any specific projects or methods. If debris booms are proposed by individual project proponents, environmental impact would be evaluated in second-tier CEQA documentation.

7-4 The Master Plan Mitigation Measure MP-C1 (page 4.3-14) includes consultation with Native American Heritage Commission as part of initial project site evaluation for cultural resources. Some municipalities may require the presence of a qualified Native American monitor during field reconnaissance activities for future Master Plan projects under their jurisdiction. For County projects, presence of a Native American monitor during reconnaissance is not required or proposed.

7-5 Per your comment, Mitigation Measures MP-G1 and CD-G1 (pages 4.4-14 and 4.4-15) have been revised to indicate that storm flows will be in compliance with the applicable provisions of the relevant NPDES municipal stormwater permits.

7-6 Per your comment, Section 4.5.1.3 (page 4.5-3) and Mitigation Measure MP-H2 (page 4.5-20) have been revised.

7-7 The County will provide copies of the Final EIR to Mr. Whittenberg as requested.

Responses to Comment Letter No. 8
County of Orange Resources & Development Management Department

8-1 Per your comment, Table 2-2 (page 2-8) has been revised to include County of Orange as a potentially applicable review agency. Please note that Mitigation Measure MP-W1 (page 4.6-39) states that future projects that propose modifications to an existing flood control channel will include detailed engineering studies, including hydrologic and hydraulic modeling as applicable, to assess potential impacts on the channel's flood control capacities and effects on upstream and downstream floodplain properties and recommendations to avoid or minimize these impacts.

8-2 As indicated in Master Plan Chapter 3, Project ID Number R7.04 (Los Alamitos Channel Treatment Wetland) is proposed by Orange County as part of the ACOE Coyote Creek Watershed Study.

8-3 Per your comment, the Master Plan text regarding Project R7.08 has been revised.

8-4 Per your comment, Table 2-2 (page 2-8) has been revised.

8-5 We look forward to continuing to work with the County of Orange on the Coyote Creek Watershed Management Plan. The County intends to continue outreach to the stakeholders via periodic Steering Committee meetings and project website updates (www.sangabrielriver.com), including the County of Orange.

8-6 Per your comment, the Master Plan text regarding Projects R7.01 and R7.02 have been revised.

8-7 Per your comment, Section 4.6.1.4 (page 4.6-20) has been revised to describe the County of Orange 2003 Drainage Area Management Plan.

8-8 The mitigation measures listed under Section 4.6.5.2 are MP-W2 and MP-W3, not CD-W1. We understand your intent and have modified Table 2-2 (page 2-8) to indicate that future Master Plan projects located in Orange County would be required to comply with the DAMP.

8-9 Section 4.6.6 Mitigation Measure CD-W1 (page 4.6-42) applies only to the Concept Design Studies identified in the Master Plan. Since all five Concept Design Studies are located within Los Angeles County, the County of Orange 2003 DAMP would not be applicable; however, the Los Angeles County's Manual for the Standard Urban Storm Water Mitigation Plan (SUSMP; LADPW, 2002b) would be applicable if any of the Concept Design Studies were defined per the SUSMP as development/redevelopment projects. However, Table 2-2 (page 2-8) has been revised to indicate that future Master Plan projects located in Orange County would be required to comply with the DAMP.

Responses to Comment Letter No. 9
Fly Fishers Club of Orange County

9-1 Earlier comments provided in your email correspondence of December 2003 in response to an earlier draft of the Master Plan were used to help prepare the Public Review Draft. Changes included significant expansion and revision of the descriptions for R1.01 Fisherman's Trail above Cogswell Dam, R2.05 Float Tubing and Fishing Study, and R2.07 Flow Study below Morris Dam. Also, the river corridor policy PP15 Habitat Integration was added to the Public Review Draft due to input provided by the Fly Fishers Club of Orange County (FFCOC). As this correspondence was used to make these and other changes to the Master Plan, it is cited as a reference in the bibliography of the Master Plan.

9-2 On February 7, 2006, the County met with several stakeholders to discuss the concerns associated with the three FFCOC proposals. It was mutually agreed to identify the proposals as follows:
Trail Above Cogswell Dam: Project
Fishing at Morris and San Gabriel Reservoirs: Study (with a feasibility study funded by Public Works and the Upper San Gabriel Valley Municipal Water District)
Minimum Stream Flows Below Morris Dam: Due to the number of complicated issues relevant to this proposal and the difficulty reaching a consensus, it was agreed to remove this proposal from the Master Plan.

The report FFCOC sponsored was only in a specific reach of the river and focused on fishing. We chose to leave out the report because the San Gabriel River Master Plan is a document with guiding principles and vision to help project sponsors successfully implement their projects regardless of the focus.

As there is strong interest in the FFCOC proposals, the County and the Steering Committee have formed a special subcommittee, the Rivers and Recreation Technical Subcommittee, so that all parties that might be impacted can collaboratively pursue the issues raised by these proposals. The subcommittee has met in the past and will meet again in the near future to discuss recent fact-finding investigations of other reservoirs that include recreational activities.

9-3 This document has been prepared as a Program EIR to consider the environmental impacts, mitigation measures and alternatives of the proposed Master Plan as a whole, not each individual project. Successful implementation of a project is not dependent on being named as part of the Master Plan but rather with complying with California Environmental Quality Act (CEQA), National Environmental Policy Act (NEPA), and/or any other regulatory agency requirements. Evaluation of impacts considered the Master Plan elements (goals, objectives and performance criteria), with more detailed analysis provided for the Concept Design Studies. As future Master Plan projects are proposed for implementation, project proponents will prepare a second-tier CEQA document (a Negative Declaration or an EIR) for each project, which will analyze the site-specific

impacts of those proposals. This is the case for all Master Plan projects whether they are referred to as studies, projects, or concept design studies.

9-4 Habitat enhancement is one of the Master Plan goals. However, it may not be possible to incorporate habitat enhancements in all projects and maintenance activities due to the need to balance various project and stakeholder goals, which include flood control and water conservation. Future County-sponsored Master Plan projects may incorporate habitat enhancements (including movement of fish and wildlife and distribution of native plants) as feasible.

Regarding water allotments to maintain or enhance instream habitat, wildlife or recreational opportunities, water in the River is fully appropriated. Future Master Plan projects would incorporate water for habitat enhancements as feasible and consistent with existing water rights.

During the development of the Master Plan, the Master Plan Steering Committee was formed to share information regarding projects in the River corridor and funding opportunities. The Steering Committee is composed of a broad range of stakeholders, including: cities along the river; water and regulatory agencies; interested community, business, and environmental groups; and other interested individuals. However, the authority to implement Master Plan projects rests with individual municipalities and regulatory agencies. Prior to project approval, each municipality would be responsible to prepare the appropriate project-specific second-tier CEQA document. Likewise, applicable permits from various regulatory agencies such as California Department of Fish and Game, U.S. Fish and Wildlife Service, and Regional Water Quality Control Board must be obtained for construction and maintenance. These agencies are mandated to protect wildlife and habitat and, through the permitting process, would assure project conformance with applicable regulations.

Since the existing Steering Committee serves as a consensus-based forum for coordination along the River corridor, a formal administrative review panel is not proposed. However, one of the main objectives of the Steering Committee is to bring various project proponents together in order to collaboratively review and promote one another's projects.

9-5 The purpose of the Program EIR is to present the results of an analysis of the environmental effects of the Master Plan. As relevant, current operations are described in the Program EIR as part of existing conditions. Current operations and policies are reviewed and modified periodically when required to conform to changing operational or regulatory agency requirements. The Department of Public Works has reviewed the operations and policies at our facilities and believes it is in compliance with all state and federal regulations.

9-6 Section 4.6 of the Program EIR discusses the water rights and uses of the water in the San Gabriel River.

9-7 Please note that a detailed description of the water rights to surface and groundwater sources is provided in Section 4.6.1.3 of the EIR.

9-8 The Steering Committee has been meeting every other month, and now approximately once a quarter, for over four years during regular business hours. It was the consensus of the 80+ Steering Committee members attending these meetings and representing a very broad spectrum of stakeholders along the river corridor that this was the most effective way for them to work together as a group to shape a consensus around which the Master Plan could be developed. During this period, no other complaints were received regarding the working schedule. This consistent schedule has allowed the Steering Committee to function effectively throughout this extended time period, as evident in the continuing high level of attendance at each meeting of the Steering Committee. Additionally, email and an internet website (www.sangabrielriver.com) were used as a mechanism to reach as much of the public as feasible.

9-9 The Master Plan and the Draft Program EIR are available in both electronic and hard copy formats. In response to each request for a copy of the Master Plan and Draft Program EIR, a CD containing an electronic version was provided. During this period, no one requested that we instead provide them with a hard copy of the Master Plan and the Draft Program EIR. Hard copies of the Master Plan and the Draft EIR were available for public review at 19 libraries in or near the San Gabriel River corridor and at the County of Los Angeles Department of Public Works headquarters in Alhambra.

Responses to Comment Letter No. 10
Law Offices of Susan M. Trager

10-1 The specific concerns outlined in your letter are addressed below.

10-2 The Master Plan is a set of policies and actions to increase open space, habitat, and recreation opportunities in the San Gabriel River corridor. A Program EIR was prepared to consider the environmental impacts, mitigation measures and alternatives of the proposed Master Plan as a whole. Impact assessment was not limited to the 1-mile wide River corridor, but considers the area applicable to each environmental topic. Please note that specific reference (by name) to individual properties within the region, such as Rose Hills, is not needed in order to adequately describe the environmental impacts.

Regarding indirect effects, CEQA requires an evaluation of indirect effects that are caused by the project and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems, including ecosystems.

An understanding of the regional setting was integral to the evaluation of environmental impacts of the Concept Design Studies, including the Discovery Center and Lario Creek projects. Significant environmental impacts were not identified for either of these projects. Specifically for the topics identified in your comment letter:

- Noise impact analysis considered impacts to the closest noise sensitive receptor (a school located across the street from the Discovery Center). Since impacts on this receptor were determined to be less than significant with implementation of mitigation measures, impacts at Rose Hills, which is located more than five times the distance away from the project site and on the other side of the Interstate 605, an existing major noise source, would be less than significant.

- Air emissions during construction and operation were estimated for each of the Concept Design Studies including the Discovery Center and Lario Creek projects. Air pollutant emissions were estimated to be below thresholds established by the South Coast Air Quality Management District in consideration of impacts to the South Coast Air Basin as a whole. Air pollutants potentially affecting views include smog-forming compounds and dust. The analysis included these parameters, and again, impacts were found to be less than significant. To further reduce project-related air quality impacts, mitigation measures were identified to reduce dust emissions during Concept Design Study construction.

- As noted in EIR Section 6.2, the Master Plan does not involve construction of new homes or businesses and does not include construction of new,

potentially growth-inducing, infrastructure such as roads or potable water or wastewater systems. The Master Plan would provide recreation and open space benefits to areas that have already been developed with residential, commercial, and industrial uses. Therefore, it would not result in the elimination of obstacles to growth. No growth inducing impacts would occur.

- Traffic impact analyses were conducted for the Discovery Center and Lario Creek Concept Design Studies. The analyses and summaries are explained in detail in Section 4.11 of the report. The analyses included existing and future traffic volumes and the impacts were found to be less than significant.

The Concept Design Studies were defined to illustrate the types of multi-purpose projects to be fostered by the Master Plan. The conceptual project descriptions detailed in the Master Plan and the EIR are the result of a Steering Committee exercise to help provide tangible examples of how the Master Plan multi-objective approach might apply to projects in the San Gabriel River corridor. These studies are intended for illustration purposes only and do not necessarily reflect the intent of the project sponsors. Environmental analysis in this Program EIR is based on the conceptual project descriptions in the Master Plan. The final project concepts for Lario Creek and the Discovery Center are still under development. Therefore, it would be too speculative at this time to complete the detailed analysis recommended. Further environmental documentation for Concept Design Studies will be conducted when the project descriptions for these proposals are formalized. Additional noise, aesthetic, air quality and/or traffic studies may be conducted at that time as necessary.

10-3 Since the project descriptions for the Concept Design Studies are conceptual and are subject to change, the Program EIR is not a project-level review of the Concept Design Studies, but instead analyzes their impacts (as best as can be determined at this preliminary stage in their design) as examples of Master Plan projects and the types of impacts expected. Further environmental documentation for Concept Design Studies will be conducted when the project descriptions for these proposals are formalized.

10-4 The purpose of the Program EIR was to evaluate the impacts of the Master Plan as a whole. The data on existing conditions, CEQA thresholds of significance, and the programmatic analyses and mitigation measures presented in the Program EIR will serve as a source of background information and model to guide further project-level CEQA review for the Concept Design Studies, and other Master Plan projects. The Program EIR will streamline the environmental review and documentation process for future Master Plan project proponents in the river corridor.

10-5 Rose Hills will be added to the notification list for CEQA documentation for all County-sponsored Master Plan projects.

10-6 Potential impacts from a rise in the groundwater table related to increased recharge are described in Sections 4.6.3, 4.4.3, and 4.6.4.5. Quantification of these impacts through modeling or other analysis can only be completed when specific recharge locations and

water volumes are defined. Since these specifics are not yet defined, Mitigation Measure MP-W7 (page 4.6-41) was defined to require consideration and mitigation, if applicable, of existing groundwater contamination and potential contaminant sources. Under Mitigation Measure MP-W7, project-specific analysis for future groundwater recharge projects would consider the aerial extent of any groundwater mound created by recharge and the potential for changing groundwater levels below your property. Please see minor revisions to MP-W7 to clarify that all contaminant sources, not just landfills, will be considered. Similarly, Mitigation Measures MP-G1 (page 4.4-14) and CD-G1 (page 4.4-15) require consideration, and mitigation if applicable, of increases in liquefaction potential associated with recharge projects.

Additionally, the monitoring well which is located within 200 feet of Rose Hills has an average elevation of 100 feet. The highest elevation recorded for this well is 103 feet in 1963. At 103 feet, the elevation of the water table is still more than 10 feet below the surface of Rose Hills.

10-7 The County is committed to recognizing the concerns of all stakeholders as part of the Master Plan process.

Responses to Comment Letter No. 11
Main San Gabriel Basin Watermaster

11-1 Table 2-1 (page 2-7) has been revised to incorporate your correction.

11-2 The Concept Design Studies were defined by the Steering Committee to protect and enhance, whenever possible, flood protection, water supply and water quality. Table 3-7 (page 3-15) indicates that flood protection, water supply and water quality are objectives of each of the Concept Design Studies.

11-3 Table 4.6-2 (page 4.6-6) has been revised to indicate the approximate capacities as determined by the most recent surveys of the reservoirs.

11-4 Master Plan projects that include stormwater infiltration would be designed to protect or enhance groundwater quality. Per your comment, the policy listed in Section 3.3.1.2 (page 3-12) of the EIR (and PP11 in the Master Plan) has been revised to clarify this intent.

Regarding groundwater monitoring, please note that Mitigation Measures MP-W6 (page 4.6-40) and CD-W5 (page 4.6-43) provide for development and implementation of a comprehensive groundwater monitoring program. These monitoring programs would include measurement of all applicable parameters, including nitrate.

Please also note that Mitigation Measure MP-W7 (page 4.6-41) provides for evaluation of potential impacts to existing groundwater contamination plumes and implementation of measures to avoid interference. As part of the investigation, relevant agencies, including the Regional Board, Watermasters, and agencies involved in groundwater clean-up activities (e.g., EPA and WQA), will be consulted.

11-5 The Concept Design Studies were defined to illustrate the types of multi-purpose projects to be fostered by the Master Plan. The conceptual project descriptions detailed in the Master Plan and the EIR are the result of a Steering Committee exercise to help provide tangible examples of how the Master Plan multi-objective approach might apply to projects in the San Gabriel River corridor. These studies are intended for illustration purposes only and do not necessarily reflect the intent of the project sponsors. Environmental analysis in this Program EIR is based on the conceptual project descriptions in the Master Plan. Further environmental documentation for Concept Design Studies will be conducted when the project descriptions for these proposals are finalized.

As described in Section 3.3.3.1, a floating island is a potential element of the San Gabriel Spreading Grounds Concept Design Study. If a floating island is included in the final project description, any conflict with the existing operation and maintenance activities for groundwater recharge (including water quality, water supply, and regulatory issues) would be considered.

Implementation of the Master Plan would have a beneficial impact on groundwater recharge by encouraging projects that reduce runoff discharges into waterways and/or expand reclaimed water use. Throughout our system of groundwater recharge facilities, the County is committed to maintaining or increasing total percolation capacity. Regarding security at the San Gabriel Spreading Basins, public access will remain restricted near the basins and the City of Azusa parcel to maintain public safety and water quality.

In response to your comments, an additional performance criterion was added to the Habitat Element (H2.10), which reads "Encourages development of new habitats without compromising essential public services including groundwater recharge, flood protection, or electrical power transmission by offering legal and operational safeguards such as memoranda of understanding that allow access for regular maintenance and emergency operations."

11-6 Per your comment, Section 3.3.3.4 (page 3-29) has been revised to note that the maximum recorded flow at F313B-R was 227 cfs (recorded on 12/28/2002).

The Lario Creek Concept Design Study project description in the Master Plan was intended for illustration purposes only and is not considered the final project description. Therefore, the necessity for modifying gaging station F313B-R is undetermined at this time. However, the County is committed to providing accurate data necessary for flow analysis to the Watermaster.

11-7 Per your comment, Section 4.6.1.1 (page 4.6-29) has been revised to note that flows significantly above 100 cfs have also been recorded during storm events. The maximum recorded flow at station E322 on the San Gabriel River at Peck Road was 24,800 cfs (recorded on 1/26/1969).

11-8 Per your comment, Section 4.6.1.1 (page 4.6-8) has been revised.

11-9 The Master Plan goals include maintenance of existing water and other rights while enhancing water quality, water supply, groundwater recharge, and water conservation. However, since the overall impact of the Master Plan would be to reduce ocean discharge of valuable freshwater resources, the implementation of projects with features that retain, reuse and/or infiltration stormwater would have an overall beneficial impact on groundwater volumes. Prior to implementation of County-sponsored Master Plan projects with reuse of stormwater runoff, the County will consult with the Watermaster.

11-10 Per your comment, Section 4.6.1.3 (page 4.6-14) has been revised.

11-11 Per your comment, Section 4.6.1.3 (page 4.6-16) has been revised.

11-12 Per your comment, Section 4.6.1.4 (page 4.6-25) has been revised.

Responses to Comment Letter No. 12
Metropolitan Water District of Southern California

12-1 Maintaining and enhancing water resources is one of the Master Plan goals. Per your comment, the Master Plan has been revised to acknowledge protection of groundwater recharge capacity (see Performance Criteria H2.5). The overall implementation of the Master Plan would have a beneficial impact on groundwater recharge by encouraging projects that reduce runoff discharges into waterways and/or expand reclaimed water use. Regarding the potential for development of floating islands at the San Gabriel Canyon Spreading Grounds, please also see response to comment 11-5.

For projects involving habitat enhancements, the project proponents would be responsible to consult with applicable wildlife and regulatory agencies and obtain operations and maintenance agreements that address the potential for habitation by sensitive species as a direct result of the habitat enhancements. Please note that Table 2-2 (page 2-6) has been revised to clarify that this type of coverage for operation and maintenance activities may be applicable.

In response to your comments, an additional performance criterion was added to the Habitat Element (H2.10), which reads "Encourages development of new habitats without compromising essential public services including groundwater recharge, flood protection, or electrical power transmission by offering legal and operational safeguards such as memoranda of understanding that allow access for regular maintenance and emergency operations."

12-2 Mitigation Measure MP-G1 (page 4.4-14) requires future Master Plan projects that include infiltration to conduct geotechnical investigations. Per your comment, Mitigation Measure MP-G1 has been revised to specifically reference pipelines.

Responses to Comment Letter No. 13
Puente Hills Landfill Native Habitat Preservation Authority

13-1 In response to your comment, the following clarification regarding the project boundary has been added to the Master Plan text on page 1-7 and EIR Section 3.2.1 (page 3-1): "This one mile wide corridor provides a necessary focus for the Master Plan study area but is not meant to be a totally exclusive boundary. Some projects and programs located nearby but outside the one-mile wide study area are included if they are designed to contribute to the vision and goals of the Master Plan."

13-2 Per your comment, Table 2-1 (page 2-7) has been revised.

13-3 In response to your comment, Performance Criteria H4.3 (EIR Section 3.3.1.1, page 3-7) has been revised to read as follows, "Utilizes ecologically responsible techniques to maintain or reduce populations of wildlife meso-predators (raccoon, feral cats, opossum, skunk) and rodents that may transmit vector-borne diseases and discourages wildlife encroachment into surrounding urban areas."

13-4 Per your comment, your suggestion has been incorporated into the description for project R4.23 Puente Hills Western Wildlife Corridor. Per your comment, the Master Plan Chapter 4.2 has been revised to include park visitors as target audience for the educational materials regarding co-existing with wildlife. Please note that Map 4-1 shows both northbound and *southbound* wildlife movements.

13-5 For future Master Plan projects that involve vegetated wetlands or other potential wildlife habitat, balancing the various project objectives (water quality improvement, groundwater recharge, and/or habitat) and operational and maintenance needs of the facilities (vegetation management for vector control, etc.) would be part of the project planning process. While maintenance activities would temporarily anticipated newly vegetated or enhanced areas, the overall impact of the Master Plan on biological resources would be beneficial as compared to existing conditions. In addition, the description for project R4.24 Equestrian Facilities Enhancement has been modified to address these concerns.

13-6 The County acknowledges the Authority's concerns related to potential future Master Plan projects involving groundwater recharge that may be located within lands owned/managed by the Habitat Authority. As noted in Section 2.3.2 (page 2-4), as future Master Plan projects are proposed for implementation, project proponents will prepare a second-tier CEQA document (a Negative Declaration or an EIR) for each project, which would include evaluation of potential impacts (including park operations, wildlife, utilities and conservation easements, as relevant). Project proponents would also be responsible for coordination with various agencies that have jurisdiction over project sites or activities. Per your comment, Table 2-2 (page 2-7) bas been revised to add the Authority as potentially applicable reviewing agency.

Responses to Comment Letter No. 14
San Gabriel River Water Committee

14-1 Please see responses to comments 11-4 and 11-9.

14-2 Please see response to comment 11-2.

14-3 Please see response to comments 11-5 and 12-1.

14-4 Please see response to comment 11-7.

14-5 Please see response to comment 11-8.

14-6 Please see response to comment 11-10.

Responses to Comment Letter No. 15
San Gabriel River Watermaster

15-1 Comment noted. As noted in Section 4.6.4.7, groundwater use included as part of a future project design would be implemented within the confines of existing groundwater rights. Similarly, water consumption associated with future projects that include planting of riparian vegetation in existing channels (i.e., increased evapotranspiration) would be implemented within the confines of existing surface water rights.

15-2 Per your comment, Section 4.6.1 (page 4.6-1) has been revised. Please note that, overall, implementation of the Master Plan would have a beneficial impact on groundwater recharge by encouraging projects that reduce runoff discharges into waterways and/or expand reclaimed water use. Therefore, the County considers the Master Plan to be consistent with preservation of the valuable local water sources.

15-3 The Lario Creek Concept Design Study project description in the Master Plan was intended for illustration purposes only and is not considered the final project description. Therefore, the necessity for modifying gaging station F313B-R is undetermined at this time. However, the County is committed to providing accurate data necessary for flow analysis to the Watermaster.

15-4 Please see responses to comments 11-5 and 12-1.

Responses to Comment Letter No. 16
San Gabriel Valley Mosquito & Vector Control District

16-1 As noted in Table 2-2 (page 2-7, List of Permits, Approvals, and Coordination Potentially Relevant to Future Projects in the Master Planning Area), the County would consult with relevant vector control agencies for applicable County-sponsored Master Plan Projects. For other Master Plan projects, the individual project proponents would be responsible for consulting the vector control agencies.

16-2 Section 1 has been revised to reflect the changes made to the other sections of the EIR per your comments.

16-3 Per your comment, Table 2-1 (page 2-2) has been revised.

16-4 Per your comment, Section 2.7 (page 2-9) has been revised.

16-5 Per your comment, the introductory paragraph to Section 4.5 (page 4.5-1) has been revised.

16-6 Section 4.5.1.4 (beginning on page 4.5-4) has been revised to incorporate your comments and suggested text, with some editorial changes.

16-7 Per your comment, Section 4.5.2 (page 4.5-10) has been revised, with the exception of the deletion of "at pre-project levels." Please note that CEQA review is focused on adverse impacts resulting from projects as compared with existing conditions.

16-8 Per your comment, Section 4.5.3 (page 4.5-10) has been revised.

16-9 The County of Los Angeles appreciates the concerns of the vector control agencies, and is committed to promoting appropriate vector control procedures at all relevant Master Plan projects. Please note, however, that with implementation of the outlined mitigation measure, the increase in vector-related public health impacts from the Master Plan would be less than significant as compared with existing conditions. However, this CEQA impact determination is not intended to imply that the Master Plan mitigation measures will mitigate existing vector conditions throughout the study area and alleviate all public health risks.

16-10 Per your comment, Table 4.5-2 (beginning on page 4.5-11) has been revised. Please note that the reference to the Health and Safety Code has been incorporated into Section 4.5.1.4 (Existing Setting).

Your comment that constructed wetlands and other facilities would impact public health in violation of the Health and Safety Code has not been incorporated since the reference to the Health and Safety Code has been incorporated in Section 4.5.1.4 (page 4.5-4) as noted above.

16-11 Per your comment, Section 4.5.4.1 (page 4.5-15) has been revised.

16-12 The County's determination that the risks of the bird/wildlife aircraft strike hazard would be less than significant at the Woodland Duck Farm and the El Dorado Regional Park Concept Design Study sites is based on existing bird use of the site and the relative sizes of the proposed habitat enhancements. Due to the highly urbanized nature of the project area and the continuing influence of human activity thus reducing the attractiveness of the created habitat to wildlife, a substantial increase in waterfowl population is not anticipated.

16-13 The County acknowledges the vector control agencies' concern regarding covered or underground stormwater capture/treatment devices. Section 4.5.4.3 (page 4.5-17) has been revised to reflect your comments. Please note, however, that surface (as opposed to underground or covered) stormwater control/treatment features are more likely to be implemented as part of future Master Plan projects since the Master Plan promotes multi-objective projects and surface features have the potential to provide multiple benefits (recreation, habitat, aesthetic, flood control, and/or water quality). Please also see responses to your comments below regarding Section 4.5.4.3.

16-14 Per your comment, Mitigation Measures MP-H1 (page 4.5-20) and CD-H1 (page 4.5-21) have been revised to add that catch basins must be designed so that all runoff would flow into the downstream facilities without ponding.

16-15 Per your comment, Mitigation Measures MP-H1 (page 4.5-20) and CD-H1 (page 4.5-21) have been revised to incorporate your comments.

16-16 Per your comment Section 4.5.4.3 (page 4.5-17, Retention Basins) has been revised to incorporate your comments. The second sentence has not been deleted since retention basins (as opposed to detention basins) would be designed to infiltrate.

16-17 Per your comment Section 4.5.4.3 (page 4.5-17, Stormwater Wetlands) has been revised.

16-18 Per your comment Section 4.5.4.3 (pages 4.5-17 and 18, Permanent Lakes) has been revised.

16-19 Please see response to comment 16-9.

16-20 Per your comment Section 4.5.1.4 (page 4.5-4, Existing Setting) has been revised to incorporate a reference to the California Health and Safety Code. Your suggested text change to the second sentence in the third paragraph has not been incorporated. The County acknowledges that increases in midges and black files would constitute a nuisance, but the impact of the Master Plan related to this nuisance would be less than significant since they do not transmit diseases to humans.

16-21 Per your comment, the last paragraph of Section 4.5.4.3 (page 4.5-18) has been revised.

16-22 Per your comment, Section 4.5.5.2 (page 4.5-19) has been revised.

16-23 Per your comment, Section 4.5.5.2 (page 4.5-19) has been revised to delete the word "insect".

16-24 To be consistent with the California Health and Safety Code, the term "district" will be utilized throughout the document.

16-25 Section 4.6.1.4 (page 4.6-20) has been revised to cross-reference Section 4.5.1.4, where a reference to the California Health and Safety Code has been added per your comment.

16-26 Per your comment, Section 4.9.1.3 (page 4.9-5) has been revised to add a cross-reference to Section 4.5.4.3, where text has been added regarding the potential for underground utility vaults to breed mosquitoes. In addition, Mitigation Measure MP-H1 (page 4.6-20) has been revised to incorporate your comment.

16-27 Per your comment, Section 5.3.2.4 (page 5-10) has been revised to acknowledge that any of the related projects may include stormwater best management practices that could create mosquito habitat. However, since the Master Plan incorporates mitigation measures for vector control, and the extent of mosquito habitat potentially created by any stormwater BMPs associated with the related projects is not known, a cumulatively considerable increase in vector-related public health risks is not anticipated based on available information.

The Master Plan goals include balancing enhancements to habitat, recreation, and open space while maintaining and enhancing flood protection and water resources; therefore, the extent of habitat enhancements that can be achieved along the River corridor would be moderated by these other objectives. Furthermore, the Master Plan Habitat element includes Performance Criteria H.2.5 and H.4.3, which are intended to encourage future Master Plan project proponents to consider the public health implications of habitat enhancement projects early in the planning process. Therefore, the Master Plan would not result in a cumulatively considerable increase in risks to public health associated with increased human-wildlife interactions.

Responses to Comment Letter No. 17
County Sanitation Districts of Los Angeles County

17-1 Per your comment, the Master Plan and the EIR have been revised.

17-2 Per your comment, the Master Plan has been revised.

17-3 Per your comment, the Master Plan has been revised.

17-4 Per your comment, the Master Plan and the EIR have been revised.

17-5 Per your comments, the Master Plan and the EIR have been revised.

17-6 Per your comment, the Master Plan has been revised.

17-7 Per your comment, the Master Plan has been revised.

17-8 Per your comment, the Master Plan has been revised.

17-9 Per your comment, the Master Plan has been revised.

17-10 In response to your comment, the reference to Department of Fish and Game standards has been deleted from page 3-69 of the Master Plan.

17-11 In response to your comment, the text on Master Plan page 3-69 has been modified.

17-12 Per your comment, the Master Plan has been revised.

17-13 Table 2-2 (page 2-8, List of Permits, Approvals, and Coordination Potentially Relevant to Future Projects in the Master Planning Area) has been revised to reference the Districts. Please also note that for future projects that include construction of pipelines or other underground structures, Mitigation Measure MP-P3 (Section 4.9.5.3, page 4.9-16) requires consultation with relevant utilities (including sewers) to identify existing and proposed buried facilities in affected areas.

17-14 Per your comment, Table 4.6-4 (page 4.6-9) has been revised.

Responses to Comment Letter No. 18
Southern California Association of Governments

18-1 The County appreciates your acknowledgement of the discussion provided in the Program EIR regarding the Master Plan's consistency with SCAG plans and policies.

Responses to Comment Letter No. 19
Southern California Edison

19-1 The County will involve Southern California Edison (SCE) early in the conceptual planning stage for all Los Angeles County sponsored projects along the river corridor that may be located in or near SCE's right-of-way. Other project sponsors would be responsible for consulting SCE for applicable projects. Per your comment, Table 2-2 (page 2-8, List of Permits, Approvals, and Coordination Potentially Relevant to Future Projects in the Master Planning Area) has been revised to include SCE.

We commend your willingness to collaborate with the County to provide a higher quality of life for the citizens of Los Angeles County. We also encourage SCE to explore the possibility of expanding the realm of the possible within SCE's properties or easements. Developing partnerships and collaborations among agencies will ensure mutual benefits for all.

19-2 The County is fully aware of and acknowledges the vital importance of SCE's stewardship and regulatory requirements. We believe that SCE's Secondary Land Use Program objectives to achieve a balance of uses, including low-intensity, green/passive recreational uses, and low-intensity economic development, are compatible with the multi-objective character of the Master Plan. The Master Plan also strives to achieve a balance among the several objectives of habitat, recreation, open space, and economic development, along with flood protection, water quality, and water conservation.

Given these similar underlying principles, the County looks forward to working closely with SCE over the coming years in finding ways to introduce habitat, recreation, open space as well as economic development uses to the river corridor in ways that are fully compatible with both the vision of the Master Plan and essential utility system operations, and stewardship requirements of SCE.

19-3 In addition to consulting with SCE on a regular basis for future County-sponsored projects that may be in or near SCE rights-of-way, we will also rely on the guidance and design criteria provided in "Southern California Edison Rights-of-Way Constraints Guidelines."

