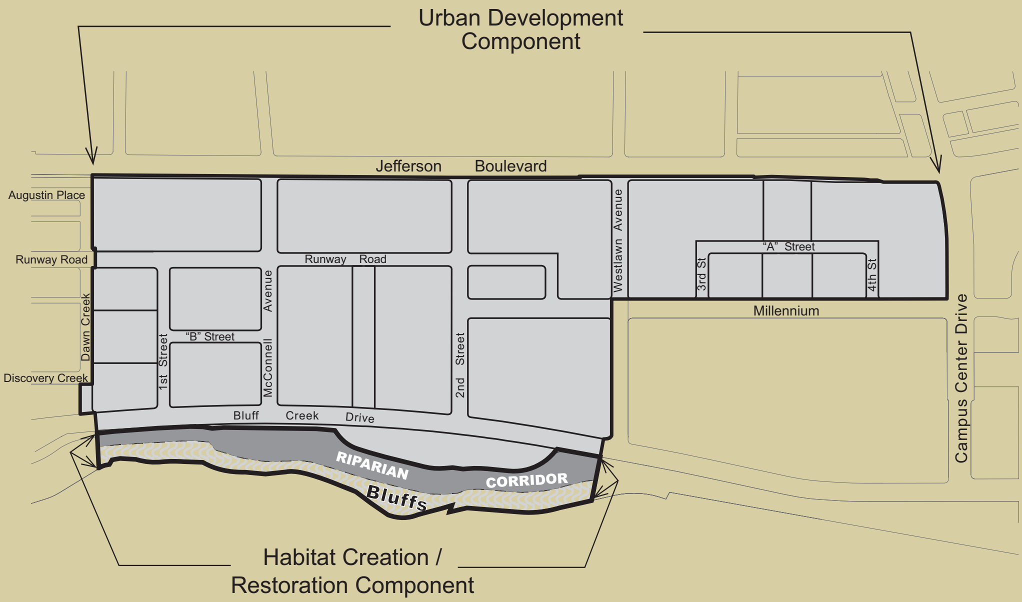
Draft Environmental Impact Report

(DEIR)

Village at Playa Vista



Volume I

Book 1

City of Los Angeles/EIR No. ENV-2002-6129-EIR

2003

State Clearinghouse No. 2002111065

DRAFT ENVIRONMENTAL IMPACT REPORT
VILLAGE AT PLAYA VISTA

City of Los Angeles/EIR No. ENV-2002-6129-EIR

State Clearinghouse No. 2002111065

Project:	Village at Playa Vista
Required City Actions:	Amendments to the Westchester / Playa del Rey Community Plan and the existing Playa Vista Area D Specific Plan with appropriate zone changes, a Development Agreement, a Conditional Use, a Vesting Tentative Tract Map, and various other discretionary approvals as the City may find necessary to implement the project.
Applicant:	Playa Capital Company, LLC 12555 W. Jefferson Blvd., Suite 300 Los Angeles, CA 90066

2003

DRAFT ENVIRONMENTAL IMPACT REPORT

(DEIR)

VILLAGE AT PLAYA VISTA

VOLUME I

BOOK 1

City of Los Angeles
2003

EIR No. ENV-2002-6129-EIR State Clearing House No. 2002111065

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I. EXECUTIVE SUMMARY
A. INTRODUCTION

This Draft EIR has been prepared pursuant to the requirements of the California Environmental Quality Act (CEQA) for the proposed Village at Playa Vista Project ("the Proposed Project" or "The Project").

The City of Los Angeles, which has the principal responsibility for approving the Proposed Project, is the Lead Agency pursuant to CEQA Statue Section 21067. As the Lead Agency, the City is responsible for the preparation and distribution of this Draft EIR. This Draft EIR identifies possible significant effects that the Proposed Project may have on the environment. It also indicates the manner in which the Project's significant effects can be reduced or avoided through the implementation of mitigation measures. Impacts that cannot be mitigated to a level below significance are considered significant unavoidable adverse impacts. For projects that result in any unmitigated or under-mitigated significant environmental effects, the City may, after making a series of findings, certify the EIR upon adoption of a Statement of Overriding Considerations pursuant to CEQA Guidelines Section 15093.

As described in Section 15121(a) and 15632 of the CEQA Guidelines, an EIR is an informational document which will inform public agency decision makers and the public of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project. The purpose of this Draft EIR, therefore, is to focus the discussion on those potential effects on the environment of the Proposed Project which the lead agency has determined are or may be significant.

1.0 PROJECT CHARACTERISTICS

The Village at Playa Vista is located on a 111.0-acre site in the Playa Vista area of West Los Angeles and consists of the following two components: (1) a mixed-use community ("the Urban Development Component"); and (2) a Riparian Corridor and restoration and maintenance of a portion of the Westchester Bluffs adjacent to the Riparian Corridor (the "Habitat Creation/Restoration Component"). As described more fully in Section I.D., the Proposed Project greatly reduces the scale of development in comparison to previous proposals within the larger area known as Playa Vista.

The primary component of the Project, the Urban Development Component would enable the development of a master planned community composed of residential, commercial, recreational, and community-serving uses. This development would occur on an approximately 99.3-acre site consisting of 87.5 acres of development, 11.4 acres of parks, and 0.4 acre of other passive open space. The proposed development includes 2,600 dwelling units, 175,000 square feet (sq.ft.) of office space, 150,000 sq.ft. of retail space, and 40,000 sq.ft. of community-serving uses. The Urban Development Component also would provide a comprehensive program of parks and open space areas that would contribute to the aesthetic character of the area and complement the land use program described above.

This development program may be amended under the provisions of an Equivalency Program. The Equivalency Program allows a limited exchange of office uses for retail and/or assisted living uses in order to meet future needs, within the framework of a balanced Project consistent with the Project's mixed-use concept. Under the proposed Equivalency Program, a maximum of 125,000 sq.ft. of office development may be exchanged for up to 56,832 sq.ft. of retail uses or up to 200 assisted living units, or a combination thereof (e.g., an increase of both retail and assisted living development). Land uses may be exchanged based on specific equivalency factors and subject to the limits set forth above.

The Habitat Creation/Restoration Component includes a total of 11.7 acres, of which the Riparian Corridor involves approximately 6.7 acres, with the restoration of the adjoining portion of the Westchester Bluffs occurring over the remaining 5 acres. Implementation of the Riparian Corridor would include excavation of the corridor, planting with native vegetation, monitoring and maintenance to meet performance standards, and corrective action as necessary. The construction of the Riparian Corridor would complete a 25-acre riparian corridor that also includes sections east and west of the Riparian Corridor, ultimately feeding into the Playa Vista First Phase Freshwater Marsh. The proposed Bluffs restoration program would enhance the bluffs adjacent to the Riparian Corridor as a coastal sage scrub community with increased habitat value. Once the Bluffs have been restored, the Proposed Project would be responsible for, an ongoing maintenance program that would include the removal of non-native plant species and the replacement of dead native plant specimens with new native plants.

2.0 DISCRETIONARY ACTIONS REQUESTED AND PERMITS REQUIRED

Development of the Project site is governed by the Playa Vista Area D Specific Plan (City of Los Angeles Ordinance No. 160,523) and the Westchester-Playa Del Rey Community Plan.

Implementation of the Project as proposed requires a General Plan amendment to amend the Westchester/Playa del Rey Community Plan. In addition, the Applicant is requesting amendments to the existing Area D Specific Plan which would modify the land uses and densities currently allowed by this Plan. Amendments to the Plans and other actions to permit the proposed development would include, but may not be limited to, the following:

- Amendment of the General Plan to amend the Westchester/Playa del Rey Community Plan, to revise the General Plan Land Use designations and corresponding map designations within the portion of the Area D Specific Plan within which the Project is located from Light/Limited Industry and High/Medium Density Residential to Community Commercial and High/Medium Density Residential.

- Amendments to the Playa Vista Area D Specific Plan to adjust the zone boundaries and designations within the Proposed Project site, adjust the land use entitlement allowed in the Area D Specific Plan, consistent with the Proposed Project and previous Playa Vista First Phase Project approvals (VTTM 49104 and TTM 52092), and other procedures necessary to implement the Proposed Project.

In addition, the following actions and approvals may be requested to implement the proposed development:

- Approval of a Tract Map for the Village at Playa Vista by the City;

- In conjunction with the approval of the Village Tract Map, adoption of Conditions of Approval, including the Project's proposed design guidelines;

- Inclusion within the Village Tract Map of a resubdivision of Lot 113 of VTTM 49104 (a portion of the previously approved Playa Vista First Phase Project). The City's

Deputy Advisory Agency would be requested to make a determination in conjunction with its approval of the subdivision that Lot 113 of VTTM 49104 is not needed to meet the open space requirements of VTTM 49104;

- Approval of a Development Agreement with the City of Los Angeles;
- Approval of CUPs for alcohol sales (on- and off-site), community-serving uses, and other uses that require conditional use permits by the City;
- Approval by the City of grading permits, building permits, and other permits issued by the Department of Building and Safety associated with the development of the Proposed Project; any necessary public works permits for infrastructure improvements for development associated with the Project; Project mitigation measures; and other permits reasonably necessary for the implementation of the Project;
- Plot plan/site plan approvals by the City for development within the Proposed Project area;
- Approval of a National Pollutant Discharge Elimination System (NPDES) construction permit for development in the Proposed Project area by the RWQCB;
- Other actions from local, regional, state, and federal agencies, as may be required to implement the Proposed Project and its mitigation measures. These may include, but are not limited to the following: creation of service or special districts (e.g., Mello-Roos), financing actions, off-site infrastructure improvements and implementation agreements, and/or approvals, permits, and licenses from regulatory agencies associated with Project construction and post-construction operations, including, but not limited to, soil and groundwater remediation, stationary source air emissions, and repair, replacement and maintenance of on- and off-site infrastructure. Agencies may include the California Department of Fish and Game, Caltrans, the U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, California Department of Toxic Substances Control, SCAQMD, SWQCB/RWQCB, ARB, the Cultural Affairs Commission, the Cultural Heritage Commission, the Native American Heritage Commission, and other local, regional, state, or federal agencies having jurisdiction over the Proposed Project or its mitigation measures.

I. EXECUTIVE SUMMARY
C. PROJECT LOCATION

The Village at Playa Vista is comprised of 111.0 acres located within the Westside area of the City of Los Angeles, approximately two miles inland from Santa Monica Bay (see Figure 1 on page 151, Figure 2 on page 152, and Figure 3 on page 153). The Proposed Project site is generally bounded by the adjacent Playa Vista First Phase Project to the east and west, Jefferson Boulevard to the north, and the Westchester Bluffs to the south. The Westchester Bluffs rise approximately 120 feet above the Project site. The City of Los Angeles' Westchester community and Loyola Marymount University lie atop the bluffs.

In a larger context, the Proposed Project is surrounded by the existing City of Los Angeles communities of Westchester on the south, Del Rey to the northeast, Venice/Mar Vista further to the north and Playa del Rey further to the west. The Los Angeles County community of Marina del Rey lies further to the northwest, and the City of Culver City further to the east.

I. EXECUTIVE SUMMARY
D. PROJECT BACKGROUND

1.0 HISTORY

The Proposed Project reflects an approach to development that has evolved over the past two decades. The Project site is part of a larger area known as Playa Vista. Historically, the Playa Vista property has included land on both sides of Lincoln Boulevard and north and south of the Ballona Channel. The site was divided into four quadrants know as Area A, Area B, Area C, and Area D (see Figure 7 on page 176). The Proposed Project is located in Area D, which was annexed into the City of Los Angeles in 1986, concurrent with the adoption of the Area D Specific Plan.

Areas A, B, and D are owned by the Proposed Project Applicant. Area C is owned by U.S. Trust of California in trust for the benefit of the State of California pursuant to certain agreements with the State and U.S. Trust. Playa Vista had the right and the obligation to plan and develop Area C.

During 1991 to 1993, the City of Los Angeles and the California Coastal Commission approved the development of the adjacent Playa Vista First Phase Project over a portion of Area D and Area B. The United States Army Corps of Engineers (USACE), also during this period, issued a permit (USACE Permit No. 90-426-EV), pursuant to Section 404 of the Federal Clean Water Act, to allow, among other things, the filling of isolated wetlands in areas that included parts of Area B and Area D, including the Project site.

In 1995, the City approved a revision to the First Phase Playa Vista Project to permit the development of an Entertainment, Media and Technology District at the east end of the Area D property, and approved the redevelopment of the former McDonnell Douglas and Howard Hughes plant site located at the eastern end of Area D.

Also in 1995, the City circulated a Notice of Preparation for a Project EIR that included the remainder of the former Playa Vista property, exclusive of the First Phase Project (EIS/EIR 95-0086, State Clearinghouse No. 1995051011) and the Army Corp of Engineers issued a Notice of Intent to prepare an Environmental Impact Statement (EIS). The Notice of Preparation included Area A, Area C and portions of Area B and Area D not included in the First Phase Project. This joint EIS/EIR, which was never circulated, was intended to address the development of the former Playa Vista Planning Areas, exclusive of the First Phase Project.

On August 8, 2001, an agreement was entered into with the Trust for Public Land (TPL) which provides an option for TPL to acquire all of Area A and portions of Area B for long-term open space/recreation uses. Also, as a result of other actions, the Applicant, while retaining some rights to Area C, is no longer under an obligation to plan and entitle Area C for the benefit of the State of California, and Area C has been excluded from the Playa Vista planning area.

On November 14, 2002, an NOP was circulated by the City for the currently proposed Village at Playa Vista Project, located within the central portion of Area D, between the western and eastern portions of the adjacent Playa Vista First Phase Project.

Since issuance of the NOP in November 2002, and in response to NOP comments, the Proposed Project was reduced in size to exclude a portion of the Westchester Bluffs located southeast of the currently defined Project.

2.0 DETERMINATION FOR THE EIR AND NOP

The Applicant submitted an Environmental Assessment Form (EAF) for the Proposed Project in October 2002. After review of the information provided, the City Planning Department determined that the Proposed Project could have a significant impact on the environment. On October 30, 2002 the Planning Department issued a determination that an Environmental Impact Report should be prepared. The City identified the following topics to be included: Aesthetics, Air Quality, Biological Resources, Cultural Resources, Geology/Soils, Hazards & Hazardous Materials, Hydrology/Water Quality, Land Use/Planning, Noise, Population/Housing, Public Services, Recreation, Transportation/Traffic, Utilities/Service Systems and Mandatory Findings of Significance.

On November 14, 2002, a Notice of Preparation (NOP) and a Notice of Public Scoping Meeting was circulated for a 60-day review period starting on November 14, 2003, and ending on January 14, 2003. The public scoping meeting was held on December 12, 2002. Written and oral comments were taken at the scoping meeting and letters were submitted from interested parties. The NOP is contained in Appendix A of the EIR; written and oral comments received are contained in Appendix B.