We will also recommend to other project sponsors within the river corridor that they refer to this same document in the design and development of their respective projects. It is also suggested that this be a topic at a future meeting of the Master Plan Steering Committee, at which representatives of SCE could present these guidelines to members of the Steering Committee as well as distribute the official SCE guidelines document to all interested stakeholders. Your recent collaborations with the City of Long Beach, as well as the Woodlands Duck Farm, could also be presented as positive working models for future partnerships.

19-4 The County acknowledges its shared commitment with the SCE to work together to achieve a balance of compatible uses along the San Gabriel River, and welcomes its input

regarding the Master Plan. The County believes most of the proposed projects within the Master Plan are compatible with SCE operations and maintenance requirements but that all proposed projects would be subject to possible revision to avoid potential problems and impacts. Such revisions would likely stem from the following two requirements as set forth in your letter dated May 4, 2005:

- SCE requires ongoing, complete access to its rights-of-way in order to perform routine maintenance and any required emergency repair or restoration of the facilities located there. No project, facility or operation can be allowed within its rights-of-way that would limit or impede such essential access or impact SCE's existing and future operating systems whether in the immediate project area or anywhere else in SCE's existing and future operating systems whether in the immediate project area or anywhere else in our rights-of-way and operating system.

- Establishing new wetlands or other similar natural habitat, vegetation or related natural plant areas within SCE's rights-of-way may be incompatible with SCE's operational requirements because they impede access to SCE operating systems and potentially impact the integrity of electric system operations. Such projects should be sited elsewhere in more appropriate locations. Prior to planning such projects, proponents must discuss any such proposals with SCE. SCE reserves the right of final approval for any projects utilizing SCE rights-of-way.

In principle, the County accepts and acknowledges these requirements and welcomes the opportunity to work with SCE and other involved project sponsors on any of the specific projects identified to ensure their compatibility with SCE operating requirements. This includes, but is not limited to, the following three projects:

- R5.16 – Wilderness Park Reclaimed Water and Open Space Park
- R6.03 – Byrun Zinn Park Improvement
- R6.21 and R6.23 – El Dorado Regional Park Wetlands and Master Plan Update

It also extends to other projects and programs that may cross SCE rights-of-way, but whose potential development can be compatible with SCE operating requirements if they can be designed to meet the critical design and siting principles outlined above.

The County will work with SCE and recommend that all project sponsors work with SCE from the conception to completion stage to ensure all your concerns are adequately addressed.

19-5 The County looks forward to further discussions with SCE regarding proposed habitat restoration opportunities in the Reach 4 area, as it relates to any potential development of open space as a habitat easement within SCE's rights-of-way. Such discussions can further explore the extent of the potential constraints you have identified and whether and/or to what extent proposed "safe harbor agreements" might provide the legal or operational safeguards essential to SCE's operating requirements.

19-6 The County welcomes your assessment that trail enhancements, in particular for hiking and non-motorized biking, are feasible in many locations within SCE's rights-of-way. The County will also work closely with SCE in the development of all such trail enhancements on a project-specific basis, and will recommend that all other project sponsors follow the same collaborative practice as well.

19-7 The County and SCE do share the goals of using a balanced approach to protect existing green/passive recreational open spaces and creating new opportunities for such spaces along the river corridor where they are compatible with SCE system operating requirements. The County also recognizes your concern that conservation easements and "safe harbor agreements" may not be suitable with SCE's system operating requirements, but also believes the likely benefits and possible drawbacks of such agreements should be further explored with SCE before reaching a final decision on their potential application in any future projects.

19-8 The County agrees that it must work closely with SCE on any proposed plans related to the expansion of the river channel and/or removal of concrete along the river channel, as referred to in the El Dorado Regional Park area, or any other activities that could impact SCE' system operations. Please note that these are only proposals and the viability of such proposals depends on an assessment of a range of factors, of which compatibility with SCE operating requirements is only one of many.

19-9 The County acknowledges SCE concerns regarding the development of wetlands or other similar habitats within SCE rights-of-way, which may be incompatible with SCE's operations and access. The County welcomes SCE willingness to consider the option of supporting such projects on other nearby or adjacent properties by possibly providing expanded green/passive recreation uses on SCE property along the river where appropriate and viable. Given the extent of SCE property along the river, the County further welcomes SCE commitment to work with the County and other stakeholders to identify possible areas where SCE can be of assistance.

19-10 The County acknowledges and welcomes the SCE commitment to work closely with the County on crafting policies related to designs and uses along the river corridor that are compatible with SCE's operations and that do not impose unnecessary operational or financial burdens on the company or the users of its property.

19-11 The County acknowledges SCE concerns regarding the possible incompatibility of SCE operations and access with the proposed development of wetlands and related habitat areas on this property, and that "safe harbor agreements" may not be sufficient mechanisms to ensure SCE access to its operating property. The County welcomes SCE's continued willingness to work closely with the County on further exploring these questions.

19-12 The County acknowledges SCE's concerns regarding proposed alignments for Lario Creek. Given the need to ensure SCE's ability to maintain, operate, and possibly expand

its existing facilities within its rights-of-way, and to address potential safety risks to the visiting public, the County will consult closely with SCE regarding all these issues.

19-13 The County acknowledges that SCE will require additional information for any proposed project along the river corridor that crosses SCE's rights-of-way, in order to assess potential impacts on SCE's operations. For County-sponsored projects, the County will provide that information to SCE and work closely with SCE on exploring ways in which such projects might be able to function within SCE's rights-of-way without substantial interference with SCE's operations. The County will also recommend that sponsors of other projects that may cross SCE's rights-of-way work closely with SCE by providing all needed information for assessment of potential impacts.

The County also acknowledges that there will be costs incurred by all stakeholders in the development of Master Plan projects. We will encourage all project sponsors to consider these costs in the beginning stages of each project.

19-14 The County also believes there are many areas along the San Gabriel River corridor where it will be possible for the County and SCE to collaborate on achieving a balance of desirable and appropriate uses, and where SCE can offer the use of needed property to the County and other involved parties to help achieve the vision and goals of the Master Plan. The County acknowledges that there may be some projects in some locations that may not be compatible with SCE's operational and maintenance requirements and responsibilities for existing and future facilities. Given the critical nature of these facilities, the County looks forward to working with the SCE on a continuing basis to ensure that the vision of the Master Plan can move forward but in full alignment with SCE's operational and maintenance requirements.

The County understands SCE's need for operation and maintenance of their facilities within the Master Plan project area. The County has always and will continue to partner with SCE to work together for a successful completion of projects which benefit and enhance each others operations as well as encourage other stakeholders to do the same.

Responses to Comment Letter No. 20
Southern Council of Conservation Clubs

20-1 The County acknowledges your concurrence with the Master Plan and your support for the maximum habitat alternative. Please note, however, that the maximum habitat alternative is not selected as the proposed project since it would fail to meet the goal of balancing habitat, recreation, and open space, as intended by the Board of Supervisors' resolution and as defined by the project objectives (see Section 6.1.2, beginning on page 6-5).

The County is committed to continuing to involve all stakeholders, including hunters and fishermen.

20-2 While some future Master Plan projects may involve habitat enhancements in areas where mountain lions and/or bighorn sheep may be present (West Fork of the River and associated canyons in the San Gabriel Mountains), implementation of the Master Plan would not affect the ecological relationship that has always existed between mountain lions and bighorn sheep.

Responses to Comment Letter No. 21
United Rock Products

21-1 The County acknowledges your concerns regarding future projects that may impact your operations and welcomes your continued participation in the Master Plan process. Future notifications to stakeholders (including United Rock Products) by the County will include e-mail notification of Steering Committee meetings, project website updates (www.sangabrielriver.com) and future CEQA notices for second-tier environmental documentation.

Responses to Comment Letter No. 22
Vulcan Materials Company Western Division

22-1 As noted in Section 4.7.1 (page 4.7-3), the Master Plan goals, objectives, and performance criteria are not intended to amend or replace any existing land use regulations. As described in Section 4.7.3 (page 4.7-15), the Master Plan envisions that future Master Plan projects that involve mine reclamation would be implemented based on negotiation and partnership with the current owners and operators. Therefore, such projects under the Master Plan are anticipated to take place after extraction of mineral resources has been completed. However, if a future Master Plan project involves development of facilities that would result in the restriction of future mineral extraction operations, the potential impact of the project on mineral resources would be evaluated and disclosed in second-tier CEQA documentation (see Section 4.7.5.1).

The Master Plan goals include maintenance of existing water and other rights while enhancing water quality, water supply, groundwater recharge, and water conservation. Please also see response to comment 11-9.

22-2 The County acknowledges Vulcan's commitment to enhancing the River system and welcomes Vulcan's continued participation in the Mater Plan process.

22-3 The comments originally submitted by Vulcan Materials Company on Nov 23, 2003 were used to help revise an earlier draft of the Master Plan, and for that reason are cited as a reference in the bibliography.

22-4 Future notifications to stakeholders (including Vulcan) by the County will include e-mail notification of Steering Committee meetings, project website updates (www.sangabrielriver.com) and future CEQA notices for second-tier environmental documentation. The County welcomes Vulcan's continued participation in the Master Plan process.

Responses to Comment Letter No. 23
Mr. Robert Dale

23-1 The County acknowledges your support for efforts to improve the river corridor's environmental quality and recreational opportunities. The Master Plan's vision is to develop the River corridor as an integrated watershed system that enhances habitat, provides recreational benefits, and protects open space while maintaining and enhancing flood protection and water resources. Please also see response to comment 10-2.

Implementation of Master Plan projects in a manner consistent with the Master Plan's Water Quality and Water Supply goal would reduce urban runoff and stormwater pollutant discharges to surface waters. In addition, the County of Orange is developing the Coyote and Carbon Creek Watershed Management Plan, listed as project R7.01 in the Master Plan, which will directly address urban runoff from inland communities in Orange County, including La Habra.

23-2 The Master Plan includes the Flood Control goal, which is intended to encourage projects that improve flood protection using natural processes and/or improve the aesthetics of flood control facilities. The County also acknowledges your support for improving riparian habitat and new or improved educational nature centers.

23-3 The County acknowledges your support for improved bike trails and linkages. The Master Plan includes the Recreation objective RC-2 (Connect open space and recreation areas with a network of trails). Implementation of future Master Plan projects in a manner consistent with this objective would result in improved bike trails (including more amenities such as shade trees, landscaping and rest areas), development of regional bike trail linkages, and increased access.

The Master Plan encourages the development of east-west trail connections to the San Gabriel River Bike Trail. This includes project R5.05 Whittier Greenway Trail and Connection being built along an abandoned railroad right-of-way, which, when completed, would extend from the San Gabriel River in Whittier through the City of La Habra to the City of Brea.

Per your comment regarding extending the Coyote Creek Bike Lane north to La Habra, please note that the project description for R7.02 Coyote Creek Regional Bikeway Improvements has been updated based on new information provided by the County of Orange.

23-4 While the Master Plan goals, objectives, and performance criteria are not intended to amend or replace any existing land use regulations, implementation of the Master Plan would have beneficial impacts with respect to land use by encouraging projects that protect/enhance land uses (e.g., open space) that enhance the character of the communities in the River corridor (see Section 4.7.3, page 4.7-14).

Responses to Comment Letter No. 24
Mr. Lester Kau

24-1 The County appreciates your interest in the Master Plan, and has reviewed and considered your comments. Los Angeles County has reviewed the information provided regarding the San Gabriel Valley Gun Club and the City of Azusa's zoning of the land to open space. Please note that the proposed Master Plan does not specifically propose zone changes to parcels along the river corridor, and the County has no jurisdiction over City of Azusa land use decisions. As noted in the Master Plan (R3.10 West Riverbank Tree Planting Project at the San Gabriel Valley Gun Club), a tree planting project is proposed at the gun club site. The County of Los Angeles does not have any zoning jurisdiction over the area discussed in your letter. We encourage you to contact the City of Azusa's Planning Division regarding your concern.

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

Findings

San Gabriel River Corridor Master Plan

June 2006

SCH No. 2003041187

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1.0 INTRODUCTION

Having received, reviewed, and considered the information contained in the Final Program EIR for the San Gabriel River Corridor Master Plan, the Board of Supervisors hereby makes findings in accordance with Sections 21081 and 21081.6 of the Public Resources Code as follows. Except as otherwise noted, these findings incorporate the facts and discussions of environmental impacts that are found in the Final Program EIR as if fully set forth herein.

Pursuant to the California Environmental Quality Act ("CEQA," Public Resources Code §§ 21000-21178.1) and the State CEQA Guidelines (14 Cal. Code Regs., §§ 15000-15387), the County of Los Angeles (County) is the lead agency for the San Gabriel River Corridor Master Plan (Master Plan or Project). The County prepared a Program Environmental Impact Report (Program EIR) for the Master Plan (State Clearinghouse No. 2003041187), to consider the environmental impacts, mitigation measures, and alternatives of the Master Plan on a program level. As projects identified in the Master Plan are proposed for implementation in the future, their sponsors will examine each project in light of the program EIR to determine what additional project-level environmental document must be prepared. The data on existing conditions and the programmatic analyses and mitigation measures presented in the program EIR will then serve as a source of background information and model to guide further project-level CEQA review.

2.0 BACKGROUND AND PROJECT OBJECTIVES

The San Gabriel River extends from the Angeles National Forest through the San Gabriel Valley and the Los Angeles Coastal Plain to the Pacific Ocean. Engineered modifications currently present along the River provide flood protection for surrounding urban development. These modifications have also allowed development almost to the River's edge, decreasing open space and altering natural habitats. In order to address conditions along the River, the County of Los Angeles Board of Supervisors passed a resolution in 1999 instructing the Department of Public Works (LADPW) to prepare a San Gabriel River Master Plan for Board approval, with the assistance of the Department of Regional Planning, Department of Parks and Recreation, and the National Park Service (NPS) (Rivers, Trails, and Conservation Assistance Program). To develop the Master Plan, LADPW established the San Gabriel River Master Plan Steering Committee (Steering Committee) composed of a broad range of stakeholders, including: cities along the river; water and regulatory agencies; interested community, business, and environmental groups; and other interested individuals. The Steering Committee is open to the public, and members have met more than 40 times over the past 4 years. In addition to the Steering Committee, a Planning Committee consisting of Los Angeles County, San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy (RMC), and NPS staff meets monthly.

The Steering Committee and LADPW developed a vision statement and a set of broad goals. As defined by the Steering Committee, the vision for the project is:

> *The San Gabriel River will be the corridor of an integrated watershed system while providing protection, benefit and enjoyment to the public.*

The following goals of the Master Plan support the vision for the San Gabriel River and serve as the project objectives for the Master Plan in accordance with State CEQA Guidelines Section 15124(b):

1. Habitat: Preserve and enhance habitat systems through public education, connectivity, and balance with other uses.
2. Recreation: Encourage and enhance safe and diverse recreation systems, while providing for expansion, equitable and sufficient access, balance, and multi-purpose uses.
3. Open Space: Enhance and protect open space systems through conservation, aesthetics, connectivity, stewardship, and multi-purpose uses.
4. Flood Protection: Maintain flood protection and existing water and other rights while enhancing flood management activities through the integration with recreation, open space, and habitat systems.
5. Water Supply and Water Quality: Maintain existing water and other rights while enhancing water quality, water supply, groundwater recharge, and water conservation through the integration with recreation, open space, and habitat systems.
6. Economic Development: Pursue economic development opportunities derived from and compatible with the natural aesthetic and environmental qualities of the river.

3.0 PROJECT DESCRIPTION

The Master Plan is an overall conceptual plan that focuses primarily on developing the San Gabriel River corridor as an integrated watershed system that enhances habitat, provides recreational benefits, and protects open space, while maintaining and enhancing flood protection and water resources. During the course of the Master Plan development process, over 130 independently sponsored enhancement projects were identified by the member agencies and organizations of the Steering Committee. Each of these projects incorporate one or more of the Master Plan goals of enhancing habitat, recreation and open space, while maintaining and enhancing flood protection, water supply and water quality. The Master Plan provides guidelines to help coordinate these independent projects and to facilitate the achievement of the shared vision and goals for the San Gabriel River corridor.

The Master Plan includes:

1. **Master Plan Vision, Goals, Objectives and Performance Criteria –** For each Master Plan goal (habitat, recreation, open space, flood protection, water supply and water quality, and economic development), the Steering Committee and LADPW defined multiple objectives that support the Master Plan vision and the goal. Performance criteria were then developed to measure progress toward those objectives.

2. **River Enhancement Project Concepts –** The following eight categories of project concepts were developed from a collective review of proposed projects along the San Gabriel River. The eight project concepts illustrate the types of projects that can be implemented along the river corridor to help achieve the vision and goals of the Master Plan.

- □ Trail Enhancements
- □ Educational Centers
- □ Bridges, Gateways and Connections
- □ Parks and Open Space
- □ Redevelopment and Reclamation
- □ Habitat Enhancement
- □ Water Quality and Supply
- □ Studies

3. **River Corridor Projects, Policies, and Programs**, **and Design Guidelines –** River corridor-wide efforts, policies, and guidelines intended to connect site-specific projects or address issues common to most Master Plan projects. The aesthetic design guidelines identify the types of materials, colors, and forms that can be incorporated into the design of project facilities (e.g., fences, gates, and walls) and landscaped areas to create an identity for the River.

4. **Stakeholder Projects –** Summary descriptions of over 130 projects suggested or proposed by Steering Committee members. Five of these projects are highlighted in the Master Plan as Concept Design Studies (see below).

5. **Concept Design Studies –** Five of the stakeholder projects are highlighted in the Master Plan as Concept Design Studies. The Concept Design Studies were defined to illustrate the types of multi-purpose projects to be fostered by the Master Plan. The conceptual project descriptions detailed in the Master Plan are the result of a Steering Committee exercise to help provide tangible examples of how the Master Plan multi-objective approach might apply to projects in the San Gabriel River corridor. These studies are intended for illustration purposes only and do not necessarily reflect the intent of the project sponsors. Environmental analysis in the Program EIR is based on the conceptual project descriptions in the Master Plan.

   - □ **San Gabriel Canyon Spreading Grounds** – Proposed by LADPW and the City of Azusa, this project will provide aesthetic improvements and recreational amenities for the area between the River and the San Gabriel Canyon Spreading Grounds. Potential project elements include improvements to the fencing around the spreading basins, landscaping, habitat restoration/enhancements, trail enhancement, and interpretive signage.
   - □ **Woodland Duck Farm** – Proposed by the Watershed Conservation Authority (WCA), this project will modify an abandoned duck farm site into an open space area with passive recreation and native habitat enhancements. Potential project elements include trails, habitat, improved site access and parking, an educational center, and constructed wetlands.
   - □ **San Gabriel River Discovery Center at Whittier Narrows** – Proposed by the Upper San Gabriel Valley Municipal Water District, County of Los Angeles Department of Parks and Recreation, and RMC, this project will include replacement of the existing Whittier Narrows Nature Center building with a new San Gabriel

River Discovery Center, habitat restoration/enhancements, improvements to the existing trail system, and development of constructed wetlands.

- **Lario Creek** – Proposed by LADPW and North East Trees, this project will enhance water conservation by increasing the capacity of Lario Creek, a man-made conveyance structure operated by LADPW to divert water from the San Gabriel River to the Rio Hondo through the Whittier Narrows Flood Control Basin. The project also proposes improvements to the surrounding Whittier Narrows Nature Area (e.g., trails, signage, constructed wetlands, and habitat restoration/enhancements).
- **El Dorado Regional Park** – Proposed by the City of Long Beach, this project includes improvements to the City's El Dorado Regional Park. Potential project elements include: development of constructed wetlands, replacement of the existing water supply for the man-made lakes in the park with a non-potable source, and habitat restoration/enhancements.

4.0 RECORD OF PROCEEDINGS

Notice of Preparation and Public Scoping Meeting. LADPW, as the division of the County responsible for preparing the Program EIR, prepared and circulated a Notice of Preparation (NOP) for the Program EIR for the Master Plan. The 30-day review period for the NOP extended from April 29, 2003 to May 28, 2003. During the review period, comments were solicited from state and local government agencies that would affect or be affected by the Project, as well as private organizations and individuals that might have an interest in the Project. The NOP is included in Appendix B of the Final Program EIR.

The County received 21 comment letters on the NOP. CEQA related comments were also received during the CEQA scoping meeting held at LADPW offices in Alhambra on May 12, 2003. The written comments submitted on the NOP and comments provided at the CEQA scoping meeting assisted LADPW in focusing the environmental analysis in the Draft Program EIR, and are presented in Appendix B of the Final Program EIR.

Draft Program EIR Circulation. A Draft Program EIR for the Master Plan was completed and released for public review on March 7, 2005, and LADPW initiated a 60-day public comment period by filing a Notice of Completion (NOC) and a Notice of Availability (NOA) with the State Office of Planning and Research. The public review period ended on May 5, 2005. LADPW also provided the NOA to all organizations and individuals who had previously requested such notice. The NOA and the Draft Program EIR were mailed to a total of 72 agencies (including all responsible and trustee agencies), organizations, and interested individuals. The NOA was published in 4 newspapers of general circulation in the project area (*San Gabriel Valley Tribune, Whittier Daily News, Long Beach Press Telegram, and Seal Beach Sun* on March 11 and April 1, 2005). In addition, the NOA was sent to over 200 individuals by e-mail. The NOA was filed with the County Clerks of Los Angeles County and Orange County for public posting. Copies of the Draft Program EIR were made available for public review at the LADPW office in Alhambra, 19 local and area libraries, and on the Master Plan website.

LADPW received written comments on the Draft Program EIR from 24 agencies, organizations and individuals, all of which LADPW responded to in the Final Program EIR. Agency and public comments received on the Draft Program EIR, as well as responses to these comments, are presented in Appendix F of the Final Program EIR.

Final Program EIR. LADPW prepared the Final Program EIR, and provided copies of the Final Program EIR to all commenting agencies.

The following documents are part of the record of proceedings upon which the Board of Supervisors based its decision on the Project:

- The NOP for the Project
- All comments submitted by agencies or members of the public during the public comment period on the NOP
- Public notices issued in conjunction with the Project
- The Draft Program EIR
- All comments submitted by agencies or members of the public during the public comment period on the Draft Program EIR
- The Final Program EIR for the Project
- The Mitigation Monitoring and Reporting Program (MMRP) for the Project
- All findings and resolutions adopted by the County in connection with the Project and all documents cited or referred to therein
- All reports, studies, memoranda, maps and other planning documents relating to the Project prepared by the County, the County's consultants, or responsible or trustee agencies with respect to the County's compliance with the requirements of CEQA and with respect to the County's action on the Project
- All documents submitted to the County by agencies or members of the public in connection with the Project
- Matters of common knowledge to the County, including, but not limited to, federal, state, and local laws and regulations

The location of the documents and other materials constituting the record of proceedings upon which the Board of Supervisors' decision is based in this matter is the County of Los Angeles Department of Public Works, Watershed Management Division, 900 South Fremont Avenue, Alhambra, California 91803. The custodian of such documents and materials shall be the Assistant Deputy Director for the Watershed Management Division, County of Los Angeles Department of Public Works.

5.0 ENVIRONMENTAL EFFECTS THAT ARE LESS THAN SIGNIFICANT WITHOUT MITIGATION

The Final Program EIR identifies environmental effects of the Project that were determined to be less than significant, and no mitigation is required to address these effects. Nevertheless, for some of the impacts, mitigation measures have been identified to reduce the less-than-significant impacts.

5.1 Air Quality

5.1.1 Master Plan Impacts

Operational impacts on air quality due to increased vehicle trips for maintenance activities and visions to recreational facilities were determined to be less than significant before mitigation. However, the following mitigation measure has been identified to reduce these impacts.

MP-A2 Evaluations of air quality impacts during project operation will be conducted as follows during site-specific environmental review of each future Master Plan project:

1. Based on the site-specific project description, the number of vehicle trips that would be generated by operation of proposed facilities (e.g., ongoing maintenance activities and/or visitors to recreational or educational facilities) will be estimated, and air emissions associated with those vehicle trips will be determined. If project operation involves use of electricity (e.g., lighting for parks, education center or park buildings, pumps, etc.), air emissions associated with electricity consumption will be estimated.
2. Based on the above information, and using the latest version of the SCAQMD CEQA Handbook, operational emissions will be compared to the thresholds of significance (**Section 4.12**).
3. One or more of the following measures will be implemented as applicable to reduce air emissions:
    - Implement dust control if dry conditions and substantial area is disturbed for operations and maintenance activities that involve ground disturbance.
    - Select energy efficient lighting features or other building design considerations for proposed facilities (e.g., park buildings or interpretive centers) to minimize emissions associated with power generation.
    - Select low-emissions equipment and vehicles for operations and maintenance to reduce tailpipe emissions.
    - Implement an employee ride-share plan to reduce vehicle trips to the facility and associated tailpipe emissions.

5.1.2 Concept Design Study Impacts

PM10 emissions during construction (earth-moving activities) (all Concept Design Study projects) were determined to be less than significant before mitigation. However, the following mitigation measures have been identified to reduce these impacts.

CD-A1 Clean dirt from construction vehicle tires and undercarriages when leaving the construction site and before entering local roadways.

CD-A2 During earth-moving activities, water the construction area as necessary, but at least twice per day.

CD-A3 Water temporary open storage piles once per hour or install temporary covers.

CD-A4 Water unpaved roadways three times per day or apply non-toxic soil stabilizers. (Note: CD-A5 Use of soil stabilizers near wetlands, streams, or other water features may be limited by regulatory agencies such as the U.S. Army Corps of Engineers and the California Department of Fish and Game.)

CD-A5 Limit construction vehicle speed on the project site to 15 miles per hour (mph) or less.

CD-A6 Cover dirt in trucks during on-road hauling.

CD-A7 Cease earth-moving activities on days when wind gusts exceed 25 mph or apply water to soil not more than 15 minutes prior to moving such soil.

CD-A8 Sweep streets near the construction area at the end of the day if visible soil material is present.

CD-A9 For applicable construction areas, establish a vegetative groundcover as soon as feasible after active operations have ceased. Groundcover shall be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting.

CD-A10 Per SCAQMD Rule 403(e), large construction operations (greater than 50 acres of disturbed area or daily earth-moving or throughput volume of 5,000 cubic yards three times during the most recent 365-day period) shall implement applicable dust suppression measures specified in Table 2 of Rule 403 at all times. When the applicable performance standards cannot be met through use of Table 2 measures, the applicable contingency control measures specified in Table 3 of Rule 403 shall be implemented.

Tailpipe emissions during construction (all Concept Design Study projects) were determined to be less than significant before mitigation. However, the following mitigation measures have been identified to reduce these impacts.

CD-A11 Prohibit all vehicles from idling in excess of 10 minutes, both on and off-site.

CD-A12 Maintain construction equipment in proper tune.

CD-A13 Encourage contractors to establish trip reduction plans. The goal of these plans will be to achieve a 1.5 average vehicle ridership (AVR) for construction employees.

To further reduce tailpipe emissions from construction equipment, implementation of optional Mitigation Measure CD-A14 shall be considered at the time of construction of individual projects.

CD-A14 Select construction equipment with low pollutant emissions and high energy efficiency. Factors to consider include model year and alternative fuels (e.g., compressed natural gas, biodiesel, emulsified diesel, methanol, propane, butane, and low sulfur diesel).

Impacts related to odor were determined to be less than significant before mitigation.

Operational impacts on air quality due to increased vehicle trips for maintenance activities and visitors to recreational facilities (all Concept Design Study projects) were determined to be less than significant before mitigation. However, the following mitigation measures have been identified to reduce these impacts.

CD-A15 Implement dust control if dry conditions and substantial area is disturbed for operations and maintenance activities that involve ground disturbance

CD-A16 Select energy efficient lighting features or other building design considerations for proposed facilities (e.g., park buildings or interpretive centers) to minimize emissions associated with power generation.

5.2 Biological Resources

5.2.1 Master Plan Impacts

Impacts related to invasive plant species were determined to be less than significant before mitigation. However, the following mitigation measure has been identified to reduce these impacts.

MP-B2 Landscaping of vegetation will not include any invasive plant species as listed on the California Invasive Plant Council Pest Plant List.

Lighting impacts on nocturnal and crepuscular wildlife were determined to be less than significant before mitigation. However, the following mitigation measure has been identified to reduce these impacts.

MP-B3 For projects that involve use of night lighting in public areas (e.g., parks) for health and/or safety reasons, lighting will be designed to minimize effects on the behavior patterns of nocturnal and crepuscular (active at dawn and dusk) wildlife (e.g., small ground-dwelling animals that use the darkness to hide from predators, and on owls that are specialized night foragers). To reduce light impacts on nocturnal and crepuscular

wildlife, night lighting will be low intensity directional lighting focused away from open space areas.

5.2.2 Concept Design Study Impacts

Construction impacts on special status habitat types for (San Gabriel River Discovery Center, Lario Creek, and El Dorado Regional Park) were determined to be less than significant before mitigation.

Construction impacts on respiratory function of plants (dust accumulation on leaf surfaces) (all Concept Design Study projects) were determined to be less than significant before mitigation.

Impacts related to invasive plant species (all Concept Design Study projects) were determined to be less than significant before mitigation. However, the following mitigation measure has been identified to reduce these impacts.

> **CD-B5** Invasive Plant Species – Landscaping of surrounding vegetation shall not include any invasive plant species as listed on the California Invasive Plant Council Pest Plant List.

Lighting impacts on nocturnal and crepuscular wildlife (all Concept Design Study projects) were determined to be less than significant before mitigation. However, the following mitigation measure has been identified to reduce these impacts.

> **CD-B6** Night Lighting – Night lighting is expected to be used in public areas for health and safety reasons. Lighting would inadvertently affect the behavior patterns of nocturnal and crepuscular (active at dawn and dusk) wildlife at these areas. Of greatest concern is the effect on small ground-dwelling animals that use the darkness to hide from predators, and on owls that are specialized night foragers. To reduce light impacts on nocturnal and crepuscular wildlife, night lighting shall be low intensity directional lighting focused away from open space areas.

Operational impacts on special status plant and wildlife species, special status habitat types, and native plant species from habitat restoration/enhancement projects (all Concept Design Study projects) were determined to be less than significant before mitigation.

5.3 Cultural Resources

5.3.1 Concept Design Study Impacts

Construction impacts on palentological resources (all Concept Design Study projects) were determined to be less than significant before mitigation.

5.4 Geology and Soils

5.4.1 Master Plan Impacts

Impacts related to seismic ground shaking and surface rupture were determined to be less than significant before mitigation.

Impacts on habitable structures related to geologic hazards were determined to be less than significant before mitigation. However, for future projects that include construction of habitable structures (e.g., recreation or interpretive centers), the following mitigation measure has been identified to reduce these impacts.

MP-G3 The site plan and building footprint will be reviewed by a registered professional to ensure that project siting and design provides adequate protection from geologic hazards such as fault rupture (including Alquist-Priolo Earthquake Fault Zones), expansive soils, liquefaction, and unstable slopes. If a project site is located in known high risk areas with respect to geological hazards, a site-specific geotechnical study will be performed during facility design to identify potential concerns and recommended measures to reduce hazards. Recommendations in the geotechnical study will be incorporated into the final design.

5.4.2 Concept Design Study Impacts

Impacts related to seismic ground shaking, surface rupture and subsidence (all Concept Design Study projects) were determined to be less than significant before mitigation.

5.5 Hazards and Hazardous Materials

5.5.1 Master Plan Impacts

Impacts related to handling of hazardous materials (disposal of potentially contaminated sediments during maintenance of stormwater facilities) were determined to be less than significant before mitigation.

Impacts related to potential increase in bird/wildlife air strike hazard at nearby airports were determined to be less than significant before mitigation. However, the following mitigation measure has been identified to reduce these impacts.

MP-H2 For projects located within 5 miles of El Monte Airport or Long Beach Airport, the potential for the proposed facilities to attract waterfowl and other birds will be evaluated. If the evaluation indicates that the project would attract birds, the FAA Western Pacific Regional Office, Long Beach Airport, El Monte Airport and Los Alamitos Joint Forces Training Base will be notified of the proposed land use change to recognize potentially significant hazards early in the planning process and avoid or minimize the hazards.

5.5.2 Concept Design Study Impacts

Impacts related to handling of hazardous materials (sodium hypochlorite for stormwater disinfection and disposal of potentially contaminated sediments during maintenance of stormwater facilities) (Woodland Duck Farm, Lario Creek, San Gabriel River Discovery Center, and El Dorado Regional Park) were determined to be less than significant before mitigation.

Impacts related to potential increase in bird/wildlife air strike hazard at nearby airports (Woodland Duck Farm and El Dorado Regional Park) were determined to be less than significant before mitigation. However, the following mitigation measure has been identified to reduce these impacts.

> **CD-H2** During the detailed design phase, FAA Western Pacific Regional Office and El Monte Airport (for Woodland Duck Farm) and Long Beach Airport (for El Dorado Regional Park) shall be notified of the proposed land use change to recognize potentially significant hazards early in the planning process and avoid or minimize the hazards.