I. EXECUTIVE SUMMARY
E. AREAS OF CONTROVERSY

Concerns raised in response to the project's NOP suggested that the EIR should include analyses in the EIR of issues in the same general categories as determined by the City Planning Department. The more notable concerns raised included soil gas and seismic safety, traffic, and issues pertaining to impacts on the Freshwater Wetland System, the Ballona Wetlands and the Ballona Channel. A number of comments addressed concerns regarding Project impacts on biological resources from development effects on habitat, and visual quality of the environment, as to how the Project would affect the visual character of the area and views to and from the Westchester Bluffs. Other concerns were raised pertaining to impacts for grading; potential geologic hazards and risks related to future habitation of the site; increased air emission and noise associated with Project-generated traffic and construction activities; effects from changes in land use and compliance with all relevant local and regional plans, and regulation; potential presence of vectors on the Project site, job-housing balance; provision of adequate public transit service and bikeways; project impacts on energy and water conservation; potential effect on the provision of services and utilities that would arise from new population growth. Many concerns were raised regarding cumulative effects of development that would occur with the Proposed Project and other development in the area. Many comments addressed the need to identify appropriate mitigation measures for the Proposed Project.

I. EXECUTIVE SUMMARY
F. ALTERNATIVES

Seven alternative project scenarios have been developed and analyzed to compare the relative impacts of a range of alternatives to the Proposed Project. The analysis of alternatives starts with the "No Project" Alternative. CEQA Guidelines Section 15126.6(e)(3) sets forth two options for discussing the No Project Alternative. The two options are to define the No Project Alternative in terms of no changes to existing on-site conditions ("no build"), or development of the site under existing land use regulations without approval of the Proposed Project. In order to fully address all applicable CEQA requirements, the first two alternatives analyzed in this Draft EIR are both No Project Alternatives that reflect these two options. Specifically, the first alternative analyzed is one in which no development would occur. The second alternative analyzed is one in which development would occur pursuant to existing land use regulations and without amendments to the Area D Specific Plan, or existing zoning. Based on comparative evaluations, estimations were made as to the environmental impacts of each alternative in contrast with those of the Proposed Project and whether each alternative could attain the Applicant's Project objectives. The seven alternatives and the conclusions reached regarding their comparative impacts after mitigation (except for traffic impacts, which are prior to mitigation) and relationship to Project objectives follows.

Alternative 1: No Project – No Development

This alternative would produce no change to the existing physical condition and use of the Project site. Existing uses would continue.

Summary of Comparative Impacts

The No Project Alternative would eliminate significant impacts that would occur with the Proposed Project, including: regional air quality, construction noise, traffic, visual qualities, police services, and solid waste disposal. The No Project Alternative would also result in the avoidance of all adverse, non-significant impacts anticipated to occur with the development of the Proposed Project, including: operational, noise, earth (seismic hazards), local air pollution, and other services.

Conversely, the No Project Alternative eliminates net beneficial effects that would occur with the Proposed Project, including: bluff restoration and biotic resources, jobs/housing balance, housing, job creation, bicycle circulation, and parks and recreation facilities.

Since the Proposed Project is not a government project (which, by nature, responds to a public health or safety need), the No Project Alternative would produce no adverse environmental impacts, except by omission of improvements associated with the Proposed Project. In other words, the Proposed Project's design would result in implementation and completion of privately funded remediation of existing public safety concerns in the area (i.e., localized flooding, bluff stability, and surface and ground water pollution), which would not be implemented under the No Project Alternative.

Relationship of this Alternative to Project Objectives

The No Project – No Development Alternative would not attain any of the Applicant's basic Project objectives for the Proposed Project. It would not provide a mixed-use community that promotes internally supportive uses that decrease dependency on the automobile with resultant traffic, air quality and noise benefits, nor create greater efficiencies in the utilization of infrastructure. This alternative would also not generate jobs, housing and recreational activities of a substantial scale and magnitude. Furthermore, this alternative would not contribute to the supply of market housing at a wide range of prices and City's need for housing Citywide and in the Westside, in particular. This alternative would not implement the proposed programs for resource protection, enhancement, conservation, and reuse.

Alternative 2: No Project – Development Permitted by Existing Specific Plan and Zoning

This alternative would allow development that could occur without any amendments to the existing specific plan. Under this alternative, development would be limited to approximately 108,050 square feet of office space (approximately 38% less than that included in the Proposed Project), but no residential, retail or community-serving uses.

Summary of Comparative Impacts

The No Project – Development Permitted by the Existing Specific Plan and Zoning Alternative would eliminate the Proposed Project's significant adverse impacts on Aesthetics and Views. The alternative would continue to generate significant impacts on traffic, regional air quality, construction noise, and solid waste disposal, although at reduced levels compared to the Proposed Project. Alternative 2 would also reduce the Proposed Project's non-significant impacts on local air quality and noise from operations, public services, biotic resources, safety/risk of upset, energy, and utilities. As with the Proposed Project, there would be no impacts on mineral or historic resources. There would be a 100% reduction in total housing capacity and an 82% reduction in employment. Therefore, this alternative would not provide housing and employment opportunities anticipated in the Specific Plan, and would exacerbate the imbalance in the jobs/housing ratio in the local and sub-regional areas.

Relationship of this Alternative to Project Objectives

The No Project – Development Permitted by the Existing Specific Plan and Zoning Alternative would not attain any of the Applicant's basic Project objectives for the Proposed Project. It would not provide a mixed-use community that promotes internally supportive uses that decrease dependency on the automobile with resultant traffic, air quality and noise benefits, nor create greater efficiencies in the utilization of infrastructure. This alternative would also not generate jobs, housing and recreational activities of a substantial scale and magnitude. Furthermore, this alternative would not contribute to the supply of market housing at a wide range of prices and the City's need for housing Citywide and in the Westside, in particular. This alternative would not implement the proposed programs for resource protection, enhancement, conservation, and reuse.

Alternative 3: Existing Specific Plan – Buildout

This alternative would allow development of the Proposed Project site to the maximum land use entitlements permitted under the existing Area D Specific Plan. The development program for this alternative is based on the remaining uses which could occur beyond those that have been approved for development in the adjacent Playa Vista First Phase Project (VTTM 49104 and TTM 52092). However, to implement this alternative, changes and/or adjustments to the existing Specific Plan zoning boundaries would be required. In comparison to the Proposed Project, the existing plan allows for 905% more office space and 310% more retail uses; it includes a 600-room hotel component and no residential component.

Summary of Comparative Impacts

The alternative would increase the degree of significant air quality, solid waste disposal, and traffic adverse impacts, as well as significant impacts associated with the obstruction of views, over that which would result from development of the Proposed Project. The alternative would also increase the Project's adverse, but non-significant impacts, on grading, groundwater hydrology, surface water quality, electricity consumption, reclaimed water consumption, and wastewater generation. These increased impacts would still be less than significant. Beneficial impacts of the Proposed Project that would be diminished or that would not be realized include impacts to housing, jobs/housing balance, flood control, and bikeway improvements. It would reduce the Project's non-significant impact on schools, libraries, energy and water consumption, and plants and animals from indirect sources. It would create more job opportunities. Overall, development of this alternative would produce a greater degree of environmental impacts than the Proposed Project.

Relationship of this Alternative to Project Objectives

Without a housing component, this alternative would not meet the Project objectives of providing a mixed-use community promoting mutually supportive uses such as employment, housing and recreation. The lack of housing along with the greater amount of commercial activity and off-site orientation would result in a less internally oriented community, exacerbating jobs/housing imbalance. This would work against the intended decrease in dependency on the automobile with resultant traffic, air quality and noise benefits. Furthermore, this alternative would not contribute to the supply of market housing at a wide range of prices and City's need for housing Citywide and in the Westside, in particular. The Applicant's resource protection, enhancement and conservation goal could be met with this alternative.

Alternative 4: Reduced Intensity – 25% Reduction

This alternative would reduce the intensity of the Proposed Project development by reducing the amount of each of the developed uses, including office, retail, housing, community-serving and park space by 25%. It is assumed that development within the various use categories would occupy the same area of the Project site as the Proposed Project, only with reduced intensity.

Summary of Comparative Impacts

The reduced intensity alternative would reduce but not eliminate the Proposed Project's significant adverse impacts on traffic, regional air quality, construction noise, police, and solid waste disposal. It would not eliminate the significant view impact along the short segment of Jefferson Boulevard adjacent to the Project site. Alternative 4 would also reduce the Proposed Project's non-significant impact levels on operational air quality and noise from operations, other public services (with less revenue generation), safety/risk of upset, earth resources (seismic hazards), energy, and utilities. There would be reductions in total housing capacity and employment. This alternative would be beneficial for the jobs/housing balance, but not to the same extent as the Proposed Project.

Relationship of this Alternative to Project Objectives

This alternative would partially meet the objectives of the Proposed Project. It would be consistent with the objective of providing a mixed-use community that provides internally supportive uses, decreasing dependency on the automobile, and increasing efficiency in the utilization of infrastructure. The objective of generating jobs, housing, and recreational opportunities would be somewhat achieved, although this alternative would provide a less substantial contribution to this objective than the Proposed Project due to the lower density of the alternative. This alternative would contribute to the supply of market housing and the City's need for housing Citywide and in the Westside, in particular, but would do so at a level that is not as substantial in nature as with the Proposed Project. In addition, the reduction in units would inhibit the objective of providing housing within a wide price range. The Applicant's resource, protection and conservation goal could be met with this Alternative.

Alternative 5: Reduced Uses – 25% Residential Reduction, No Retail or Office

This alternative would reduce both the overall intensity of the Proposed Project and the types of uses permitted. Housing, park space and community-serving uses would still occur, but would be reduced by 25%. Retail and office uses would be eliminated. It is assumed that the development reductions would occur at specified locations, rather than across the board, allowing for additional open space within the Project site.

Summary of Comparative Impacts

This alternative would reduce but not eliminate the Proposed Project's significant adverse impacts on traffic, regional air quality, construction noise, police services and solid waste disposal. It would not eliminate the significant aesthetics/view impact along the segment of Jefferson Boulevard adjacent to the Project site. Alternative 5 would also reduce the Proposed Project non-significant impact levels on local air quality and noise, other public services, safety/risk of upset, earth resources (grading, dewatering/subsidence, and seismic hazards), energy, and utilities. There would be reductions in total housing capacity, and employment. This alternative would be beneficial for the jobs/housing balance in the local area and region, but not to the same extent as the Proposed Project even though the on-site ratio would be better.

Relationship of This Alternative to Project Objectives

This alternative would partially address some of the basic objectives of the Proposed Project. This alternative would help to meet the supply of market housing and the City's need for housing Citywide and in the Westside, in particular, but would do so at a level that is not as substantial in nature as with the Proposed Project. In addition, the reduction in units would inhibit the objective of providing housing within a wide price range. Also, the Applicant's resource, protection and conservation goal would be met with this Alternative. The objective of generating housing would be somewhat achieved, although this alternative would provide a less substantial contribution to this objective than the Proposed Project due to the lower density of the alternative. The objective of generating a substantial number of jobs would not be addressed. This alternative would not be consistent with the objective of providing a mixed-use community that provides internally supportive uses, decreasing dependency on the automobile with resultant traffic, air quality and noise benefits, and that creates greater efficiencies in the utilization of infrastructure.

Alternative 6: Reduced Uses – 75% Residential Reduction, No Retail, Office, or Community-Serving Uses

This alternative would limit development to low-density, low-rise residential housing. The number of residential units would be reduced by 75%. It is assumed that development would occupy the same area as the Proposed Project, only varied by the type of housing provided.

Summary of Comparative Impacts

This alternative would reduce but not eliminate the Proposed Project's significant impacts on traffic, regional air quality, construction noise, police service and solid waste disposal. It would not eliminate the significant aesthetic/view impact along Jefferson Boulevard adjacent to the Project site. Alternative 6 would also reduce the Proposed Project's non-significant impact levels on local air quality and noise from operations, other public services (with less revenue generation), safety/risk of upset, earth resources (grading, dewatering/ subsidence, and seismic hazards), energy, and utilities. There would be reductions in total housing capacity, and employment.

Relationship of this Alternative to Project Objectives

This alternative would not meet most of the Proposed Project's basic objectives. It would not provide a mixed-use community that promotes internally supportive uses that decrease dependency on the automobile with resultant traffic, air quality, and noise benefits, nor create greater efficiencies in the utilization of infrastructure. This alternative would also not generate jobs, housing, and recreational activities of a substantial scale and magnitude. Furthermore, this alternative while helping to meet the supply of market housing and City's need for housing Citywide and in the Westside, in particular, would do so at a level that is not substantial in nature as identified in the Project's basic objectives. In addition, the substantial reduction in units would preclude the objective of providing housing within a wide price range. Notwithstanding, the alternative would meet the Project's basic objective pertaining to resource protection and conservation.

Alternative 7: Designated Alternative Site

Various sites were surveyed and considered as an alternative location for Proposed Project development to address the relative impacts that would occur if the development were located somewhere other than at the Proposed Project site. Of the candidate sites, one was selected for a comparative analysis of potential impacts. The site chosen for analysis was the Cal Compact site in the City of Carson.

Summary of Comparative Impacts

Implementation of the Proposed Project at the Cal Compact site would result in a varied impact profile from the Playa Vista site with impacts better, similar or worse than those of the Proposed Project, depending upon the environmental topic. Implementation of the Cal Compact site would generally not avoid impacts that would be encountered at the Playa Vista site. A few conditions would be better and impacts would be avoided that are associated with unique features of the Playa Vista site (i.e., views of the bluffs); however, the alternative site would also not provide the view benefit related to those features that would occur due to the Project's design features at Playa Vista (i.e., the riparian corridor and bluff restoration). This alternative would also result in worse impacts to air quality and earth resources (grading) and less of a beneficial impact to the local jobs/housing balance.

Relationship of this Alternative to Project Objectives

Selection of an alternate site by the decision maker is most appropriate where the decision maker is also the developer, as in a government or quasi-government project such as a fire station or power generation plant wherein the power of eminent domain is available and economic feasibility is not necessarily the predominant factor. The "selection" of an alternate site by a governmental agency decision maker for a private development, however, would seem inappropriate because the decision maker lacks commensurate power to make such alternate site available for a private project and to approve or guarantee approval of the entitlements that would be needed to support such a selection. This is particularly true when the alternate site lies within a different governmental jurisdiction.

The provision of development at an alternative site could meet the Project's basic objective related to the provision of a mixed-use community that provides internally supportive uses, decreasing dependency on the automobile, and increasing efficiency in the utilization of infrastructure. Such development would also meet the basic objective to provide a new community that would generate jobs, housing, and employment of a substantial scale and magnitude. Development at an alternative site would not be consistent with the Project's basic objective to provide housing to meet market demand in the Westside of Los Angeles, nor the objective to address housing needs within the City of Los Angeles, the Westside in particular, pursuant to regional and local plans. This alternative would not meet objectives regarding implementation of a comprehensive program of resource protection, enhancement, and conservation specifically designed for the Playa Vista site, as the alternative site does not have similar natural features. This alternative would not contribute to the Project's objective of providing a development that would be consistent with, and form linkages to, development, transportation, and conservation linkages with the adjacent Playa Vista First Phase Project.

Selection of an alternative site would entail acquisition, engineering, environmental, permit application and other start-up costs for the Applicant with no assurance that entitlements needed would be approved. There would be consequent loss of investment already made for like purpose relative to the Playa Vista site. As discussed above, selection of an alternative site does not lend itself to the type of private development proposed for the Playa Vista site; would be difficult, if not impossible, to implement for the Applicant; and would not meet the Applicant's basic objectives.