Public health impacts of recycled water and stormwater reuse (Woodland Duck Farm, Lario Creek, San Gabriel River Discovery Center, and El Dorado Regional Park) were determined to be less than significant before mitigation.

5.6 Hydrology and Water Quality

5.6.1 Master Plan Impacts

Impacts related to increase in impervious surfaces or change in drainage patterns were determined to be less than significant before mitigation.

5.6.2 Concept Design Study Impacts

Impacts related to increase in impervious surfaces or change in drainage patterns (San Gabriel Canyon Spreading Grounds, Woodland Duck Farm, and San Gabriel River Discovery Center) were determined to be less than significant before mitigation.

Impacts on channel flood capacity (El Dorado Regional Park, Lario Creek, and Woodland Duck Farm) were determined to be less than significant before mitigation.

Operational impacts on water quality related to channel modifications (El Dorado Regional Park) were determined to be less than significant before mitigation.

Impacts related to water supply and water rights (all Concept Design Study projects) were determined to be less than significant before mitigation.

Impacts related to dam safety (Woodland Duck Farm, Lario Creek, San Gabriel River Discovery Center, and El Dorado Regional Park) were determined to be less than significant before mitigation.

5.7 Land Use / Mineral Resources

5.7.1 Master Plan Impacts

Impacts on land use were determined to be less than significant before mitigation.

5.7.2 Concept Design Study Impacts

Impacts on land use and mineral resources (all Concept Design Study projects) were determined to be less than significant before mitigation.

5.8 Noise

5.8.1 Concept Design Study Impacts

Operational noise impacts (operation of pumps, use of vehicles for facility maintenance and increased traffic to parks) (all Concept Design Study projects) were determined to be less than significant before mitigation.

Impact of siting new parks in areas with high ambient noise levels (Woodland Duck Farm) was determined to be less than significant before mitigation.

5.9 Public Services and Utilities

5.9.1 Master Plan Impacts

Operational impacts on police and fire protection services were determined to be less than significant before mitigation.

Operational impacts related to sewer and wastewater treatment systems, water supply systems, electricity consumption, and solid waste were determined to be less than significant before mitigation.

Impact on landfill capacity from generation of solid waste during construction were determined to be less than significant before mitigation. However, the following mitigation measure has been identified to reduce these impacts.

> **MP-P5** State in the plans and specifications for the proposed project that the construction contractor is required to identify and implement programs for minimizing solid waste generated during construction. These programs could include recycling of asphalt and concrete paving materials, reuse and composting of green waste materials on site where appropriate (e.g., where there is limited potential for inadvertent spreading of invasive plants), and balance of graded soil on site to the maximum extent feasible.

Impact on solid waste collection routes from temporary lane and/or road closures during construction of storm drains, etc. were determined to be less than significant before mitigation. However, the following mitigation measure has been identified to reduce these impacts.

MP-P6 Prior to construction, notify the relevant municipality of the construction schedule and planned lane or road closures. The municipality or agency may then modify the solid waste collection routes and access in the area.

5.9.2 Concept Design Study Impacts

Operational impacts on police and fire protection services (all Concept Design Study projects) were determined to be less than significant before mitigation.

Construction impact on school access and student safety (San Gabriel River Discovery Center and Lario Creek). However, the following mitigation measure has been identified to reduce these impacts.

CD-P4 Prior to project construction, contact school administrators to provide sufficient notice to forewarn school bus operators, children, and parents when existing pedestrian and vehicular routes to school will be affected. As necessary to protect the safety of children, parents and employees accessing the school, one or more of the following measures shall be implemented in coordination with the school administrators:

- Develop temporary alternative pedestrian and vehicular routes to the school that avoid construction areas
- Install appropriate temporary traffic controls (signs, crossing guards, and/or signals) as needed to ensure pedestrian and vehicular safety
- Minimize use of haul routes past the school when school is in session
- Prohibit parking or staging of construction or worker vehicles on streets adjacent to the school.

CD-P5 Secure all construction areas adjacent to the school, including trench areas, operating equipment areas and equipment staging and stockpile areas, through fencing or other barriers to prevent trespassing and reduce hazards to children and other pedestrians.

Operational impacts related to sewer and wastewater treatment systems, water supply systems, electricity consumption, and solid waste (all Concept Design Study projects) were determined to be less than significant before mitigation.

Impact on landfill capacity from generation of solid waste during construction (all Concept Design Study projects) were determined to be less than significant before mitigation. However, the following mitigation measure has been identified to reduce these impacts.

CD-P8 State in the plans and specifications for the proposed project that the construction contractor is required to identify and implement one or more

of the following applicable programs for minimizing solid waste generated during construction:

- Recycling of asphalt and concrete paving materials
- Reuse and composting of green waste materials where there is limited potential for inadvertent spreading of invasive plants
- Balance graded soil on site to the maximum extent feasible

Impact on solid waste collection routes from temporary lane and/or road closures during construction of storm drains, etc. (all Concept Design Study projects) were determined to be less than significant before mitigation. However, the following mitigation measure has been identified to reduce these impacts.

CD-P9 Prior to construction, notify the relevant municipality of the construction schedule and planned lane or road closures. The municipality or agency may then modify the solid waste collection routes and access in the area.

5.10 Recreation

5.10.1 Concept Design Study Impacts

Construction impacts on existing parks (San Gabriel River Discovery Center, Lario Creek, and El Dorado Regional Park) were determined to be less than significant before mitigation.

5.11 Transportation and Traffic

5.11.1 Concept Design Study Impacts

Temporary impacts on traffic in the project area from construction vehicles and equipment and/or from construction activities in the street rights-of-way (e.g., storm drains) (all Concept Design Study projects) were determined to be less than significant before mitigation. However, the following mitigation measures have been identified to reduce these impacts.

CD-T1 A construction traffic management plan shall be developed for each project site that shall include but not be limited to such measures as designated haul routes for construction-related traffic (e.g., construction equipment, pickup and dump trucks, and other material delivery trucks), travel time restrictions for construction-related traffic to avoid weekday peak periods on selected roadways, designated site access locations, driveway turning restrictions, temporary traffic controls and/or flaggers, and designated parking/staging locations for workers and equipment.

CD-T2 A construction area traffic control plan and/or detour plan shall be prepared for any location where construction activities would encroach into the right-of-way of a public roadway. The plan would include, but not be limited to such features as warning signs, lights, barricades, cones, lane closures, and restricted hours during which lane closures would not be allowed (e.g., 6:00 to 9:00 a.m. and 3:00 to 6:00 p.m., or as directed by the affected public agency).

CD-T3 Provide advance notification to affected property owners, businesses, residents, etc. of possible driveway blockages or other access obstructions and implement alternate access and parking provisions where necessary.

CD-T4 Provide alternative pedestrian and bicycle access/circulation routes if existing facilities such as sidewalks, crosswalks, and bike lanes would be obstructed to ensure safe pedestrian/bicycle travel.

CD-T5 Coordinate with emergency service providers (police, fire, and ambulance/paramedic agencies) prior to construction to provide information regarding lane closures, construction schedules, driveway blockages, etc., if any, and develop a plan to maintain or accommodate essential emergency access routes (e.g., plating over excavations and use of detours).

CD-T6 Coordinate with public transit agencies (e.g., MTA) to provide information regarding lane closures, bus stop disruptions, etc. so that MTA or relevant agency can designate alternate pick-up/drop-off locations, if appropriate, and provide for uninterrupted service.

CD-T7 As necessary, obtain a transportation permit from Caltrans for transportation of heavy construction equipment and/or materials which requires the use of oversized-transport vehicles on State highways.

Operational impacts on traffic from increased visitors to proposed recreational facilities (all Concept Design Study projects) were determined to be less than significant before mitigation.

5.12 Growth Inducing Impacts

The Proposed Project does not involve construction of new homes or businesses and does not include construction of new, potentially growth-inducing, infrastructure such as roads or potable water or wastewater systems. Minor improvements to existing roadways may be proposed to improve site-specific access and circulation. The Master Plan would encourage projects that include infiltration of stormwater which could increase the volume of available groundwater. Since no new potable water treatment or distribution systems are proposed, this is not considered growth inducing. The Proposed Project would provide recreation and open space benefits to areas that have already been developed with residential, commercial, and industrial uses. Therefore, it would not result in the elimination of obstacles to growth. No growth inducing impacts would occur.

6.0 SIGNIFICANT ENVIRONMENTAL EFFECTS AND MITIGATION MEASURES

The Final Program EIR identifies environmental effects produced by the Project that are considered potentially significant prior to the application of mitigation measures. All of the impacts, including cumulative impacts, determined in the Program EIR to be significant or potentially significant can be mitigated to less than significant levels through the implementation of feasible mitigation measures. This section presents in greater detail each of the significant or potentially significant environmental effects of the Project and the mitigation measures that are

proposed. It also summarizes the evidence relied upon by the Board of Supervisors in making these findings. This evidence is drawn from the Final Program EIR, including the comments and responses to comments on the Draft Program EIR, comments received on the NOP, other evidence presented to the County, and all other information in the administrative record.

6.1 Air Quality

6.1.1 Master Plan Impacts

6.1.1.1 Significant Effect – Air Pollutant Emissions During Construction of Future Master Plan Projects

Construction of these projects could result in potentially significant impacts on air quality from use of construction equipment and vehicles (tailpipe emissions) and earth moving activities (fugitive dust emissions). The following mitigation measure has been identified to reduce emissions.

Mitigation Measure MP-A1: Evaluations of air quality impacts during project construction will be conducted as follows during site-specific environmental review of each future Master Plan project:

1. Based on the site-specific project description, the following should be determined:
    - Acreage of site disturbance that would occur during excavation, grading, and/or filling
    - List of necessary construction equipment (number, type, hours of operation per day, and number of days in operation for each phase of construction)
    - Length of construction period
    - Number of construction workers and vehicles
2. Based on the above information, and using the latest version of the SCAQMD CEQA Handbook, construction emissions will then be estimated and compared to the thresholds of significance.
3. If the estimated construction emissions exceed the SCAQMD threshold of significance for fugitive dust, then one or more of the following dust control measures will be implemented as applicable:
    - Clean dirt from construction vehicle tires and undercarriages when leaving the construction site and before entering local roadways.
    - During earth-moving activities, water the construction area as necessary, but at least twice per day.
    - Water temporary open storage piles once per hour or install temporary covers.
    - Water unpaved roadways three times per day or apply non-toxic soil stabilizers. (Note: Use of soil stabilizers near wetlands, streams, or other water features may be limited by regulatory agencies such as the U.S. Army Corps of Engineers and the California Department of Fish and Game.)
    - Limit construction vehicle speed on the project site to 15 miles per hour (mph) or less.

- Cover dirt in trucks during on-road hauling.
- Cease earth-moving activities on days when wind gusts exceed 25 mph or apply water to soil not more than 15 minutes prior to moving such soil.
- Sweep streets near the construction area at the end of the day if visible soil material is present.
- For applicable construction areas, establish a vegetative groundcover as soon as feasible after active operations have ceased. Groundcover will be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting.
- Per SCAQMD Rule 403(e), large construction operations (greater than 50 acres of disturbed area or daily earth-moving or throughput volume of 5,000 cubic yards three times during the most recent 365-day period) will implement applicable dust suppression measures specified in Table 2 of Rule 403 at all times. When the applicable performance standards cannot be met through use of Table 2 measures, the applicable contingency control measures specified in Table 3 of Rule 403 will be implemented.

4. If the estimated construction emissions exceed the SCAQMD threshold of significance for CO, ROC, NO_x, SO_x, then one or more of the following measures will be implemented:
   - Prohibit all vehicles from idling in excess of 10 minutes, both on and off-site.
   - Maintain construction equipment in proper tune.
   - Encourage contractors to establish trip reduction plans. The goal of these plans will be to achieve a 1.5 average vehicle ridership (AVR) for construction employees.

   To further reduce tailpipe emissions from construction equipment, implementation of the following optional measure will be considered at the time of construction of individual projects. Aside from fugitive dust, the majority of construction emissions, particularly for NO_x, are generally associated with tailpipe emissions from diesel-fueled construction equipment. Using construction equipment with alternative fuel(s) can achieve high reduction efficiency for tailpipe emissions. The approximate NO_x emissions reduction rates of various alternative fuels are: 60 percent for compressed natural gas (CNG), 10 percent for emulsified diesel fuel, and 2 to 10 percent for biodiesel fuel (EPA, 2003c). However, use of construction equipment with alternative fuel(s), while effective, may not be applicable to all projects (i.e., limited equipment availability and high costs may make it infeasible to use a large fleet of construction equipment with alternative fuel(s)).

   - Select construction equipment with low pollutant emissions and high energy efficiency. Factors to consider include model year and alternative fuels (e.g., compressed natural gas, biodiesel, emulsified diesel, methanol, propane, butane, and low sulfur diesel).

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Master Plan Projects:

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Master Plan Projects:

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: It is anticipated that future projects developed in a manner consistent with the Master Plan would involve the construction of facilities similar to those proposed for the Concept Design Studies (e.g., stormwater retention basins or constructed wetlands, trails, signage, etc.). As described in Section 4.1.4 of the Program EIR, each of the Concept Design Studies has a less than significant impact on air quality. Therefore, it is anticipated that implementation of most future projects developed in a manner consistent with the Master Plan would result in less-than-significant air emissions, similar to the Concept Design Studies. If significant air quality impacts are identified during second-tier CEQA analysis for each project undertaken pursuant to the Master Plan, site-specific mitigation measures will be defined and implemented by the specific lead agencies for each future project in the Master Plan study area. Therefore, with implementation of Mitigation Measure MP-A1, construction impacts on air quality would be reduced to less than significant levels.

Reference: Final Program EIR Section 4.1.3.

6.1.2 Concept Design Study Impacts

No significant air quality impacts have been identified for the Concept Design Studies.

6.2 Biological Resources

6.2.1 Master Plan Impacts

6.2.1.1 Significant Effect – Construction Impacts on Special Status Species and Habitat Types

Construction of these projects on an undeveloped site would result in ground disturbance, which could have an adverse impact on existing special status species and/or high-value vegetation types, if any are present at those locations. The following mitigation measure has been identified to avoid, reduce or mitigate the impact.

Mitigation Measure MP-B1: Site-specific evaluations for biological resources will be conducted prior to completion of detailed design plans for each of the future projects to determine the presence of high-value vegetation types and the potential for special status plant and wildlife species to occur. The following tasks will be completed by these evaluations:

1. Identify and determine the extent of site disturbance proposed by the project. For sites where biological resources have any potential to be sensitive, continue evaluation as outlined below.

2. General plant and wildlife surveys will be performed by a qualified biologist to determine if any focused surveys for special status species are necessary. If the general surveys indicate that there is potential for sensitive plant or wildlife species to occur on the project site, focused surveys will be conducted for those species in accordance with relevant protocols at the appropriate time of the year.

3. If any special status species or high-value vegetation types are identified, the proposed facilities will be designed and/or sited to avoid disturbance and loss of the sensitive resources. If nesting habitat of special status bird species will be impacted, project construction will be scheduled outside of the breeding season if feasible. If scheduling construction outside of the breeding season is not feasible, then a pre-construction survey will be conducted to identify nests and to establish a buffer zone between the construction area and the nests to avoid construction impacts.

4. In some instances, depending on the location of sensitive resources and/or construction schedule requirements, project redesign and/or construction phasing that avoids biological resources while still meeting the project objective may be infeasible. Therefore, if avoidance is not feasible, the following measures will be detailed and disclosed in second tier CEQA documentation and implemented under the direction of a qualified biologist:

    - Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment; and/or

- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the project; and/or
- Compensating for the impact by replacing or providing substitute resources or environments.

5. If avoidance of impacts to listed species is not feasible, then consultation with the USFWS shall be required for federally-listed species, and consultation with the CDFG shall be required for state-listed species. If special status plants are identified, a mitigation program shall be developed following focused surveys and submitted to the appropriate agencies for review.

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Master Plan Projects:

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Master Plan Projects:

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: The mitigation measure described above outlines an approach to evaluation of biological resources prior to completion of detailed design plans and implementation of measures to reduce impacts by avoiding sensitive species nesting periods during construction, avoiding high value vegetation types or special status species, and/or rehabilitating habitat where avoidance is not

feasible. Therefore, with implementation of Mitigation Measure MP-B1, construction impacts on special status species or high-value habitat types would be avoided or reduced to less than significant levels.

Reference: Final Program EIR Section 4.2.5.

6.2.1.2 Significant Effect – Disturbance of Wildlife Behavior and Habitat Associated with Human Activity

Future Master Plan projects that involve operation of facilities for active recreation could result in increased visitors and human activities, which could result in adverse impacts to adjacent or onsite habitat areas (e.g., trampling of vegetation), if any. The following mitigation measure has been identified to reduce this impact.

Mitigation Measure MP-B4: For projects that involve recreational uses near habitat areas, a management plan to reduce impacts from human uses (e.g., riding, hiking, biking) on native habitats will be incorporated into detailed design plans. As relevant, the management plan will include access points including parking and restrooms, signage for trails and restricted uses, appropriate fencing, and restrictions on domestic animals. This plan will be written by a qualified biologist and approved by the sponsoring agency prior to initiation of site development.

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Master Plan Projects:

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Master Plan Projects:

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: Mitigation Measure MP-B4 above requires preparation of a management plan to reduce impacts from human uses through proper design of recreational and other facilities in coordination with a qualified biologist. Therefore, with implementation of Mitigation Measure MP-B4, operational impacts on biological resources associated with recreational activities would be avoided or reduced to less than significant levels.

Reference: Final Program EIR Section 4.2.5.

6.2.2 Concept Design Study Impacts

6.2.2.1 Significant Effect – Impacts on Special Status Species and Habitat Types during Construction (All Concept Design Studies)

Construction of facilities for the Concept Design Study projects would result in ground disturbance, which could have an adverse impact on existing special status species. The following mitigation measures have been identified to avoid, reduce or mitigate the impact.

Mitigation Measure CD-B1: Prior to completion of detailed design plans for each of the five Concept Design Study sites, a qualified biologist shall conduct general plant and wildlife surveys to determine if any focused surveys for special status species are necessary. If the surveys confirm the potential for one or more special status species to occur, focused surveys for those species shall be conducted as described in Mitigation Measure CD-B2.

Mitigation Measure CD-B2: If the general biological survey (Mitigation Measure CD-B1) indicates that there is potential for sensitive plant species to occur on the project site, a spring survey shall be conducted prior to finalizing the project designs. The special status plant species surveys shall follow guidelines developed by the CNPS (CNPS, 2001). These surveys, as outlined in the guidelines, shall be conducted during the appropriate time of year for each species as determined by a qualified botanist. Collection of special status plant species, if any, shall follow the guidelines of CDFG and USFWS collection permits. If any special status plant species are located, their rarity and abundance shall be evaluated. If the general biological survey indicates that there is potential for special status wildlife species to occur on the project site, protocol surveys for those species shall be conducted in accordance with appropriate survey protocols at the appropriate time of the year. The results of these investigations and the appropriate mitigation measures to reduce any potentially significant environmental impacts to a level that is less than significant shall be disclosed in second tier CEQA documentation.

If any special status wildlife species are identified, the proposed facilities shall be designed and/or sited to avoid or reduce potentially significant impacts to the species during construction to levels that are less than significant. If nesting habitat of special status bird species will be impacted, project construction shall be scheduled outside of the breeding season, or a pre-

construction survey shall be conducted to identify nests and to establish a buffer zone between the construction area and identified nests to avoid construction impacts.

However, depending on the location of sensitive resources and/or construction schedule requirements, project redesign and/or construction phasing that avoids biological resources while still meeting the project objective may be infeasible. Therefore, if avoidance is not feasible, the following measures shall be detailed and disclosed in second tier CEQA document and implemented under the direction of a qualified biologist:

- Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment; or
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the project; or
- Compensating for the impact by replacing or providing substitute resources or environments.

If avoidance of impacts to listed species is not feasible, then consultation with the USFWS shall be required for federally-listed species and consultation with the CDFG shall be required for state-listed species. As relevant, a special status plant mitigation program shall be developed following focused surveys and submitted to the appropriate agencies for review.

Rationale: The mitigation measures described above outline an approach to evaluation of biological resources prior to completion of detailed design plans and implementation of measures to reduce impacts by avoiding sensitive species nesting periods during construction, avoiding special status species, and/or rehabilitating habitat where avoidance is not feasible. Therefore, with implementation of Mitigation Measures CD-B1 and CD-B2, construction impacts on special status species would be avoided or reduced to less than significant levels.

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Concept Design Study Projects (San Gabriel Canyon Spreading Grounds and Lario Creek):

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Concept Design Study Projects (Woodland Duck Farm, San Gabriel River Discovery Center, and El Dorado Regional Park):

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Reference: Final Program EIR Section 4.2.6.

6.2.2.2 Significant Effect – Impacts on Least Bell's Vireo during Construction of the San Gabriel River Discovery Center, Lario Creek and El Dorado Regional Park Concept Design Studies

The least Bell's vireo, an Endangered species, is known to occur in the vicinity of the Concept Design Study sites for San Gabriel River Discovery Center, Lario Creek, and El Dorado Regional Park. Construction of facilities at these sites may disturb nests or nesting behavior of least Bell's vireo. The following mitigation measure has been identified to avoid the impact.

Mitigation Measure CD-B4: Since least Bell's vireos are known to occur in the vicinity of the San Gabriel River Discovery Center, Lario Creek, and El Dorado Regional Park, the following mitigation measure shall be implemented to reduce impacts on this Endangered species:

To the extent feasible, no construction shall occur within the project site during the nesting season for least Bell's vireo (March 15 to September 1). However, if construction work is necessary between March 15 and September 1, a qualified biologist shall survey suitable habitat within the impact area, plus 1,000 feet (300 meters) on either side of the impact area, to identify the presence of any least Bell's vireo. No construction activities shall occur within 1,000 feet of a least Bell's vireo territory until the end of the nesting season (September 1) or when the least Bell's vireo departs the area, as determined by the biologist and with confirmation from the USFWS. The biological monitor shall use their discretion to increase the distance from vireo territory that construction can occur (in excess of 1,000 feet) or to limit use of the noisiest equipment to outside the nesting season if deemed necessary based on the type of construction equipment to be used.

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Concept Design Study Projects (Lario Creek):

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Concept Design Study Projects (San Gabriel River Discovery Center and El Dorado Regional Park):

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: The mitigation measure described above would avoid potential impacts on nests or nesting behavior of least Bell's vireo by scheduling construction to avoid the nesting season or by establishing a setback from the least Bell's vireo territory to the construction area. Therefore, with implementation of Mitigation Measure CD-B4, construction impacts on least Bell's vireo nests or nesting behavior would be avoided.

Reference: Final Program EIR Section 4.2.6.

6.2.2.3 Significant Effect – Impacts on Nesting Raptors and Other Birds during Construction of the San Gabriel River Discovery Center, Lario Creek and El Dorado Regional Park Concept Design Studies

Nests of raptors and other birds may be present in the vicinity of the Concept Design Study sites for San Gabriel River Discovery Center, Lario Creek, and El Dorado Regional Park. Construction of facilities at these sites may disturb nests or nesting behavior of raptors and other birds protected by the Migratory Bird Treaty Act and/or the California Fish and Game Code. The following mitigation measure has been identified to avoid the impact.

Mitigation Measure CD-B5: The following mitigation measure shall be implemented to avoid raptor impacts: One week prior to construction and clearing activities that would occur during the nesting/breeding season of native bird species potentially nesting on the site (typically February through August), a survey shall be conducted by a qualified biologist to determine if

active nests of bird species protected by the Migratory Bird Treaty Act and/or the California Fish and Game Code are present within 300 feet (within 500 feet for raptors) of the construction zone. Construction can proceed if no active avian nests are located during this survey. If an active nest is found during the survey, a 500-foot (this distance may vary depending on the bird species and construction activity, as determined by the biologist) fence barrier shall be erected around the nest site. Clearing and construction within the fenced area shall be postponed or halted, at the discretion of the biologist, until the nest is vacated and juveniles have fledged, as determined by the biologist, and there is no evidence of a second attempt at nesting. The biologist shall serve as a construction monitor during those periods when construction activities may occur near active nests to ensure that no inadvertent impacts on these nests occur. Results of the raptor survey and any subsequent monitoring shall be provided to the CDFG and any other appropriate agency.

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Concept Design Study Projects (Lario Creek):

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Concept Design Study Projects (San Gabriel River Discovery Center and El Dorado Regional Park):

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: The mitigation measure described above would avoid potential impacts on nests or nesting behavior of birds protected by the Migratory Bird Treaty Act and/or the California Fish

and Game Code by scheduling construction to avoid the nesting season or by establishing a setback from the vicinity of active nests to the construction area. Therefore, with implementation of Mitigation Measure CD-B5, construction impacts on nesting birds protected by the Migratory Bird Treaty Act and/or the California Fish and Game Code would be avoided.

Reference: Final Program EIR Section 4.2.6.

6.2.2.4 Significant Effect – Disturbance of Wildlife Behavior and Habitat Associated with Human Activity at Concept Design Study Sites (All Concept Design Studies)

Operation of facilities for active recreation could result in increased visitors and human activities, which could result in adverse impacts to adjacent or onsite habitat areas (e.g., trampling of vegetation), if any. The following mitigation measure has been identified to reduce this impact.

Mitigation Measure CD-B7: An appropriate plan for the management of native habitats shall accompany each Concept Design Study site to reduce impacts from human uses (e.g., riding, hiking, biking) on habitat areas. The management plan shall include access points including parking and restrooms, signage for trails and restricted uses, appropriate fencing, and restrictions on domestic animals. This plan shall be written by a qualified biologist and approved by the sponsoring agency prior to initiation of site development.

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Concept Design Study Projects (San Gabriel Canyon Spreading Grounds and Lario Creek):

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Concept Design Study Projects (Woodland Duck Farm, San Gabriel River Discovery Center, and El Dorado Regional Park):

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: Mitigation Measure CD-B7 above requires preparation of a management plan to reduce impacts from human uses through proper design of recreational and other facilities in coordination with a qualified biologist. Therefore, with implementation of Mitigation Measure CD-B7, operational impacts on biological resources associated with recreational activities would be avoided or reduced to less than significant levels.

Reference: Final Program EIR Section 4.2.6.

6.3 Cultural Resources

6.3.1 Master Plan Impacts

6.3.1.1 Significant Effect – Construction Impacts on Cultural Resources and/or Human Remains

Construction of these projects could result in ground disturbance or demolition/modification of existing structures, which could have an adverse impact on significant archaeological or historic resources, if any are present at those locations. The following mitigation measure has been identified to avoid, reduce or mitigate the impact.

Mitigation Measure MP-C1: Site-specific evaluations for cultural resources will be conducted as follows prior to completion of detailed design plans for each future Master Plan project:

1. Identify and determine the extent of site disturbance and/or structural modifications proposed by the project. For sites where ground will be newly disturbed (i.e., not fill soils or previously completely disturbed sites) and/or for sites with potentially historic structures present, continue evaluation as outlined below.
2. Conduct background research to identify previous cultural resources investigations and known cultural resources relevant to the project site (review records at the South Central Coastal Information Center, contact local historical societies, the Native American Heritage Commission, etc.).
3. Conduct field reconnaissance if the project site has not been surveyed for cultural resources in the last five years.
4. If potential resources are identified in the field reconnaissance, determine if avoidance is feasible (e.g., design project to locate the proposed structures or site disturbance away from or around the area of the potential resource; a buffer of 100 meters is recommended in most cases). If feasible, the resource shall be avoided.

5. If avoidance is not feasible, evaluate the significance of the potential resource. The evaluation process may include excavation, additional review of records and literatures, interviews, field examination by a an architectural historian, and/or laboratory analysis. Based on the results of the evaluation, the significance of the potential resource should be determined using the criteria listed in Section 4.3.1.3 of the Final Program EIR.
6. If the resource is found to be significant, determine significance of project impacts on the resource. (Significant change to a resource includes demolition, replacement, substantial alteration, or relocation (California Code of Regulations [CCR] Section 15064.5)).
7. If project impacts are determined to be significant, the following measures (in order of preference) will be implemented to reduce impacts to below a level of significance:
   - Incorporating the resource into the project design (e.g., for projects involving park development or interpretive centers); or
   - Remove and relocate the resource to an appropriate location (e.g., museum, public library, or school)

   The results of site-specific evaluations and detailed mitigation measures, if any, will be disclosed in subsequent CEQA documentation.

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Master Plan Projects:

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Master Plan Projects:

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: The mitigation measure described above outlines an approach to evaluation of cultural resources prior to completion of detailed design plans and implementation of measures to reduce potential impacts, if any. Impacts on known resources would be avoided or reduced by incorporating known resources into project design or removing and relocating the known resource. Therefore, with implementation of Mitigation Measure MP-C1, construction impacts on cultural resources would be avoided or reduced to less than significant levels.

Reference: Final Program EIR Section 4.3.3.

6.3.1.2 Significant Effect – Construction Impacts on Buried Cultural Resources and/or Human Remains

Construction of these projects could result in ground disturbance, which could have an adverse impact on buried archaeological resources or human remains, if any are present at those locations. The following mitigation measures have been identified to reduce the impact.

Mitigation Measure MP-C2: If previously unknown cultural resources are discovered in the course of excavation for project construction, the construction inspector shall have the authority and responsibility to halt construction until a qualified archaeologist can evaluate the significance and distribution of the materials, and identify future activities needed. If the cultural material discovered is determined to be of potential archaeological significance, the investigation and future activities shall be conducted in consultation with a culturally affiliated Native American or other parties, as necessary.

Mitigation Measure MP-C3: If human remains are discovered in the course of excavation for project construction, the County Coroner shall be contacted and provisions of State CEQA Guidelines Section 15064.5 shall be followed.

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Master Plan Projects:

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible

additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Master Plan Projects:

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: Impacts on unknown buried cultural resources or human remains would be reduced by halting construction activities if any cultural resources/human remains are encountered and reporting to limit the potential for inadvertent destruction of potential cultural resources. Therefore, with implementation of Mitigation Measures MP-C2 and MP-C3, construction impacts on buried cultural resources would be reduced to less than significant levels.

Reference: Final Program EIR Section 4.3.3.

6.3.2 Concept Design Study Impacts

6.3.2.1 Significant Effect – Construction Impacts on Buried Cultural Resources at the San Gabriel Canyon Spreading Grounds

No cultural resources were identified at the San Gabriel Canyon Spreading Grounds. Site disturbance associated during project construction would be limited to installation of fencing, landscaping, installation of irrigation lines, and other minor activities. However, since the examination of the project area was limited to surface observations, there is potential for encountering and inadvertently disturbing significant buried resources during project construction at this site. The following mitigation measure has been identified to reduce the impact.

Mitigation Measure CD-C1: On the first day of subsurface work at the San Gabriel Canyon Spreading Grounds, a professional monitor qualified in historical archaeology shall be present to assess whether further monitoring might be warranted. Further monitoring may be required if subsurface cultural material was uncovered on the first day of earthwork and/or if the monitor determined that there was a high probability of additional subsurface cultural materials being encountered.

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Concept Design Study Project (San Gabriel Canyon Spreading Grounds):

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: Impacts on unknown buried cultural resources would be reduced by monitoring and reporting to limit the potential for inadvertent destruction of cultural resources during construction activities. Therefore, with implementation of Mitigation Measures CD-C1 above and CD-C8 and CD-C9 (see Section 6.3.2.8), construction impacts on buried cultural resources present at the San Gabriel Canyon Spreading Grounds site, if any, would be reduced to less than significant levels.

Reference: Final Program EIR Section 4.3.4.

6.3.2.2 Significant Effect – Construction Impacts on Buried Cultural Resources at the San Gabriel River Discovery Center

Since there are known cultural resources in the vicinity of the San Gabriel River Discovery Center project site (see Section 4.3.1.4 of the Program EIR) and the examination of the project area was limited to surface observations, there is potential for encountering and inadvertently disturbing significant buried resources during project construction. The following mitigation measure has been identified to reduce the impact.

Mitigation Measure CD-C2: A professional monitor qualified in historical archaeology shall be present at the San Gabriel River Discovery Center for subsurface work between the surface and 5 feet (or more as determined by the monitor based on soil conditions) in depth. If potentially important cultural deposits are encountered in the course of construction, work shall be temporarily diverted from the vicinity of the discovery until the monitoring archaeologist can identify and evaluate the importance of the find and conduct any appropriate assessment and activities, as necessary.

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Concept Design Study Project (San Gabriel River Discovery Center):

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: Impacts on unknown buried cultural resources would be reduced by monitoring and reporting to limit the potential for inadvertent destruction of cultural resources during construction activities. Therefore, with implementation of Mitigation Measures CD-C2 above and CD-C8 and CD-C9 (see Section 6.3.2.8), construction impacts on buried cultural resources present at the San Gabriel River Discovery Center site, if any, would be reduced to less than significant levels.

Reference: Final Program EIR Section 4.3.4.

6.3.2.3 Significant Effect – Construction Impacts on Buried Cultural Resources at Lario Creek

There are known cultural resources at the Lario Creek project site (see Section 4.3.1.4 of the Program EIR) and the examination of the project area was limited to surface observations. Therefore, there is potential for encountering buried resources during project construction and inadvertently disturbing significant resources. The following mitigation measure has been identified to reduce the impact.

Mitigation Measure CD-C5: A professional monitor qualified in historical archaeology shall be present at the Lario Creek project site for subsurface work between the surface and 5 feet (or more as determined by the monitor based on soil conditions) in depth. If potentially important cultural deposits are encountered in the course of construction, work shall be temporarily diverted from the vicinity of the discovery until the monitoring archaeologist can identify and evaluate the importance of the find and conduct any appropriate assessment and activities, as necessary.

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Concept Design Study Project (Lario Creek):

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible

additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: Impacts on unknown buried cultural resources would be reduced by monitoring and reporting to limit the potential for inadvertent destruction of cultural resources during construction activities. Therefore, with implementation of Mitigation Measures CD-C5 above and CD-C8 and CD-C9 (see Section 6.3.2.8), construction impacts on buried cultural resources present at the Lario Creek site, if any, would be reduced to less than significant levels.

Reference: Final Program EIR Section 4.3.4.

6.3.2.4 Significant Effect – Construction Impacts on Buried Cultural Resources at El Dorado Regional Park

The Master Plan Concept Design for the El Dorado Regional Park does not propose any activities that would disturb the area where the potential archaeological resource (shell beads; see Section 4.3.1.4 of the Program EIR) were found. However, as with the other Concept Design Study sites, there is potential for encountering and inadvertently disturbing significant buried resources during project construction, which would include earthwork for construction of wetlands. The following mitigation measure has been identified to reduce the impact.

Mitigation Measure CD-C6: On the first day of subsurface work at El Dorado Regional Park, a professional monitor qualified in historical archaeology shall be present to assess whether further monitoring might be warranted.

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Concept Design Study Project (El Dorado Regional Park):

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: Impacts on unknown buried cultural resources would be reduced by monitoring and reporting to limit the potential for inadvertent destruction of cultural resources during construction activities. Therefore, with implementation of Mitigation Measures CD-C6 above and CD-C8 and CD-C9 (see Section 6.3.2.8), construction impacts on buried cultural resources present at the El Dorado Regional Park site, if any, would be reduced to less than significant levels.

Reference: Final Program EIR Section 4.3.4.

6.3.2.5 Significant Effect – Replacement of the Nature Center Building (San Gabriel River Discovery Center)

The Master Plan Concept Design for the San Gabriel River Discovery Center proposes to replace the existing Nature Center building with a new Discovery Center building. During the design phase of the San Gabriel River Discovery Center, the project proponent or the CEQA lead agency will conduct additional research and on-site surface inventory to determine the historical significance of the Nature Center building. If it is determined to be a significant historical resource, project impacts would be significant. The following mitigation measure has been identified to reduce project-related impacts to a less-than-significant level.

Mitigation Measure CD-C3: During the design phase of the San Gabriel River Discovery Center, the project proponent shall evaluate whether the Nature Center building is a significant historical resource using the criteria described in Section 15064.5(a) of the State CEQA Guidelines. If it is determined to be a significant historical resource, the lead agency shall:

- Remove and relocate the building or historically significant portion of the building to an appropriate location, or
- Incorporate the historically significant elements of the existing building into the new Discovery Center.

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Concept Design Study Project (San Gabriel River Discovery Center):

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: The mitigation measure described above outlines an approach to evaluation of historical significance of the Nature Center building and implementation of measures to reduce impacts by removing and relocating the building or historically significant portion of the building or incorporating the historically significant elements of the existing building into the new Discovery Center. Therefore, with implementation of Mitigation Measures CD-C3, potential impacts would be reduced to less than significant levels.

Reference: Final Program EIR Section 4.3.4.

6.3.2.6 Significant Effect – Construction Impacts on Potential Cultural Resources at Lario Creek Identified During the Records Search and Field Reconnaissance

Potential cultural resources were identified during records search and field reconnaissance of the Lario Creek Concept Design Study project site. Disturbance of these resources, if found to be significant, would be a significant impact. The following mitigation measure has been identified to reduce project-related impacts to a less-than-significant level.

Mitigation Measure CD-C4: During the design phase of Lario Creek, LADPW shall evaluate if the project can be designed to avoid the structures identified in Section 4.3.1.4 of the Final Program EIR (locate the proposed structures or site disturbance at least 100 meters away from or around the structures).

If avoidance is not feasible for one or more of the structures, the structure's significance shall be evaluated, using the criteria listed in CEQA Guidelines Section 15064.5[a]. Results of this evaluation would be disclosed in second-tier environmental documentation.

If the resource is found to be significant, the significance of project impacts on the resource shall be determined. (Significant change to a resource includes demolition, replacement, substantial alteration, or relocation (California Code of Regulations [CCR] Section 15064.5)). If feasible, the significant resource(s) shall be avoided.

If project impacts are determined to be significant, LADPW shall:

- Incorporate the resource into the project design, or
- Remove and relocate the resource to an appropriate location (e.g., museum, public library, or school)

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Concept Design Study Project (Lario Creek):

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: The mitigation measure described above outlines an approach to ensuring that significant cultural resources are avoided or preserved. Therefore, with implementation of Mitigation Measures CD-C4, potential impacts would be reduced to less than significant levels.

Reference: Final Program EIR Section 4.3.4.

6.3.2.7 Significant Effect – Construction Impacts on Historical Resources at Woodland Duck Farm

The Original Ranch House and any adjacent structure located on the Woodland Duck Farm site that is 45 years and older have the potential to be a historically significant structure. Modification of these structures would be a potentially significant impact. The following mitigation measure has been identified to reduce project-related impacts to a less-than-significant level.

Mitigation Measure CD-C7: During the design phase of Woodland Duck Farm, the Watershed Conservation Authority (WCA) shall evaluate if any onsite structures that are 45 years and older may be affected by the project.

For each structure that is 45 years and older and shall be affected by the project, the structure's significance shall be evaluated by a professional architectural historian, using the criteria listed in CEQA Guidelines Section 15064.5[a]. Results of this evaluation would be disclosed in second-tier environmental documentation.

If the resource is found to be significant, the significance of project impacts on the resource shall be determined. (Significant change to a resource includes demolition, replacement, substantial alteration, or relocation (CCR Section 15064.5)).

If project impacts are determined to be significant, the relevant resources shall be:

- Incorporated into the project design, or
- Removed and relocated to an appropriate location (e.g., museum, public library, or school)

Finding per State CEQA Guidelines Section 15091 for <u>Non-County-Sponsored</u> Concept Design Study Project (Woodland Duck Farm):

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible

additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: The mitigation measure described above outlines an approach to evaluation of historical significance of existing structures that would be affected by the project and implementation of measures to avoid or reduce impacts by incorporating the resource into the project design or removing and relocating the resource to an appropriate location. Therefore, with implementation of Mitigation Measures CD-C7, potential impacts would be reduced to less than significant levels.

Reference: Final Program EIR Section 4.3.4.

6.3.2.8 Significant Effect – Construction Impacts on Buried Cultural Resources and/or Human Remains (All Concept Design Studies)

Construction of the Concept Design Study projects would result in ground disturbance, which could have an adverse impact on unknown buried archaeological resources or human remains, if any are present at those locations. The following mitigation measures have been identified to reduce the impact.

Mitigation Measure CD-C8: If previously unknown cultural resources are discovered in the course of excavation for project construction, the construction inspector shall have the authority and responsibility to halt construction until a qualified archaeologist can evaluate the significance and distribution of the materials, and identify future activities needed. If the cultural material discovered is determined to be of potential archaeological significance, the investigation and future activities shall be conducted in consultation with a culturally affiliated Native American or other parties, as necessary.

Mitigation Measure CD-C9: If human remains are discovered in the course of excavation for project construction, the County Coroner shall be contacted and provisions of State CEQA Guidelines Section 15064.5 shall be followed.

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Concept Design Study Projects (San Gabriel Canyon Spreading Grounds and Lario Creek):

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Finding per State CEQA Guidelines Section 15091 for Non-County Sponsored Concept Design Study Projects (Woodland Duck Farm, San Gabriel River Discovery Center, and El Dorado Regional Park):

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: Impacts on unknown buried cultural resources or human remains would be reduced by halting construction activities if any resources are encountered and reporting to limit the potential for inadvertent destruction of potential cultural resources. Therefore, with implementation of Mitigation Measures CD-C8 and CD-C9, construction impacts on buried cultural resources would be reduced to less than significant levels.

Reference: Final Program EIR Section 4.3.4.

6.4 Geology and Soils

6.4.1 Master Plan Impacts

6.4.1.1 Significant Effect – Impacts Related to Liquefaction Potential from Proposed Stormwater Infiltration

Due to the presence of loose alluvium materials deposited by the San Gabriel River, most of the Master Plan study area falls within the liquefaction hazard zone (see Section 4.4.1.5 of the Program EIR). Future Master Plan projects may include groundwater recharge of stormwater (e.g., at former gravel pits). If project-related stormwater infiltration caused groundwater levels to rise within 30 feet of the surface, the project could result in an increased risk of liquefaction. In addition to the long-term effects of stormwater infiltration on groundwater levels, large volumes of stormwater infiltrated over a short period of time could have a temporary "mounding" effect, causing a localized increase in the groundwater level beneath the infiltration basins. If stormwater infiltration at project sites resulted in a substantial increase in groundwater levels and consequently increased liquefaction risk for onsite or adjacent habitable or other structures, the impact would be significant. The following mitigation measure has been identified to reduce the impact.

Mitigation Measure G-1: During facility design, a site-specific geotechnical analysis will be conducted to determine soil types and groundwater levels. Based on the results of the

geotechnical analysis, the potential increase in liquefaction potential from the proposed infiltration will be evaluated. Factors that will be considered include the capacity of the infiltration facility and the associated amount of water proposed for infiltration, infiltration rate, proximity and types of nearby structures (including pipelines) that could be damaged from liquefaction, and infiltration at adjacent spreading grounds, if any.

If the project is determined to have the potential to cause groundwater levels to rise within 30 feet of the surface, new monitoring wells and/or existing wells in the project area will be used to detect any substantial increase in groundwater levels. If monitoring indicates a substantial rise in groundwater levels that could impact adjacent structures, stormwater would not be infiltrated and would be diverted into storm drains or onto street surfaces or routed to other stormwater management facilities as applicable.

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Master Plan Projects:

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Master Plan Projects:

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: Incorporation of Mitigation Measure MP-G1 outlines an approach to evaluating and monitoring the potential for increase in liquefaction risk due to rising groundwater levels. Infiltration would be ceased if necessary to prevent groundwater levels from increasing to within 30 feet of the surface. Therefore, with incorporation of Mitigation Measure MP-G1, impacts related to liquefaction risk would be less than significant.

Reference: Final Program EIR Section 4.4.3.

6.4.1.2 Significant Effect – Impacts Related to Slope Instability

Adoption of the Master Plan could encourage reclamation of gravel mines. Sideslopes of gravel mines are potentially susceptible to landslides in the event of an earthquake or heavy precipitation. The following mitigation measure has been identified to reduce the impact.

Mitigation Measure G-2: Site-specific evaluation of slope stability will be conducted as a part of the geotechnical analyses during design of each future Master Plan project that involves modification of a gravel mine. The recommendations of the geotechnical study will include optimum slope design for stability and safety, soil compaction or recompaction requirements, surface cover, and potentially other slope stabilizing measures. The recommendations of the geotechnical analysis will be incorporated into the detailed design of the project. The results of site-specific evaluations and detailed mitigation measures, if any, will be disclosed in subsequent CEQA documentation.

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Master Plan Projects:

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Master Plan Projects:

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: As outlined in Mitigation Measure MP-G2 above, an evaluation of slope stability would be conducted as part of the geotechnical analyses during design of gravel mine reclamation projects to ensure that proposed modification does not result in unstable slope conditions. Therefore, with incorporation of Mitigation Measure MP-G2, impacts related to landslide/slope instability would be less than significant.

Reference: Final Program EIR Section 4.4.3.

6.4.2 Concept Design Study Impacts

6.4.2.1 Significant Effect – Impacts Related to Liquefaction Potential from Proposed Stormwater Infiltration (Woodland Duck Farm, Lario Creek, San Gabriel River Discovery Center, and El Dorado Regional Park)

The project area is considered by the California Geological Survey to be susceptible to liquefaction based on historical occurrence of liquefaction or local geological and groundwater conditions. The Master Plan Concept Design Studies for the Woodland Duck Farm, Lario Creek, San Gabriel River Discovery Center, and El Dorado Regional Park include constructed wetlands, which may be unlined and designed to allow infiltration to the groundwater. If project-related stormwater infiltration caused groundwater levels to rise within 30 feet of the surface, the project could result in an increased risk of liquefaction. In addition to the long-term effects of stormwater infiltration on groundwater levels, large volumes of stormwater infiltrated over a short period of time could have a temporary "mounding" effect, causing a localized increase in the groundwater level beneath the infiltration basins. If stormwater infiltration at project sites resulted in a substantial increase in groundwater levels and consequently increased liquefaction risk for onsite or adjacent habitable or other structures, the impact would be significant. The following mitigation measure has been identified to reduce the impact.

Mitigation Measure CD-G1: Prior to construction, conduct a geotechnical investigation to define site-specific subsurface conditions, including determination of site-specific groundwater levels and soil conditions to evaluate the potential for liquefaction onsite or at adjacent properties. Based on the results of the geotechnical analysis, the potential increase in liquefaction potential from the proposed infiltration shall be evaluated. Factors that should be considered include the capacity of the infiltration facility and the associated amount of water proposed for infiltration, infiltration rate, proximity and types of nearby structures that could be damaged from liquefaction, and infiltration at adjacent spreading grounds, if any.

If the project is determined to have the potential to cause groundwater levels to rise within 30 feet of the surface, new monitoring wells and/or existing wells in the project area shall be used to detect any substantial increase in groundwater levels. If monitoring indicates a substantial rise in groundwater levels that could impact adjacent structures, stormwater would not be infiltrated and would be diverted into storm drains or onto street surfaces with sufficient capacity. Re-diversion of storm flows will be in compliance with the applicable provisions of the relevant NPDES municipal stormwater permits.

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Concept Design Study Projects (Lario Creek):

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Concept Design Study Projects (Woodland Duck Farm, San Gabriel River Discovery Center, and El Dorado Regional Park):

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: Incorporation of Mitigation Measure CD-G1 outlines an approach to evaluating and monitoring the potential for increase in liquefaction risk due to rising groundwater levels. Infiltration would be ceased if necessary to prevent groundwater levels from increasing to within 30 feet of the surface. Therefore, with incorporation of Mitigation Measure CD-G1, impacts related to liquefaction risk would be less than significant.

Reference: Final Program EIR Section 4.4.4.

6.4.2.2 Significant Effect – Impacts on Habitable Structures related to Expansive Soils (San Gabriel River Discovery Center)

The Concept Design Study for the San Gabriel River Discovery Center includes construction of a habitable structure (the Discovery Center building). If habitable structures were constructed on expansive soils, the potential damage to these structures would be considered a significant impact. The following mitigation measure has been identified to reduce the impact.

Mitigation Measure CD-G2: During facility design, evaluate site soils to determine the area and thickness of expansive soils. If expansive soils are found, one or more of the following measures shall be specified in the construction plans to minimize potential hazards associated with expansive soils:

- Replacement of expansive soils with granular non-expansive soils, or
- Treatment of expansive soils with lime to reduce expansivity, or
- Other appropriate geotechnical practices.

These measures that mitigate for expansive soils shall be incorporated into the construction documents.

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Concept Design Study Projects (San Gabriel River Discovery Center):

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: Incorporation of Mitigation Measure CD-G2 would require site-specific review of soil conditions and, if necessary, replacement or treatment of expansive soils to minimize risk of structural damage. Therefore, with incorporation of Mitigation Measure CD-G2, impacts related to expansive soils would be less than significant.

Reference: Final Program EIR Section 4.4.4.

6.5 Hazards and Hazardous Materials

6.5.1 Master Plan Impacts

6.5.1.1 Significant Effect – Public Health Impacts related to Potential Increase in Mosquito Habitat

Future Master Plan projects could include construction and operation of various types of stormwater retention/infiltration facilities. Some of the proposed facilities would temporarily contain stagnant water, which would create potential mosquito breeding conditions, a potentially significant public safety impact. The following mitigation measure has been identified to reduce the impact.

Mitigation Measure MP-H1: Project plans and designs will be submitted to the applicable vector control agency (see Section 4.5.1.4 of the Final Program EIR) for review and comment with respect to control of mosquitoes and other vectors. Upon consultation with the vector control agency, appropriate vector management measures will be incorporated into the project design. Potential management measures include the following:

- Design to minimize and/or provide periodic removal of vegetation on bank slopes and periphery of water bodies to minimize areas of stagnant water.
- Design and/or manage to optimize water depths and flow pattern. For mosquito control, maintain water depths and encourage/provide water circulation. For black fly control, minimize aeration of flowing water. If necessary, design water features to allow for periodical drying to desiccate vector larvae.
- Work with the vector control agency to stock ponds and other permanent water features with mosquito-eating fish as needed.
- Provide site access to vector control agency specifications (e.g., dikes with access roads or trails) to potential breeding areas for maintenance (e.g., vegetation removal) and treatment (e.g., application of Bti or other larvicides).
- Design stormwater retention facilities/devices to drain completely within 72 hours, or design with the capability to be dewatered rapidly if needed for vector control.
- Incorporate measures into project designs that serve to educate the public about wildlife safety and vector-borne disease issues, prevent wildlife-human interactions, and prevent wildlife access to trash and unnatural food and water sources that are likely to result in unnatural population levels.
- Design underground utility vaults, if needed for project implementation, to prevent retention of standing water thereby reducing vector breeding habitat.
- Regularly consult with the vector control agency to identify mosquito management problems, mosquito monitoring and abatement procedures, and opportunities to adjust water and vegetation management practices to reduce mosquito production.
- Incorporate funding for vector management activities into project funding or implement a secure and reliable funding source for vector management activities.

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Master Plan Projects:

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Master Plan Projects:

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: Implementation of Mitigation Measure MP-H1 requires consulting with the relevant vector control agencies and incorporating into the project design and operations measures to minimize mosquito breeding potential. Therefore, with implementation of Mitigation Measure MP-H1, impacts on public health due to mosquitoes and mosquito-borne diseases would be reduced to less than significant levels.

Reference: Final Program EIR Section 4.5.4.

6.5.2 Concept Design Study Impacts

6.5.2.1 Significant Effect – Public Health Impacts related to Potential Increase in Mosquito Habitat (All Concept Design Studies)

All Concept Design Studies projects could include construction and operation of various types of stormwater retention/infiltration facilities or other water features. Some of the proposed facilities would temporarily contain stagnant water, which would create potential mosquito breeding conditions, a potentially significant public safety impact. The following mitigation measure has been identified to reduce the impact.

Mitigation Measure CD-H1: Project plans and designs shall be submitted to the applicable vector control agency (SGVMVCD for San Gabriel Canyon Spreading Grounds and Woodland Duck Farm and GLAVCD for San Gabriel River Discovery Center, Lario Creek, and El Dorado Regional Park) for review and comment with respect to control of mosquito and other vectors. Upon consultation with the vector control agency, appropriate vector management measures shall be incorporated into the project design. Potential management measures include the following:

- Design to minimize and/or provide periodic removal of vegetation on bank slopes and periphery of water bodies to minimize areas of stagnant water.
- Design and/or manage to optimize water depths and flow pattern. For mosquito control, maintain water depths and encourage/provide water circulation. For black fly control, minimize aeration of flowing water. If necessary, design water features to allow for periodical drying to desiccate vector larvae.
- Work with the vector control agency to stock ponds and other permanent water features with mosquito-eating fish as needed.
- Provide site access to vector control agency specifications (e.g., dikes with access roads or trails) to potential breeding areas for maintenance (e.g., vegetation removal) and treatment (e.g., application of Bti or other larvicides).
- Design stormwater retention facilities/devices to drain completely within 72 hours, or design with the capability to be dewatered rapidly if needed for vector control.
- Incorporate measures into project designs that serve to educate the public about wildlife safety and vector-borne disease issues, prevent wildlife-human interactions, and prevent wildlife access to trash and unnatural food and water sources that are likely to result in unnatural population levels.
- Design underground utility vaults, if needed for project implementation, to prevent retention of standing water thereby reducing vector breeding habitat.
- Regularly consult with the vector control agency to identify mosquito management problems, mosquito monitoring and abatement procedures, and opportunities to adjust water and vegetation management practices to reduce mosquito production.
- Incorporate funding for vector management activities into project funding or implement a secure and reliable funding source for vector management activities.

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Concept Design Study Projects (San Gabriel Canyon Spreading Grounds and Lario Creek):

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Finding per State CEQA Guidelines Section 15091 for Non-County Sponsored Concept Design Study Projects (Woodland Duck Farm, San Gabriel River Discovery Center, and El Dorado Regional Park):

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: Implementation of Mitigation Measure CD-H1 requires consulting with the relevant vector control agencies and incorporating into the project design and operations measures to minimize mosquito breeding potential. Therefore, with implementation of Mitigation Measure CD-H1, impacts on public health due to mosquitoes and mosquito-borne diseases would be reduced to less than significant levels:

Reference: Final Program EIR Section 4.5.5.

6.6 Hydrology and Water Quality

6.6.1 Master Plan Impacts

6.6.1.1 Significant Effect – Construction Impacts on Surface Water Quality related to Soil Erosion

Construction activities that involve soil disturbance (e.g., excavation, grading, and filling) would temporarily increase the potential for soil erosion. In addition, during the rainy season, construction materials, equipment, and maintenance supplies may come in contact with runoff. If appropriate measures are not taken to minimize the release of sediments and other materials from construction sites, this could result in a temporary impact on surface water quality. The following mitigation measure has been identified to reduce the impact.

Mitigation Measure MP-W2: For future projects involving constructing, clearing, grading or excavation on areas over 1 acre in size, develop and implement a Storm Water Pollution Prevention Plan (SWPPP) to minimize the amount of runoff and associated pollutants (e.g.,

sediments) leaving the construction site by containing the runoff onsite, containing the sediments onsite, and/or minimizing the potential for stormwater to come in contact with pollutants. The following are possible measures to be incorporated into site-specific SWPPPs as applicable. Additional sample measures and guidelines for developing SWPPPs are available in California Stormwater Quality Association's Stormwater Best Management Practice Handbook – Construction (CASQA, 2003). Measures to reduce fugitive dust generated during construction (see Section 4.1.5 – Air Quality) will also minimize the potential for soil erosion.

- Install perimeter silt fences or hay bales.
- Stabilize soils through hydroseeding with native plant species where possible and use of soil stabilizers.
- Install temporary sedimentation basins.
- Conduct earth moving activities during the dry season (April through October), as feasible.
- Designate storage areas for construction materials, equipment, and maintenance supplies (e.g., fuels, lubricants, paints, solvents, adhesives) to keep these materials out of the rain and minimize contact with stormwater.
- Conduct regular inspections to ensure compliance with the SWPPP.

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Master Plan Projects:

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Master Plan Projects:

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: As required by the EPA and the Regional Board and as outlined in Mitigation Measure MP-W2 above, a Stormwater Pollution Prevention Plan (SWPPP) will be developed and implemented during construction of project components greater than 1 acre in area. Incorporation of stormwater best management practices in the SWPPP would reduce the potential for soil erosion and release of other pollutants during construction. These measures would minimize the amount of runoff and associated pollutants (e.g., sediments) leaving the construction site by containing the runoff onsite (e.g., sedimentation basins), containing the sediments onsite (e.g., silt fences and hay bales), or minimizing the potential for stormwater to come in contact with pollutants (e.g., conduct activities during the dry season, control pollutant releases (oils, grease, etc.) from construction equipment). With the incorporation of such control measures in the SWPPPs, construction impacts on surface water quality are expected to be less than significant.

Reference: Final Program EIR Sections 4.6.3. and 4.6.4

6.6.1.2 Significant Effect – Construction Impacts on Water Quality during Channel Modifications

Master Plan projects that propose earth moving activities within the channel of the River or tributaries could result in a temporary increase in the potential for soil erosion and release of sediments. The resultant increase in turbidity (and potential release of pollutants in the soils underlying the concrete) in river flows could be a significant water quality impact. The following mitigation measure has been identified to reduce the impact.

Mitigation Measure MP-W3: For future projects involving channel modifications, COE, Regional Board, U.S. Fish and Wildlife Service, and California Department of Fish and Game will be consulted. All necessary federal and state approvals (including CWA Section 404 permits, CWA Section 401 water quality certifications or waivers, and California Fish and Game Code Section 1602 Streambed Alteration Agreements) will be obtained prior to the implementation of construction activities. Any conditions of agency approvals (e.g., measures to minimize the potential water quality impacts associated with the channel modification) will be incorporated into the project design. Water quality mitigation options for use during construction of in-channel improvements include diversion of flows around the construction site, installation of in-stream silt curtains, or use of off-channel sediment retention ponds or tanks.

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Master Plan Projects:

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Master Plan Projects:

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: Under Mitigation Measure MP-W3, COE, Regional Board, U.S. Fish and Wildlife Service, and California Department of Fish and Game will be consulted for projects involving channel modifications. Any conditions of agency approvals (e.g., measures to minimize the potential water quality impacts associated with the channel modification) will be incorporated into the project design. Therefore, with implementation of Mitigation Measure MP-W3, potential impacts on water quality during channel modifications would be reduced to less than significant levels.

Reference: Final Program EIR Sections 4.6.3. and 4.6.4

6.6.1.3 Significant Effect – Water Quality Impacts of Pesticide/Herbicide Use in Landscaped Areas or for Exotics Species Removal

Future Master Plan projects could include landscaping/habitat restoration and/or removal of exotic plant species as potential project elements. Water quality impacts associated with runoff containing chemical herbicides/pesticides would be potentially significant. The following mitigation measure has been identified to reduce the impact.

Mitigation Measure MP-W4: For future projects involving landscaping, habitat restoration, and/or removal of exotic plant species, select biological or non-chemical means of controlling exotics and pests unless not feasible because biological or non-chemical controls are not readily available for the specific exotics to be controlled. If chemical pesticide or herbicide use is necessary, compounds that are less persistent in the environment will be selected, and application will be conducted in accordance with manufacturers' recommendations and general standards of use, e.g., restricted application before and during rain storms.

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Master Plan Projects:

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Master Plan Projects:

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: With incorporation of Mitigation Measure MP-W4, use of chemical herbicides/pesticides will be minimized, use of chemicals will be limited to approved herbicides and pesticides, and application will be conducted in accordance with manufacturers' recommendations and general standards of use, e.g., restricted application before and during rain storms. Therefore, with incorporation of Mitigation Measure MP-W4, water quality impacts from this type of chemical use would be less than significant.

Reference: Final Program EIR Sections 4.6.3. and 4.6.4

6.6.1.4 Significant Effect – Operational Impacts on Water Quality Related to Channel Modifications

Master Plan projects that propose removal of concrete from the channel of the River or tributaries could result in substantial erosion and downstream surface water quality impacts if measures to stabilize slopes and control scour are not incorporated into project design. The following mitigation measure has been identified to reduce the impact.

Mitigation Measure MP-W5: For future projects involving channel modifications, detailed engineering studies (including sediment transport as applicable) will be conducted to assess the impact of the proposed changes on the channel's stability and erodability and will include recommendations to avoid or minimize the impact. Recommendations of the engineering studies will be incorporated into project design to minimize impacts on surface water quality associated with potential increase in erosion of channel banks from proposed modifications.

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Master Plan Projects:

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Master Plan Projects:

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible

additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: Mitigation Measure MP-W5 would require consideration and incorporation of measures to stabilize slopes and control scour for future Master Plan projects that involve removal of concrete from the channel. Incorporation of these measures would minimize soil erosion after channel modifications have been completed. Therefore, with incorporation of Mitigation Measure MP-W5, operational impacts on water quality associated with channel modifications would be less than significant.

Reference: Final Program EIR Sections 4.6.3. and 4.6.4

6.6.1.5 Significant Effect – Operational Impacts on Groundwater Quality from Stormwater Infiltration

Future Master Plan projects could include recharge of stormwater. The level of treatment needed prior to infiltration would vary depending on the drainage area land use. Stormwater treatment methods designed to remove suspended solids and floatables (e.g., oil and grease) are expected to remove many of the pollutants (e.g., heavy metals and organics) that are sorbed onto particulates. For projects that include industrial land uses in the drainage areas, additional treatment could be used to further improve water quality. If the adequacy of the treatment methods is not monitored and evaluated, stormwater infiltration could result in a significant impact on groundwater quality. The following mitigation measure has been identified to reduce the impact.

Mitigation Measure MP-W6: For projects that involve stormwater infiltration, a comprehensive stormwater and groundwater quality monitoring program will be designed and implemented, or the results of existing monitoring programs will be considered. Monitoring results will be used to assess the ongoing effectiveness of the proposed stormwater treatment methods in protecting both surface and groundwater. If monitoring results indicate substantial water quality degradation associated with project infiltration, the following strategy will be followed:

- Provide additional treatment prior to infiltration, or
- Redesign project to reduce or eliminate infiltration (e.g., lining), or
- Identify an alternative water source (e.g., reclaimed water).

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Master Plan Projects:

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Master Plan Projects:

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: Mitigation Measure MP-W6 requires monitoring of stormwater and groundwater quality to assess the ongoing effectiveness of the proposed stormwater treatment methods in protecting water quality, and outlines measures that would be taken if monitoring results indicate substantial water quality degradation associated with project infiltration. Therefore, with incorporation of Mitigation Measure MP-W6, water quality impacts associated with stormwater infiltration would be less than significant.

Reference: Final Program EIR Sections 4.6.3. and 4.6.4

6.6.1.6 Significant Effect – Groundwater Hydrology Impacts from Stormwater Infiltration

Master Plan projects that increase recharge of stormwater or recycled water would generally result in beneficial impacts on groundwater elevations of the underlying groundwater basins. However, projects that involve large amounts of groundwater recharge could have adverse effects on groundwater hydrology (groundwater elevations and flow directions). Potential adverse impacts include inundation of historical landfill materials or other contaminant sources and potential interference with ongoing remediation and cleanup efforts of existing groundwater contamination in the San Gabriel Valley Groundwater Basin. The significance of impacts on groundwater hydrology would be site-specific, and depend on the volume and rate of water infiltrated and proximity to contamination plumes and landfills. The following mitigation measure has been identified to reduce the impact.

Mitigation Measure MP-W7: For projects involving groundwater recharge, the project site's proximity to existing groundwater contamination plumes and landfills (or other known hazardous materials sites that could become a contamination source if inundated with groundwater) will be evaluated. If a project site is located within or adjacent to a plume or in the vicinity of a contamination source, the effect of the proposed recharge on groundwater hydrology (changes in flow direction and levels) will be evaluated. As applicable, groundwater modeling would be conducted to determine whether the rate and amount of recharge proposed by the project could result in substantial changes to the location or shape of existing contamination plumes, or in the inundation of landfills or other contamination sources. As part of the investigation, relevant agencies, including the Regional Board, Watermasters, and agencies involved in groundwater clean-up activities (e.g., EPA and WQA), will be consulted. As applicable, Mitigation Measure CD-W4 will be implemented to prevent interaction of infiltrated water with landfill materials or other contaminant sources.

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Master Plan Projects:

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Master Plan Projects:

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: Mitigation Measure MP-W7 includes a site-specific assessment to identify land uses with the potential for contaminants which would be incompatible with infiltration. If a project site is located within or adjacent to a plume or in the vicinity of a contamination source, the effect of the proposed recharge on groundwater hydrology (changes in flow direction and levels) will be evaluated. Based on the results of the evaluation, additional measures to protect groundwater quality (modifications to the location and design of infiltration facilities and/or monitoring) would be incorporated into the project (see Mitigation Measure CD-W4). Therefore, with implementation of Mitigation Measure MP-W7 and CD-W4, impacts on groundwater quality would be less than significant.

Reference: Final Program EIR Sections 4.6.3. and 4.6.4

6.6.1.7 Significant Effect – Groundwater Quality Impacts related to Potential Soil Contamination at Infiltration Sites

Future Master Plan projects may include stormwater infiltration. If stormwater were infiltrated in large amounts through contaminants and caused pollutants to leach out into the underlying groundwater, this would be considered a significant impact on groundwater quality. The following mitigation measure has been identified to reduce the impact.