1. EARTH

a. Environmental Impacts

Grading

Excavation and Fill

Fill and excavation activities during the grading phase of construction would result in a less-than-significant impact because the proposed grading activities would not cause or accelerate geologic hazards which would result in substantial damage to structures or infrastructure, or expose people to substantial risk of injury, and one or more distinct and prominent geologic or topographic features would not be destroyed, permanently covered or materially and adversely modified.

Erosion and Sedimentation

Grading activities have the potential to result in erosion and sedimentation; however, implementation of BMPs and other erosion and sedimentation control measures would enable Proposed Project-related grading, excavation and other earth-moving activities to avoid a significant impact. As such, construction of Proposed Project components (i.e., the Urban Development and Habitat Creation/Restoration Components) would result in a less-than-significant impact by not constituting a geologic hazard to other properties by causing or accelerating instability from erosion; or accelerating natural processes of wind and water erosion and sedimentation, resulting in sediment runoff or deposition which would not be contained or controlled on-site.

Operation of Proposed Project components would not constitute a geologic hazard to other properties by causing or accelerating instability from erosion, and would not accelerate natural processes of wind and water erosion and sedimentation, resulting in sediment runoff or deposition which would not be contained or controlled on-site. Therefore, operations-related impacts would be less than significant.

Dewatering

Dewatering would be required for the construction and operation of the Urban Development Component. However, dewatering activities during construction and operation of Urban Development uses are anticipated to result in a less-than-significant impact since they would not: cause or accelerate geologic hazards which would result in substantial damage to structures or infrastructure, or expose people to substantial risk of injury; constitute a geologic hazard to other properties by causing or accelerating instability from erosion; or accelerate natural processes of wind and water erosion and sedimentation, resulting in sediment runoff or deposition which would not be contained or controlled on-site.

Subsidence

Because subsidence is minimal in and around the Proposed Project site, and no significant subsidence is anticipated in the area (i.e., from dewatering activities during construction and operation of proposed uses), development of the Proposed Project components would not cause or accelerate geological hazards which would result in substantial damage to structures or infrastructure, or expose people to substantial risk of injury. As such, subsidence impacts to or from the Proposed Project would be less than significant.

Seismic Hazards

Groundshaking and Rupture

Although the Proposed Project site is located within a region subject to seismic events, development of the Proposed Project is not expected to expose people or structures associated with the Urban Development Component to a higher level of risk from groundshaking or surface rupture than would otherwise occur in other parts of the region. As such, the groundshaking and fault rupture hazard associated with the Urban Development Component is a less-than-significant impact, as the Proposed Project would not cause or accelerate groundshaking and fault rupture hazards.

Tsunami and Seiche

The Proposed Project site is not expected to be affected by seiching, and the site is not located in a flood hazard zone on the applicable flood hazard map (such as would be subject to tsunami-related flooding). Consequently, impacts would be less than significant, as the Proposed Project would not cause or accelerate tsunami or seiche hazards, which would not result in substantial damage to structures or infrastructure, or expose people to substantial risk of injury.

Liquefaction Potential

Although the Proposed Project site is located in a potentially liquefiable area, on-site geotechnical investigations have concluded that the potential for adverse effects from liquefaction is minimal, given the thickness and distribution of liquefiable soils on-site. As such, given compliance with the provisions required by City building and safety codes and by the Uniform Building Code (UBC), a significant impact related to liquefaction is not expected, as the Proposed Project would not cause or accelerate liquefaction hazards which would result in substantial damage to structures or infrastructures, or expose people to substantial risk of injury.

Lurching

The Bluffs are sufficiently remote from the Urban Development Component, and bluff restoration under the Habitat Creation/Restoration Component would only be at the surface such that lurching, if it ever did occur, would not result in substantial damage to structures or infrastructures, or expose people to substantial risk of injury; therefore, no significant impact is anticipated.

Slope Stability

The Urban Development Component would not have the potential to affect slope stability, or be affected by slope failure. However, the Habitat Creation/Restoration Component could have the potential to affect, or be affected by, unstable slopes. Therefore, the Habitat Creation/Restoration Component would result in a potentially significant impact, since the Proposed Project could cause or accelerate a geologic hazard which would result in substantial damage to structures or infrastructure, or expose people to substantial risk of injury, and slope failure could destroy, permanently cover, or materially and adversely modify a distinct and prominent geologic or topographic feature (i.e., the Riparian Corridor).

Impacts to earth resources from implementation of the Project's Equivalency Program would be similar to those of the Proposed Project and would be less than significant. Likewise, impacts resulting from implementation of the Project's off-site improvements, though they would occur at various locations within the Project vicinity, would be comparable to those of the Proposed Project and would be less than significant.

b. Recommended Mitigation Measures

Mitigation Measures for the Proposed Project and the Equivalency Program

Slope Stability

- Prior to completion of the Riparian Corridor, the slope stability remedial measures shall be implemented as appropriate for the areas of potential instability below Cabora Road in accordance with the Group Delta Consultants (GDC) bluff stabilization final assessment report dated December 3, 2001, and approved by the City of Los Angeles Department of Public Works on February 19, 2002. Identification of areas having the potential for slope stability problems is shown in the GDC report and completion of the appropriate mitigation (slope stability remedial) measures shall be subject to approval of the Department of Public Works. Completion of the slope repair shall be monitored by a qualified engineer subject to approval of the City of Los Angeles Department of Public Works.

  In accordance with the recommendations of the GDC report, the following slope repair methods would be employed as appropriate to minimize the potential for slope failures in areas of potential instability. The applicable locations of each repair type is shown within the GDC report, and that same information is also shown on Figure 20 on page 237 of this EIR.

  Type 1: Full Slope Height Fill – The affected portions of the slope would be cut back in benches, a minimum of one equipment width into dense native soil with a 2-foot deep key at the toe. The removed material would be replaced with material having a minimum cohesion of 200 pounds per square foot (psf) and effective angle of internal friction of 30°, with a slope grade of 1.5:1 (horizontal to vertical distance, or H:V).

  Type 2: Partial Slope Height Fill – A portion of the slope height would be cut back into dense native soil and filled with material having a minimum cohesion of 200 psf and effective angle of internal friction of 30°, in 2-foot lifts of 8-inches or less in thickness. The slope grade would match the surrounding grade of 1.5:1 (H:V) or flatter.

- A soil erosion resistant matting shall be used in the Proposed Project site for the portion of the slope below Cabora Road to reduce the accumulation of soil debris.

- Permanent erosion control features (i.e., rip-rap, concrete steps, stones) shall be installed at all stormwater discharge points within the southern portion of the

Proposed Project site in a manner satisfactory to the City of Los Angeles' Department of Building and Safety and/or Department of Public Works, as appropriate.

Other

- All dewatering shall be conducted in accordance with the requirements of dewatering permits obtained from the Regional Water Quality Control Board. Prior to initiating any construction dewatering activities that are not included within the scope of permit provisions, the Applicant/Contractor must update the plans and provisions related to the permit and must notify the Regional Water Quality Control Board of any such plan/provision modifications.

- Prior to the issuance of grading permits for initial site preparation, a pest control firm shall be retained to conduct and implement a rodent control program to prevent the migration of rodents or pest to neighboring properties. The rodent control program shall comply with all applicable local, state, and federal regulations. Evidence shall be provided to the advisory agency prior to the issuance of any permit that this provision has been satisfied.

c. Unavoidable Adverse Impacts

Implementation of the Proposed Project would not result in any significant impacts due to the implementation of mitigation measures and Project Design Features, as discussed previously. Specifically, the Urban Development Component would not cause or accelerate geologic hazards which would result in substantial damage to structures, or infrastructure, or expose people to substantial risk of injury. Although the Habitat Creation/Restoration Component has the potential for significant impacts relative to slope stability, with implementation of slope repair mitigation measures, the Habitat Creation/Restoration Component would not cause or accelerate geologic hazards which would result in substantial damage to structures, or infrastructure, or expose people to substantial risk of injury. Therefore, slope stability impacts as pertains to geologic hazards would be less than significant. With adherence to the provisions of the Playa Vista SWPPP and applicable BMPs, construction and operation of the Urban Development and Habitat Creation/Restoration Components would not constitute a geologic hazard to other properties by causing or accelerating instability from erosion or accelerate the natural processes of wind and water erosion sedimentation, resulting in sediment runoff or deposition which would not be contained or controlled on-site. Erosion and sedimentation impacts would be less than significant. Additionally, the Urban Development Component would not destroy, permanently cover, or materially and adversely modify any distinct and prominent geologic or topographic features. The Habitat Creation/Restoration Component, however, has the potential to affect, or be affected by, slope stability impacts, including slope failure. Such impacts could have the potential to destroy, permanently cover, or materially and adversely modify a distinct and prominent geologic or topographic feature (e.g., the Bluffs or off-site Riparian Corridor). Implementation of applicable mitigation measures relative to slope stability would minimize the potential for slope failure, and would thus reduce slope stability impacts associated with the Habitat Creation/Restoration Component to a level less than significant. In summary, with implementation of applicable mitigation measures, no unavoidable adverse impacts with respect to earth resources are anticipated to occur. These impacts are inclusive of the Proposed Project, the Equivalency Program and the Project's off-site improvements.

d. Cumulative Impacts

For the most part, the earth resources impacts of the Proposed Project would be unique to the Proposed Project site, not leading to cumulative effects in conjunction with related projects. The only other development of note in close proximity to the Proposed Project would be the previously approved Playa Vista First Phase Project, which is adjacent to the east and west of the Proposed Project site. Because the Proposed Project site and the adjacent Playa Vista First Phase Project site are adjacent, the two projects' combined earth impacts may be evaluated relative to cumulative effects. The adjacent Playa Vista First Phase Project, currently under construction, is not anticipated to result in significant earth resources impacts, and BMPs and Project Design Features are being employed to minimize the potential for impacts from geologic hazards, erosion and sedimentation, and landform alteration. Such BMPs and design features would also be applied during implementation of the Proposed Project. As such, the Proposed Project and the adjacent Playa Vista First Phase Project, considered cumulatively, would not cause or accelerate geologic hazards which would result in substantial damage to structures or infrastructure, or expose people to substantial risk of injury; constitute a geologic hazard to other properties by causing or accelerating instability from erosion; accelerate natural processes of wind and water erosion and sedimentation, resulting in sediment runoff or deposition which would not be contained or controlled on-site; or destroy, permanently cover, or materially and adversely modify one or more distinct and prominent geologic or topographic features. Therefore, cumulative earth resources impacts of the Proposed Project and the adjacent Playa Vista First Phase Project would be less than significant. These impacts are inclusive of the Proposed Project, the Equivalency Program and the Project's off-site improvements.

2. AIR QUALITY

a. Environmental Impacts

This air quality analysis evaluates air emissions attributable to the Project's construction and post-construction (e.g., operational) activities for criteria air pollutants, air toxics, and odors.

In addition, the Project's compatibility with applicable air quality policies as set forth in the City of Los Angeles General Plan and regional plans prepared by SCAG and the SCAQMD is also assessed.

Construction of the Proposed Project would generate pollutant emissions from the following activities: (1) site preparation operations (grading/dredging/filling); (2) travel by construction workers to and from the Project site; (3) delivery and hauling of construction materials and supplies to and from the Project site; (4) fuel combustion by on-site construction equipment; and (5) the application of architectural coatings and other building materials that release reactive organic compounds (ROC). Construction related daily regional emissions from both direct and indirect sources exceed the significance thresholds for CO, NO_X, and ROC. Thus, emissions of these pollutants would result in a significant regional air quality impact during the Project's construction phase. Regional construction emissions from both direct and indirect sources would not exceed the daily significance thresholds for PM_{10} and SO_X. During construction, a major source of air emissions occurs during the grading/site preparation phase where large numbers of diesel powered construction equipment are involved with soil disturbance. During this phase of construction operations, not only are there combustion emissions from construction equipment, but it is during this phase that fugitive PM_{10} emissions are at their greatest magnitude. An analysis of local air quality impacts from construction operations focused on PM_{10} emissions and their impact on nearby sensitive receptors (e.g., residences, schools, etc.). The maximum construction-related PM_{10} impacts near the Project site occurred at the multi-family residential area across from the Project site north of Jefferson Boulevard with a concentration of 5.6 $\mu g/m^3$. As the Project would not cause an incremental increase in localized PM_{10} concentrations of 10.4 $\mu g/m^3$, a less-than-significant air quality impact would occur during the Project's construction phase. In addition, the highest potential for construction-related PM_{10} concentration impacts associated with the Project's proposed off-site roadway improvements occurs southeast of the Inglewood Boulevard and Culver Boulevard intersection would be below the 10.4 $\mu g/m^3$ threshold. This same conclusion applies to St. Gerard Majella School, which is located northwest of this intersection. In addition, construction-related localized emissions of NO_2 and CO would not exceed the relevant ambient air quality standards and as a result, a less-than-significant impact would occur.

Construction of the Proposed Project would generate toxic air pollutant emissions primarily from diesel-powered construction equipment, haul trucks, architectural coatings and solvents and limited amounts during the remediation of potentially contaminated on-site soils. The analysis of localized air toxics impacts resulted in a maximum off-site individual cancer risk of 5.7 in a million. As the Project would not emit carcinogenic or toxic air contaminants that individually or cumulatively exceed the maximum individual cancer risk of ten in one million, air toxic emissions during construction would be less than significant.

No construction activities are proposed which would create objectionable odors and, therefore, no significant impacts would occur.

Air pollutant emissions associated with occupancy and operation of the Proposed Project would be generated by the consumption of electricity and natural gas, by the operation of on-road vehicles and by miscellaneous area sources (among other things, landscaping equipment, consumer/commercial solvent usage, architectural and automotive coatings, restaurant charbroilers, and emergency generators). In its operational phase, the Project would result in a net increase in weekday emissions of 2,522 pounds per day of CO, 362 pounds per day of NO_X, 366 pounds per day of PM_{10}, 582 pounds per day of ROC, and 27 pounds per day of SO_X. These levels exceed SCAQMD significance thresholds for CO, NO_X, PM_{10}, and ROC. While these emissions are those that would occur during the Project's operational phase, the Project's maximum emissions occur during the latter stages of Project construction when Project operational emissions also occur concurrently with construction emissions. During this period, a maximum increase in weekday emissions of 3,215 pounds per day of CO, 847 pounds per day of NO_X, 389 pounds per day of PM_{10}, 907 pounds per day of ROC, and 27 pounds per day of SO_X would occur. These levels exceed SCAQMD significance thresholds for CO, NO_X, PM_{10}, and ROC.

Project traffic during the operational phase of the Project would have the potential to create local area impacts. An analysis at selected intersections was performed to determine the potential for the presence or the creation of CO hot spots attributable to the Proposed Project. As a result of this analysis, it was determined that the Project does not cause an exceedance of the California 1-hour or 8-hour CO standards of 20 or 9.0 ppm, respectively and no significant impacts to local CO concentrations would occur.

Potential sources of air toxic emissions associated with Project development include, but may not be limited to, diesel particulates from loading docks, delivery trucks, and buses as well as small amounts of toxics from consumer household products. These sources are typical within the urban environment and would contribute small amounts of toxic air pollutants to the Project vicinity, and would be well below any levels that would result in a significant impact on human health. Also, potential localized air toxic impacts from Project-related mobile source emissions would be minimal since the Proposed Project does not include any facilities (e.g., warehouse distribution and truck terminals) that would substantially change the number of heavy-duty trucks on the surrounding roadway network resulting in an increase of diesel particulate emissions. As such, a less-than-significant impact on human health would occur.