Mitigation Measure MP-W8: For projects involving substantial ground disturbance where prior land use is unknown and the potential for soil contamination or other constraints (e.g., oil or gas wells) from previous land uses exists, a Phase I Environmental Site Assessment (ESA) will be conducted to determine the site-specific potential for soil contamination or other constraints. The Phase I ESA will be conducted in accordance with the latest version of the American Society of Testing and Materials (ASTM) 1527 "Standard Practice for Environmental Site Assessments: Phase I Environmental Assessment Process." This document outlines the customary practice for performing ESA's in the United States. Phase I ESA will consist of a review of site-specific documents and historical maps to determine past uses of the site, a site visit to visually inspect the property for signs of potential environmental contamination, and investigation of state and federal environmental regulatory databases to identify recognized hazardous materials usage or spills, and include review of California Department of Conservation Division of Oil, Gas, & Geothermal Resources records of oil, gas, and geothermal wells. For project sites with infiltration, the boundary of the Phase I ESA will include parcels located within 500 feet of the project site boundary to identify active or abandoned landfills or other land uses with the potential for contaminated soils which would be incompatible with infiltration (to be cross-referenced with Mitigation Measure CD-W4). If the Phase I ESA concludes that there is no substantial potential for soil contamination or other constraints, no further action would be required. If the Phase I ESA indicates that there is potential for soil to be contaminated, additional investigation (Phase II ESA, including soil sampling and analysis) will be conducted to determine the presence and extent of the contamination. If the proposed project would involve disturbance of soil in the contaminated area, soil would be removed and disposed of in compliance with applicable regulations at approved disposal sites. If the proposed project site includes or is in the immediate vicinity of oil or gas wells or if any unrecorded wells are damaged or uncovered during excavation or grading, the project proponent shall submit the information outlined in the "Construction Project Site Review and Well Abandonment Procedure" to the California Department of Conservation Division of Oil, Gas & Geothermal Resources. In order of preference, wells should be avoided, plugged or re-

plugged to current Division specifications, or an adequate gas venting system should be installed if construction over an abandoned well is unavoidable.

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Master Plan Projects:

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Master Plan Projects:

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: Mitigation Measure MP-W8 includes site-specific investigation of potential contaminants and proper disposal, if any. Therefore, with implementation of Mitigation Measure MP-W8, groundwater quality impacts associated with potential contamination at infiltration sites would be less than significant.

Reference: Final Program EIR Sections 4.6.3. and 4.6.4

6.6.2 Concept Design Study Impacts

6.6.2.1 Significant Effect – Construction Impacts on Surface Water Quality related to Soil Erosion (All Concept Design Studies)

Construction of facilities proposed for the Concept Design Studies would involve soil disturbance (e.g., excavation, grading, and filling), which would temporarily increase the potential for soil erosion. In addition, during the rainy season, construction materials, equipment, and maintenance supplies may come in contact with runoff. If appropriate measures are not taken to minimize the release of sediments and other materials from construction sites, this could result in a temporary impact on surface water quality. The following mitigation measure has been identified to reduce the impact.

Mitigation Measure CD-W1: Develop and implement a Storm Water Pollution Prevention Plan (SWPPP) for projects that involve constructing, clearing, grading or excavation on areas over 1 acre in size to minimize the amount of runoff and associated pollutants (e.g., sediments) leaving the construction site by containing the runoff onsite, containing the sediments onsite, and/or minimizing the potential for stormwater to come in contact with pollutants. The following are possible measures to be incorporated into site-specific SWPPPs. Additional sample measures and guidelines for developing SWPPPs are available in California Stormwater Quality Association's *Stormwater Best Management Practice Handbook – Construction* (CASQA, 2003). Measures to reduce fugitive dust generated during construction (see Section 4.1.5 – Air Quality) will also minimize the potential for soil erosion.

- Install perimeter silt fences or hay bales.
- Stabilize soils through hydroseeding with native plant species where possible and use of soil stabilizers.
- Install temporary sedimentation basins.
- Conduct earth moving activities during the dry season (April through October), as feasible.
- Designate storage areas for construction materials, equipment, and maintenance supplies (e.g., fuels, lubricants, paints, solvents, adhesives) to keep these materials out of the rain and minimize contact with stormwater.
- Conduct regular inspections to ensure compliance with the SWPPP.

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Concept Design Study Projects (San Gabriel Canyon Spreading Grounds and Lario Creek):

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Finding per State CEQA Guidelines Section 15091 for Non-County Sponsored Concept Design Study Projects (Woodland Duck Farm, San Gabriel River Discovery Center, and El Dorado Regional Park):

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: As required by the EPA and the Regional Board and as outlined in Mitigation Measure CD-W1 above, a SWPPP will be developed and implemented during construction of Concept Design Study projects. Incorporation of stormwater best management practices in the SWPPP would reduce the potential for soil erosion and release of other pollutants during construction. These measures would minimize the amount of runoff and associated pollutants (e.g., sediments) leaving the construction site by containing the runoff onsite (e.g., sedimentation basins), containing the sediments onsite (e.g., silt fences and hay bales), or minimizing the potential for stormwater to come in contact with pollutants (e.g., conduct activities during the dry season, control pollutant releases (oils, grease, etc.) from construction equipment). With the incorporation of such control measures in the SWPPPs, construction impacts on surface water quality are expected to be less than significant.

Reference: Final Program EIR Section 4.6.4.

6.6.2.2 Significant Effect – Impacts on Water Quality During Channel Modifications (El Dorado Regional Park, Lario Creek, and Woodland Duck Farm)

The Master Plan Concept Design Studies for El Dorado Regional Park, Lario Creek, and potentially Woodland Duck Farm include channel modifications. Earth moving activities within the channel of the River or tributaries could result in a temporary increase in the potential for soil erosion and release of sediments. The resultant increase in turbidity (and potential release of pollutants in the soils underlying the concrete) in river flows could be a significant water quality impact. The following mitigation measure has been identified to reduce the impact.

Mitigation Measure CD-W6: For projects involving channel modifications, COE, Regional Board, U.S. Fish and Wildlife Service, and California Department of Fish and Game shall be consulted. All necessary federal and state approvals (including CWA Section 404 permits, CWA Section 401 water quality certifications or waivers, and California Fish and Game Code Section 1602 Streambed Alteration Agreements) shall be obtained prior to the implementation of construction activities. Any conditions of agency approvals (e.g., measures to minimize the potential water quality impacts associated with the channel modification) shall be incorporated into the project design. Water quality mitigation options for use during construction of in-channel improvements include diversion of flows around the construction site, installation of in-stream silt curtains, or use of off-channel sediment retention ponds or tanks.

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Concept Design Study Projects (Lario Creek):

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Concept Design Study Projects (Woodland Duck Farm and El Dorado Regional Park):

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: Under Mitigation Measure CD-W6, COE, Regional Board, U.S. Fish and Wildlife Service, and California Department of Fish and Game will be consulted for projects involving channel modifications. Any conditions of agency approvals (e.g., measures to minimize the

potential water quality impacts associated with the channel modification) will be incorporated into the project design. Therefore, with implementation of Mitigation Measure CD-W6, potential impacts on water quality during channel modifications would be reduced to less than significant levels.

Reference: Final Program EIR Section 4.6.4.

6.6.2.3 Significant Effect – Water Quality Impacts of Pesticide/Herbicide Use in Landscaped Areas or for Exotics Species Removal (All Concept Design Studies)

All five Concept Design Studies could include landscaping/habitat restoration as potential project elements. In addition, the Concept Design Studies for San Gabriel River Discovery Center, Lario Creek, and El Dorado Regional Park propose removal of exotic plant species. Water quality impacts associated with runoff containing chemical herbicides/pesticides would be potentially significant. The following mitigation measure has been identified to reduce the impact.

Mitigation Measure CD-W2: For projects involving landscaping, habitat restoration, and/or removal of exotic plant species, select biological or non-chemical means of controlling exotics and pests unless not feasible because biological or non-chemical controls are not readily available for the specific exotics to be controlled. If chemical pesticide or herbicide use is necessary, compounds that are less persistent in the environment shall be selected, and application shall be conducted in accordance with manufacturers' recommendations and general standards of use, e.g., restricted application before and during rain storms.

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Concept Design Study Projects (San Gabriel Canyon Spreading Grounds and Lario Creek):

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Concept Design Study Projects (Woodland Duck Farm, San Gabriel River Discovery Center, and El Dorado Regional Park):

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

With incorporation of Mitigation Measure CD-W2, use of chemical herbicides/pesticides will be minimized, use of chemicals will be limited to approved herbicides and pesticides, and application will be conducted in accordance with manufacturers' recommendations and general standards of use, e.g., restricted application before and during rain storms. Therefore, with incorporation of Mitigation Measure CD-W2, water quality impacts from this type of chemical use would be less than significant.

Reference: Final Program EIR Section 4.6.4.

6.6.2.4 Significant Effect – Groundwater Quality Impacts related to Potential Soil Contamination at Infiltration Sites (El Dorado Regional Park, Lario Creek, and Woodland Duck Farm)

Future Master Plan projects may include stormwater infiltration. If stormwater were infiltrated in large amounts through contaminants and caused pollutants to leach out into the underlying groundwater, this would be considered a significant impact on groundwater quality. The following mitigation measure has been identified to reduce the impact.

Mitigation Measure CD-W3: For projects involving substantial ground disturbance, conduct a Phase I Environmental Site Assessment (ESA) to determine the site-specific potential for soil contamination. The Phase I ESA shall be conducted in accordance with the latest version of the American Society of Testing and Materials (ASTM) 1527 "Standard Practice for Environmental Site Assessments: Phase I Environmental Assessment Process." This document outlines the customary practice for performing ESA's in the United States. Phase I ESA shall consist of a review of site-specific documents and historical maps to determine past uses of the site, a site visit to visually inspect the property for signs of potential environmental contamination, and investigation of state and federal environmental regulatory databases to identify recognized hazardous materials usage or spills. For project sites with infiltration, the boundary of the Phase I ESA shall include parcels located within 500 feet of the project site boundary to identify active or abandoned landfills or other land uses with the potential for contaminated soils which would be incompatible with infiltration (to be cross-referenced with Mitigation Measure CD-W4). If the Phase I ESA concludes that there is no substantial potential for soil contamination, no further action would be required. If the Phase I ESA indicates that there is potential for soil to be contaminated, additional investigation (Phase II ESA, including soil sampling and analysis) shall

be conducted to determine the presence and extent of the contamination. If the proposed project would involve disturbance of soil in the contaminated area, soil would be removed and disposed of in compliance with applicable regulations at approved disposal sites.

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Concept Design Study Projects (Lario Creek):

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Concept Design Study Projects (Woodland Duck Farm, San Gabriel River Discovery Center, and El Dorado Regional Park):

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: Mitigation Measure CD-W3 includes site-specific investigation of soil contamination potential and proper disposal of contaminated soil, if any. Therefore, with implementation of Mitigation Measure CD-W3, groundwater quality impacts associated with potential soil contamination at infiltration sites would be less than significant.

Reference: Final Program EIR Section 4.6.4.

6.6.2.5 Significant Effect – Operational Impacts on Groundwater Quality from Stormwater Infiltration (Woodland Duck Farm, Lario Creek, San Gabriel River Discovery Center, and El Dorado Regional Park)

The Master Plan Concept Design Studies for the Woodland Duck Farm, Lario Creek, the San Gabriel River Discovery Center at Whittier Narrows, and El Dorado Regional Park include constructed wetlands, which may be unlined and designed to allow infiltration of stormwater to the groundwater. The level of treatment needed prior to stormwater infiltration would vary depending on the drainage area land use. Stormwater treatment methods designed to remove suspended solids and floatables (e.g., oil and grease) are expected to remove many of the pollutants (e.g., heavy metals and organics) that are sorbed onto particulates. For projects that include industrial land uses in the drainage areas, additional treatment could be used to further improve water quality. If the adequacy of the treatment methods is not monitored and evaluated, stormwater infiltration could result in a significant impact on groundwater quality. The following mitigation measure has been identified to reduce the impact.

Mitigation Measure CD-W5: For projects that involve stormwater infiltration, conduct vadose zone and groundwater quality monitoring. If monitoring results indicate substantial water quality degradation, pursue the following general strategy:

- Provide additional treatment prior to infiltration, or
- Redesign project to reduce or eliminate infiltration (e.g., lining), or
- Identify an alternative water source (e.g., reclaimed water).

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Concept Design Study Projects (Lario Creek):

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Concept Design Study Projects (Woodland Duck Farm, San Gabriel River Discovery Center, and El Dorado Regional Park):

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: Mitigation Measure CD-W5 requires monitoring of stormwater and groundwater quality to assess the ongoing effectiveness of the proposed stormwater treatment methods in protecting water quality, and outlines measures that would be taken if monitoring results indicate substantial water quality degradation associated with project infiltration. Therefore, with incorporation of Mitigation Measure CD-W5, water quality impacts associated with stormwater infiltration would be less than significant.

Reference: Final Program EIR Section 4.6.4.

6.6.2.6 Significant Effect – Groundwater Hydrology Impacts from Stormwater Infiltration (Woodland Duck Farm, Lario Creek, San Gabriel River Discovery Center, and El Dorado Regional Park)

The Master Plan Concept Design Studies for the Woodland Duck Farm, Lario Creek, the San Gabriel River Discovery Center at Whittier Narrows, and El Dorado Regional Park include constructed wetlands, which may be unlined and designed to allow infiltration of stormwater to the groundwater. Increase recharge of stormwater or recycled water would generally result in beneficial impacts on groundwater elevations of the underlying groundwater basins. However, projects that involve large amounts of groundwater recharge could have adverse effects on groundwater hydrology (groundwater elevations and flow directions). Potential adverse impacts include inundation of historical landfill materials or other contaminant sources and potential interference with ongoing remediation and cleanup efforts of existing groundwater contamination in the San Gabriel Valley Groundwater Basin. The significance of impacts on groundwater hydrology would be site-specific, and depend on the volume and rate of water infiltrated and proximity to contamination plumes and landfills. The following mitigation measure has been identified to reduce the impact.

Mitigation Measure CD-W4: If the site-specific Phase I ESA (Mitigation Measure CD-W3) indicates that an active or closed landfill (either municipal solid waste or inert construction waste) is located within 500 feet of the project site boundary, then a site-specific geotechnical study shall be conducted to: 1) characterize the extent and composition of landfill materials; 2) determine whether the landfill materials are releasing methane; 3) and estimate the potential mounding effect from the proposed stormwater infiltration. The results of the geotechnical study shall be incorporated into the project design to minimize the potential for project infiltration to

result in interaction between infiltrated stormwater and landfill materials or to impact landfill gas releases, if any. Potential design modifications include siting the infiltration facilities away from the landfill and/or partially lining the facilities to direct infiltration away from the landfill. For sites with stormwater infiltration within 500 feet of an active or closed landfill, a groundwater monitoring program shall be developed and implemented to ensure that infiltration does not result in interaction between infiltrated stormwater and landfilled materials or impact landfill gas releases. Infiltration would cease at any site where groundwater levels rose to within 10 feet of landfilled materials to prevent interaction of infiltrated water with landfill materials.

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Concept Design Study Projects (Lario Creek):

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Concept Design Study Projects (Woodland Duck Farm, San Gabriel River Discovery Center, and El Dorado Regional Park):

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: Mitigation Measure CD-W3 includes a site-specific assessment to identify land uses with the potential for contaminated soils which would be incompatible with infiltration. If a project site is located within or adjacent to a plume or in the vicinity of a contamination source, the effect of the proposed recharge on groundwater hydrology (changes in flow direction and

levels) will be evaluated. Based on the results of the evaluation, additional measures to protect groundwater quality (modifications to the location and design of infiltration facilities and/or monitoring) would be incorporated into the project per Mitigation Measure CD-W4. Therefore, with implementation of Mitigation Measures CD-W3 and CD-W4, impacts on groundwater quality would be less than significant.

Reference: Final Program EIR Section 4.6.4.

6.7 Land Use / Mineral Resources

6.7.1 Master Plan Impacts

6.7.1.1 Significant Effect – Impacts on Availability of Mineral Resources

Adoption of the Master Plan could encourage redevelopment and reclamation, including development of gravel mines or abandoned lands for various purposes including active and passive recreation and habitat restoration. The Master Plan envisions that reclamation plans would be developed based on negotiation and partnership with the current owners and operators of these properties, including mining operations. Therefore, implementation of redevelopment and reclamation projects under the Master Plan are anticipated to take place after extraction of mineral resources have been completed. However, if a Master Plan project proposes development of facilities that would result in the restriction of future mineral extraction operations (e.g., reclamation of an existing gravel mine before gravel extraction activities have been completed or restriction of access for in-channel gravel removal activities approved by the U.S. Army Corps of Engineers), the impact on mineral resources would be potentially significant. The following mitigation measure has been identified to reduce the impact.

Mitigation Measure MP-L1: For future projects that propose development of facilities that would result in restriction of future mineral extraction operations (e.g., reclamation of an existing gravel mine before gravel extraction activities have been completed), site-specific evaluations described below will be conducted and the results will be disclosed in subsequent CEQA documentation:

1. Determine the site-specific availability of mineral resources by reviewing relevant publications from the California Geological Survey (e.g., Surface Mining and Reclamation Act (SMARA) Mineral Land Classification, available at: http://www.consrv.ca.gov/cgs/minerals/mlc/index.htm) and/or mine reclamation plans (if the proposed project site is an existing mine).

2. Contact the relevant SMARA lead agency (see Section 4.7.1.1 of the Final Program EIR) to determine whether the proposed land use change could restrict or preclude the extraction of mineral resources designated as regionally significant (MRZ-2) or locally important (as designated in a local land use plan).

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Master Plan Projects:

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Master Plan Projects:

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: If a future Master Plan project proposes development of facilities that would result in the restriction of future mineral extraction, site-specific evaluations (including availability of mineral resources and consultation with SMARA) would be conducted under Mitigation Measure MP-L1. Therefore, with implementation of Mitigation Measure MP-L1, impacts on mineral resources would be less than significant.

Reference: Final Program EIR Section 4.7.3.

6.7.2 Concept Design Study Impacts

No significant land use or mineral resources impacts have been identified for the Concept Design Studies.

6.8 Noise

6.8.1 Master Plan Impacts

6.8.1.1 Significant Effect – Construction Noise Impact on Sensitive Receptors

Construction of facilities proposed under future Master Plan projects could temporarily increase noise from construction equipment use and worker vehicle trips. Depending on the project-specific construction characteristics and distance to nearby noise receptors, noise generated during construction could exceed the applicable municipality's noise standards, a potentially significant impact. The following mitigation measure has been identified to reduce the impact.

Mitigation Measure MP-N1: Evaluations of construction noise generation will be conducted as follows during site-specific environmental review of each future Master Plan project:

1. Identify noise-sensitive land uses located in the vicinity of the project site (e.g., residences, hospitals, schools, guest lodging, libraries, convalescent and retirement facilities, houses of worship, auditoriums and concert halls, outdoor theaters, nature and wildlife preserves, and parks).

2. Determine the existing noise environment of the project area (e.g., rural vs. high density urban). Identify nearby existing noise sources that affect the project site (e.g., heavy industrial operations or major highways).

3. Review the relevant jurisdiction's noise regulations and policies (e.g., noise ordinances and general plan noise element) to identify construction noise standards and noise/land use compatibility guidelines.

4. Estimate the construction equipment needed and resultant noise generation (see Section 4.8.5.1 of the Final Program EIR). Compare the estimated construction noise levels that would be experienced by the nearest sensitive receptor to the relevant jurisdiction's construction noise standards. The impact evaluation will also take into consideration construction duration, whether the noise generated would be intermittent or continuous, and the existing noise environment of the project area.

5. If the estimated noise levels exceed the standards, one or more of the following applicable site-specific measures will be implemented to reduce noise levels to meet the relevant jurisdiction's noise standards:

    - Equip all mobile construction equipment with properly operating mufflers or other noise reduction devices
    - Install sound walls, sound curtains, or other temporary sound barriers
    - Select quieter construction procedures and/or equipment

6. For projects at school sites: schedule the noisier phases of construction on Saturdays, school vacation periods, and/or after regular class hours but before 9 p.m., as feasible; and maintain

ongoing communications with the schools' administrators to address any construction noise-related issues.

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Master Plan Projects:

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Master Plan Projects:

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: Mitigation Measure MP-N1 outlines an approach to evaluation of construction noise and implementation of measures to reduce noise (via installation of mufflers, notification to nearby receptors, limitation of construction hours, and development of site-specific noise mitigation plans (to potentially include sound barriers, etc.)). Therefore, with implementation of Mitigation Measure MP-N1, construction noise impacts would be less than significant.

Reference: Final Program EIR Section 4.8.4.

6.8.1.2 Significant Effect – Operational Noise Impact of New or Expanded Facilities for Active Recreation

Operation of recreational facilities proposed as part of future Master Plan projects would result in generation of noise associated with park users, which could have adverse impacts on adjacent noise-sensitive land uses (e.g., residential uses or habitat areas). The following mitigation measure has been identified to reduce the impact.

Mitigation Measure MP-N2: Projects that involve new or expanded facilities for active recreation (e.g., athletic fields) will be designed to minimize impacts on nearby noise-sensitive land uses, if any, by siting facilities away from noise-sensitive land uses, limiting hours of operation, installation of sound barriers, and/or using other appropriate measures as necessary.

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Master Plan Projects:

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Master Plan Projects:

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: Implementation of Mitigation Measure MP-N2 would require siting facilities away from noise sensitive land uses, limiting hours of operation, and installation of sound barriers, etc., thereby mitigating this impact to below a level of significance.

Reference: Final Program EIR Section 4.8.4.

6.8.2 Concept Design Study Impacts

6.8.2.1 Significant Effect – Construction Noise Impact on Sensitive Receptors (All Concept Design Studies)

Since detailed construction plans have not been developed for the proposed Concept Design Studies, the types of construction equipment required for each project were estimated based on the concept designs of the proposed facilities. Typical construction noise levels for each project site were then assessed and compared to the construction noise standards established by the applicable municipality for each Concept Design Study site. Based on this evaluation, construction noise impacts on sensitive receptors would be potentially significant for all five Concept Design Studies. The following mitigation measures have been identified to reduce the impact.

Mitigation Measure CD-N1: Limit construction activities to the hours allowed by the applicable jurisdiction's noise ordinance (City of Azusa for San Gabriel Canyon Spreading Grounds; County of Los Angeles for Woodland Duck Farm, San Gabriel River Discovery Center, and Lario Creek; and City of Long Beach for El Dorado Regional Park).

Mitigation Measure CD-N2: Equip all mobile construction equipment with properly operating mufflers or other noise reduction devices.

Mitigation Measure CD-N3: Notify businesses and residences immediately adjacent to the construction site prior to the start of construction (e.g., via flyers). Include a telephone number for noise complaints in this notification.

Mitigation Measure CD-N4: Prior to the start of construction of the project, require the construction contractor to develop a site-specific noise mitigation plan based on an updated estimate of construction equipment and schedule. One or more of the following measures shall be implemented as applicable to reduce noise levels to meet the relevant jurisdiction's construction noise standards:

- Install temporary sound walls, sound curtains, or other temporary sound barriers
- Select quieter construction procedures and/or equipment

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Concept Design Study Projects (San Gabriel Canyon Spreading Grounds and Lario Creek):

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Concept Design Study Projects (Woodland Duck Farm, San Gabriel River Discovery Center, and El Dorado Regional Park):

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: Implementation of Mitigation Measures CD-N1 through CD-N4 would reduce construction noise impacts to less than significant levels by limiting construction activities to daytime hours (thereby avoiding noise generation during nighttime when nearby receptors are most sensitive to noise), using noise reduction devices on construction equipment, and identifying site specific measures to reduce noise levels to meet construction noise standards established by the applicable municipality.

Reference: Final Program EIR Section 4.8.5.

6.9 Public Services and Utilities

6.9.1 Master Plan Impacts

6.9.1.1 Significant Effect – Construction Impact on Police and Fire Protection Services from Temporary Lane and/or Road Closures

Future Master Plan projects could include stormwater management facilities, such as storm drains, catch basins, or other structures within street rights-of-way. Temporary road or lane closures associated with construction of these facilities may have a temporary significant impact on police and fire emergency response times and emergency vehicle access to streets, fire

hydrants or structures adjacent to the affected roadways. The following mitigation measure has been identified to reduce the impact.

Mitigation Measure MP-P1: For future projects with substantial construction periods, the following measures will be implemented as applicable to minimize construction impacts on emergency response requirements of relevant police and fire departments. (See also Section 4.11.6 regarding mitigation measures related to construction impacts on traffic and roadways).

- Prior to the start of construction, consult the fire station(s) serving the project area and review phasing, road/lane closure, and detour plans. The fire station(s) may then identify alternative fire and emergency medical response routes.

- Prior to the start of construction, consult the police station(s) serving the project area, as appropriate, of project-related lane and/or road closures and detour plans. The police station(s) may then identify alternative police emergency response routes.

- If determined to be necessary by the relevant police and/or fire service providers, implement one or more of the following applicable traffic control measures capable of reducing the temporary adverse effects to police and emergency vehicle travel during project construction:

  - Use flagmen to direct traffic
  - Post "No Parking" signs along the affected area
  - Install temporary signals or signs to direct traffic
  - Other equivalent traffic control measures

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Master Plan Projects:

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Master Plan Projects:

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: Implementation of Mitigation Measure MP-P1 would reduce impacts on emergency service provider response times to below a level of significance by requiring consultation with emergency service providers and implementation of traffic control measures to reduce temporary adverse effects to emergency vehicle response vehicles.

Reference: Final Program EIR Section 4.9.3.

6.9.1.2 Significant Effect – Construction Impact on Schools

Construction activities at future Master Plan Project sites located near schools (e.g., construction traffic and parking of construction vehicles on the street adjacent to the school) could have temporary significant impacts on access to the school and on student safety. In addition, projects involving construction of structures within street rights-of-way as part of a stormwater management facility may have a significant adverse impact on school commuting routes. The following mitigation measure has been identified to reduce the impact.

Mitigation Measure MP-P2: For future projects located adjacent to a school, evaluate the impact on school access (vehicles and pedestrians) and student safety from operation and/or parking of construction vehicles and equipment near the school property. The school district or the school administrator will be contacted to identify any policies that the school or the school district has established regarding construction on or near school properties (e.g., noise and traffic control standards) and to provide sufficient notice to forewarn school bus operators, children, and parents if existing pedestrian and vehicular routes to school would be affected. As necessary to protect the safety of children, parents and employees accessing the school, one or more of the following measures will be implemented in coordination with the school administrators:

- Develop temporary alternative pedestrian and vehicular routes to the school that avoid construction areas
- Install appropriate temporary traffic controls (signs, crossing guards, and/or signals) as needed to ensure pedestrian and vehicular safety
- Minimize use of haul routes past the school when school is in session
- Prohibit parking or staging of construction or worker vehicles on streets adjacent to the school.

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Master Plan Projects:

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Master Plan Projects:

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: Incorporation of Mitigation Measure MP-P2 would reduce construction impacts on school access and school commuting routes to less-than-significant levels through proper planning of construction activities and/or identification of alternative bus routes, as necessary.

Reference: Final Program EIR Section 4.9.3.

6.9.1.3 Significant Effect – Potential Interference with Existing Utilities

Projects involving stormwater collection and treatment may include construction of storm drains, catch basins, or other structures within street rights-of-way as part of a stormwater management facility. Utilities that may be affected by construction of these facilities include water, sewer, electricity, gas, oil, telephone, and cable. If underground utilities are not identified prior to construction, significant damage and temporary disruption to those lines and associated services could occur. The following mitigation measure has been identified to reduce the impact.

Mitigation Measure MP-P3: For future projects that include construction of pipelines or other underground structures, identify the roadways or other rights-of-way that would be affected during construction. During facility design, contact the relevant utilities (e.g., water, sewage, electricity, natural gas, telephone, cable, and oil) to identify existing and proposed buried facilities in affected roadways. To the extent feasible, the alignment of new facilities will be designed to avoid the existing utilities. If avoidance is not feasible, one or more of the following measures will be implemented as applicable:

- If relocation is required, sequence construction activities to avoid or minimize interruptions in service.
- If utility service disruption is necessary, notify residents and businesses in the project area a minimum of 2 to 4 days prior to service disruption through local newspapers, direct mailings to affected parties, or public posting of notices.
- If project construction would occur near existing utilities, require the contractor to excavate around utilities, including hand excavation as necessary, to avoid damage and to minimize interference with safe operation and use. Hand tools must be used to expose the exact location of buried gas or electric utilities.

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Master Plan Projects:

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Master Plan Projects:

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: Implementation of MP-P3 would reduce potential impacts on utilities below a level of significance by requiring identification of buried facilities in affected roadways and relocation of facilities as necessary.

Reference: Final Program EIR Section 4.9.3.

6.9.1.4 Significant Effect – Operational Impact on Power Line Towers from Stormwater Infiltration

Portions of the river corridor parallel power transmission lines. Operation of stormwater infiltration facilities near power line towers could result in saturation of soil surrounding the towers, which could affect the stability of the power line towers, a potentially significant impact on utilities. The following mitigation measure has been identified to reduce the impact.

Mitigation Measure MP-P4: For future projects that include stormwater infiltration in the vicinity of power line towers, a geotechnical investigation will be conducted during facility design to assess the characteristics and stability of the soil around the power line towers. If results of the investigation indicate that stormwater infiltration may saturate the soil and affect the stability of the towers, one or more of the following changes will be incorporated into the site design as applicable:

- Site the proposed retention basins to avoid the towers, if possible, or construct a series of drywells so that water would be infiltrated deeper into the ground to avoid saturation of surface soils.
- Install a liner along the sideslope of the basin closest to the power line towers to prevent infiltration. (The liner would cover only a small portion of the infiltration basin.)

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Master Plan Projects:

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible

additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Master Plan Projects:

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: Implementation of Mitigation Measure MP-P4 would reduce impacts on utility tower stability to below a level of significance by requiring a geotechnical investigation and modifications to infiltration system design to minimize saturation of soils around power line towers.

Reference: Final Program EIR Section 4.9.3.

6.9.2 Concept Design Study Impacts

6.9.2.1 Significant Effect – Construction Impact on Police and Fire Protection Services from Temporary Lane and/or Road Closures (Woodland Duck Farm, Lario Creek, San Gabriel River Discovery Center, and El Dorado Regional Park)

The Concept Design Studies for the Woodland Duck Farm, Lario Creek, San Gabriel River Discovery Center, and El Dorado Regional Park include stormwater management facilities, such as storm drains, catch basins, or other structures within street rights-of-way. Temporary road or lane closures associated with construction of these facilities may have a temporary significant impact on police and fire emergency response times and emergency vehicle access to streets, fire hydrants or structures adjacent to the affected roadways. The following mitigation measures have been identified to reduce the impact.

Mitigation Measure CD-P1: Prior to the start of construction, consult the fire station(s) serving the project area and review phasing, road/lane closure, and detour plans. The fire station(s) may then identify alternative fire and emergency medical response routes.

Mitigation Measure CD-P2: Prior to the start of construction, consult the police station(s) serving the project area, as appropriate, of project-related lane and/or road closures and detour plans. The police station(s) may then identify alternative police emergency response routes.

Mitigation Measure CD-P3: If determined to be necessary by the relevant police and/or fire service providers, implement one or more of the following applicable traffic control measures capable of reducing the temporary adverse effects to police and emergency vehicle travel during project construction:

- Use flagmen to direct traffic
- Post "No Parking" signs along the affected area
- Install temporary signals or signs to direct traffic
- Other equivalent traffic control measures

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Concept Design Study Projects (Lario Creek):

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Concept Design Study Projects (Woodland Duck Farm, San Gabriel River Discovery Center, and El Dorado Regional Park):

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: Implementation of Mitigation Measures CD-P1 through CD-P3 would reduce impacts on emergency provider response times to below a level of significance by requiring consultation with emergency service providers and implementation of traffic control measures to reduce temporary adverse effects to emergency response vehicles.

Reference: Final Program EIR Section 4.9.4.

6.9.2.2 Significant Effect – Construction Impact on School Commuting Routes from Temporary Lane and/or Road Closures (Woodland Duck Farm, Lario Creek, San Gabriel River Discovery Center, and El Dorado Regional Park)

The Concept Design Studies for the Woodland Duck Farm, Lario Creek, San Gabriel River Discovery Center, and El Dorado Regional Park include stormwater management facilities, such as storm drains, catch basins, or other structures within street rights-of-way. Temporary road or lane closures associated with construction of these facilities may have a temporary significant impact on school commuting routes. The following mitigation measure has been identified to reduce the impact.

Mitigation Measure CD-P6: Notify the applicable school district of the expected start and end dates for various portions of the project that may affect traffic in the area and any potential impact on existing school bus routes to facilitate identification of alternative routes and minimize unexpected delays in commuting to the school.

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Concept Design Study Projects (Lario Creek):

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Concept Design Study Projects (Woodland Duck Farm, San Gabriel River Discovery Center, and El Dorado Regional Park):

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: Incorporation of Mitigation Measure CD-P6 would reduce construction impacts on school access and school commuting routes to less-than-significant levels through proper planning of construction activities and/or identification of alternative bus routes, as necessary.

Reference: Final Program EIR Section 4.9.4.

6.9.2.3 Significant Effect – Potential Interference with Existing Utilities (All Concept Design Studies)

The Concept Design Studies for the Woodland Duck Farm, Lario Creek, San Gabriel River Discovery Center, and El Dorado Regional Park include stormwater management facilities, such as storm drains, catch basins, or other structures within street rights-of-way. Utilities that may be affected by construction of these facilities include water, sewer, electricity, gas, oil, telephone, and cable. In addition, the Concept Design Study site for the San Gabriel Canyon Spreading Grounds contains an underground water pipeline near the perimeter of the spreading grounds. This pipeline is owned and maintained by the City of Azusa for conveying water from its wells to its water treatment facility. If underground utilities are not identified prior to construction, significant damage and temporary disruption to those lines and associated services could occur. The following mitigation measure has been identified to reduce the impact.

Mitigation Measure CD-P7: During design of each project component, consult the applicable utility service provider(s) to identify existing and proposed buried facilities in affected roadways and to determine which utilities require relocation and which can be avoided. If results of the consultation indicate that project construction could affect buried facilities, one or more of the following measures shall be implemented as applicable:

- If relocation is required, sequence construction activities to avoid or minimize interruptions in service.
- If utility service disruption is necessary, notify residents and businesses in the project area a minimum of 2 to 4 days prior to service disruption through local newspapers, direct mailings to affected parties, or public posting of notices.
- If project construction would occur near existing utilities, require the contractor to excavate around utilities, including hand excavation as necessary, to avoid damage and to minimize interference with safe operation and use. Hand tools must be used to expose the exact location of buried gas or electric utilities.

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Concept Design Study Projects (San Gabriel Canyon Spreading Grounds and Lario Creek):

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Concept Design Study Projects (Woodland Duck Farm, San Gabriel River Discovery Center, and El Dorado Regional Park):

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: Implementation of CD-P7 would reduce potential impacts on utilities below a level of significance by requiring identification of buried facilities in affected roadways and relocation of facilities as necessary.

Reference: Final Program EIR Section 4.9.4.

6.9.2.4 Significant Effect – Operational Impact on Power Line Towers from Stormwater Infiltration (Woodland Duck Farm and El Dorado Regional Park)

The Concept Design Studies for the Woodland Duck Farm and El Dorado Regional Park may involve construction of stormwater infiltration facilities near power line towers. If stormwater infiltration saturates the soil surrounding the towers and affects the stability of the power line

towers, it could result in a significant impact on electricity infrastructure. The following mitigation measure has been identified to reduce the impact.

Mitigation Measure CD-P10: During design of the facility, conduct a geotechnical investigation to assess the characteristics and stability of the soil around the power line towers. If results of the investigation indicate that stormwater infiltration may saturate the soil and affect the stability of the towers, one or more of the following changes shall be incorporated into the site design as applicable:

- Site the proposed retention basins to avoid the towers, if possible, or construct a series of drywells so that water would be infiltrated deeper into the ground to avoid saturation of surface soils.
- Install a liner along the sideslope of the basin closest to the power line towers to prevent infiltration. (The liner would cover only a small portion of the infiltration basin.)

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Concept Design Study Projects (Woodland Duck Farm and El Dorado Regional Park):

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: Implementation of Mitigation Measure CD-P10 would reduce impacts on utility tower stability to below a level of significance by requiring a geotechnical investigation and modifications to infiltration system design to minimize saturation of soils around power line towers.

Reference: Final Program EIR Section 4.9.4.

6.10 Recreation

6.10.1 Master Plan Impacts

6.10.1.1 Significant Effect – Construction Impact on Existing Recreational Facilities

Construction of new facilities in or near existing recreational facilities as part of future Master Plan projects could temporarily reduce public access to the facilities, a potentially significant impact on recreation. The following mitigation measure has been identified to reduce the impact.

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Master Plan Projects:

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Master Plan Projects:

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Mitigation Measure MP-R1: For projects that include modifications of existing recreational facilities, the timing, duration and areal extent of disturbance that would occur during construction of the proposed facilities will be identified during facility design. If temporary closures of existing recreational facilities would be necessary, the potential increase in use of

other nearby recreational facilities will be evaluated. Factors to be considered in the evaluation include the duration of the closure, acreage and type of facility that would be unavailable due to the closure, and existing usage levels at the relevant recreational facilities.

If the impacts on nearby recreational facilities are determined to be potentially significant, one or more of the following measures will be implemented:

- Minimize construction period
- Modify construction phasing to limit disturbance of existing recreational facilities
- Avoid construction during peak use periods

Rationale: Implementation of Mitigation Measure MP-R1 would reduce temporary potentially significant impacts on existing recreational facilities by modification of construction schedules to minimize the duration of closure and/or to avoid peak use periods.

Reference: Final Program EIR Section 4.10.3.

6.10.2 Concept Design Study Impacts

No significant recreation impacts have been identified for the Concept Design Studies.

6.11 Transportation and Traffic

6.11.1 Master Plan Impacts

6.11.1.1 Significant Effect – Construction Impacts on Traffic

Construction of facilities proposed as part of future Master Plan projects could have potentially significant impacts on transportation/traffic from construction vehicle trips and/or construction within the right-of-way of public streets/bikeways. The following mitigation measure has been identified to reduce the impact.

Mitigation Measure MP-T1: A traffic impact study will be prepared for any Master Plan project that is projected to meet or exceed the site-generated traffic volume thresholds cited in the Los Angeles County Congestion Management Program "Guidelines for CMP Transportation Impact Analysis." The guidelines indicate that a study is required if a project would add 50 or more vehicle trips during either the a.m. or p.m. weekday peak hours to a CMP arterial monitoring intersection or freeway on- or off-ramp. An analysis will be conducted if the project would add 150 or more trips in either direction to a mainline freeway during either the a.m. or p.m. weekday peak hours. A traffic study will also be prepared if the project meets the criteria for the municipality in which the project site is located (i.e., an incorporated city, County of Los Angeles, or County of Orange). If the project would result in significant traffic impacts, one or more of the following measures will be implemented as applicable.

- A construction traffic management plan shall be developed for each project site that will include but not be limited to such measures as designated haul routes for construction-related traffic (e.g., construction equipment, pickup and dump trucks, and other material

delivery trucks), travel time restrictions for construction-related traffic to avoid weekday peak periods on selected roadways, designated site access locations, driveway turning restrictions, temporary traffic controls and/or flaggers, and designated parking/staging locations for workers and equipment.

- A construction area traffic control plan and/or detour plan shall be prepared for any location where construction activities would encroach into the right-of-way of a public roadway. The plan would include, but not be limited to such features as warning signs, lights, barricades, cones, lane closures, and restricted hours during which lane closures would not be allowed (e.g., 6:00 to 9:00 a.m. and 3:00 to 6:00 p.m., or as directed by the affected public agency).
- Provide advance notification to affected property owners, businesses, residents, etc. of possible driveway blockages or other access obstructions and implement alternate access and parking provisions where necessary.
- Provide alternative pedestrian and bicycle access/circulation routes if existing facilities such as sidewalks, crosswalks, and bike lanes would be obstructed to ensure safe pedestrian/bicycle travel.
- Coordinate with emergency service providers (police, fire, and ambulance/paramedic agencies) prior to construction to provide information regarding lane closures, construction schedules, driveway blockages, etc., if any, and develop a plan to maintain or accommodate essential emergency access routes (e.g., plating over excavations and use of detours).
- Coordinate with public transit agencies (e.g., MTA) to provide information regarding lane closures, bus stop disruptions, etc. so that MTA or relevant agency can designate alternate pick-up/drop-off locations, if appropriate, and provide for uninterrupted service.
- As necessary, obtain a transportation permit from Caltrans for transportation of heavy construction equipment and/or materials which requires the use of oversized-transport vehicles on State highways.
- Other relevant traffic control measures.

Finding per State CEQA Guidelines Section 15091 for <u>County-Sponsored</u> Master Plan Projects:

[XX] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible

additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Finding per State CEQA Guidelines Section 15091 for <u>Non-County Sponsored</u> Master Plan Projects:

[ ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final Program EIR. (Subd. [a][1].)

[XX] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (Subd. [a][2].)

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible additional mitigation measures or project alternatives identified in the Final EIR. (Subd. [a][3].)

Rationale: Implementation of Mitigation Measure MP-T1 would reduce traffic impacts to below a level of significance by requiring the evaluation of construction traffic and implementation of traffic control measures such as installation of warning signs, lights, and barricades; restriction of lane closure hours; provision of alternative pedestrian and bicycle routes; and restriction of travel times during construction to avoid peak periods.

Reference: Final Program EIR Section 4.11.4.

6.11.2 Concept Design Study Impacts

No significant transportation and traffic impacts have been identified for the Concept Design Studies.

7.0 CUMULATIVE IMPACTS

7.1 Air Quality

The SCAB is a non-attainment area for ozone (extreme), PM10 (serious), and CO (serious). It can be reasonably assumed that construction of Master Plan projects would overlap with other construction in the South Coast Air Basin including construction of one or more of the related projects. However, each of the Master Plan projects is anticipated to be below the construction emission thresholds established by SCAQMD, and operational impacts on air quality of Master Plan projects would be negligible. In addition, each of the related projects would be required to mitigate its temporary construction impacts to the extent feasible. Therefore, cumulative effects are anticipated to be less than significant.

7.2 Cultural Resources

Significant impacts to archaeological materials are not predicted for the Master Plan since mitigation measures, including monitoring during subsurface disturbances, would be conduced as warranted. Since other related projects are located in disturbed urban areas with limited potential for cultural resources, and since these projects would also mitigate their individual impacts, if any, significant cumulative impacts on cultural resources are not anticipated.

7.3 Hydrology and Water Quality

The other related development projects could increase impervious surface area within the corridor and, therefore, result in generation of additional runoff over existing conditions. Increases in runoff which exceed the capacity of the receiving waterbody would be potentially significant without mitigation.

However, compliance with LADPW standards for stormwater discharges would be required at every construction site within the County. LADPW has determined the allowable discharge rate for parcels within their jurisdiction. Allowable discharge rates are calculated by multiplying the site acreage by the allowable flow rate per acre, which varies by the design capacity of the receiving drainage facility and is determined by LADPW. The objective of the allowable discharge rates is to maintain the design capacities of LADPW's existing storm drainage facilities in compliance with the agency's flood protection standards. Compliance with the LADPW standards would reduce cumulative impacts on drainage to a less than significant level for the related development projects. Together with the beneficial impacts on runoff from the Master Plan projects which would decrease stormwater runoff by provision of infiltration and detention facilities, the cumulative impact would be less than significant or beneficial.

With regard to stormwater runoff quality, development of Master Plan projects would not have an incremental effect that is cumulatively considerable. Instead, Master Plan impacts to water quality are net beneficial, and would be expected to partially offset water quality impacts from development of the related projects which would increase impervious surface area (homes, warehouses, restaurants, etc.). Each of the related projects would contribute non-point source pollutants to runoff that flows into surface waters tributary to the San Gabriel River. However, the cities along the corridor require implementation of BMPs in compliance with SUSMP. Overall, the cumulative effect with implementation of Master Plan is less than cumulatively considerable. Runoff quality from the watershed should improve over time as compared with existing conditions.

7.4 Land Use

Each of the proposed related projects and the Master Plan projects would require compliance with local zoning and land use regulations. Master Plan projects would be generally consistent with relevant land use policies. The cumulative impact on land use of all related projects is less than significant.

7.5 Noise

Cumulatively considerable noise impacts could occur in the event construction schedules overlapped for various projects in the same vicinity and the net effect was generation of noise in excess of local noise standards. However, the Master Plan and each of its Concept Design Studies, however, would not contribute to a significant noise impact. Further, since each project would be required to incorporate mitigation to reduce noise generation to the extent feasible, the cumulative effect would be less than significant. Operations related noise related to the Master Plan projects would be limited to infrequent maintenance and recreation use. Again, with compliance with local noise standards, cumulative impacts with the related projects would be less than significant.

7.6 Transportation and Traffic

Cumulatively considerable impacts could occur on traffic in the event construction schedules overlapped for various projects and the net effect was degradation of service to unacceptable volume/capacity ratios on specific roadway segments. The cumulative impact would then be considered significant, but temporary. It is anticipated that in this case, traffic mitigation would be required of each project to reduce LOS on the affected streets to "D." The cumulative impact would then be mitigated to a level of less than significant.

8.0 ALTERNATIVES

CEQA requires that an EIR evaluate a range of reasonable alternatives to a project, or to the location of the project, which would feasibly obtain most of the basic project objectives but would avoid or substantially lessen any of the significant effects of the project. (State CEQA Guidelines Section 15126.6.) The "No Project" alternative must be evaluated, and if it is the environmentally superior alternative, another environmentally superior alternative must be identified among the other alternatives. (State CEQA Guidelines Section 15126.6(e).)

There are no environmental impacts of the Master Plan that are significant and cannot be avoided through mitigation. In addition, The Master Plan document does not detail any alternatives. Therefore, for the purposes of Program EIR analysis, the County evaluated the environmental effects of the following alternatives to the Master Plan:

- No Project
- Maximum Habitat Alternative
- Maximum Recreation Alternative
- Maximum Master Plan
- Specific Alternatives for Individual Master Plan Elements

No Project Alternative

Under this alternative, there would not be any unifying planning process or Master Plan document to guide individual projects along the river corridor proposed by various municipalities, agencies and interest groups.

Under the No Project alternative, the environmental benefits that would result from the collaborative process and the multi-objective planning approach advocated by the Master Plan would be reduced as summarized below:

- Biological resources – reduced consistency of restoration projects, possible reduction in the use of native species and therefore reduced habitat values, no planned wildlife corridors or linkages would be established, reduced coordination for invasive species removal and therefore potentially reduced success of individual efforts
- Recreation – reduced integration of trails and reduced focus on underserved areas
- Open space – reduced integration of land acquisition, potentially reduced coordination of clean-up efforts
- Water resources – elimination of another coordination mechanism for TMDL and NPDES processes
- Aesthetics – reduced potential for common design elements for signs, fences, gates, etc.

Therefore, the No Project alternative is not considered environmentally superior to the Proposed Project.

Maximum Habitat Alternative

Under this alternative, each future Master Plan project would maximize the opportunities for habitat preservation and enhancement available at each site. The recreation component of each project would consist mostly of passive forms of recreation that are compatible with the habitat component of the project (e.g., bird watching, wildlife appreciation, etc.).

This alternative does not avoid any significant unmitigable impacts identified for the Proposed Project but would have greater beneficial impacts on biological resources than the proposed Master Plan by encouraging a greater number of projects to maximize habitat enhancement and preservation of open space. The Maximum Habitat Alternative would mostly avoid potentially adverse impacts associated with the Recreation, Flood Protection, Water Quality, and Economic Development Elements. For example, this alternative would largely avoid the traffic, noise, and air pollutant emissions related to an increase in recreational visitor trips associated with active recreation. For this reason, and since this alternative would maximize habitat restoration efforts within the river corridor resulting in greater beneficial impacts on biological resources, it can be considered the environmentally superior alternative. However, this alternative would not encourage projects that provide active recreation to the communities along the river.

Since it would fail to meet the goal of balancing habitat, recreation, and open space, as intended by the Board of Supervisors' resolution and as defined by the project objectives, it is rejected and not proposed for adoption by the Board and the other municipalities in the river corridor.

Maximum Recreation Alternative

Under this alternative, each future Master Plan project would maximize the opportunities for providing recreational facilities, particularly those for active forms of recreation. The habitat

component of each project would consist of landscaping, tree planting, and other forms of enhancements that are compatible with human activities.

This alternative does not avoid any significant impacts identified for the Proposed Project but would have greater beneficial impacts on recreation than the proposed Master Plan by encouraging a greater number of projects to maximize recreational opportunities. The Maximum Recreation Alternative would mostly avoid potentially adverse impacts associated with the Habitat, Open Space, Flood Protection, Water Quality, and Economic Development Elements. For example, this alternative would avoid impacts associated with development of stormwater retention facilities such as an increase in mosquito breeding habitat or potential liquefaction concerns. However, this alternative would have increased operational impacts on traffic, air quality, and noise associated with recreational visitors as compared to the Proposed Project. This alternative would not encourage projects that provide habitat restoration and preservation of open space reducing beneficial impacts on biological resources.

Since it would fail to meet the goal of balancing habitat, recreation, and open space, as intended by the Board of Supervisors' resolution and as defined by the project objectives, this alternative is not identified as the environmentally superior alternative and it is rejected and not proposed for adoption by the Board and the other municipalities in the river corridor.

Maximum Master Plan Alternative

Under this alternative, the goal of the Master Plan would be to restore the river to more a natural state reminiscent of its condition prior to urban development (e.g., removal of dams, lined channels and other engineered features that provide flood control and water supply benefits).

Removal of concrete to re-naturalize the river would result in:

- Significant flooding impacts from decreased flood control capacity currently designed into the system, or
- Significant land use changes from expansion of the floodplain to accommodate flood flows, for example, the displacement of existing residential, commercial, and industrial land uses through building demolition and replacement with open space.

This alternative does not avoid any significant impact identified for the proposed project but could maximize beneficial impacts on biological resources, recreation, and open space. However, this alternative would have significant impacts on water supply, flooding, land use, population, and housing. This alternative is not identified as the environmentally superior alternative and it is rejected and not proposed for adoption by the Board and the other municipalities in the river corridor.

Specific Alternatives for Individual Master Plan Projects

For many of the future Master Plan projects, more than one project description will be considered. These alternatives may focus on balancing project objectives at specific sites. Overall, definition of component-specific alternatives will focus on balancing the multiple uses of the sites to accommodate various interests and maximize beneficial effects.

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

Programmatic Mitigation Monitoring and Reporting Program

San Gabriel River Corridor Master Plan

June 2006

SCH No. 2003041187

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Section 1
Introduction

This Mitigation Monitoring and Reporting Program (MMRP) has been developed to ensure implementation of the mitigation measures outlined in the Final Program Environmental Impact Report (Program EIR) (State Clearinghouse No. 2003041187) for the San Gabriel River Corridor Master Plan (Master Plan). The MMRP has been prepared by the County of Los Angeles Department of Public Works (LADPW), the lead agency for the Master Plan under the California Environmental Quality Act (CEQA), in conformance with Public Resources Code Section 21081.6 and CEQA Guidelines Section 15097.

Project Description Summary. The proposed project area is a 1-mile wide corridor along 58 river miles of the San Gabriel River from its headwaters in the San Gabriel Mountains to its terminus at the Pacific Ocean between Long Beach and Seal Beach. (This study area provides a necessary focus for the Master Plan but is not meant to be a totally exclusive boundary. Some projects and programs located nearby but outside the 1-mile wide study area are included if they are designed to contribute to the vision and goals of the Master Plan.) The project area includes 19 cities as well as unincorporated areas of Los Angeles and Orange counties, and encompasses a total of approximately 58 square miles. The Master Plan is a consensus-based document that recognizes and addresses a renewed interest in recreation, open space, and habitat, while also seeking to enhance and maintain flood protection, water conservation benefits, along with existing water rights. The Master Plan identifies over 130 projects along the San Gabriel River that are visions of cities and other stakeholder organizations and incorporate one or more of the Master Plan goals. The Master Plan provides policies and guidelines to help coordinate these independent projects and to facilitate the achievement of the shared vision and goals for the San Gabriel River corridor.

In addition, the Master Plan identifies five Concept Design Studies that highlight how project planning can address multiple goals of the Master Plan. The Concept Design Studies were defined to illustrate the types of multi-purpose projects to be fostered by the Master Plan. The conceptual project descriptions presented in the Master Plan are the result of a Steering Committee exercise to help provide tangible examples of how the Master Plan multi-objective approach might apply to projects in the San Gabriel River corridor. These studies are intended for illustration purposes only and do not necessarily reflect the intent of the project sponsors. Environmental analysis in this Program EIR is based on the conceptual project descriptions in the Master Plan. For each of these sites, the actual planning process by project sponsors still needs to be carried out or is ongoing, including appropriate public involvement and CEQA compliance.

Mitigation Monitoring and Reporting Responsibility. The Master Plan is a set of policies and actions to increase open space, habitat, and recreation opportunities in the San Gabriel River corridor. This EIR has been prepared as a Program EIR to consider the environmental impacts, mitigation measures and alternatives of the proposed Master Plan as a whole. As Master Plan

projects are proposed for implementation, project proponents will prepare a second-tier CEQA document (a Negative Declaration or an EIR) for each project.

LADPW will use this MMRP for implementation of mitigation measures associated with the County-sponsored Concept Design Studies (San Gabriel Canyon Spreading Grounds and Lario Creek) and other future County-sponsored Master Plan projects. Other municipalities and agencies may also use this MMRP, with modifications as necessary, for future Master Plan projects over which they have approval authority.

This MMRP is divided into two sections. Section 2 includes the Master Plan Mitigation Measures, which apply to future Master Plan projects (other than Concept Design Studies). Section 3 includes the mitigation measures for the Concept Design Studies. The project proponents and agencies anticipated to be the CEQA lead agencies for the Concept Design Studies are shown below:

Concept Design Study	Project Proponent	CEQA lead agency
San Gabriel Canyon Spreading Grounds	LADPW	LADPW
Woodland Duck Farm	WCA	WCA
San Gabriel River Discovery Center	Upper San Gabriel Valley Municipal Water District, County of Los Angeles Department of Parks and Recreation, and RMC	Joint Project Authority (to be defined)
Lario Creek	LADPW and Northeast Trees	LADPW
El Dorado Regional Park	City of Long Beach	City of Long Beach

WCA: Watershed Conservation Authority

Section 2
Master Plan Mitigation Measures

2.1 AIR QUALITY

Mitigation Measure MP-A1

Applicable Project Type:	Projects that involve use of heavy equipment and vehicles during construction
Impact:	Air pollutant emissions from use of construction equipment and vehicles
Timing:	Evaluation: During project design Implementation of pollution control measures: During construction
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review of second-tier CEQA document Construction inspection

Evaluations of air quality impacts during project construction will be conducted as follows during site-specific environmental review of each future Master Plan project:

1. Based on the site-specific project description, the following should be determined:
   - Acreage of site disturbance that would occur during excavation, grading, and/or filling
   - List of necessary construction equipment (number, type, hours of operation per day, and number of days in operation for each phase of construction)
   - Length of construction period
   - Number of construction workers and vehicles
2. Based on the above information, and using the latest version of the SCAQMD CEQA Handbook, construction emissions will then be estimated and compared to the thresholds of significance.
3. If the estimated construction emissions exceed the SCAQMD threshold of significance for fugitive dust, then one or more of the following dust control measures will be implemented as applicable:
   - Clean dirt from construction vehicle tires and undercarriages when leaving the construction site and before entering local roadways.
   - During earth-moving activities, water the construction area as necessary, but at least twice per day.
   - Water temporary open storage piles once per hour or install temporary covers.
   - Water unpaved roadways three times per day or apply non-toxic soil stabilizers. (Note: Use of soil stabilizers near wetlands, streams, or other water features may be limited by

regulatory agencies such as the U.S. Army Corps of Engineers and the California Department of Fish and Game.)

- Limit construction vehicle speed on the project site to 15 miles per hour (mph) or less.
- Cover dirt in trucks during on-road hauling.
- Cease earth-moving activities on days when wind gusts exceed 25 mph or apply water to soil not more than 15 minutes prior to moving such soil.
- Sweep streets near the construction area at the end of the day if visible soil material is present.
- For applicable construction areas, establish a vegetative groundcover as soon as feasible after active operations have ceased. Groundcover will be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting.
- Per SCAQMD Rule 403(e), large construction operations (greater than 50 acres of disturbed area or daily earth-moving or throughput volume of 5,000 cubic yards three times during the most recent 365-day period) will implement applicable dust suppression measures specified in Table 2 of Rule 403 at all times. When the applicable performance standards cannot be met through use of Table 2 measures, the applicable contingency control measures specified in Table 3 of Rule 403 will be implemented.

4. If the estimated construction emissions exceed the SCAQMD threshold of significance for CO, ROC, NO_x, SO_x, then one or more of the following measures will be implemented:

   - Prohibit all vehicles from idling in excess of 10 minutes, both on and off-site.
   - Maintain construction equipment in proper tune.
   - Encourage contractors to establish trip reduction plans. The goal of these plans will be to achieve a 1.5 average vehicle ridership (AVR) for construction employees.

     To further reduce tailpipe emissions from construction equipment, implementation of the following optional measure will be considered at the time of construction of individual projects. Aside from fugitive dust, the majority of construction emissions, particularly for NO_x, are generally associated with tailpipe emissions from diesel-fueled construction equipment. Using construction equipment with alternative fuel(s) can achieve high reduction efficiency for tailpipe emissions. The approximate NO_x emissions reduction rates of various alternative fuels are: 60 percent for compressed natural gas (CNG), 10 percent for emulsified diesel fuel, and 2 to 10 percent for biodiesel fuel (EPA, 2003c). However, use of construction equipment with alternative fuel(s), while effective, may not be applicable to all projects (i.e., limited equipment availability and high costs may make it infeasible to use a large fleet of construction equipment with alternative fuel(s)).

   - Select construction equipment with low pollutant emissions and high energy efficiency. Factors to consider include model year and alternative fuels (e.g., compressed natural gas, biodiesel, emulsified diesel, methanol, propane, butane, and low sulfur diesel).

Mitigation Measure MP-A2

Applicable Project Type:	Projects that involve vehicle trips or equipment operation during operation of the proposed facilities
Impact:	Air pollutant emissions from use of equipment and vehicles during project operation
Timing:	Evaluation: During project design Implementation of pollution control measures: During project operation
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review of second-tier CEQA document Review of equipment selection at project implementation Review of operations and maintenance plans

Evaluations of air quality impacts during project operation will be conducted as follows during site-specific environmental review of each future Master Plan project:

1. Based on the site-specific project description, the number of vehicle trips that would be generated by operation of proposed facilities (e.g., ongoing maintenance activities and/or visitors to recreational or educational facilities) will be estimated, and air emissions associated with those vehicle trips will be determined. If project operation involves use of electricity (e.g., lighting for parks, education center or park buildings, pumps, etc.), air emissions associated with electricity consumption will be estimated.
2. Based on the above information, and using the latest version of the SCAQMD CEQA Handbook, operational emissions will be compared to the thresholds of significance.
3. One or more of the following measures will be implemented as applicable to reduce air emissions:
    - Implement dust control if dry conditions and substantial area is disturbed for operations and maintenance activities that involve ground disturbance.
    - Select energy efficient lighting features or other building design considerations for proposed facilities (e.g., park buildings or interpretive centers) to minimize emissions associated with power generation.
    - Select low-emissions equipment and vehicles for operations and maintenance to reduce tailpipe emissions.
    - Implement an employee ride-share plan to reduce vehicle trips to the facility and associated tailpipe emissions.

2.2 BIOLOGICAL RESOURCES

Mitigation Measure MP-B1

Applicable Project Type:	Projects involving site disturbance in areas with potential biological resources
Impact:	Impacts on special status species or high-value vegetation types
Timing:	During project design and construction
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review of biological study report Review project plans and specifications Construction inspection Review documentation of agency consultations (as applicable)

Site-specific evaluations for biological resources will be conducted prior to completion of detailed design plans for each of the future projects to determine the presence of high-value vegetation types and the potential for special status plant and wildlife species to occur. The following tasks will be completed by these evaluations:

1. Identify and determine the extent of site disturbance proposed by the project. For sites where biological resources have any potential to be sensitive, continue evaluation as outlined below.

2. General plant and wildlife surveys will be performed by a qualified biologist to determine if any focused surveys for special status species are necessary. If the general surveys indicate that there is potential for sensitive plant or wildlife species to occur on the project site, focused surveys will be conducted for those species in accordance with relevant protocols at the appropriate time of the year.

3. If any special status species or high-value vegetation types are identified, the proposed facilities will be designed and/or sited to avoid disturbance and loss of the sensitive resources. If nesting habitat of special status bird species will be impacted, project construction will be scheduled outside of the breeding season if feasible. If scheduling construction outside of the breeding season is not feasible, then a pre-construction survey will be conducted to identify nests and to establish a buffer zone between the construction area and the nests to avoid construction impacts.

4. In some instances, depending on the location of sensitive resources and/or construction schedule requirements, project redesign and/or construction phasing that avoids biological resources while still meeting the project objective may be infeasible. Therefore, if avoidance is not feasible, the following measures will be detailed and disclosed in second tier CEQA documentation and implemented under the direction of a qualified biologist:

    - Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment; and/or

- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the project; and/or
- Compensating for the impact by replacing or providing substitute resources or environments.

5. If avoidance of impacts to listed species is not feasible, then consultation with the USFWS shall be required for federally-listed species, and consultation with the CDFG shall be required for state-listed species. If special status plants are identified, a mitigation program shall be developed following focused surveys and submitted to the appropriate agencies for review.

Mitigation Measure MP-B2

Applicable Project Type:	Projects involving landscaping
Impact:	Impacts on native habitat
Timing:	During project design and construction
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review plans and specifications Construction inspection

Landscaping of vegetation will not include any invasive plant species as listed on the California Invasive Plant Council Pest Plant List.

Mitigation Measure MP-B3

Applicable Project Type:	Projects that involve use of night lighting
Impact:	Impacts on nocturnal and crepuscular wildlife
Timing:	During project design
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review plans and specifications

For projects that involve use of night lighting in public areas (e.g., parks) for health and/or safety reasons, lighting will be designed to minimize effects on the behavior patterns of nocturnal and crepuscular (active at dawn and dusk) wildlife (e.g., small ground-dwelling animals that use the darkness to hide from predators, and on owls that are specialized night foragers). To reduce light impacts on nocturnal and crepuscular wildlife, night lighting will be low intensity directional lighting focused away from open space areas.

Mitigation Measure MP-B4

Applicable Project Type:	Projects that involve recreational uses near habitat areas
Impact:	Disturbance of habitat areas
Timing:	During project design
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review management plan Review plans and specifications

For projects that involve recreational uses near habitat areas, a management plan to reduce impacts from human uses (e.g., riding, hiking, biking) on native habitats will be incorporated into detailed design plans. As relevant, the management plan will include access points including parking and restrooms, signage for trails and restricted uses, appropriate fencing, and restrictions on domestic animals. This plan will be written by a qualified biologist and approved by the sponsoring agency prior to initiation of site development.

2.3 CULTURAL RESOURCES

Mitigation Measure MP-C1

Applicable Project Type:	Projects involving site disturbance or modifications to existing structures
Impact:	Disturbance of cultural resources
Timing:	During project design and construction
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review plans and specifications Construction inspection

Site-specific evaluations for cultural resources will be conducted as follows prior to completion of detailed design plans for each future Master Plan project:

1. Identify and determine the extent of site disturbance and/or structural modifications proposed by the project. For sites where ground will be newly disturbed (i.e., not fill soils or previously completely disturbed sites) and/or for sites with potentially historic structures present, continue evaluation as outlined below.
2. Conduct background research to identify previous cultural resources investigations and known cultural resources relevant to the project site (review records at the South Central Coastal Information Center, contact local historical societies, the Native American Heritage Commission, etc.).
3. Conduct field reconnaissance if the project site has not been surveyed for cultural resources in the last five years.

4. If potential resources are identified in the field reconnaissance, determine if avoidance is feasible (e.g., design project to locate the proposed structures or site disturbance away from or around the area of the potential resource; a buffer of 100 meters is recommended in most cases). If feasible, the resource shall be avoided.
5. If avoidance is not feasible, evaluate the significance of the potential resource. The evaluation process may include excavation, additional review of records and literatures, interviews, field examination by a an architectural historian, and/or laboratory analysis. Based on the results of the evaluation, the significance of the potential resource should be determined using the criteria listed in Section 4.3.1.3 of the Final Program EIR.
6. If the resource is found to be significant, determine significance of project impacts on the resource. (Significant change to a resource includes demolition, replacement, substantial alteration, or relocation (California Code of Regulations [CCR] Section 15064.5)).
7. If project impacts are determined to be significant, the following measures (in order of preference) will be implemented to reduce impacts to below a level of significance:
   - Incorporating the resource into the project design (e.g., for projects involving park development or interpretive centers); or
   - Remove and relocate the resource to an appropriate location (e.g., museum, public library, or school)

   The results of site-specific evaluations and detailed mitigation measures, if any, will be disclosed in subsequent CEQA documentation.