No operational activities are proposed which would create objectionable odors; therefore, no significant impacts would occur.

Development of the Proposed Project would be compatible with the air quality policies set forth in the SCAQMD's AQMP, SCAG's RCPG and the City of Los Angeles General Plan.

b. Recommended Mitigation Measures

Mitigation Measures for the Proposed Project and the Equivalency Program

The mitigation program for the Proposed Project is set forth in the Air Quality Management Plan for Playa Vista (Playa Vista AQMP or Plan). The Playa Vista AQMP serves the same purpose for the Proposed Project as the SCAQMD's AQMP serves the entire Basin. The Playa Vista AQMP sets forth a comprehensive and strategic program of air emission control strategies, as documented in the mitigation measures set forth below. Emission control strategies of the Playa Vista AQMP address construction and post-construction operational emissions in a two-tier approach. Tier 1 measures include known and currently implemented emissions reduction strategies. It also includes additional mitigation measures, which allow for the identification and implementation of applicable emission reduction strategies which may emerge in the future and for updating the Playa Vista AQMP (refer to the Tier II mitigation measures outlined below). The Playa Vista AQMP is included as Appendix E-8 of the EIR.

a. Playa Vista Air Quality Management Plan

- Prior to the issuance of any grading or building permits, the Playa Vista AQMP shall be prepared satisfactory to the Planning Department. The Playa Vista AQMP shall identify specific emission reduction/mitigation measures addressing the air quality impacts associated with construction and operations of the Proposed Project, such as construction mitigation measures addressing emissions from heavy-duty construction equipment, fugitive dust, construction deliveries, construction worker travel and the application of architectural coatings; as well as operational mitigation measures addressing emissions from utility consumption, building maintenance, and service and support facilities. The Plan shall implement proactively the strategies called for in the regional Air Quality Management Plan as prepared by the SCAQMD through:
    - Implementation of emission control strategies based on currently available and cost-effective technology, and
    - Providing the means by which future technological advances can be incorporated in the development of the Playa Vista Project.

b. Monitoring the Playa Vista AQMP

- Prior to the issuance of any grading/building permit, an Air Quality Monitor, satisfactory to the Director of Planning shall be retained by the Applicant to document compliance with the Playa Vista AQMP. During the Project's construction phase and operational phase, until the Project's buildout, the Monitor shall review all activities occurring on the Project site on a periodic basis and maintain current records on compliance with the Playa Vista AQMP. The Monitor shall submit monthly reports during Project construction, and annual reports during Project operations, until the Project's buildout, documenting compliance with all air emission control measures contained in the Playa Vista AQMP. The records and reports shall be maintained as public documents. The Monitor's identification, qualifications, address and phone number shall be listed in all construction and construction-related contracts and shall be placed in the pertinent files of the Planning Department.

c. Remedial Action

- The Applicant shall require in all construction and construction-related contracts, provisions requiring compliance with all applicable environmental conditions included in all relevant entitlement approval actions of the City.

- Upon identification of any instance of non-compliance with the Playa Vista AQMP, the Monitor shall within 48 hours notify the Applicant and the designated representative of the Planning Department, or other appropriate enforcement and monitoring agency. All of the Applicant's applicable contracts shall require corrective actions within 48 hours to attain compliance. Once notified of a condition of non-compliance, the Applicant shall promptly act to attempt to attain compliance. In the event that a contractor, subcontractor, or operator fails to correct the noticed noncompliance, the Applicant, its representative or prime contractor shall retain the contractual right to effect prompt corrective action. Should remedial action not occur, the Director of Planning, or other City enforcement and monitoring agencies, are empowered to issue cease and desist orders.

d. Emission Control Strategies

(1) Tier 1 Mitigation Measures

(a) Construction Emissions

Emission control measures are specified for the following five sources of construction emissions: (1) combustion exhaust of heavy-duty construction equipment, delivery of construction supplies and the off-site hauling of debris; (2) fugitive dust; (3) construction workers traveling to and from the Project site; and (4) application of building materials and architectural coatings.

(i) Construction Equipment/Operation

- Control Technologies: Apply NO_X control technologies, such as fuel injection timing retard for diesel engines and air-to-air after cooling, as feasible.
- Low Emission Equipment and Technologies: Use low emission fuels and technology, such as LNG, CNG, and advanced low emission diesel technology or at a minimum, low sulfur fuel, as feasible.
- Configure construction parking to minimize traffic interference.
- Develop a construction traffic management plan that includes, but is not limited to:
  - Providing temporary traffic control during all phases of construction activities to improve traffic flow on public roadways (e.g., flag person).
  - Scheduling of construction activities that affect traffic flow on public roadways to off-peak hours to the extent feasible.
  - Rerouting construction trucks off congested streets.
  - Consolidating truck deliveries.
  - Providing dedicated turn lanes for movement of construction trucks and equipment on- and off-site.
  - Prohibit truck idling in excess of two minutes, whenever practical.
- Where possible use electricity from power lines rather than temporary generators.

- Construction Practices: Use only well maintained equipment, utilize proper planning to reduce rework and multiple handling of earth materials, select equipment that is properly sized to minimize trips/use, consolidate deliveries, and maximize off-site construction (i.e., prefabricating and prepainting).

- Record Keeping: Log fuel use, hours of operation and periodic maintenance of all construction equipment to ensure proper maintenance.

- Use ultra low-emission vehicles (ULEVs), zero emission vehicles (ZEVs), or other low emission support vehicles and equipment, including fleet vehicles if any, to the extent cost effective and feasible.

(ii) Fugitive Dust

- For disturbed dirt areas which remain inactive over an extended period of time, soil stabilization measures shall be undertaken such as application of moisture retaining binders which pull moisture out of the air to form a cohesive soil binder.

- Replace ground cover in disturbed areas as quickly as possible.

- During dry weather, enclose, cover, water twice daily or apply non-toxic soil binders according to manufacturers' specifications, to exposed piles (i.e., gravel, sand, dirt) with 5% or greater silt content.

- Water active grading/construction sites at least twice daily, or as needed during wet weather.

- Suspend all excavating and grading operations when wind speeds (as instantaneous gusts) exceed 25 mph.

- All trucks hauling dirt, sand, soil, or other loose materials off-site shall be covered or shall maintain at least two feet of freeboard (i.e., minimum vertical distance between top of the load and the top of the trailer) in accordance with the requirements of CVC Section 23114.

- Sweep streets at the end of the day if visible soil material is carried onto adjacent public paved roads. Water sweepers shall use reclaimed water, where available.

- Apply water up to three times daily or as necessary, to all unpaved parking or staging areas or unpaved road surfaces, during dry weather.

- Limit traffic speeds on all unpaved roads to 25 mph or less.

- Pave or apply chemical stabilization at sufficient concentration and frequency to maintain a stabilized surface starting from the point of intersection with the public paved surface, and extending for a centerline distance of at least 100 feet and a width of at least 20 feet.

- Other Dust Controls: Any intensive dust generating activity, such as abrasive blasting, drilling, and grinding must be controlled to the greatest extent feasible. Such control would necessarily be specific to the activity, but could include the use of screens or enclosures, water sprays or collection devices.

- Comply with the requirements of AQMD Rule 403 to the extent not provided above.

(iii) Construction Worker Travel

- All contractors shall be required to participate in a common carpool registry which provides a list of construction workers willing to carpool during all periods of contract performance. This registry shall be maintained by the Applicant and reviewed by the Monitor.

(iv) Building Materials and Architectural Coatings

- Building materials, architectural coatings and cleaning solvents used must comply with all applicable SCAQMD rules and regulations.

(b) Post-Construction Operations Emissions

Tier I emission control measures are specified for three sources of post-construction emissions: (1) service and support facilities; (2) natural gas consumption and electricity production; and (3) building materials, architectural coatings, and cleaning solvents.

(i) Service and Support Facilities (point sources)

- All point source facilities shall obtain all required permits from the SCAQMD. The issuance of these permits by the SCAQMD will require the operators of these facilities to implement Best Available Control Technology and other required measures that reduce emissions of criteria air pollutants.

(ii) Natural Gas Consumption and Electricity Production

Adherence to the following energy consumption measures shall be made an element of the Playa Vista AQMP if deemed acceptable to the Department of Building and Safety.

- All residential buildings shall be equipped with Energy-Star rated appliances, to the extent feasible.
- All residential and non-residential buildings shall exceed the California Title 24 Energy Efficiency standards for water heating, space heating and cooling, to the extent feasible.
- Energy efficient lighting fixtures, which exceed the California Title 24 Energy Efficiency standards to the extent feasible, shall be installed to satisfy interior lighting requirements within all buildings. Automatic devices to turn off lights when they are not needed shall also be used to regulate lighting for interior office common spaces, such as conference rooms and bathrooms.
- All fixtures used for lighting of exterior common areas shall be regulated by automatic devices to turn off lights when they are not needed. Exterior lighting fixtures as might be specified by the Department of Water and Power as energy efficient shall be used to the extent such lighting is available and architecturally acceptable.
- All residential and commercial buildings shall be equipped with electric vehicle charging stations to the extent required by the California ARB at the time of construction of the given building.
- Shade producing trees shall be planted at the Proposed Project site to the extent feasible to provide localized as well as overall community cooling.
- All buildings shall employ passive heating and cooling design strategies to the extent feasible.
- All buildings shall be designed to accommodate renewable energy sources, to the extent feasible.

(iii) Building Materials and Architectural Coatings

- Building materials, architectural coatings and cleaning solvents shall comply with all applicable SCAQMD rules and regulations.

(iv) Public Information Program

The Applicant or successor shall circulate or cause to be circulated a semi-annual or more frequent newsletter to all on-site residents, businesses and employees to provide information on carpool incentives, internal shuttle system routes and schedules, on-site housing and job opportunities for on-site employees and residents, and mandatory or voluntary new technologies for air pollution reduction in businesses and homes.

(2) Tier II Post-Construction Mitigation Measures

(a) Implementation of New Technology

The following Tier II mitigation measures apply to both Project construction and operations, until Project buildout.

The Applicant or its successors shall, on a yearly basis until Project buildout, identify emerging technologies which may yield emission reductions. Such consideration shall include analysis of the feasibility of new emission reduction measures recommended in updates of the SCAQMD's CEQA Air Quality Handbook.

The Applicant or its successors shall assess the feasibility of implementing such measures based on the following:

- The ability of the measure to reduce air pollutant emissions which result from Project construction operations.
- The new measure or product is equivalent in cost to the standard strategies, measures or products.
- The availability of the new measure or product prior to the time required for implementation.
- The reasonable reliability and reasonably equivalent durability of the new measure or product to standard measures and products.
- The absence of significant adverse impacts to other areas of the environment (e.g., noise, water, aesthetics).
- The consistency of the new measure with the Project's design concepts and objectives.

The Air Quality Monitor shall determine the feasibility of all new recommended measures, technologies or products identified by the Applicant.

Recommendations which are determined to be feasible and appropriate pursuant to the standards set forth above shall be incorporated by the Applicant into all future contracts for construction and development at the Proposed Project.

The Monitor shall also be responsible for providing the Director of Planning with documentation regarding compliance with this provision.

All associated reports and documentation (including feasibility assessment of new emission reduction measures, the Air Quality Monitor's feasibility determination and the Applicant's compliance with the feasible new emission reduction measures and technologies) shall be included in an annual monitoring report to the enforcement and monitoring agencies and kept open for public inspection. Said reports, documentations and monitor's identification, qualifications, address and telephone number shall be placed in the pertinent files of the City Planning Department.

Implementation of new mitigation measures or products would not affect contracts and commitments entered into prior to the date the new mitigation measures/products and strategies meet the above standards. However, contractors shall be informed/advised of the available new emission reduction measures and technologies.

Additional Mitigation Measures for the Off-Site Improvements

- For each of the road widenings, the Air Quality Monitor shall monitor construction activity and insure implementation of the mitigation measures listed below. The monitor shall check construction procedures. In addition, the Applicant shall identify and the Monitor shall assess the feasibility and recommend implementation of new technological advancements that will help minimize emissions.
- The following procedures to control air emissions shall be applied wherever applicable:

Construction Equipment/Operation

– Control Technologies: Apply NO_X control technologies, such as fuel injection timing retard for diesel engines and air-to-air after cooling, as feasible.

- Low Emission Equipment and Technologies: Use low emission fuels and technologies, such as LNG, CNG, and advanced low emission diesel technology or at a minimum low sulfur fuel, as feasible.

- Prohibit truck idling in excess of two minutes, whenever practical.

- Where possible use electricity from power lines rather than temporary generators.

- Construction Practices: Use only well maintained equipment, utilize proper planning to reduce rework and multiple handling of earth materials, select equipment that is properly sized to minimize trips/use, consolidate deliveries, and maximize off-site construction (i.e., prefabricating and prepainting).

Fugitive Dust

- Replace ground cover in disturbed areas as quickly as possible.

- Suspend all excavating and grading operations when wind speeds (as instantaneous gusts) exceed 25 mph.

- All trucks hauling dirt, sand, soil, or other loose materials off-site shall be covered or shall maintain at least two feet of freeboard (i.e., minimum vertical distance between top of the load and the top of the trailer) in accordance with the requirements of CVC Section 23114.

- Sweep streets at the end of the day if visible soil material is carried onto adjacent public paved roads. Water sweepers shall use reclaimed water, where available.

- Apply water up to three times daily or as necessary, to all unpaved parking or staging areas or unpaved road surfaces, during dry weather.

- Other Dust Controls: Any intensive dust generating activity, such as abrasive blasting, drilling, and grinding must be controlled to the greatest extent feasible. Such control would necessarily be specific to the activity, but could include the use of screens or enclosures, water sprays or collection devices.

Building Materials and Architectural Coatings

- Building materials, architectural coatings and cleaning solvents used must comply with all applicable South Coast Air Quality Management District (SCAQMD) rules and regulations.

c. Unavoidable Adverse Impacts

After implementation of all feasible mitigation measures as described above, Project construction, inclusive of the Equivalency Program and the proposed off-site improvements, would generate CO, NO_X, and ROC emissions that exceed SCAQMD regional significance thresholds for construction activities. Therefore, regional emissions from both on-site and off-site (e.g., delivery trucks) construction sources would have a significant and unavoidable adverse impact on regional air quality. As the Project, inclusive of the Equivalency Program and the Project's proposed off-site improvements, does not cause an incremental increase in localized PM_{10} concentrations of 10.4 $\mu g/m^3$, localized impacts to sensitive receptors during construction would be less than significant.

As the Project, inclusive of the Equivalency Program and the Project's proposed off-site improvements, would not emit carcinogenic or toxic air contaminants that individually or cumulatively exceed the maximum individual cancer risk of ten in one million, air toxic emissions from construction activities would be less than significant.

No construction activities or materials are proposed which would create objectionable odors and, therefore, no significant impacts would occur.

In the operational phase, the Project, inclusive of the Equivalency Program, would result in a net increase in weekday emissions of 2,522 pounds per day of CO, 362 pounds per day of NO_X, 366 pounds per day of PM_{10}, 582 pounds per day of ROC and 28 pounds per day of SO_X. While these emissions are those that would occur during the Project's operational phase, the Project's maximum emissions occur during the latter stages of Project construction when Project operational emissions also occur concurrently with construction emissions. During this period, inclusive of the Equivalency Program and the Project's proposed off-site improvements, a maximum increase in weekday emissions of 3,215 pounds per day of CO, 847 pounds per day of NO_X, 389 pounds per day of PM_{10}, 907 pounds per day of ROC, and 27 pounds per day of SO_X would occur. These levels exceed SCAQMD significance thresholds for CO, NO_X, PM_{10}, and ROC. Mitigation measures identified above would reduce the potential air quality impacts of the Project, inclusive of the Equivalency Program and the proposed off-site improvements, to the degree technically feasible, but emissions would remain above SCAQMD significance thresholds. Therefore, operation of the Project, inclusive of the Equivalency Program, would have a significant and unavoidable adverse impact on regional air quality. As the Project, inclusive of the Equivalency Program, does not cause an exceedance of the California 1-hour or 8-hour CO standards of 20 or 9.0 ppm, respectively, no significant impacts to local CO concentrations would occur.

Operation of the Project, inclusive of the Equivalency Program, is not anticipated to emit carcinogenic or toxic air contaminants that individually or cumulatively exceed the maximum individual cancer risk of ten in one million. As such, a less-than-significant impact on human health would occur. Furthermore, on-site sensitive receptors would not be developed within a quarter mile of existing off-site sources of toxic air contaminants.

The Project's proposed residential, office and community serving land uses, inclusive of the Equivalency Program, would not create adverse odors. However, there is a potential that on-site retail and restaurant uses have the potential to create odors. While there is a potential for odors to occur, compliance with industry standard odor control practices, SCAQMD Rule 402 (Nuisance), and SCAQMD Best Available Control Technology Guidelines would limit potential objectionable odor impacts to a less-than-significant level.

Development of the Proposed Project, inclusive of the Equivalency Program and the proposed off-site improvements, would be compatible with the air quality policies set forth in the SCAQMD's AQMP, SCAG's RCPG and the City of Los Angeles General Plan.

d. Cumulative Impacts

Buildout of year 2010 related projects within a similar time frame as the Proposed Project would increase short-term emissions for concurrent activities during any day of the Project's construction period. Since the worst-case construction day for the Proposed Project, inclusive of the Equivalency Program and the proposed off-site improvements, was identified to be significant, any additional construction activities occurring during this time and in the vicinity of the Proposed Project site would be adding an additional air pollutant emission burden to these significant levels. As emission levels associated with the Proposed Project already are projected to have a significant impact, a significant and unavoidable cumulative impact with respect to construction emissions would occur.

The SCAQMD has set forth both a methodological framework as well as significance thresholds for the assessment of a project's cumulative air quality impacts. Based on the SCAQMD's methodology (presented in Chapter 9 of the *CEQA Air Quality Handbook*), the Project, inclusive of the Equivalency Program, would have a significant cumulative impact on air quality. In addition, implementation of the Project would also result in an increase in emissions which would contribute to region-wide emissions on a cumulative basis and as such, the Project's cumulative air quality impacts are also concluded to be significant. In such cases, the SCAQMD recommends that all projects, to the extent possible, employ feasible mitigation measures which has been done with regard to the Proposed Project, inclusive of the Equivalency Program.

3. WATER RESOURCES – HYDROLOGY

a. Environmental Impacts

Surface Water Hydrology Impacts

No development portion of the Proposed Project site (i.e., the Urban Development Component) is within the Federal Emergency Management Agency (FEMA) 100-Year Floodplain. The proposed drainage system for the Proposed Project (inclusive of the Urban Development drainage system, and the Riparian Corridor as part of the Habitat Creation/Restoration Component) has been designed to convey increases in total peak runoff rates and volumes and provide an appropriate level of on-site flood protection, detention and drainage. Therefore, the Project would not cause flooding of the existing local storm drains during the projected 50-year developed storm event, which would have the potential to harm people or damage property.

During construction of the Proposed Project, a Stormwater Pollution Prevention Plan and Erosion Control Plan would be implemented to provide for temporary stormwater management. These plans would prevent construction from adversely affecting the amount of surface water in a waterbody. Additionally, these stormwater management measures would be temporary; hence, the construction of the Proposed Project would not result in a permanent adverse change to the movement of surface water.

Although the development of the Urban Development area would result in increased amounts of impervious surface that consequently would increase stormwater runoff flowing into adjacent waterbodies, the increase is not significant because the runoff would be detained in the Freshwater Wetlands System (the Riparian Corridor, a portion of which would be constructed as part of the Habitat Creation/Restoration Component and the Freshwater Marsh), which would be designed specifically for stormwater management. Therefore, the Proposed Project (inclusive of both Components) would not significantly reduce or increase the amount of surface water in a waterbody.

As a Project Design Feature, the Proposed Project would result in grading of the Project area, which would, by design, modify the surface runoff patterns during Proposed Project construction and operation. Stormwater runoff during Proposed Project operation would also be redirected from the Jefferson Storm Drain into the Central Storm Drain and Riparian Corridor (a portion of which would be constructed as part of the Habitat Creation/Restoration Component). This redirection of runoff from the Jefferson Storm Drain is considered beneficial since it would result in a decrease of runoff in the Jefferson Storm Drain, which does not meet City design standards for hydraulic capacity. Because the Proposed Project would result in a beneficial impact on the constrained Jefferson Storm Drain, and would not adversely impact any other stormwater drainage facilities, operation of the Proposed Project would not result in a permanent adverse change in the movement of surface water.

Groundwater Hydrology Impacts

Because construction and operation of the Project's Habitat Creation/Restoration Component is expected to allow that portion of the Project site to remain as pervious surfaces, it is not expected to change potable water level sufficiently or result in demonstrable and sustained reductions of groundwater recharge capacity. As such, a less-than-significant impact would occur. Construction of the Project's Urban Development Component includes construction of temporary and permanent dewatering systems. Furthermore, groundwater in the area of the Proposed Project site is not pumped for potable water. Although dewatering may cause local changes in the flow direction of shallow groundwater, this change in flow would be localized and, therefore, considered negligible from a regional basin perspective. Therefore, the Proposed Project is not anticipated to change potable water level to sufficiently reduce the ability of the water utility to use groundwater for public water supplies, conjunctive uses purposes, storage of imported water, summer/winter peaking, or to respond to emergencies and drought, reduce yield of adjacent wells/well fields, or adversely change the rate or direction of flow of groundwater. Accordingly, a less-than-significant impact would occur. Implementation of the Project's Urban Development Component would include the addition of impervious surfaces. The conversion of surfaces from pervious to impervious due to development of the Proposed Project has the potential to reduce groundwater recharge by approximately 12 acre-feet/year. The introduction of additional landscape irrigation is estimated to produce approximately 18 acre-feet/year of groundwater recharge. Therefore, the net increase of approximately 6 acre-feet/year of increased recharge due the Proposed Project is considered positive, but negligible from a regional basin perspective; hence, the Project would not result in a demonstrable and sustained reduction of groundwater recharge capacity, and no significant impact would occur.

Surface water and groundwater hydrology impacts resulting from implementation of the Project's Equivalency Program would be similar to those of the Proposed Project and would be less than significant, due to the similarity in construction activities, proposed land uses, and site characteristics. Additionally, hydrology impacts resulting from construction of the Project's off-site improvements, though the improvements would occur at various locations within the Project vicinity, would be similar to those of the Proposed Project. Operation of off-site improvements would not notably affect surface water or groundwater hydrology in the Project vicinity, and therefore, impacts would be less than significant.

b. Recommended Mitigation Measures

Mitigation Measures for the Proposed Project and the Equivalency Program

- Prior to issuance of any building permit, the Applicant shall be required to complete or otherwise guarantee completion of the Freshwater Marsh, Riparian Corridor and other structural/treatment control BMPs (e.g., Best Management Practice catchbasins, etc.), satisfactory to the City's Department of Public Works and/or other responsible agencies (e.g., U.S. Army Corps of Engineers in conformance with Permit No. 90-426-EV).

- Prior to recordation of the tentative tract map, a covenant and agreement shall be prepared and recorded satisfactory to the Department of Public Works, Bureau of Sanitation, Stormwater Management Division and the City Attorney, as appropriate, which shall include the following:

  - Properties within the Proposed Project shall be encumbered with an obligation to perpetually fund the operation and maintenance of the appropriate structural/ treatment control BMPs, such as the Freshwater Marsh and Riparian Corridor and Best Management Practice catchbasins, satisfactory to the Department of Public Works. Properties dedicated to a public entity or owned by the property owners' association (i.e., parks, community-serving parcels, etc.) shall not be subject to this funding obligation.

  - The Proposed Project shall implement and perform the requirements set forth in the Operations, Maintenance and Monitoring Manual for the Freshwater Wetland System, in accordance with all permit requirements to monitor and evaluate the hydrologic and water quality performance of the Freshwater Marsh and Riparian Corridor. Information obtained from the monitoring program shall be translated into corrective action and system modifications if necessary, in accordance with the U.S. Army Corps of Engineers (USACE) requirements and satisfactory to the City of Los Angeles Department of Public Works.

  - A monitoring report shall be prepared as required by applicable permits which addresses water sampling locations, frequency of sampling, pollutants of concern to be tested, testing methods, corrective measures, if necessary, etc. for the Freshwater Marsh and Riparian Corridor. The report shall be submitted to the USACE, Regional Water Quality Control Board, and the City of Los Angeles Department of Public Works, Bureau of Sanitation.

  - Maintenance records for the structural/treatment control BMPs shall be maintained and submitted to the City of Los Angeles Department of Public Works, Bureau of Sanitation.

- Prior to issuance of any building permit, the Applicant shall encumber the parcel for which the permit is sought with a covenant to fund the Playa Vista Community Service Organization or other funding mechanism, satisfactory to the Advisory Agency and the City Engineer, for the purpose of funding the operation and maintenance of the Freshwater Marsh and Riparian Corridor and other structural/ treatment control BMPs. The covenant shall obligate future owners within the parcel to fund the Community Service Organization or other funding mechanism, and shall contain provisions detailing the timing and mechanism for such funding, satisfactory to the Department of Public Works. Properties dedicated to a public entity or owned by the property owners' association (i.e., parks community-serving parcels, etc.) shall not be subject to this funding obligation.

- Prior to issuance of any building permit, the Applicant or the Playa Vista Community Service Organization shall establish and enter into an agreement with the Ballona Wetlands Conservancy or other responsible entity, which shall address the responsibility for funding, coordination, and oversight of all operations and maintenance procedures for the Freshwater Marsh and Riparian Corridor. Maintenance shall be conducted, and maintenance reports submitted periodically and after each storm event to prevent trash, debris, and sediments from clogging the system, in accordance with the U.S. Army Corps of Engineers (USACE) requirements and satisfactory to the City of Los Angeles Department of Public Works.

c. Unavoidable Adverse Impacts

Impacts to surface water hydrology would be less than significant, as the Proposed Project is not anticipated to cause flooding during the projected 50-year developed storm event, which would have the potential to harm people or damage property; substantially reduce or increase the amount of surface water in a waterbody; or result in a permanent, adverse change to the movement of surface water sufficient to produce a substantial change in the current or direction of water flow.

Impacts to groundwater hydrology would be less than significant, as the Proposed Project is not anticipated to change potable water level sufficiently to reduce the ability of the water utility to use the groundwater basin for public water supplies, conjunctive use purposes, storage of imported water, summer/winter peaking, or respond to emergencies and drought; reduce yields of adjacent wells or well fields (public or private); or adversely change the rate or direction of flow of groundwater; or result in demonstrable and sustained reductions of groundwater recharge capacity.

These impacts are inclusive of the Proposed Project, the Equivalency Program and the Project's off-site improvements.

d. Cumulative Impacts

The majority of the off-site areas tributary to the adjacent Playa Vista First Phase Project and the Proposed Project consist of highly urbanized development. As a result, substantial additional changes in off-site hydrologic factors affecting runoff rates (i.e., increases in impervious surface area, changes in drainage routes, etc.) are unlikely to occur. Changes in topography and developed acreage should be minimal within the entire developed watershed. While land uses may change, the total impervious area, and therefore runoff rates, should remain relatively constant. For instance the West Bluff project (Tentative Tract 51122), a 38-acre residential development, located south of the Freshwater Marsh has been approved since the adjacent Playa Vista First Phase Project was approved. The hydrology for Tentative Tract 51122 includes the diversion of 27 acres of area currently draining south to Manchester Boulevard and eventually to the Freshwater Marsh. Based upon the hydrology prepared by Robert Bein, William Frost and Associates, the total 50-year peak runoff generated by the 38 acres of residential tributary area (on-site and off-site to Tract 51122) is 124 cubic feet per second (cfs) with a total storm volume of 49 acre-feet, and the total 50-year peak flow rate generated by the 27 acres of diverted area is 88 cfs with a total storm volume of 35 acre-feet. Per City of Los Angeles requirements, the analysis of future conditions with the addition of Proposed Project assumes that all off-site areas within the local watershed have been built out to the current zoning designations. Therefore, the potential for cumulative impacts, including Tentative Tract 51122, has already been accounted for in the Project Design Features for the Proposed Project. As such, cumulative impacts to surface water hydrology from implementation of the Proposed Project, related projects, and other background growth would be less than significant, as the Proposed Project and related growth is not anticipated to cause flooding during the projected 50-year developed storm event, which would have the potential to harm people or damage property; substantially reduce or increase the amount of surface water in a waterbody; or result in a permanent, adverse change to the movement of surface water sufficient to produce a substantial change in the current or direction of water flow.

Cumulative groundwater hydrology impacts could result from the overall utilization of respective groundwater basins located in proximity to the Proposed Project and related project sites. To the extent that it is possible that public supply wells are located within or near the related project sites, and the related projects could extract water from local basins, such cumulative utilization of groundwater in the region could adversely affect local and regional groundwater hydrology. However, the extent to which the related projects would extract or otherwise directly utilize groundwater is not possible to assess. However, the potential for impacts to groundwater hydrology from the related projects in conjunction with the Proposed

Project is not anticipated to be adverse inasmuch as the related projects would be expected to utilize water supplies from the respective public water suppliers (e.g., Los Angeles Department of Water and Power), including possible use of groundwater as a supply source. Such groundwater consumption would be regulated by the respective public water supply agencies, for which groundwater utilization is limited by entitlements to maintain the integrity and productivity of groundwater basins. Consequently, no significant cumulative impacts to groundwater hydrology are expected, as the Proposed Project and related growth is not anticipated to change potable water level sufficiently to reduce the ability of the water utility to use the groundwater basin for public water supplies, conjunctive use purposes, storage of imported water, summer/winter peaking, or respond to emergencies and drought; reduce yields of adjacent wells or wellfields (public or private); or adversely change the rate or direction of flow of groundwater; or result in demonstrable and sustained reductions of groundwater recharge capacity. As such, no significant cumulative impacts are anticipated.

These impacts are inclusive of the Proposed Project, the Equivalency Program and the Project's off-site improvements.