Mitigation Measure MP-C2

Applicable Project Type:	Projects involving site disturbance
Impact:	Disturbance of previously unknown buried cultural resources during project construction
Timing:	During construction
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Method:	Review of construction reports

If previously unknown cultural resources are discovered in the course of excavation for project construction, the construction inspector shall have the authority and responsibility to halt construction until a qualified archaeologist can evaluate the significance and distribution of the materials, and identify future activities needed. If the cultural material discovered is determined to be of potential archaeological significance, the investigation and future activities shall be conducted in consultation with a culturally affiliated Native American or other parties, as necessary.

Mitigation Measure MP-C3

Applicable Project Type:	Projects involving site disturbance
Impact:	Disturbance of buried human remains during project construction
Timing:	During construction
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Method:	Review of construction reports

If human remains are discovered in the course of excavation for project construction, the County Coroner shall be contacted and provisions of State CEQA Guidelines Section 15064.5 shall be followed.

2.4 GEOLOGY AND SOILS

Mitigation Measure MP-G1

Applicable Project Type:	Projects that would result in increased infiltration (including but not limited to construction of stormwater retention/infiltration facilities, unlined wetlands, and structures designed to increase in-stream recharge (e.g., rubber dams))
Impact:	Increase in liquefaction risk due to rise in groundwater levels
Timing:	During project design and operation
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review geotechnical report Review of project plans and specifications Review groundwater monitoring reports

During facility design, a site-specific geotechnical analysis will be conducted to determine soil types and groundwater levels. Based on the results of the geotechnical analysis, the potential increase in liquefaction potential from the proposed infiltration will be evaluated. Factors that will be considered include the capacity of the infiltration facility and the associated amount of water proposed for infiltration, infiltration rate, proximity and types of nearby structures (including pipelines) that could be damaged from liquefaction, and infiltration at adjacent spreading grounds, if any.

If the project is determined to have the potential to cause groundwater levels to rise within 30 feet of the surface, new monitoring wells and/or existing wells in the project area will be used to detect any substantial increase in groundwater levels. If monitoring indicates a substantial rise in groundwater levels that could impact adjacent structures, stormwater would not be infiltrated and would be diverted into storm drains or onto street surfaces or routed to other stormwater management facilities as applicable.

Mitigation Measure MP-G2

Applicable Project Type:	Projects that involve reclamation of gravel mines to create parks, open space and/or stormwater retention facilities
Impact:	Slope instability
Timing:	During project design
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review of geotechnical report Review of project plans and specifications

Site-specific evaluation of slope stability will be conducted as a part of the geotechnical analyses during design of each future Master Plan project that involves modification of a gravel mine. The recommendations of the geotechnical study will include optimum slope design for stability and safety, soil compaction or recompaction requirements, surface cover, and potentially other slope stabilizing measures. The recommendations of the geotechnical analysis will be incorporated into the detailed design of the project. The results of site-specific evaluations and detailed mitigation measures, if any, will be disclosed in subsequent CEQA documentation.

Mitigation Measure MP-G3

Applicable Project Type:	Projects that include construction of habitable structures (e.g., recreation or interpretive centers)
Impact:	Earthquake hazards for habitable structures
Timing:	During project design
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review of geotechnical report Review of project plans and specifications

The site plan and building footprint will be reviewed by a registered professional to ensure that project siting and design provides adequate protection from geologic hazards such as fault rupture (including Alquist-Priolo Earthquake Fault Zones), expansive soils, liquefaction, and unstable slopes. If a project site is located in known high risk areas with respect to geological hazards, a site-specific geotechnical study will be performed during facility design to identify potential concerns and recommended measures to reduce hazards. Recommendations in the geotechnical study will be incorporated into the final design.

2.5 HAZARDS AND HAZARDOUS MATERIALS

Mitigation Measure MP-H1

Applicable Project Type:	Projects that involve construction of stormwater treatment wetlands, other water features or underground utility vaults or propose increasing vegetation within existing water features
Impact:	Public health impacts associated with vectors
Timing:	During project design and project operation
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review documentation of consultation with applicable vector control district Review of project plans and specifications Review operations and maintenance plans

Project plans and designs will be submitted to the applicable vector control agency (see Section 4.5.1.4 of the Final Program EIR) for review and comment with respect to control of mosquitoes and other vectors. Upon consultation with the vector control agency, appropriate vector management measures will be incorporated into the project design. Potential management measures include the following:

- Design to minimize and/or provide periodic removal of vegetation on bank slopes and periphery of water bodies to minimize areas of stagnant water.
- Design and/or manage to optimize water depths and flow pattern. For mosquito control, maintain water depths and encourage/provide water circulation. For black fly control, minimize aeration of flowing water. If necessary, design water features to allow for periodical drying to desiccate vector larvae.
- Work with the vector control agency to stock ponds and other permanent water features with mosquito-eating fish as needed.
- Provide site access to vector control agency specifications (e.g., dikes with access roads or trails) to potential breeding areas for maintenance (e.g., vegetation removal) and treatment (e.g., application of Bti or other larvicides).
- Design stormwater retention facilities/devices to drain completely within 72 hours, or design with the capability to be dewatered rapidly if needed for vector control.
- Incorporate measures into project designs that serve to educate the public about wildlife safety and vector-borne disease issues, prevent wildlife-human interactions, and prevent wildlife access to trash and unnatural food and water sources that are likely to result in unnatural population levels.
- Design underground utility vaults, if needed for project implementation, to prevent retention of standing water thereby reducing vector breeding habitat.

- Regularly consult with the vector control agency to identify mosquito management problems, mosquito monitoring and abatement procedures, and opportunities to adjust water and vegetation management practices to reduce mosquito production.
- Incorporate funding for vector management activities into project funding or implement a secure and reliable funding source for vector management activities.

Mitigation Measure MP-H2

Applicable Project Type:	For projects located within 5 miles of El Monte Airport or Long Beach Airport
Impact:	Bird / wildlife air strike hazard associated with creation of habitat for waterfowl and other birds
Timing:	During project design
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Method:	Review of documentation of consultation with applicable airport

For projects located within 5 miles of El Monte Airport or Long Beach Airport, the potential for the proposed facilities to attract waterfowl and other birds will be evaluated. If the evaluation indicates that the project would attract birds, the FAA Western Pacific Regional Office, Long Beach Airport, El Monte Airport and Los Alamitos Joint Forces Training Base will be notified of the proposed land use change to recognize potentially significant hazards early in the planning process and avoid or minimize the hazards.

2.6 HYDROLOGY AND WATER QUALITY

Mitigation Measure MP-W1

Applicable Project Type:	Projects that involve modifications to an existing flood control channel
Impact:	Impact on flood control capacities and downstream floodplain properties
Timing:	During project design
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review of detailed engineering studies Review of project plans and specifications Review of revised FEMA floodplain maps, as applicable

Future projects that propose modifications to an existing flood control channel will include detailed engineering studies, including hydrologic and hydraulic modeling as applicable, to assess potential impacts on the channel's flood control capacities and effects on upstream and downstream floodplain properties and recommendations to avoid or minimize these impacts. Recommendations of the engineering studies will be incorporated into project design. Modifications to Federal Emergency Management Agency (FEMA) floodplain maps will be made as needed.

Mitigation Measure MP-W2

Applicable Project Type:	Projects involving constructing, clearing, grading or excavation on areas over 1 acre in size
Impact:	Discharge of polluted stormwater runoff during project construction
Timing:	During project design and during construction
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review of SWPPP Construction inspection

For future projects involving constructing, clearing, grading or excavation on areas over 1 acre in size, develop and implement a Storm Water Pollution Prevention Plan (SWPPP) to minimize the amount of runoff and associated pollutants (e.g., sediments) leaving the construction site by containing the runoff onsite, containing the sediments onsite, and/or minimizing the potential for stormwater to come in contact with pollutants. The following are possible measures to be incorporated into site-specific SWPPPs as applicable. Additional sample measures and guidelines for developing SWPPPs are available in California Stormwater Quality Association's Stormwater Best Management Practice Handbook – Construction (CASQA, 2003). Measures to reduce fugitive dust generated during construction (see Section 4.1.5 – Air Quality) will also minimize the potential for soil erosion.

- Install perimeter silt fences or hay bales.
- Stabilize soils through hydroseeding with native plant species where possible and use of soil stabilizers.
- Install temporary sedimentation basins.
- Conduct earth moving activities during the dry season (April through October), as feasible.
- Designate storage areas for construction materials, equipment, and maintenance supplies (e.g., fuels, lubricants, paints, solvents, adhesives) to keep these materials out of the rain and minimize contact with stormwater.
- Conduct regular inspections to ensure compliance with the SWPPP.

Mitigation Measure MP-W3

Applicable Project Type:	Projects that involve channel modifications
Impact:	Discharge of sediment during construction of in-channel improvements
Timing:	During project design
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review of project plans and specifications Construction inspection

For future projects involving channel modifications, COE, Regional Board, U.S. Fish and Wildlife Service, and California Department of Fish and Game will be consulted. All necessary federal and state approvals (including CWA Section 404 permits, CWA Section 401 water quality certifications or waivers, and California Fish and Game Code Section 1602 Streambed Alteration Agreements) will be obtained prior to the implementation of construction activities. Any conditions of agency approvals (e.g., measures to minimize the potential water quality impacts associated with the channel modification) will be incorporated into the project design. Water quality mitigation options for use during construction of in-channel improvements include diversion of flows around the construction site, installation of in-stream silt curtains, or use of off-channel sediment retention ponds or tanks.

Mitigation Measure MP-W4

Applicable Project Type:	Projects involving landscaping, habitat restoration, and/or removal of exotic plant species
Impact:	Discharge of chemical pesticide/herbicide
Timing:	During project design, construction, and operation
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review of project plans and specifications Construction inspection Review of operations and maintenance plans

For future projects involving landscaping, habitat restoration, and/or removal of exotic plant species, select biological or non-chemical means of controlling exotics and pests unless not feasible because biological or non-chemical controls are not readily available for the specific exotics to be controlled. If chemical pesticide or herbicide use is necessary, compounds that are less persistent in the environment will be selected, and application will be conducted in accordance with manufacturers' recommendations and general standards of use, e.g., restricted application before and during rain storms.

Mitigation Measure MP-W5

Applicable Project Type:	Projects involving channel modifications
Impact:	Increase in erosion due to channel modifications
Timing:	During project design
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review of detailed engineering studies Review of project plans and specifications

For future projects involving channel modifications, detailed engineering studies (including sediment transport as applicable) will be conducted to assess the impact of the proposed changes on the channel's stability and erodability and will include recommendations to avoid or minimize the impact. Recommendations of the engineering studies will be incorporated into project design

to minimize impacts on surface water quality associated with potential increase in erosion of channel banks from proposed modifications.

Mitigation Measure MP-W6

Applicable Project Type:	Projects that involve stormwater infiltration
Impact:	Impact on groundwater quality from infiltration of polluted stormwater
Timing:	During project design and operation
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Method:	Review of project plans and specifications Review of stormwater and groundwater monitoring reports

For projects that involve stormwater infiltration, a comprehensive stormwater and groundwater quality monitoring program will be designed and implemented, or the results of existing monitoring programs will be considered. Monitoring results will be used to assess the ongoing effectiveness of the proposed stormwater treatment methods in protecting both surface and groundwater. If monitoring results indicate substantial water quality degradation associated with project infiltration, the following strategy will be followed:

- Provide additional treatment prior to infiltration, or
- Redesign project to reduce or eliminate infiltration (e.g., lining), or
- Identify an alternative water source (e.g., reclaimed water).

Mitigation Measure MP-W7

Applicable Project Type:	Projects involving groundwater recharge
Impact:	Groundwater hydrology impacts (potential inundation of landfill material or other contaminant sources and potential interference with ongoing cleanup of existing contamination plumes in the San Gabriel Valley)
Timing:	During project design
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review of site-specific groundwater information Review of project plans and specifications

For projects involving groundwater recharge, the project site's proximity to existing groundwater contamination plumes and landfills (or other known hazardous materials sites that could become a contamination source if inundated with groundwater) will be evaluated. If a project site is located within or adjacent to a plume or in the vicinity of a contamination source, the effect of the proposed recharge on groundwater hydrology (changes in flow direction and levels) will be evaluated. As applicable, groundwater modeling would be conducted to determine whether the rate and amount of recharge proposed by the project could result in substantial changes to the location or shape of existing contamination plumes, or in the inundation of landfills or other contamination sources. As part of the investigation, relevant agencies, including the Regional

Board, Watermasters, and agencies involved in groundwater clean-up activities (e.g., EPA and WQA), will be consulted. As applicable, Mitigation Measure CD-W4 will be implemented to prevent interaction of infiltrated water with landfill materials or other contaminant sources.

Mitigation Measure MP-W8

Applicable Project Type:	Projects involving substantial ground disturbance
Impact:	Groundwater quality and hazardous materials impacts related to potential soil contamination or other constraints at project sites
Timing:	During project design
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review Phase I ESA report (and reports from additional investigation, if any) Review of project plans and specifications

For projects involving substantial ground disturbance where prior land use is unknown and the potential for soil contamination or other constraints (e.g., oil or gas wells) from previous land uses exists, a Phase I Environmental Site Assessment (ESA) will be conducted to determine the site-specific potential for soil contamination or other constraints. The Phase I ESA will be conducted in accordance with the latest version of the American Society of Testing and Materials (ASTM) 1527 "Standard Practice for Environmental Site Assessments: Phase I Environmental Assessment Process." This document outlines the customary practice for performing ESA's in the United States. Phase I ESA will consist of a review of site-specific documents and historical maps to determine past uses of the site, a site visit to visually inspect the property for signs of potential environmental contamination, and investigation of state and federal environmental regulatory databases to identify recognized hazardous materials usage or spills, and include review of California Department of Conservation Division of Oil, Gas, & Geothermal Resources records of oil, gas, and geothermal wells. For project sites with infiltration, the boundary of the Phase I ESA will include parcels located within 500 feet of the project site boundary to identify active or abandoned landfills or other land uses with the potential for contaminated soils which would be incompatible with infiltration (to be cross-referenced with Mitigation Measure CD-W4). If the Phase I ESA concludes that there is no substantial potential for soil contamination or other constraints, no further action would be required. If the Phase I ESA indicates that there is potential for soil to be contaminated, additional investigation (Phase II ESA, including soil sampling and analysis) will be conducted to determine the presence and extent of the contamination. If the proposed project would involve disturbance of soil in the contaminated area, soil would be removed and disposed of in compliance with applicable regulations at approved disposal sites. If the proposed project site includes or is in the immediate vicinity of oil or gas wells or if any unrecorded wells are damaged or uncovered during excavation or grading, the project proponent shall submit the information outlined in the "Construction Project Site Review and Well Abandonment Procedure" to the California Department of Conservation Division of Oil, Gas & Geothermal Resources. In order of preference, wells should be avoided, plugged or re-plugged to current Division specifications, or an adequate gas venting system should be installed if construction over an abandoned well is unavoidable.

2.7 LAND USE

Mitigation Measure MP-L1

Applicable Project Type:	Projects that propose development of facilities that would result in restriction of future mineral extraction operations
Impact:	Impacts on availability of mineral resources
Timing:	During project design
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Method:	Review of documentation of consultation with SMARA lead agency

For future projects that propose development of facilities that would result in restriction of future mineral extraction operations (e.g., reclamation of an existing gravel mine before gravel extraction activities have been completed), site-specific evaluations described below will be conducted and the results will be disclosed in subsequent CEQA documentation:

1. Determine the site-specific availability of mineral resources by reviewing relevant publications from the California Geological Survey (e.g., SMARA Mineral Land Classification, available at: http://www.consrv.ca.gov/cgs/minerals/mlc/index.htm) and/or mine reclamation plans (if the proposed project site is an existing mine).
2. Contact the relevant SMARA lead agency (see Section 4.7.1.1 of the Final Program EIR) to determine whether the proposed land use change could restrict or preclude the extraction of mineral resources designated as regionally significant (MRZ-2) or locally important (as designated in a local land use plan).

2.8 NOISE

Mitigation Measure MP-N1

Applicable Project Type:	Projects involving use of use of heavy equipment and vehicles during construction
Impact:	Construction noise impact on sensitive receptors
Timing:	During project design and construction
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review of project plans and specifications Construction inspection

Evaluations of construction noise generation will be conducted as follows during site-specific environmental review of each future Master Plan project:

1. Identify noise-sensitive land uses located in the vicinity of the project site (e.g., residences, hospitals, schools, guest lodging, libraries, convalescent and retirement facilities, houses of

worship, auditoriums and concert halls, outdoor theaters, nature and wildlife preserves, and parks).

2. Determine the existing noise environment of the project area (e.g., rural vs. high density urban). Identify nearby existing noise sources that affect the project site (e.g., heavy industrial operations or major highways).

3. Review the relevant jurisdiction's noise regulations and policies (e.g., noise ordinances and general plan noise element) to identify construction noise standards and noise/land use compatibility guidelines.

4. Estimate the construction equipment needed and resultant noise generation (see Section 4.8.5.1 of the Final Program EIR). Compare the estimated construction noise levels that would be experienced by the nearest sensitive receptor to the relevant jurisdiction's construction noise standards. The impact evaluation will also take into consideration construction duration, whether the noise generated would be intermittent or continuous, and the existing noise environment of the project area.

5. If the estimated noise levels exceed the standards, one or more of the following applicable site-specific measures will be implemented to reduce noise levels to meet the relevant jurisdiction's noise standards:

   - Equip all mobile construction equipment with properly operating mufflers or other noise reduction devices
   - Install sound walls, sound curtains, or other temporary sound barriers
   - Select quieter construction procedures and/or equipment

6. For projects at school sites: schedule the noisier phases of construction on Saturdays, school vacation periods, and/or after regular class hours but before 9 p.m., as feasible; and maintain ongoing communications with the schools' administrators to address any construction noise-related issues.

Mitigation Measure MP-N2

Applicable Project Type:	Projects involving new or expanded facilities for active recreation
Impact:	Operational noise impacts of new or expanded facilities for active recreation
Timing:	During project design and operation
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review of project plans and specifications Review of operations and maintenance plans

Projects that involve new or expanded facilities for active recreation (e.g., athletic fields) will be designed to minimize impacts on nearby noise-sensitive land uses, if any, by siting facilities

away from noise-sensitive land uses, limiting hours of operation, installation of sound barriers, and/or using other appropriate measures as necessary.

2.9 PUBLIC SERVICES AND UTILITIES

Mitigation Measure MP-P1

Applicable Project Type:	Projects with substantial construction periods
Impact:	Construction impact on police and fire protection services from temporary lane and/or road closures during construction of storm drains, etc.
Timing:	Prior to start of construction and during construction
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review of project plans and specifications Review of documentation of consultation with relevant service providers Construction inspection

For future projects with substantial construction periods, the following measures will be implemented as applicable to minimize construction impacts on emergency response requirements of relevant police and fire departments. (See also Section 4.11.6 regarding mitigation measures related to construction impacts on traffic and roadways).

- Prior to the start of construction, consult the fire station(s) serving the project area and review phasing, road/lane closure, and detour plans. The fire station(s) may then identify alternative fire and emergency medical response routes.

- Prior to the start of construction, consult the police station(s) serving the project area, as appropriate, of project-related lane and/or road closures and detour plans. The police station(s) may then identify alternative police emergency response routes.

- If determined to be necessary by the relevant police and/or fire service providers, implement one or more of the following applicable traffic control measures capable of reducing the temporary adverse effects to police and emergency vehicle travel during project construction:

  - Use flagmen to direct traffic
  - Post "No Parking" signs along the affected area
  - Install temporary signals or signs to direct traffic
  - Other equivalent traffic control measures

Mitigation Measure MP-P2

Applicable Project Type:	Projects located adjacent to a school
Impact:	Construction impact on school access and student safety and on school commuting routes from temporary lane and/or road closures
Timing:	Prior to start of construction and during construction
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review of project plans and specifications Review documentation of consultation with applicable school administrators Construction inspection

For future projects located adjacent to a school, evaluate the impact on school access (vehicles and pedestrians) and student safety from operation and/or parking of construction vehicles and equipment near the school property. The school district or the school administrator will be contacted to identify any policies that the school or the school district has established regarding construction on or near school properties (e.g., noise and traffic control standards) and to provide sufficient notice to forewarn school bus operators, children, and parents if existing pedestrian and vehicular routes to school would be affected. As necessary to protect the safety of children, parents and employees accessing the school, one or more of the following measures will be implemented in coordination with the school administrators:

- Develop temporary alternative pedestrian and vehicular routes to the school that avoid construction areas
- Install appropriate temporary traffic controls (signs, crossing guards, and/or signals) as needed to ensure pedestrian and vehicular safety
- Minimize use of haul routes past the school when school is in session
- Prohibit parking or staging of construction or worker vehicles on streets adjacent to the school.

Mitigation Measure MP-P3

Applicable Project Type:	Projects that include construction of pipelines or other underground structures
Impact:	Potential interference with existing utilities within street rights-of-way from construction of storm drains, etc.
Timing:	During project design, prior to start of construction, and during construction
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review documentation of consultation with relevant utilities Review project plans and specifications Construction inspection

For future projects that include construction of pipelines or other underground structures, identify the roadways or other rights-of-way that would be affected during construction. During facility design, contact the relevant utilities (e.g., water, sewage, electricity, natural gas, telephone, cable, and oil) to identify existing and proposed buried facilities in affected roadways. To the extent feasible, the alignment of new facilities will be designed to avoid the existing utilities. If avoidance is not feasible, one or more of the following measures will be implemented as applicable:

- If relocation is required, sequence construction activities to avoid or minimize interruptions in service.
- If utility service disruption is necessary, notify residents and businesses in the project area a minimum of 2 to 4 days prior to service disruption through local newspapers, direct mailings to affected parties, or public posting of notices.
- If project construction would occur near existing utilities, require the contractor to excavate around utilities, including hand excavation as necessary, to avoid damage and to minimize interference with safe operation and use. Hand tools must be used to expose the exact location of buried gas or electric utilities.

Mitigation Measure MP-P4

Applicable Project Type:	Projects that include stormwater infiltration in the vicinity of power line towers
Impact:	Operational impact on power line towers from stormwater infiltration
Timing:	During project design
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review geotechnical report Review project plans and specifications

For future projects that include stormwater infiltration in the vicinity of power line towers, a geotechnical investigation will be conducted during facility design to assess the characteristics and stability of the soil around the power line towers. If results of the investigation indicate that stormwater infiltration may saturate the soil and affect the stability of the towers, one or more of the following changes will be incorporated into the site design as applicable:

- Site the proposed retention basins to avoid the towers, if possible, or construct a series of drywells so that water would be infiltrated deeper into the ground to avoid saturation of surface soils.
- Install a liner along the sideslope of the basin closest to the power line towers to prevent infiltration. (The liner would cover only a small portion of the infiltration basin.)

Mitigation Measure MP-P5

Applicable Project Type:	Projects involving construction activities that would generate substantial amounts of construction waste (e.g., demolition of existing structures or modification of paved areas)
Impact:	Impact on landfill capacity from generation of solid waste during construction
Timing:	Prior to start of construction and during construction
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review of project plans and specifications Construction inspection

State in the plans and specifications for the proposed project that the construction contractor is required to identify and implement programs for minimizing solid waste generated during construction. These programs could include recycling of asphalt and concrete paving materials, reuse and composting of green waste materials on site where appropriate (e.g., where there is limited potential for inadvertent spreading of invasive plants), and balance of graded soil on site to the maximum extent feasible.

Mitigation Measure MP-P6

Applicable Project Type:	Projects involving lane or road closures during construction
Impact:	Impact on solid waste collection routes from temporary lane and/or road closures during construction of storm drains, etc.
Timing:	Prior to construction
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Method:	Review documentation of consultation with relevant municipality

Prior to construction, notify the relevant municipality of the construction schedule and planned lane or road closures. The municipality or agency may then modify the solid waste collection routes and access in the area.

2.10 RECREATION

Mitigation Measure MP-R1

Applicable Project Type:	Projects that include modifications of existing recreational facilities
Impact:	Construction impact on existing recreational facilities
Timing:	During project design
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review of project plans and specifications Construction inspection

Future projects that include modifications of existing recreational facilities will require an evaluation of the impacts of proposed actions on other nearby recreational facilities as described in program Mitigation Measure MP-R1:

For projects that include modifications of existing recreational facilities, the timing, duration and areal extent of disturbance that would occur during construction of the proposed facilities will be identified during facility design. If temporary closures of existing recreational facilities would be necessary, the potential increase in use of other nearby recreational facilities will be evaluated. Factors to be considered in the evaluation include the duration of the closure, acreage and type of facility that would be unavailable due to the closure, and existing usage levels at the relevant recreational facilities.

If the impacts on nearby recreational facilities are determined to be potentially significant, one or more of the following measures will be implemented:

- Minimize construction period
- Modify construction phasing to limit disturbance of existing recreational facilities
- Avoid construction during peak use periods

2.11 TRANSPORTATION AND TRAFFIC

Mitigation Measure MP-T1

Applicable Project Type:	Projects that are projected to meet or exceed the site-generated traffic volume thresholds cited in the Los Angeles County Congestion Management Program
Impact:	Traffic impacts during project construction (including construction activities in the street rights-of-way) and operation; impact on traffic in the project area from construction activities in the street rights-of-way (e.g., storm drains)
Timing:	Prior to and during construction
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review of traffic study report Review of project plans and specifications Construction inspection

A traffic impact study will be prepared for any Master Plan project that is projected to meet or exceed the site-generated traffic volume thresholds cited in the Los Angeles County Congestion Management Program "Guidelines for CMP Transportation Impact Analysis." The guidelines indicate that a study is required if a project would add 50 or more vehicle trips during either the a.m. or p.m. weekday peak hours to a CMP arterial monitoring intersection or freeway on- or off-ramp. An analysis will be conducted if the project would add 150 or more trips in either direction to a mainline freeway during either the a.m. or p.m. weekday peak hours. A traffic study will also be prepared if the project meets the criteria for the municipality in which the project site is located (i.e., an incorporated city, County of Los Angeles, or County of Orange).

If the project would result in significant traffic impacts, one or more of the following measures will be implemented as applicable.

- A construction traffic management plan shall be developed for each project site that will include but not be limited to such measures as designated haul routes for construction-related traffic (e.g., construction equipment, pickup and dump trucks, and other material delivery trucks), travel time restrictions for construction-related traffic to avoid weekday peak periods on selected roadways, designated site access locations, driveway turning restrictions, temporary traffic controls and/or flaggers, and designated parking/staging locations for workers and equipment.
- A construction area traffic control plan and/or detour plan shall be prepared for any location where construction activities would encroach into the right-of-way of a public roadway. The plan would include, but not be limited to such features as warning signs, lights, barricades, cones, lane closures, and restricted hours during which lane closures would not be allowed (e.g., 6:00 to 9:00 a.m. and 3:00 to 6:00 p.m., or as directed by the affected public agency).
- Provide advance notification to affected property owners, businesses, residents, etc. of possible driveway blockages or other access obstructions and implement alternate access and parking provisions where necessary.
- Provide alternative pedestrian and bicycle access/circulation routes if existing facilities such as sidewalks, crosswalks, and bike lanes would be obstructed to ensure safe pedestrian/bicycle travel.
- Coordinate with emergency service providers (police, fire, and ambulance/paramedic agencies) prior to construction to provide information regarding lane closures, construction schedules, driveway blockages, etc., if any, and develop a plan to maintain or accommodate essential emergency access routes (e.g., plating over excavations and use of detours).
- Coordinate with public transit agencies (e.g., MTA) to provide information regarding lane closures, bus stop disruptions, etc. so that MTA or relevant agency can designate alternate pick-up/drop-off locations, if appropriate, and provide for uninterrupted service.
- As necessary, obtain a transportation permit from Caltrans for transportation of heavy construction equipment and/or materials which requires the use of oversized-transport vehicles on State highways.
- Other relevant traffic control measures.

Section 3
Mitigation Measures for Concept Design Studies

3.1 AIR QUALITY

Mitigation Measures CD-A1 through CD-A10

Applicable Project:	All Concept Design Studies
Impact:	Fugitive dust emissions during construction
Timing:	During project construction
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review project plans and specifications Construction inspection

CD-A1 Clean dirt from construction vehicle tires and undercarriages when leaving the construction site and before entering local roadways.

CD-A2 During earth-moving activities, water the construction area as necessary, but at least twice per day.

CD-A3 Water temporary open storage piles once per hour or install temporary covers.

CD-A4 Water unpaved roadways three times per day or apply non-toxic soil stabilizers. (Note: Use of soil stabilizers near wetlands, streams, or other water features may be limited by regulatory agencies such as the U.S. Army Corps of Engineers and the California Department of Fish and Game.)

CD-A5 Limit construction vehicle speed on the project site to 15 miles per hour (mph) or less.

CD-A6 Cover dirt in trucks during on-road hauling.

CD-A7 Cease earth-moving activities on days when wind gusts exceed 25 mph or apply water to soil not more than 15 minutes prior to moving such soil.

CD-A8 Sweep streets near the construction area at the end of the day if visible soil material is present.

CD-A9 For applicable construction areas, establish a vegetative groundcover as soon as feasible after active operations have ceased. Groundcover shall be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting.

CD-A10 Per SCAQMD Rule 403(e), large construction operations (greater than 50 acres of disturbed area or daily earth-moving or throughput volume of 5,000 cubic yards three times during the most recent 365-day period) shall implement applicable dust

suppression measures specified in Table 2 of Rule 403 at all times. When the applicable performance standards cannot be met through use of Table 2 measures, the applicable contingency control measures specified in Table 3 of Rule 403 shall be implemented.

Mitigation Measures CD-A11 through CD-A13

Applicable Project:	All Concept Design Studies
Impact:	Tailpipe emissions from construction vehicles and equipment
Timing:	During project construction
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Method:	Construction inspection

Mitigation Measures CD-A11, CD-A12, and CD-A13 shall be implemented during construction of all five Concept Design Studies to reduce tailpipe emissions (including CO, ROC, NO_x, SO_x, and PM10) from worker commutes, use of delivery and work trucks, and use of construction equipment.

CD-A11 Prohibit all vehicles from idling in excess of 10 minutes, both on and off-site.

CD-A12 Maintain construction equipment in proper tune.

CD-A13 Encourage contractors to establish trip reduction plans. The goal of these plans will be to achieve a 1.5 average vehicle ridership (AVR) for construction employees.

Optional Mitigation Measure CD-A14

Applicable Project:	All Concept Design Studies
Impact:	Tailpipe emissions from construction vehicles and equipment
Timing:	Prior to start of construction
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Method:	Review of project plans and specifications

To further reduce tailpipe emissions from construction equipment, implementation of optional Mitigation Measure CD-A14 shall be considered at the time of construction of individual projects. The majority of the construction emissions, particularly for NO_x, are associated with tailpipe emissions from diesel-fueled construction equipment. Using construction equipment with alternative fuel(s) can achieve high reduction efficiency for tailpipe emissions. The approximate NO_x emissions reduction rates of various alternative fuels are: 60 percent for compressed natural gas (CNG), 10 percent for emulsified diesel fuel, and 2 to 10 percent for biodiesel fuel (EPA, 2003c). However, use of construction equipment with alternative fuel(s), while effective, may not be applicable to all projects (i.e., limited equipment availability and high costs may make it infeasible to use a large fleet of construction equipment with alternative fuel(s)).

CD-A14 Select construction equipment with low pollutant emissions and high energy efficiency. Factors to consider include model year and alternative fuels (e.g., compressed natural gas, biodiesel, emulsified diesel, methanol, propane, butane, and low sulfur diesel).

Mitigation Measure CD-A15

Applicable Project:	All Concept Design Studies
Impact:	Fugitive dust emissions during project operation and maintenance activities
Timing:	During project operation and maintenance activities
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Method:	Review of operations and maintenance plans

Implement dust control if dry conditions and substantial area is disturbed for operations and maintenance activities that involve ground disturbance

Mitigation Measure CD-A16

Applicable Project:	All Concept Design Studies that involve power consumption during project operation
Impact:	Air quality impacts associated with power consumption
Timing:	During project operation
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Method:	Review of project plans and specifications

Select energy efficient lighting features or other building design considerations for proposed facilities (e.g., park buildings or interpretive centers) to minimize emissions associated with power generation.

3.2 BIOLOGICAL RESOURCES

Mitigation Measure CD-B1

Applicable Project:	All Concept Design Studies
Impact:	Impacts on special status species
Timing:	Prior to completion of detailed design
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Method:	Review of biological survey reports

Prior to completion of detailed design plans for each of the five Concept Design Study sites, a qualified biologist shall conduct general plant and wildlife surveys to determine if any focused surveys for special status species are necessary. If the surveys confirm the potential for one or

more special status species to occur, focused surveys for those species shall be conducted as described in Mitigation Measure CD-B2.