4. WATER RESOURCES – WATER QUALITY

a. Environmental Impacts

Surface Water Quality Impacts

Potential significant impacts of the Proposed Project were assessed both numerically and narratively. In the numerical assessment, a pollutant loadings and concentrations model, developed specifically for the planned development, was used to evaluate potential changes in concentrations in stormwater runoff from pre-First Phase, with Playa Vista First Phase, and with Playa Vista First Phase and Proposed Project areas. The model was also used to compare numerical water quality benchmarks to the model-predicted pollutants (i.e., total suspended solids, total phosphorus, total Kjeldahl nitrogen, oil and grease, and dissolved and total copper, lead, and zinc). The numerical impact assessment found less-than-significant increases in pollutant loadings and concentrations and no exceedances of numerical water quality benchmarks in waterbodies with designated beneficial uses, as defined in the Water Quality Control Plan (Basin Plan).

In addition to using the pollutant loadings model for assessing numerical significance impacts, narrative significance impacts were also assessed by qualitatively discussing the Project Design Features with respect to the following:

1. Potential impacts to the Santa Monica Bay,
2. Requirements in the Los Angeles County Standard Urban Stormwater Mitigation Plan (SUSMP),
3. Characteristics and potential sources of the 303(d) listed parameters,
4. Narrative water quality objectives of the Basin Plan,
5. Stability of channels receiving stormwater runoff from the Proposed Project site,
6. Potential impacts of dry-weather (nuisance) flows from the Proposed Project site, and
7. Potential deviation from the Performance Criteria.

Considering all of the inputs to Santa Monica Bay, the quantity of stormwater runoff from the Proposed Project site is less than significant in comparison. In fact the adjacent Playa Vista First Phase Project together with the Proposed Project results in net benefits to receiving waters listed in the Basin Plan, including the Ballona Wetlands, Ballona Estuary, and Santa Monica Bay. Consequently, the potential water quality impacts to Santa Monica Bay have been qualitatively discussed and determined to be less than significant, via comparisons of Project runoff quality to pre-First Phase loads and concentrations and numerical water quality benchmarks, as well as discussions of 303(d) listed pollutants.

The stormwater treatment system and source control measures for both the adjacent Playa Vista First Phase Project and the Proposed Project were designed specifically with consideration of the local design and treatment requirements and, therefore, are consistent with requirements for stormwater management. The Project Design Features were designed to specifically exceed the requirements of the Los Angeles County SUSMP. This exceedance is not only based upon the size of the treatment system, but also the treatment of significant off-site areas (more than half of the total tributary area of the Freshwater Marsh is from off-site areas) and the high effectiveness of wetland treatment systems over other less effective Best Management Practice (BMP) types that are allowed under the SUSMP program.

In addition to the Freshwater Wetlands System, the treatment control BMPs that were included in the model consist of:

1. Roof downspout planter boxes for all buildings planned for the Proposed Project in the Central Drain catchment,

2. A vegetated swale for all low-flow runoff entering the Riparian Corridor from the Proposed Project area,

3. Catch basin inserts for 100% of the runoff entering the Central Drain from the Proposed Project area and additional catch basin inserts for 25% of the runoff from other adjacent Playa Vista First Phase and Proposed Project areas,

4. A vegetated swale treating Lincoln Boulevard runoff prior to discharging to the Central Drain, and

5. A hydrodynamic solids separation device treating Lincoln Boulevard runoff prior to discharging to the Freshwater Marsh.

Some of the planned BMPs that are expected to reduce pollutant loads and concentrations in the runoff of the Proposed Project but were not included in the model include street sweeping, public education, catch basin cleaning, trash racks, underground parking, an internal transit system, and a pesticide and fertilizer management program. Street sweeping, public education, catch basin cleaning, and trash racks are anticipated to reduce trash and sediment loadings, as well as contaminants associated with these bulk pollutants. Underground parking and the internal transit system are anticipated to reduce vehicular pollutants including metals. The pesticide and fertilizer management program is anticipated to reduce the amount of nutrients and toxic pollutants generated from landscaping activities.

Peak stormwater runoff discharge rates and channel stability are not considered to be a significant issue with the development of the Proposed Project. The increased runoff due to increased impervious areas would be completely contained within the stormwater treatment system, which includes energy dissipaters (e.g., water quality inserts/catch basin inserts and riprap at outlets) and extended detention in the Freshwater Wetlands System. No detrimental increases in channel velocities are expected and the Proposed Project is not expected to cause regulatory standards to be violated, as defined in the applicable National Pollutant Discharge Elimination System (NPDES) Permit (municipal separate storm sewer system [MS4] Permit; per SUSMP Standards) or the Basin Plan. By not causing a condition of nuisance as defined in the Basin Plan, a nuisance is also not anticipated to be created as defined in Section 13050 of the California Water Code (CWC). The Ballona Wetlands will receive reduced erosive flows because of the routing of flows away from the salt marsh from all but large storm events and the flow retardation in the Freshwater Marsh. The Ballona Channel is a grouted riprap sided channel that would not be impacted by the small increase in flows caused by this Project. The small increase in flows relative to those originating upstream is not expected to create pollution, contamination or nuisance as defined in Section 13050 of the CWC.

Potential dry-weather flows from the developed areas and off-site areas would be detained longer than wet-weather flows, resulting in even greater treatment. They are being employed to help sustain the Freshwater Wetlands System (Freshwater Marsh and Riparian Corridor) and, in fact, are considered a benefit to the system. Also, conservative irrigation practices and newer sewer systems are expected to minimize dry-weather flows from the Proposed Project areas.

Compliance with the Performance Criteria is an ongoing process as construction of the Freshwater Wetlands System is completed, and as habitat is established and maintained. The Freshwater Marsh System's Operations, Maintenance and Monitoring Manual (O&M Manual) serves as the primary vehicle, in accordance with which compliance with the Performance Criteria is taking place. The analyses presented herein above demonstrate that water quality of the Proposed Project will support the required habitat of the Freshwater Wetlands System and protect downstream receiving waters, thus satisfying the water quality aspects of the Performance Criteria and the associated permits and approvals. Verification of the water quality-related Performance Criteria will be documented through the annual reports submitted to the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), California Coastal Commission (CCC), and other agencies responsible for enforcement of the Performance Criteria.

Based on the numerical and narrative impact assessment, the Proposed Project is not expected to create pollution, contamination, or nuisance, as defined in Section 13050 of the CWC, or cause regulatory standards to be violated, as defined in the applicable NPDES Permit (MS4 Permit) or the Basin Plan, for the receiving waterbodies, and is expected to comply with the project-specific Performance Criteria resulting from the USACE 404 Permit and related agency actions. Mitigation measures are proposed below to require implementation of the Project Design Features which serve to eliminate potential significant impacts discussed above. Therefore, the impacts to surface waters are anticipated to be less than significant with the implementation of the Proposed Project.

Groundwater Quality Impacts

The potential for the Proposed Project to result in groundwater contamination, modification of existing contaminant movement, or expansion of the contaminated area is analyzed in Section IV.I, Safety/Risk of Upset.

The Habitat Creation/Restoration Component does not involve the construction of any industrial development that would contribute to groundwater contamination within the Proposed Project site. The Riparian Corridor portion of the Habitat Creation/Restoration Component would collect stormwater runoff from the Proposed Project and off-site tributaries, which could contain pollutants typical of urban development. The Riparian Corridor could detain the stormwater resulting in percolation of the stormwater runoff into the groundwater. However, the upper portion of the Riparian Corridor would have a clay liner limiting percolation of surface runoff to the groundwater. In addition, the depth to Silverado Aquifer, which is the only aquifer at the site with beneficial uses, is 100 to 200 feet below ground surface. Therefore, development of the Habitat Creation/Restoration Component is not expected to result in an increased level of groundwater contamination (including that from direct percolation, injection or salt water intrusion).

Given the relatively shallow depth to groundwater in the area of the Proposed Project, below-grade construction activities for the Urban Development Component could potentially encounter groundwater, thereby requiring dewatering during construction. In addition, long-term dewatering during operation of the Urban Development Component may be required for structures that would be constructed below the groundwater table surface, such as subterranean (underground) parking garages. The proposed permanent dewatering systems, which include dewatering for the methane safety system and dewatering of two-level subterranean parking garages (it would not be necessary for one-level subterranean garages), is a "contingent" system that would operate only if/as groundwater elevations occur at the level of the dewatering pipes. In case groundwater is present or in the future rises to an elevation above the elevation of the groundwater pipes, the water is conveyed to a sump where it is removed by automatic pumps. The dewatering system does not include dewatering by pumping from deep wells or any specific well points. Adverse impacts are not anticipated relative to the rate or change in the direction or movement of existing contaminates in groundwater from dewatering associated with operation of the permanent dewatering systems. This is because the maximum flow of the dewatering pipes is very low and their radius of influence on the groundwater unit is limited. Therefore, the dewatering pipes are not anticipated to draw water across any substantial distance, and impacts would be less than significant. To date, no effect on plume movement has been observed in relation to the operation of permanent dewatering systems anywhere within the adjacent Playa Vista First Phase Project site, and similar results are anticipated for such systems installed within the Proposed Project. See Section IV.A, Earth and Section IV.I, Safety/Risk of Upset, for further discussion of the potential impacts of dewatering on subsidence and groundwater contamination, respectively.

In addition, remediation would be conducted under the direction of the RWQCB, and the RWQCB would require that construction dewatering be conducted in a manner that does not negatively impact ongoing remediation nor exacerbate the extent of contamination. Remediation at the nearby areas of Test Site 2 and the former industrial areas east of the Proposed Project site and within the adjacent Playa Vista First Phase Project would create an inward hydraulic gradient toward the treatment zone; i.e., away from the Proposed Project, and would also be conducted under the direction of the RWQCB. Due to the short-term nature of construction and dewatering activities, dewatering for the Habitat Creation/Restoration Component is not expected to significantly affect the rate or change the direction of movement of existing contaminants or expand the area affected by contaminants for the known contaminant areas beneath the Proposed Project Site, the former Test Site 2, and the former industrial sites east of the Project Site and within the adjacent Playa Vista First Phase Project.

The existing Stormwater Pollution Prevention Plan (SWPPP) enforced by the RWQCB would be updated and amended as appropriate to include Proposed Project construction activities and would be implemented throughout the duration of construction activities on the Proposed Project site. The RWQCB also has the authority to review the SWPPP at the site, declare the SWPPP and/or BMPs to be inadequate, to require an individual NPDES permit for the activity, and to initiate enforcement actions, if necessary. While the BMPs that would be included in the SWPPP are primarily aimed at minimizing the discharge of pollutants to surface receiving waters, the BMPs would also serve to minimize any short-term impacts on groundwater quality from construction activities. Any discharge of groundwater in conjunction with construction dewatering or operational dewatering for structures placed below grade for the Proposed Project would require compliance with the Project's General Construction Permit, an individual NPDES permit, or an appropriate industrial users discharge permit issued by the City of Los Angeles Department of Public Works, Bureau of Sanitation. Although construction of the Urban Development Component would reduce open space and increase the impervious areas of the site, resulting in reduced infiltration (see Section IV.C.(1), Hydrology), additional irrigation of added landscaped areas would offset the decrease, resulting in a net increase of approximately 6 acre-feet/year. This increase is considered positive, but negligible from a regional basin perspective, and is not expected to result in any measurable increase in local groundwater levels. Due to the short-term nature of construction and dewatering activities, implementation of applicable construction BMPs, compliance with NPDES requirements for dewatering discharges, and compliance with State Title 22 standards for recycled water quality, development of the Urban Development Component would not result in an increased level of groundwater contamination (including that from direct percolation, injection or salt water intrusion). Therefore, a less-than-significant impact to groundwater quality would occur.

The Proposed Project would utilize recycled (reclaimed) water for irrigation and office toilet/cooling tower use, which may percolate to local groundwater units. However, such irrigation water must meet or exceed the State Title 22 standards for water quality. Any recycled water that would percolate into local groundwater units would be filtered through varying layers of earth, further enhancing its quality. In addition, the depth to the Silverado Aquifer, which is the only aquifer at the site with beneficial uses, is 100 to 200 feet below ground surface, requiring the recycled irrigation water to percolate through earth and rock in order to reach an aquifer that is pumped for beneficial uses. The upper portion of the Riparian Corridor will have a clay liner further limiting percolation of surface runoff to the groundwater. Therefore, no impacts to groundwater quality from the use of recycled water are expected to occur.

With respect to other operational (long-term) groundwater quality impacts, no land uses (e.g., industrial development) would be permitted or are presently planned that could legally contribute to groundwater contamination within the Proposed Project site. Current state law would regulate the design, construction and operation of any land uses that might include storage of fuel in underground tanks.

Groundwater in the area of the Urban Development Component of the Proposed Project is not currently pumped for beneficial uses (i.e., drinking water, industrial or agricultural supply). Due to the distance of the Proposed Project from the nearest beneficial use wells, the fact that drinking water, industrial or agricultural supply wells would not be constructed as part of the Urban Development Component, and compliance with State Title 22 standards for recycled water quality, construction and operation of the Urban Development Component are not expected to cause regulatory water quality standards at an existing production well to be violated, as defined in the California Code of Regulations, Title 22, Division 4, Chapter 15 and the Safe Drinking Water Act. Hence, a less-than-significant impact to groundwater quality would occur.

The nearest public water supply is 2 miles northwest of the Proposed Project, and the nearest irrigation well is located approximately 2 miles southeast of the Proposed Project. Due to the distance to these wells, the fact that no wells would be constructed as part of the Habitat Creation/Restoration Component, and the compliance with State Title 22 standards for recycled water quality, construction and operation of the Habitat Creation/Restoration Component are not expected to cause regulatory water quality standards at an existing production well to be violated, as defined in the California Code of Regulations, Title 22, Division 4, Chapter 15 and the Safe Drinking Water Act.

Surface water and groundwater water quality impacts resulting from implementation of the Project's Equivalency Program would be similar to those of the Proposed Project and would be less than significant, due to the similarity in construction activities, proposed land uses, and site characteristics. Additionally, water quality impacts resulting from construction of the Project's off-site improvements would be similar to those of the Proposed Project and would be temporary and less than significant. Operation of off-site improvements would result in negligible contributions of pollutants to surface waterbodies and/or groundwater basin(s), and impacts would be less than significant.

b. Recommended Mitigation Measures

Mitigation Measures for the Proposed Project and the Equivalency Program

Mitigation measures implemented for Hydrology will also reduce or avoid water quality impacts. (See Section IV.C.(1), of the EIR, for associated mitigation measures.)

- The Proposed Project shall incorporate the following features to reduce pollutant loadings:
  - Roof drain biofiltration systems to receive and filter runoff from all buildings within the Proposed Project;
  - Water quality catch basin inserts for all catch basins within the Proposed Project site where water is flowing to the Central Storm Drain;
  - A vegetated swale within a park adjacent to the Riparian Corridor to receive and filter low-flow runoff from the Proposed Project prior to entering the Riparian Corridor.
- Prior to issuance of a B-Permit or building permit for construction of the additional BMPs discussed above, as applicable, drawings and specifications of the proposed BMPs shall be submitted to the City of Los Angeles for review and comments. Such information shall include, but is not limited to, a site map showing locations of the proposed BMPs, product manufacturer, model number, and manufacturer's recommended maintenance schedule.
- The Proposed Project shall include on-site operation and maintenance programs designed to minimize environmental impacts including:
  - Only slow-release fertilizers that are applied directly to the soil shall be used to establish vegetation. No fertilizer shall be applied during or within 72 hours of a forecasted rain event. Erosion and sediment control measures shall be implemented during landscaping of the project to minimize the export of nutrients from the Proposed Project site.
  - The Proposed Project shall include the use of native or drought-resistant vegetation in no less than 50% of the community landscaped areas and an irrigation program that emphasizes no excess irrigation. Any non-native vegetation selected for landscaping shall be noninvasive.
  - The Proposed Project shall install trash racks at inlets to the Riparian Corridor.