Mitigation Measure CD-B2

Applicable Project:	All Concept Design Studies, as applicable (i.e., if the general biological survey (Mitigation Measure CD-B1) indicates that there is potential for sensitive species to occur on the project site)
Impact:	Impacts on special status species
Timing:	During project design
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review of biological survey reports Review of project plans and specifications Documentation of USFWS and CDFG agency coordination, as applicable Construction inspection

If the general biological survey (Mitigation Measure CD-B1) indicates that there is potential for sensitive plant species to occur on the project site, a spring survey shall be conducted prior to finalizing the project designs. The special status plant species surveys shall follow guidelines developed by the CNPS (CNPS, 2001). These surveys, as outlined in the guidelines, shall be conducted during the appropriate time of year for each species as determined by a qualified botanist. Collection of special status plant species, if any, shall follow the guidelines of CDFG and USFWS collection permits. If any special status plant species are located, their rarity and abundance shall be evaluated. If the general biological survey indicates that there is potential for special status wildlife species to occur on the project site, protocol surveys for those species shall be conducted in accordance with appropriate survey protocols at the appropriate time of the year. The results of these investigations and the appropriate mitigation measures to reduce any potentially significant environmental impacts to a level that is less than significant shall be disclosed in second tier CEQA documentation.

If any special status wildlife species are identified, the proposed facilities shall be designed and/or sited to avoid or reduce potentially significant impacts to the species during construction to levels that are less than significant. If nesting habitat of special status bird species will be impacted, project construction shall be scheduled outside of the breeding season, or a pre-construction survey shall be conducted to identify nests and to establish a buffer zone between the construction area and identified nests to avoid construction impacts.

However, depending on the location of sensitive resources and/or construction schedule requirements, project redesign and/or construction phasing that avoids biological resources while still meeting the project objective may be infeasible. Therefore, if avoidance is not feasible, the following measures shall be detailed and disclosed in second tier CEQA document and implemented under the direction of a qualified biologist:

- Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment; or

- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the project; or
- Compensating for the impact by replacing or providing substitute resources or environments.

If avoidance of impacts to listed species is not feasible, then consultation with the USFWS shall be required for federally-listed species and consultation with the CDFG shall be required for state-listed species. As relevant, a special status plant mitigation program shall be developed following focused surveys and submitted to the appropriate agencies for review.

Mitigation Measure CD-B3

Applicable Project:	San Gabriel River Discovery Center, Lario Creek and El Dorado Regional Park
Impact:	Impacts on least Bell's vireo nests or nesting behavior during construction
Timing:	During project construction
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review of project plans and specifications Construction monitoring by a qualified biologist

Since least Bell's vireos are known to occur in the vicinity of the San Gabriel River Discovery Center, Lario Creek, and El Dorado Regional Park, the following mitigation measure shall be implemented to reduce impacts on this Endangered species:

To the extent feasible, no construction shall occur within the project site during the nesting season for least Bell's vireo (March 15 to September 1). However, if construction work is necessary between March 15 and September 1, a qualified biologist shall survey suitable habitat within the impact area, plus 1,000 feet (300 meters) on either side of the impact area, to identify the presence of any least Bell's vireo. No construction activities shall occur within 1,000 feet of a least Bell's vireo territory until the end of the nesting season (September 1) or when the least Bell's vireo departs the area, as determined by the biologist and with confirmation from the USFWS. The biological monitor shall use their discretion to increase the distance from vireo territory that construction can occur (in excess of 1,000 feet) or to limit use of the noisiest equipment to outside the nesting season if deemed necessary based on the type of construction equipment to be used.

Mitigation Measure CD-B4

Applicable Project:	San Gabriel River Discovery Center, Lario Creek and El Dorado Regional Park
Impact:	Construction impacts on nesting birds (e.g., raptors)
Timing:	During project construction
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Method:	Review of project plans and specifications Construction monitoring by a qualified biologist

The following mitigation measure shall be implemented to avoid raptor impacts: One week prior to construction and clearing activities that would occur during the nesting/breeding season of native bird species potentially nesting on the site (typically February through August), a survey shall be conducted by a qualified biologist to determine if active nests of bird species protected by the Migratory Bird Treaty Act and/or the California Fish and Game Code are present within 300 feet (within 500 feet for raptors) of the construction zone. Construction can proceed if no active avian nests are located during this survey. If an active nest is found during the survey, a 500-foot (this distance may vary depending on the bird species and construction activity, as determined by the biologist) fence barrier shall be erected around the nest site. Clearing and construction within the fenced area shall be postponed or halted, at the discretion of the biologist, until the nest is vacated and juveniles have fledged, as determined by the biologist, and there is no evidence of a second attempt at nesting. The biologist shall serve as a construction monitor during those periods when construction activities may occur near active nests to ensure that no inadvertent impacts on these nests occur. Results of the raptor survey and any subsequent monitoring shall be provided to the CDFG and any other appropriate agency.

Mitigation Measure CD-B5

Applicable Project:	All Concept Design Studies involving landscaping
Impact:	Impacts on native habitat
Timing:	During project design and construction
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review of project plans and specifications Construction inspection

Landscaping of surrounding vegetation shall not include any invasive plant species as listed on the California Invasive Plant Council Pest Plant List.

Mitigation Measure CD-B6

Applicable Project:	All Concept Design Studies involving use of night lighting
Impact:	Impacts on nocturnal and crepuscular wildlife
Timing:	During project design and construction
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review of project plans and specifications Construction inspection

Night lighting is expected to be used in public areas for health and safety reasons. Lighting would inadvertently affect the behavior patterns of nocturnal and crepuscular (active at dawn and dusk) wildlife at these areas. Of greatest concern is the effect on small ground-dwelling animals that use the darkness to hide from predators, and on owls that are specialized night foragers. To reduce light impacts on nocturnal and crepuscular wildlife, night lighting shall be low intensity directional lighting focused away from open space areas.

Mitigation Measure CD-B7

Applicable Project:	All Concept Design Studies that involve recreational uses near habitat areas
Impact:	Disturbance of habitat areas
Timing:	During project design
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review management plan Review plans and specifications.

An appropriate plan for the management of native habitats shall accompany each Concept Design Study site to reduce impacts from human uses (e.g., riding, hiking, biking) on habitat areas. The management plan shall include access points including parking and restrooms, signage for trails and restricted uses, appropriate fencing, and restrictions on domestic animals. This plan shall be written by a qualified biologist and approved by the sponsoring agency prior to initiation of site development.

3.3 CULTURAL RESOURCES

Mitigation Measure CD-C1

Applicable Project:	San Gabriel Canyon Spreading Grounds
Impact:	Construction impacts on buried cultural resources
Timing:	During project construction (first day of subsurface work)
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Method:	Monitoring by a professional monitor qualified in historical archaeology

On the first day of subsurface work at the San Gabriel Canyon Spreading Grounds, a professional monitor qualified in historical archaeology shall be present to assess whether further monitoring might be warranted. Further monitoring may be required if subsurface cultural material was uncovered on the first day of earthwork and/or if the monitor determined that there was a high probability of additional subsurface cultural materials being encountered.

Mitigation Measure CD-C2

Applicable Project:	San Gabriel River Discovery Center
Impact:	Construction impacts on buried cultural resources
Timing:	During project construction (subsurface work between the surface and 5 feet (or more as determined by the monitor))
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Method:	Monitoring by a professional monitor qualified in historical archaeology

A professional monitor qualified in historical archaeology shall be present at the San Gabriel River Discovery Center for subsurface work between the surface and 5 feet (or more as determined by the monitor based on soil conditions) in depth. If potentially important cultural deposits are encountered in the course of construction, work shall be temporarily diverted from the vicinity of the discovery until the monitoring archaeologist can identify and evaluate the importance of the find and conduct any appropriate assessment and activities, as necessary.

Mitigation Measure CD-C3

Applicable Project:	San Gabriel River Discovery Center
Impact:	Replacement of the Nature Center building
Timing:	During project design
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review of cultural resources report Review of project plans and specifications

During the design phase of the San Gabriel River Discovery Center, the project proponent shall evaluate whether the Nature Center building is a significant historical resource using the criteria described in Section 15064.5(a) of the State CEQA Guidelines. If it is determined to be a significant historical resource, the lead agency shall:

- Remove and relocate the building or historically significant portion of the building to an appropriate location, or
- Incorporate the historically significant elements of the existing building into the new Discovery Center.

Mitigation Measure CD-C4

Applicable Project:	Lario Creek
Impact:	Construction impacts on potential cultural resources identified during the records search and field reconnaissance
Timing:	During project design
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review of historical resources report (if applicable) Review of project plans and specifications

During the design phase of Lario Creek, LADPW shall evaluate if the project can be designed to avoid the structures identified in Section 4.3.1.4 of the Final Program EIR (locate the proposed structures or site disturbance at least 100 meters away from or around the structures).

If avoidance is not feasible for one or more of the structures, the structure's significance shall be evaluated, using the criteria listed in CEQA Guidelines Section 15064.5[a]. Results of this evaluation would be disclosed in second-tier environmental documentation.

If the resource is found to be significant, the significance of project impacts on the resource shall be determined. (Significant change to a resource includes demolition, replacement, substantial alteration, or relocation (California Code of Regulations [CCR] Section 15064.5)). If feasible, the significant resource(s) shall be avoided.

If project impacts are determined to be significant, LADPW shall:

- Incorporate the resource into the project design, or
- Remove and relocate the resource to an appropriate location (e.g., museum, public library, or school)

Mitigation Measure CD-C5

Applicable Project:	Lario Creek
Impact:	Construction impacts on buried cultural resources
Timing:	During project construction (subsurface work between the surface and 5 feet (or more as determined by the monitor))
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Method:	Monitoring by a professional monitor qualified in historical archaeology

A professional monitor qualified in historical archaeology shall be present at the Lario Creek project site for subsurface work between the surface and 5 feet (or more as determined by the monitor based on soil conditions) in depth. If potentially important cultural deposits are encountered in the course of construction, work shall be temporarily diverted from the vicinity of the discovery until the monitoring archaeologist can identify and evaluate the importance of the find and conduct any appropriate assessment and activities, as necessary.

Mitigation Measure CD-C6

Applicable Project:	El Dorado Regional Park
Impact:	Construction impacts on buried cultural resources
Timing:	During project construction (first day of subsurface work)
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Method:	Monitoring by a professional monitor qualified in historical archaeology

On the first day of subsurface work at El Dorado Regional Park, a professional monitor qualified in historical archaeology shall be present to assess whether further monitoring might be warranted.

Mitigation Measure CD-C7

Applicable Project:	Woodland Duck Farm
Impact:	Construction impact on historic structures
Timing:	During project design
Party Responsible for Implementation:	Watershed Conservation Authority
Agency Responsible for Monitoring:	Watershed Conservation Authority
Monitoring Method:	Review of cultural resources report, if applicable Review of project plans and specifications

During the design phase of Woodland Duck Farm, the Watershed Conservation Authority (WCA) shall evaluate if any onsite structures that are 45 years and older may be affected by the project.

For each structure that is 45 years and older and shall be affected by the project, the structure's significance shall be evaluated by a professional architectural historian, using the criteria listed in CEQA Guidelines Section 15064.5[a]. Results of this evaluation would be disclosed in second-tier environmental documentation.

If the resource is found to be significant, the significance of project impacts on the resource shall be determined. (Significant change to a resource includes demolition, replacement, substantial alteration, or relocation (CCR Section 15064.5)).

If project impacts are determined to be significant, the relevant resources shall be:

- Incorporated into the project design, or
- Removed and relocated to an appropriate location (e.g., museum, public library, or school)

Mitigation Measure CD-C8

Applicable Project:	All Concept Design Studies
Impact:	Construction impact on buried cultural resources
Timing:	During project construction
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Method:	Review of construction reports

If previously unknown cultural resources are discovered in the course of excavation for project construction, the construction inspector shall have the authority and responsibility to halt construction until a qualified archaeologist can evaluate the significance and distribution of the materials, and identify future activities needed. If the cultural material discovered is determined to be of potential archaeological significance, the investigation and future activities shall be conducted in consultation with a culturally affiliated Native American or other parties, as necessary.

Mitigation Measure CD-C9

Applicable Project:	All Concept Design Studies
Impact:	Construction impact on buried human remains
Timing:	During project construction
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Method:	Review of construction reports

If human remains are discovered in the course of excavation for project construction, the County Coroner shall be contacted and provisions of State CEQA Guidelines Section 15064.5 shall be followed.

3.4 GEOLOGY AND SOILS

Mitigation Measure CD-G1

Applicable Project:	Woodland Duck Farm, San Gabriel River Discovery Center, Lario Creek, and El Dorado Regional Park
Impact:	Impacts related to liquefaction potential from proposed stormwater infiltration
Timing:	During project design and operation
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review of geotechnical report Review of plans and specifications Review of groundwater monitoring reports

Prior to construction, conduct a geotechnical investigation to define site-specific subsurface conditions, including determination of site-specific groundwater levels and soil conditions to evaluate the potential for liquefaction onsite or at adjacent properties. Based on the results of the geotechnical analysis, the potential increase in liquefaction potential from the proposed infiltration shall be evaluated. Factors that should be considered include the capacity of the infiltration facility and the associated amount of water proposed for infiltration, infiltration rate, proximity and types of nearby structures that could be damaged from liquefaction, and infiltration at adjacent spreading grounds, if any.

If the project is determined to have the potential to cause groundwater levels to rise within 30 feet of the surface, new monitoring wells and/or existing wells in the project area shall be used to detect any substantial increase in groundwater levels. If monitoring indicates a substantial rise in groundwater levels that could impact adjacent structures, stormwater would not be infiltrated and would be diverted into storm drains or onto street surfaces with sufficient capacity. Re-diversion of storm flows will be in compliance with the applicable provisions of the relevant NPDES municipal stormwater permits.

Mitigation Measure CD-G2

Applicable Project:	San Gabriel River Discovery Center
Impact:	Impacts on habitable structures related to expansive soils
Timing:	During project design
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review of geotechnical report Review of project plans and specifications

During facility design, evaluate site soils to determine the area and thickness of expansive soils. If expansive soils are found, one or more of the following measures shall be specified in the construction plans to minimize potential hazards associated with expansive soils:

- Replacement of expansive soils with granular non-expansive soils, or
- Treatment of expansive soils with lime to reduce expansivity, or
- Other appropriate geotechnical practices.

These measures that mitigate for expansive soils shall be incorporated into the construction documents.

3.5 HAZARDS AND HAZARDOUS MATERIALS

Mitigation Measure CD-H1

Applicable Project:	San Gabriel Canyon Spreading Grounds, Woodland Duck Farm, San Gabriel River Discovery Center, Lario Creek, and El Dorado Regional Park
Impact:	Public health impacts related to potential increase in mosquito habitat
Timing:	During project design and operation
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review documentation of consultation with applicable vector control district Review of project plans and specifications Review of operations and maintenance plans

Project plans and designs shall be submitted to the applicable vector control agency (SGVMVCD for San Gabriel Canyon Spreading Grounds and Woodland Duck Farm and GLAVCD for San Gabriel River Discovery Center, Lario Creek, and El Dorado Regional Park) for review and comment with respect to control of mosquito and other vectors. Upon consultation with the vector control agency, appropriate vector management measures shall be incorporated into the project design. Potential management measures include the following:

- Design to minimize and/or provide periodic removal of vegetation on bank slopes and periphery of water bodies to minimize areas of stagnant water.
- Design and/or manage to optimize water depths and flow pattern. For mosquito control, maintain water depths and encourage/provide water circulation. For black fly control, minimize aeration of flowing water. If necessary, design water features to allow for periodical drying to desiccate vector larvae.
- Work with the vector control agency to stock ponds and other permanent water features with mosquito-eating fish as needed.
- Provide site access to vector control agency specifications (e.g., dikes with access roads or trails) to potential breeding areas for maintenance (e.g., vegetation removal) and treatment (e.g., application of Bti or other larvicides).
- Design stormwater retention facilities/devices to drain completely within 72 hours, or design with the capability to be dewatered rapidly if needed for vector control.

- Incorporate measures into project designs that serve to educate the public about wildlife safety and vector-borne disease issues, prevent wildlife-human interactions, and prevent wildlife access to trash and unnatural food and water sources that are likely to result in unnatural population levels.
- Design underground utility vaults, if needed for project implementation, to prevent retention of standing water thereby reducing vector breeding habitat.
- Regularly consult with the vector control agency to identify mosquito management problems, mosquito monitoring and abatement procedures, and opportunities to adjust water and vegetation management practices to reduce mosquito production.
- Incorporate funding for vector management activities into project funding or implement a secure and reliable funding source for vector management activities.

Mitigation Measure CD-H2

Applicable Project:	Woodland Duck Farm and El Dorado Regional Park
Impact:	Impacts related to potential increase in bird/wildlife air strike hazard at nearby airports
Timing:	During project design
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review documentation of consultation with applicable airport Review of project plans and specifications

During the detailed design phase, FAA Western Pacific Regional Office and El Monte Airport (for Woodland Duck Farm) and Long Beach Airport (for El Dorado Regional Park) shall be notified of the proposed land use change to recognize potentially significant hazards early in the planning process and avoid or minimize the hazards.

3.6 HYDROLOGY AND WATER QUALITY

Mitigation Measure CD-W1

Applicable Project:	All Concept Design Studies
Impact:	Discharge of polluted stormwater runoff during project construction
Timing:	During project design and construction
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review of SWPPP Construction inspection

Develop and implement a Storm Water Pollution Prevention Plan (SWPPP) for projects that involve constructing, clearing, grading or excavation on areas over 1 acre in size to minimize the amount of runoff and associated pollutants (e.g., sediments) leaving the construction site by containing the runoff onsite, containing the sediments onsite, and/or minimizing the potential for

stormwater to come in contact with pollutants. The following are possible measures to be incorporated into site-specific SWPPPs. Additional sample measures and guidelines for developing SWPPPs are available in California Stormwater Quality Association's *Stormwater Best Management Practice Handbook – Construction* (CASQA, 2003). Measures to reduce fugitive dust generated during construction (see **Section 4.1.5 – Air Quality**) will also minimize the potential for soil erosion.

- Install perimeter silt fences or hay bales.
- Stabilize soils through hydroseeding with native plant species where possible and use of soil stabilizers.
- Install temporary sedimentation basins.
- Conduct earth moving activities during the dry season (April through October), as feasible.
- Designate storage areas for construction materials, equipment, and maintenance supplies (e.g., fuels, lubricants, paints, solvents, adhesives) to keep these materials out of the rain and minimize contact with stormwater.
- Conduct regular inspections to ensure compliance with the SWPPP.

Mitigation Measure CD-W2

Applicable Project:	All Concept Design Studies
Impact:	Discharge of chemical pesticide/herbicide
Timing:	Prior to project design and construction and operation
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review of project plans and specifications Construction inspection Review of operations and maintenance plan

For projects involving landscaping, habitat restoration, and/or removal of exotic plant species, select biological or non-chemical means of controlling exotics and pests unless not feasible because biological or non-chemical controls are not readily available for the specific exotics to be controlled. If chemical pesticide or herbicide use is necessary, compounds that are less persistent in the environment shall be selected, and application shall be conducted in accordance with manufacturers' recommendations and general standards of use, e.g., restricted application before and during rain storms.

Mitigation Measure CD-W3

Applicable Project:	Woodland Duck Farm, Lario Creek, the San Gabriel River Discovery Center, and El Dorado Regional Park
Impact:	Groundwater quality and hazardous materials impacts related to potential soil contamination at project sites
Timing:	During project design
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review Phase I ESA report (and reports from additional investigation, if any) Review of project plans and specifications

For projects involving substantial ground disturbance, conduct a Phase I Environmental Site Assessment (ESA) to determine the site-specific potential for soil contamination. The Phase I ESA shall be conducted in accordance with the latest version of the American Society of Testing and Materials (ASTM) 1527 "Standard Practice for Environmental Site Assessments: Phase I Environmental Assessment Process." This document outlines the customary practice for performing ESA's in the United States. Phase I ESA shall consist of a review of site-specific documents and historical maps to determine past uses of the site, a site visit to visually inspect the property for signs of potential environmental contamination, and investigation of state and federal environmental regulatory databases to identify recognized hazardous materials usage or spills. For project sites with infiltration, the boundary of the Phase I ESA shall include parcels located within 500 feet of the project site boundary to identify active or abandoned landfills or other land uses with the potential for contaminated soils which would be incompatible with infiltration (to be cross-referenced with Mitigation Measure CD-W4). If the Phase I ESA concludes that there is no substantial potential for soil contamination, no further action would be required. If the Phase I ESA indicates that there is potential for soil to be contaminated, additional investigation (Phase II ESA, including soil sampling and analysis) shall be conducted to determine the presence and extent of the contamination. If the proposed project would involve disturbance of soil in the contaminated area, soil would be removed and disposed of in compliance with applicable regulations at approved disposal sites.

Mitigation Measure CD-W4

Applicable Project:	Concept Design Study located within 500 feet of an active or closed landfill
Impact:	Groundwater hydrology impacts (potential inundation of landfill material or other contaminant sources and potential interference with ongoing cleanup of existing contamination plumes in the San Gabriel Valley)
Timing:	During project design and operation (as applicable)
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review of Phase I ESA (and geotechnical study if applicable) Review of project plans and specifications Review of groundwater monitoring reports

If the site-specific Phase I ESA (Mitigation Measure CD-W3) indicates that an active or closed landfill (either municipal solid waste or inert construction waste) is located within 500 feet of the project site boundary, then a site-specific geotechnical study shall be conducted to: 1) characterize the extent and composition of landfill materials; 2) determine whether the landfill materials are releasing methane; 3) and estimate the potential mounding effect from the proposed stormwater infiltration. The results of the geotechnical study shall be incorporated into the project design to minimize the potential for project infiltration to result in interaction between infiltrated stormwater and landfill materials or to impact landfill gas releases, if any. Potential design modifications include siting the infiltration facilities away from the landfill and/or partially lining the facilities to direct infiltration away from the landfill. For sites with stormwater infiltration within 500 feet of an active or closed landfill, a groundwater monitoring program shall be developed and implemented to ensure that infiltration does not result in interaction between infiltrated stormwater and landfilled materials or impact landfill gas releases. Infiltration would cease at any site where groundwater levels rose to within 10 feet of landfilled materials to prevent interaction of infiltrated water with landfill materials.

Mitigation Measure CD-W5

Applicable Project:	Concept Design Studies that involve stormwater infiltration (Woodland Duck Farm, Lario Creek, the San Gabriel River Discovery Center, and El Dorado Regional Park)
Impact:	Impact on groundwater quality from infiltration of polluted stormwater
Timing:	During project design and operation
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review of project plans and specifications Review of vadose zone and groundwater monitoring reports

For projects that involve stormwater infiltration, conduct vadose zone and groundwater quality monitoring. If monitoring results indicate substantial water quality degradation, pursue the following general strategy:

- Provide additional treatment prior to infiltration, or
- Redesign project to reduce or eliminate infiltration (e.g., lining), or
- Identify an alternative water source (e.g., reclaimed water).

Mitigation Measure CD-W6

Applicable Project:	El Dorado Regional Park
Impact:	Discharge of sediment during construction of in-channel improvements
Timing:	During project design and construction
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review of project plans and specifications Construction inspection

For projects involving channel modifications, COE, Regional Board, U.S. Fish and Wildlife Service, and California Department of Fish and Game shall be consulted. All necessary federal and state approvals (including CWA Section 404 permits, CWA Section 401 water quality certifications or waivers, and California Fish and Game Code Section 1602 Streambed Alteration Agreements) shall be obtained prior to the implementation of construction activities. Any conditions of agency approvals (e.g., measures to minimize the potential water quality impacts associated with the channel modification) shall be incorporated into the project design. Water quality mitigation options for use during construction of in-channel improvements include diversion of flows around the construction site, installation of in-stream silt curtains, or use of off-channel sediment retention ponds or tanks.

3.7 NOISE

Mitigation Measures CD-N1 through CD-N4

Applicable Project:	All Concept Design Studies
Impact:	Construction noise impact on sensitive receptors
Timing:	During project design and construction
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review of project plans and specifications Construction inspection

CD-N1 Limit construction activities to the hours allowed by the applicable jurisdiction's noise ordinance (City of Azusa for San Gabriel Canyon Spreading Grounds; County of Los Angeles for Woodland Duck Farm, San Gabriel River Discovery Center, and Lario Creek; and City of Long Beach for El Dorado Regional Park).

CD-N2 Equip all mobile construction equipment with properly operating mufflers or other noise reduction devices.

CD-N3 Notify businesses and residences immediately adjacent to the construction site prior to the start of construction (e.g., via flyers). Include a telephone number for noise complaints in this notification.

CD-N4 Prior to the start of construction of the project, require the construction contractor to develop a site-specific noise mitigation plan based on an updated estimate of construction equipment and schedule. One or more of the following measures shall be implemented as applicable to reduce noise levels to meet the relevant jurisdiction's construction noise standards:

- Install temporary sound walls, sound curtains, or other temporary sound barriers
- Select quieter construction procedures and/or equipment

3.8 PUBLIC SERVICES AND UTILITIES

Mitigation Measures CD-P1 through CD-P3

Applicable Project:	All Concept Design Studies
Impact:	Construction impact on police and fire protection services from temporary lane and/or road closures during construction of storm drains, etc.
Timing:	Prior to start of construction and during construction
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review of project plans and specifications Review of documentation of consultation with relevant service providers Construction inspection

CD-P1 Prior to the start of construction, consult the fire station(s) serving the project area and review phasing, road/lane closure, and detour plans. The fire station(s) may then identify alternative fire and emergency medical response routes.

CD-P2 Prior to the start of construction, consult the police station(s) serving the project area, as appropriate, of project-related lane and/or road closures and detour plans. The police station(s) may then identify alternative police emergency response routes.

CD-P3 If determined to be necessary by the relevant police and/or fire service providers, implement one or more of the following applicable traffic control measures capable of reducing the temporary adverse effects to police and emergency vehicle travel during project construction:

- Use flagmen to direct traffic
- Post "No Parking" signs along the affected area
- Install temporary signals or signs to direct traffic
- Other equivalent traffic control measures

Mitigation Measures CD-P4 and CD-P5

Applicable Project:	San Gabriel River Discovery Center and Lario Creek
Impact:	Construction impact on school access and student safety
Timing:	Prior to start of construction and during construction
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review documentation of consultation with applicable school administrators Review project plans and specifications Construction inspection

CD-P4 Prior to project construction, contact school administrators to provide sufficient notice to forewarn school bus operators, children, and parents when existing pedestrian and vehicular routes to school will be affected. As necessary to protect the safety of children, parents and employees accessing the school, one or more of the following measures shall be implemented in coordination with the school administrators:

- Develop temporary alternative pedestrian and vehicular routes to the school that avoid construction areas
- Install appropriate temporary traffic controls (signs, crossing guards, and/or signals) as needed to ensure pedestrian and vehicular safety
- Minimize use of haul routes past the school when school is in session
- Prohibit parking or staging of construction or worker vehicles on streets adjacent to the school.

CD-P5 Secure all construction areas adjacent to the school, including trench areas, operating equipment areas and equipment staging and stockpile areas, through fencing or other barriers to prevent trespassing and reduce hazards to children and other pedestrians.

Mitigation Measure CD-P6

Applicable Project:	Woodland Duck Farm, Lario Creek, San Gabriel River Discovery Center, and El Dorado Regional Park
Impact:	Construction impact on school commuting routes from temporary lane and/or road closures
Timing:	Prior to start of construction and during construction
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review documentation of consultation with applicable school administrators Review project plans and specifications

Notify the applicable school district of the expected start and end dates for various portions of the project that may affect traffic in the area and any potential impact on existing school bus routes to facilitate identification of alternative routes and minimize unexpected delays in commuting to the school.

Mitigation Measure CD-P7

Applicable Project:	All Concept Design Studies
Impact:	Potential interference with existing utilities within street rights-of-way from construction of storm drains, etc.
Timing:	During project design, prior to start of construction, and during construction
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review documentation of consultation with applicable utility providers Review documentation of notification to residents and businesses, if applicable Review project plans and specifications

During design of each project component, consult the applicable utility service provider(s) to identify existing and proposed buried facilities in affected roadways and to determine which utilities require relocation and which can be avoided. If results of the consultation indicate that project construction could affect buried facilities, one or more of the following measures shall be implemented as applicable:

- If relocation is required, sequence construction activities to avoid or minimize interruptions in service.
- If utility service disruption is necessary, notify residents and businesses in the project area a minimum of 2 to 4 days prior to service disruption through local newspapers, direct mailings to affected parties, or public posting of notices.
- If project construction would occur near existing utilities, require the contractor to excavate around utilities, including hand excavation as necessary, to avoid damage and to minimize interference with safe operation and use. Hand tools must be used to expose the exact location of buried gas or electric utilities.

Mitigation Measure CD-P8

Applicable Project:	All Concept Design Studies
Impact:	Impact on landfill capacity from generation of solid waste during construction
Timing:	Prior to start of construction and during construction
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review of project plans and specifications Construction inspection

State in the plans and specifications for the proposed project that the construction contractor is required to identify and implement one or more of the following applicable programs for minimizing solid waste generated during construction:

- Recycling of asphalt and concrete paving materials
- Reuse and composting of green waste materials where there is limited potential for inadvertent spreading of invasive plants
- Balance graded soil on site to the maximum extent feasible

Mitigation Measure CD-P9

Applicable Project:	All Concept Design Studies
Impact:	Impact on solid waste collection routes from temporary lane and/or road closures during construction of storm drains, etc.
Timing:	Prior to construction
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Method:	Review documentation of consultation with relevant municipality

Prior to construction, notify the relevant municipality of the construction schedule and planned lane or road closures. The municipality or agency may then modify the solid waste collection routes and access in the area.

Mitigation Measure CD-P10

Applicable Project:	Woodland Duck Farm and El Dorado Regional Park
Impact:	Operational impact on power line towers from stormwater infiltration
Timing:	During project design
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review geotechnical report Review project plans and specifications

During design of the facility, conduct a geotechnical investigation to assess the characteristics and stability of the soil around the power line towers. If results of the investigation indicate that stormwater infiltration may saturate the soil and affect the stability of the towers, one or more of the following changes shall be incorporated into the site design as applicable:

- Site the proposed retention basins to avoid the towers, if possible, or construct a series of drywells so that water would be infiltrated deeper into the ground to avoid saturation of surface soils.
- Install a liner along the sideslope of the basin closest to the power line towers to prevent infiltration. (The liner would cover only a small portion of the infiltration basin.)

3.9 TRANSPORTATION AND TRAFFIC

Mitigation Measures CD-T1 through CD-T7

Applicable Project:	All Concept Design Studies
Impact:	Traffic impacts during project construction
Timing:	Prior to and during construction
Party Responsible for Implementation:	Project proponent
Agency Responsible for Monitoring:	CEQA lead agency for the project
Monitoring Methods:	Review construction traffic management plan and construction area traffic control plan / detour plan, as applicable Review project plans and specifications Construction inspection

CD-T1 A construction traffic management plan shall be developed for each project site that shall include but not be limited to such measures as designated haul routes for construction-related traffic (e.g., construction equipment, pickup and dump trucks, and other material delivery trucks), travel time restrictions for construction-related traffic to avoid weekday peak periods on selected roadways, designated site access locations, driveway turning restrictions, temporary traffic controls and/or flaggers, and designated parking/staging locations for workers and equipment.

CD-T2 A construction area traffic control plan and/or detour plan shall be prepared for any location where construction activities would encroach into the right-of-way of a public roadway. The plan would include, but not be limited to such features as warning signs, lights, barricades, cones, lane closures, and restricted hours during which lane closures would not be allowed (e.g., 6:00 to 9:00 a.m. and 3:00 to 6:00 p.m., or as directed by the affected public agency).

CD-T3 Provide advance notification to affected property owners, businesses, residents, etc. of possible driveway blockages or other access obstructions and implement alternate access and parking provisions where necessary.

CD-T4 Provide alternative pedestrian and bicycle access/circulation routes if existing facilities such as sidewalks, crosswalks, and bike lanes would be obstructed to ensure safe pedestrian/bicycle travel.

CD-T5 Coordinate with emergency service providers (police, fire, and ambulance/paramedic agencies) prior to construction to provide information regarding lane closures, construction schedules, driveway blockages, etc., if any, and develop a plan to maintain or accommodate essential emergency access routes (e.g., plating over excavations and use of detours).

CD-T6 Coordinate with public transit agencies (e.g., MTA) to provide information regarding lane closures, bus stop disruptions, etc. so that MTA or relevant agency can designate alternate pick-up/drop-off locations, if appropriate, and provide for uninterrupted service.

CD-T7 As necessary, obtain a transportation permit from Caltrans for transportation of heavy construction equipment and/or materials which requires the use of oversized-transport vehicles on State highways.