- All multi-family buildings within the Proposed Project shall include trash collection and storage areas for residents, and managed trash collection areas for commercial businesses.

- The Master Homeowner's Association shall provide tenants/residents with information to encourage compliance with good housekeeping practices, such as proper disposal of household and office hazardous waste; encourage tenants/ residents not to plant exotic grasses or other plants whose seeds may potentially migrate off their properties via wind, rain, or animals; and to inform residents of the potential receiving waters impacts of excessive dry-weather runoff.

• Prior to issuance of any grading, building or B-Permit, the existing Playa Vista Stormwater Pollution Prevention Plan (SWPPP) shall be amended to include the Proposed Project. The SWPPP shall identify temporary Best Management Practices (BMPs) to be implemented in accordance with the General Construction Permit issued by the Regional Water Quality Control Board (RWQCB). BMP categories deployed during construction shall include contractor activities practices, waste management practices, soil stabilization (erosion control) practices, sediment control practices, roadway cleaning/tracking control practices, vehicles and equipment cleaning, concrete truck washout and fueling practices.

Additional Mitigation Measures for the Off-Site Improvements

• Construction contractor(s) selected for the proposed improvements shall be required, through contract specifications, to use grading and excavation techniques that control runoff from the off-site traffic improvements, as well as Best Management Practices (BMPs) to avoid/control erosion and sedimentation. The contractor(s) shall also be required to implement other BMPs appropriate for the nature, location, timing (relative to rainy season), and duration of proposed construction activities. Typical BMPs related to construction activities include the following:

  - Erosion and sediment controls, including soil stabilization, silt fence installation, and/or sandbag installation;

  - Wind erosion controls, such as using only the minimum amount of water to control dust without adding to runoff;

  - Tracking controls, such as construction vehicle egress management for sedimentation carried on vehicles leaving the site;

  - Spill prevention and control measures, such as regular inspections of vehicles for leaks, and prevention measures, such as oil pans under parked vehicles; and

- Concrete and construction materials management, such as the avoidance of fresh concrete washing unless runoff can be drained to a bermed or level area away from drain outlets or channels.

- Permanent BMPs shall be integrated into the design and operation of off-site improvements, as appropriate. Examples of such BMPs include street sweeping, catch basins, directing surface runoff into landscaped medians/strip, and other water quality treatment measures as feasible and appropriate.

c. Unavoidable Adverse Impacts

With implementation of the mitigation measures, impacts to surface water quality would be less than significant, as the Proposed Project is not anticipated to create pollution, contamination or nuisance as defined in Section 13050 of the CWC or cause any applicable regulatory standards to be violated, as defined in the applicable NPDES stormwater permit or Water Quality Control Plan (Basin Plan) for the receiving waterbodies, and as reflected in the Performance Criteria.

Impacts to groundwater quality would be less than significant, as the Proposed Project is not anticipated to affect the rate or movement direction of existing contaminants; expand the areas affected by contaminants; increase the level of groundwater contamination (including that from direct percolation, injection or saltwater intrusion); or cause regulatory water quality standards of existing production wells to be violated as defined in the California Code of Regulations, Title 22, Division 4, Chapter 15 and the Safe Drinking Water Act. These impacts are inclusive of the Proposed Project, the Equivalency Program and the Project's off-site improvements.

d. Cumulative Impacts

The majority of the off-site tributary area is already highly urbanized. The off-site tributary area includes the Proposed Project and the subset of related projects within the tributary area, which includes the adjacent Playa Vista First Phase Project, West Bluff project (Tentative Tract 51122), and the Loyola Marymount University expansion. Since these areas are already highly urbanized, other changes or development are not likely to cause substantial changes in regional surface water or groundwater quality. Predicted loads and concentrations in this analysis were based on the total tributary drainage area generating runoff using designated zoning/land uses. In fact, with redevelopment projects (with application of the SUSMP requirements as appropriate) and increases in system-wide controls associated with other elements of the MS4 Permit, it is anticipated over time, regional water quality may improve.

Additionally, related projects are unlikely to cause or increase groundwater contamination because existing statutes prohibit contamination of groundwater by existing and future land uses and also require remediation of existing contamination. The Proposed Project occupies less than 1% of the coastal plain hydrologic groundwater basin. As such and in light of the limited contribution from other projects and Proposed Project's control measures, the Proposed Project's contribution to surface water or groundwater quality impacts is not cumulatively considerable and, therefore, less than significant.

Cumulative impacts to surface water quality would be less than significant, as the Proposed Project is not anticipated to create pollution, contamination or nuisance as defined in Section 13050 of the CWC or cause regulatory standards to be violated, as defined in the applicable NPDES stormwater permit or Water Quality Control Plan (Basin Plan) for the receiving waterbodies.

Cumulative impacts to groundwater quality would be less than significant, as the Proposed Project is not anticipated to affect the rate or direction of movement of existing contaminants; expand the areas affected by contaminants; increase the level of groundwater contamination (including that from direct percolation, injection or saltwater intrusion); or cause regulatory water quality standards of existing production wells to be violated as defined in the California Code of Regulations, Title 22, Division 4, Chapter 15 and the Safe Drinking Water Act.

These impacts are inclusive of the Proposed Project, the Equivalency Program and the Project's off-site improvements.

5. BIOTIC RESOURCES

a. Environmental Impacts

The Proposed Project's Urban Development Component would introduce a developed community on 99.3 acres of the Proposed Project site, and a Habitat creation and restoration program on the remaining 11.7 acres. The Project's Urban Development Component would result in a net loss of 60.9 acres of existing undeveloped area on the site. This undeveloped area has a long history of disturbance; in the past, the area has been developed with buildings, roads, parking areas, and a runway associated with the Hughes Industrial Complex. The Project's Habitat Creation/Restoration Component of the Project would result in a net gain of 10.2 acres of native habitat, a beneficial impact. Impacts of the Project relative to the six significance thresholds evaluated are as follows:

- **Federal and State Listed Threatened and Endangered Species.** No adverse impact would occur. No federal or state listed threatened or endangered species reside on the Project site or are dependent on the site's resources for survival. Restoration components of the Project have potential to attract listed species (e.g., least Bell's vireo, coastal California gnatcatcher) and therefore have the potential for a beneficial impact on such species.

- **Non-Listed Sensitive Species.** If construction occurs during nesting season, potentially significant short-term impacts on migrant birds may occur. The Urban Development Component of the Proposed Project would result in a net loss of foraging area for raptors such as Cooper's hawk, but unlikely to affect long-term survival of species due to the restoration components of the Project and presence of more diverse foraging opportunities off-site in the nearby Ballona Wetlands. There is potential for long-term beneficial impacts on migrant birds and raptors due to the restoration components of the Project, which will increase the amount and diversity of native habitat on site in comparison to current conditions.

- **Locally Designated Species, Habitat, or Plant Community.** No impact on locally designated species would occur. Such species are absent from the Project site. Less-than-significant impact on off-site locally designated habitats/plant communities (Ballona Wetlands) would occur due to design features (including habitat restoration) of the Proposed Project.

- **Interference with Wildlife Movement/Migration Corridors.** No impact would occur to a wildlife movement corridor – the Project is surrounded by urban development and does not serve as a link between areas of core habitat for wildlife. However, the Habitat Creation/Restoration component has potential for a beneficial impact by expanding and linking existing habitats that are currently fragmented and degraded. The Riparian Corridor will link two segments of the riparian corridor that will be established as part of the adjacent Playa Vista First Phase Project. This linkage will result in an extended movement corridor for wildlife through the Project site. Similarly, the proposed Bluff Restoration element will link existing stands of revegetated coastal sage scrub along the bluffs so as to provide a continuous expanse of native upland habitat from Lincoln Boulevard east to Centinela Avenue.

- **Alteration of Existing Wetland Habitat.** Project impacts would be less than significant. There are no on-site wetlands beyond those previously permitted for fill that would be impacted by the Project. Potential impacts to off-site wetlands from pollutants in stormwater runoff and irrigation runoff would be less than significant due to treatment measures built into the Project design, the Riparian Corridor and the Freshwater Marsh.

- **Interference with Habitat/Species Behavior (Indirect Impacts).** Project impacts would be less than significant. The Project site is already located within an urban environment, and sensitive species that utilize the Ballona Wetlands do so in the presence of busy streets and lighting. In the future, sensitive species may also be attracted to the Habitat Creation/Restoration Component of the Project. Lighting, noise, and intrusion by humans and pets from the adjacent mixed-use development may limit use of the restored habitats by sensitive species although such factors would not be expected to diminish long-term chances for survival of the species.

b. Recommended Mitigation Measures

Mitigation Measures for the Proposed Project and the Equivalency Program

The following measures shall be implemented to avoid or minimize potential impacts on biological resources:

Construction Measures

- Prior to any earthmoving activities during the breeding and nesting season, the Applicant shall have a field survey conducted by a qualified biologist to determine if active nests of breeding birds are present within the area of potential influence of the activity. This area of influence shall include the nest site as well as an appropriate buffer determined by the biologist based on field observations and the biology of the species. This survey shall be conducted within three (3) days before the clearing/ grubbing. If nesting birds protected under the Migratory Bird Treaty Act or California Fish and Game Code are found, the breeding/nesting area(s) shall be protected according to the biologist's recommendations that include, but are not limited to, a suitable buffer area around the nest, which shall not be disturbed until the young have fledged.

Increased Non-Native Plant Species

- Prior to issuance of any building permit, landscape guidelines shall be prepared by a licensed landscape architect in consultation with a qualified biologist for review and approval by the City Planning or Public Works department, if applicable. The plan shall identify non-native plants that are potentially invasive and that shall be prohibited.

  These planting guidelines shall be provided to all new business owners and residents in the Project site prior to the close of escrow and executed lease agreements. Planting guidelines shall be monitored by a licensed landscape architect.

Disposal of cuttings of any ornamental plants during Project operation in on-site or off-site open space areas shall be strictly prohibited.

Bluff Restoration

- Concurrent with the construction of the adjacent Riparian Corridor, the bluff area within the Habitat Creation/Restoration Component shall be restored as coastal sage scrub habitat.

Light and Glare/Noise

- Night lighting within 100 feet of restored habitat areas (riparian areas and bluffs) shall be directed onto the property and away from the habitat area. Such lighting shall be downcast luminaries with light patterns directed away from natural areas, and shall be coordinated with the lighting engineer and the environmental and biological resource monitor.

- Landscaping along Bluff Creek Drive shall incorporate native plant materials that will reduce the potential for intrusion of vehicle headlight glare into the Riparian Corridor.

- Landscaping along Bluff Creek Drive shall incorporate native plant materials that will buffer traffic noise and help reduce noise levels within the Riparian Corridor.

Intrusions into Habitat Areas by Humans and Pets

- The riparian corridor shall be fenced along the northern side and at strategic locations to discourage access into the habitat area.

- Signs shall be placed along recreational trails in proximity to the Habitat Creation/Restoration Component to inform users of the proximity of the trail to sensitive habitat areas. Signs shall list rules and regulations for trail use designed to protect sensitive biological resources. Rules shall include, but not be limited to, the following: no access to off-trail areas; no excessively loud voices or other noise disturbances; no harassment of wildlife; no domestic pets; no “taking” of plants and animals; and strict adherence to trail boundaries.

c. Unavoidable Adverse Impacts

With the exception of impacts on raptor foraging area and short-term loss of marginal nesting habitat for common migrant birds, the Proposed Project, with implementation of the proposed mitigation measures, would not result in unavoidable adverse impacts on biological resources. The Habitat Creation/Restoration Component of the Project would result in a net gain of 10.2 acres of native habitat, a beneficial impact. Development of the Urban Development Component for both the Proposed Project and the Equivalency Program would result in a net loss of 60.9 acres of existing undeveloped area on the site. This undeveloped area has a long history of disturbance; in the past, the area has been developed with buildings, roads, parking areas, and a runway associated with the Hughes Industrial Complex. Currently this area is used on an ongoing basis to stockpile soil and crushed rock; provide a recycling site for construction materials; stage construction equipment, materials and personnel; and provide for temporary stormwater detention. However, this highly disturbed area still provides foraging opportunities for raptors and some marginal nesting habitat for common migrant birds. Loss of undeveloped area due to the Urban Development Component would be an unavoidable impact of the Project, but unlikely to affect long-term survival of species due to the restoration components of the Project and presence of more diverse foraging opportunities off site in the nearby Ballona Wetlands. It is concluded that while unavoidable adverse impacts on foraging raptors and nesting common migrant birds may occur due to loss of undeveloped area, these impacts will be less than significant. These conclusions are inclusive of the Project's Equivalency Program and the construction of the Project's off-site improvements.

d. Cumulative Impacts

The Urban Development Component of the Proposed Project would incrementally reduce the total amount of undeveloped area in the region by about 60.9 acres. Without the Habitat Creation/Restoration Component of the Project, the loss of 60.9 acres of undeveloped area, in combination with the loss of undeveloped area resulting other related projects, would constitute a substantial loss of undeveloped area in the Project region. However, the Habitat Creation/Restoration Component of the Proposed Project (inclusive of the Equivalency Program) would increase the total amount of native habitat in the region by about 10.2 acres, in addition to the 44.4 acres of habitat restoration (Freshwater Marsh and First Phase Riparian Corridor) that are under construction as part of the Playa Vista First Phase Project. Evaluated as a whole in combination with other known development projects in the area, with consideration of design components that will reduce pollutant levels in comparison to existing conditions, and with consideration that the Habitat Creation/Restoration Component of the Project will establish better quality, more diverse native habitat than presently occurs, it is anticipated that cumulative impacts of the Proposed Project, inclusive of the Equivalency Program and construction of the Project's off-site improvements. on biological resources will be less than significant.

6. NOISE

a. Environmental Impacts

Development of the Proposed Project would require site preparation (i.e., grading and infrastructure construction) within both the Urban Development and Habitat Creation/ Restoration Components and the construction of proposed structures within the Project's Urban Development Component. These activities typically involve the use of heavy equipment, such as tractors, loaders, concrete mixers, cranes, etc. Pile drivers would be used in the construction of several Project structures within the Project's Urban Development Component. Grading and infrastructure noise levels would be greater than 5 dB(A) at locations along the edge of the Westchester Bluffs (e.g., LMU and adjoining residences), the apartment buildings located on the north side of Jefferson Boulevard, west of Centinela Avenue, and at Playa del Rey Elementary School. As Project construction activities would exceed ambient exterior noise levels by 5 dBA or more at a noise sensitive use, Project construction impacts are concluded to be significant.

Project operations would generate potential noise impacts to off-site locations. The most meaningful assessment of the Project's operational noise impacts is one that considers the combined effect of the Project's traffic and stationary (e.g., heating, ventilating and cooling equipment) noise sources. The Proposed Project's combined noise sources would increase noise levels at the analyzed off-site locations by up to 1.9 db(A) CNEL. This level of noise increase would not exceed the operational thresholds of significance and are not considered significant. With regard to future on-site uses, the on-site residential land uses located south of Jefferson Boulevard, and north of Bluff Creek Drive would be exposed to noise levels that exceed the 65 dB(A) CNEL "normally acceptable" Land Use Compatibility Guideline for multi-family residential noise utilized by the City. This would be a significant impact without mitigation. As part of the adjacent Playa Vista First Phase Project, up to two small helistops may be located east of the Project site. No on-site uses would be exposed to noise levels that exceed the 65 dB(A) CNEL "normally acceptable" Land Use Compatibility Guideline for multi-family residential uses nor the 70 dB(A) CNEL "normally acceptable" Land Use Compatibility Guideline for office and commercial uses under either operations scenario. Therefore, helicopter noise would not cause a significant impact to on-site uses.

b. Recommended Mitigation Measures

Construction Noise

Mitigation Measure for the Proposed Project and the Equivalency Program

- Prior to the issuance of any grading, excavation, foundation, or building permits, the Applicant shall provide proof satisfactory to the Advisory Agency that all construction documents require contractors to comply with Los Angeles Municipal Code Section 41.40 which requires all construction and demolition activity located within 500 feet of a residence to occur between 7 A.M. and 6 P.M., Monday through Friday, and 8 A.M. and 6 P.M. on Saturday, and that a noise management plan for compliance and verification has been prepared by a monitor retained by the Applicant. At a minimum, the plan shall include the following requirements:

  – Pile drivers used in proximity to sensitive receptors shall be equipped with noise control having a minimum quieting factor of 10 dB(A);

  – Loading and staging areas must be located on site and away from the most noise-sensitive uses surrounding the site as determined by the Advisory Agency;

  – Program to maintain all sound-reducing devices and restrictions throughout the construction phases;

  – An approved haul route authorization that avoids noise-sensitive land uses to the maximum extent feasible; and

  – Identification of the noise statutes compliance/verification monitor, including his/her qualifications and telephone number(s).

Additional Construction Mitigation Measures for the Off-Site Improvements

- All construction and demolition activity located within 500 feet of a residence shall occur between 7 A.M. and 6 P.M., Monday through Friday, and 8 A.M. and 6 P.M. on Saturday.

- Contractors shall ensure that construction equipment is fitted with modern sound-reduction equipment.

- When construction operations occur adjacent to occupied residential areas, the contractor shall implement all technically feasible mitigation measures, pursuant to the LAMC, that include, but are not limited to, changing the location of stationary construction equipment, shutting off idling equipment, notifying adjacent residences in advance of construction work, and installing temporary acoustic barriers around stationary construction noise sources.

- Haul routes that avoid noise-sensitive land uses shall be utilized to the maximum extent feasible.

Operational Noise

Mitigation Measures for the Proposed Project and the Equivalency Program

- Construct all exterior walls, floor-ceiling assemblies (unless within a unit) and windows having a line of sight (30 degrees measured from the horizontal plane) of Jefferson Boulevard and Bluff Creek with double-paned glass or an equivalent and in a manner to provide an airborne sound insulation system achieving a Sound Transmission Class of 50 (45 if field tested) as defined in the UBC Standard No. 35-1, 1982 edition. Advisory Agency sign-off shall be required prior to obtaining a building permit. The subdivider, as an alternative, may retain an engineer registered in the State of California with expertise in acoustical engineering, who shall submit a signed report for an alternative means of sound insulation satisfactory to the Advisory Agency which achieves a maximum interior noise of CNEL 45 (Residential).

- All HVAC and related roof-top mechanical equipment shall be installed in accordance with Los Angeles Municipal Code Section XI. Prior to issuance of certificates of occupancy for each building, an acoustical inspection shall be performed for each building to ensure building compliance with applicable interior and exterior noise criteria as specified by the City of Los Angeles Municipal Code Section XI.

c. Unavoidable Adverse Impacts

The mitigation measures recommended in this section would reduce the noise levels associated with grading and construction activities attributable to the Project, Equivalency Program and the identified off-site improvements to some extent. However, these activities would continue to substantially increase the daytime noise levels at nearby noise-sensitive uses by more than 5.0 dB(A) L_{eq}. This would be considered a significant and unavoidable short-term impact when grading and construction activities associated with the Project, Equivalency Program or the off-site improvements occur near noise sensitive uses.

The mitigation measures recommended in this section would ensure that roadway and HVAC noise at the Project site would meet adopted City standards. No significant impacts associated with helicopter noise, and off-site traffic noise and composite noise levels would occur. This conclusion applies to the Project, Equivalency Program and the construction of the Project's off-site improvements.

d. Cumulative Impacts

Cumulative construction noise impacts occur when one or more related projects or the Project's off-site traffic improvements, are located in close proximity to the Project site. Construction activities occurring at related projects and off-site improvements that do not meet this criterion would be located sufficiently distant to the Project site so as to not contribute to a cumulative effect. The only related project that meets the criterion for potential cumulative impacts is the adjacent Playa Vista First Phase Project, assuming that construction of this related project is not completed before start of Proposed Project construction. In the event that construction of the Proposed Project, inclusive of the Equivalency Program, is occurring concurrently with construction of the adjacent Playa Vista First Phase Project, cumulative impacts would be significant because Proposed Project impacts are significant unto themselves and Playa Vista First Phase Project construction would generate construction noise levels that are comparable to those generated by the Proposed Project.

Cumulative noise impacts would also occur as a result of increased traffic on local roadways due to the Proposed Project, inclusive of the Equivalency Program, and other developments in the Project study area. The implementation of the Project's off-site improvements would not affect traffic volumes or travel speeds and thus would not contribute to any cumulative impact during Project operations.

The increase in noise levels at the study-area receptors would range from 0.3 to 5.3 dB(A) CNEL. Noticeable increases of 3.0 dB(A) or more would occur on the portions of the LMU campus located along the top edge of the Westchester Bluffs. The noise level increases at all other locations would be less than 3.0 dB(A) and would not exceed the operational thresholds of significance. Therefore, the Proposed Project, inclusive of the Equivalency Program, and the development of the related projects would result in a significant cumulative mobile source noise impact.

As the Proposed Project does not involve any helicopter facilities, other than those required by the Los Angeles Municipal Code for emergency purposes, cumulative noise impacts from helicopter operations would not occur. With regard to stationary noise sources (e.g., HVAC equipment), each related project would be required to comply with the provisions of the Los Angeles Municipal Code. Given the stringent noise limitations set forth in the Los Angeles Municipal Code, cumulative stationary source noise impacts would be less than significant as cumulative noise levels from this particular noise source would be below ambient noise levels and therefore would not be discernible in the context of the community noise environment. Cumulative composite noise impacts would be the same, and thus significant, as those generated by cumulative mobile sources, as described above, since this would be the dominant noise source in the area. Based on these analyses, development of the Proposed Project, inclusive of the Equivalency Program and the identified off-site improvements, in conjunction with the development of the identified related projects would result in significant cumulative noise impacts.

7. NATURAL LIGHT – SHADING

a. Environmental Impacts

The Proposed Project would introduce new buildings on the Project site that could cause off-site shading. The only sensitive use that could be affected would be the apartment buildings on Jefferson Boulevard, across the street from the Project site. Shading at other off-site sensitive uses would be limited due to their elevation or distance. There would be no shading of the existing residential buildings during the equinox or summer seasons, and a maximum of 1.5 hours of shading on during the winter mornings. This level of the shading would be less than that allowed under the significance thresholds: 4 hours of shading between 9 A.M. and 5 P.M. between early April to late October, 3 hours of shading between the hours of 9 A.M. to 3 P.M. between late October and early April, and no shading at the equinox.

b. Recommended Mitigation Measures

The Proposed Project would not result in a significant impact; therefore, mitigation measures are not required or recommended for the Proposed Project, inclusive of the Equivalency Program and off-site improvements.

c. Unavoidable Adverse Impacts

Proposed Project shading on off-site shadow sensitive uses would be limited. There would be no shading of existing residential buildings during the equinox or summer seasons, and a maximum of 1.5 hours of shading on two specific apartment complexes across Jefferson Boulevard during the winter mornings. This level of the shading would be less than that allowed under the significance thresholds. No other existing shadow sensitive areas which rely on sun for their activities would be impacted.

d. Cumulative Impacts

Shading impacts are extremely localized in nature. Unless two Projects stand sufficiently near to each other, they cannot cause shadows to fall on the same sensitive use. Thus, possibilities for impacts which are singularly non-significant, but cumulatively significant, are limited.

New related projects in the areas surrounding the Proposed Project site could potentially generate their own significant shading impacts on their nearby uses. The adjacent Playa Vista First Phase Project, would increase the amount of shading on off-site uses. The main effect of this shading would be on thoroughfares through the area. The portions of Jefferson Boulevard subject to shading would be cumulatively greater than with either project alone. However, this road is not considered a shadow sensitive use. There are no shadow sensitive uses which would be subject to cumulative impacts, and therefore no significant cumulative shading affects are anticipated to occur.

8. ARTIFICIAL LIGHT AND GLARE

a. Environmental Impacts

Impacts from Artificial Lighting

The Proposed Project would add night-time lighting to the Proposed Project site, infilling a currently vacant area that is surrounded with urban/suburban development containing typical nighttime lighting. The Proposed Project would not alter the general ambient lighting characteristics of off-site neighborhoods. The night-time appearance of the Project site would be altered with additional lighting that would be similar in nature to or less than some commercial uses in the Project vicinity.

The Proposed Project would may have some directed on-site lighting. Directed lighting to off-site sensitive uses would be an adverse impact. The City has, for many years, routinely required shielding of outdoor lighting to preclude glare impact to off-site properties. The City has also adopted specific lighting requirements in its Municipal Code to limit adverse impacts from artificial lighting. Notwithstanding, further mitigation measures are proposed to limit the effects of directed-lighting.

Effects of lighting on habitat areas (e.g., the riparian corridor and bluffs) is discussed further in the Biological Resource Sections of the EIR, which also includes a pertinent related mitigation measure.

Impacts from Glare

Development associated with the Project is anticipated to use building materials which are typical of those used throughout the area and which are low-reflective in nature. Further, the view from the area most prone to glare effects, Jefferson Boulevard would be located at lower elevations than the Proposed Project buildings and would offer views of landscaped areas and slopes. Therefore, adverse impacts are not expected. However, since there are no binding requirements on the Proposed Project to preclude potential impacts from glare, impacts are considered potentially significant, and mitigation measures are recommended below to preclude the generation of such impacts.

b. Recommended Mitigation Measures

Mitigation Measures for the Proposed Project and the Equivalency Program

The following mitigation measures protect human population and activity. An additional measure to protect habitat areas is included in Section IV.D, Biotic Resources.

With regard to artificial lighting:

- All outdoor lighting, other than signs, shall be limited to those required for safety, security, highlighting and landscaping.
- Animated building identification signs shall be prohibited. Illuminated residential building signs shall not be permitted above the first level.

With regard to glare:

- The Applicant shall use exterior building materials and facades which eliminate or minimize highly reflective materials. At the time of plan check review for specific development projects, building materials shall be reviewed to assure that they do not exceed the reflectivity of standard building materials. If the Applicant should desire to use more reflective materials in locations isolated from major thoroughfares, adequate analysis must be presented to the Department of Building and Safety to determine that the building, due to location, would not cause glare impacts on motorists or nearby population.
- Direct glare from automobile headlights in parking structures shall be shielded by walls, louvers, landscaping and/or other similar measures.

c. Unavoidable Adverse Impacts

The Proposed Project and its Equivalency Program would add lighting to the Project site that would be noticeable from off-site locations. Such lighting would be similar to lighting in adjoining areas. It would not substantially alter the lighting character of off-site areas surrounding the Project site, and would not be directed off-site in a manner which would interfere with the performance of off-site activity. Furthermore, the Proposed Project, inclusive of the Equivalency Program and off-site improvements, would not be expected to generate off-site reflective glare, so as to interfere with the performance of an off-site activity. Therefore, no significant impacts are expected after mitigation.

d. Cumulative Impacts

Lighting from the Proposed Project, in conjunction with lighting associated with related projects, would contribute to the general level of ambient lighting surrounding the Project site. However, existing lighting already establishes a suburban-to-urban level of lighting condition baseline, and new sources would not significantly alter the nighttime appearance of the surrounding area. The Proposed Project would not create nighttime glare that would interfere with off-site activities, and there are no related projects that would contribute with the Proposed Project to an off-site interference of an activity. Cumulative impacts regarding nighttime illumination, inclusive of the Proposed Project, its Equivalency Program, and its off-site improvements, would be less than significant.

Glare impacts occur on a project-by-project basis. The Proposed Project is not expected to create daytime glare that would interfere with the performance of off-site activities and there are no related projects the would contribute with the Proposed Project to such an effect. Therefore, no significant cumulative impacts are anticipated from glare, inclusive of the Proposed Project, its Equivalency Program, and its off-site improvements.

9. LAND USE

a. Environmental Impacts

Land Use impacts of the Proposed Project were considered in relationship to regulatory framework under which the Proposed Project would be developed and in relationship to the surrounding uses.

The Proposed Project would be implemented via amendments to the existing Specific Plan and its zoning designations, establishing new boundaries for R4(PV) and C2(PV) zone areas in place of existing R4(PV) and M(PV) zone areas. The Specific Plan amendment and zone changes would enable the Project's proposed development of housing uses in place of office, retail, and hotel uses allowed under the existing Specific Plan. The exchange is offered in the context of the overall planning concept for the Proposed Project. Implementation of the Urban Development Component would be compatible with the land use/density designation in the Community Plan and Specific Plan, and the adopted environmental goals and policies of the community, and impacts regarding the regulatory framework would be less than significant. Development of the Proposed Project would support policies for mixed-use, clustered development, enhancement of jobs/housing balance, efficient provision of infrastructure, and emphasis of public transit and non-motorized transportation. Further, the Proposed Project would support such activity at a location identified for such uses in existing plans.

Implementation of the Urban Development Component would not disrupt, divide, or isolate any existing neighborhoods, communities or land uses, and impacts regarding the relationship to existing uses would be less than significant. The Proposed Project would integrate with and provide continuity with development between the portions of the Playa Vista First Phase Project lying to the east and west of the Proposed Project site. Existing development to the south of the Project site, is located atop the bluffs, and would not have its physical arrangement affected by the Proposed Project. Project height limits restrict development to a level well below the average height of the bluffs creating a distinct separation between neighborhoods. The Project would not alter the character or distribution of uses to the north of the Proposed Project. Further, the Proposed Project would support a clustered development allowing for growth outside of existing localized neighborhoods.

Implementation of the Habitat Creation/Restoration Component would provide an environmental enhancement and neighborhood amenity. This Project Component is compatible with existing land use regulations and would not have a significant impact on the regulatory framework. The Habitat Creation/Restoration Component would enhance an existing buffer area and would not disrupt, divide or isolate any existing neighborhoods, communities or land uses. Impacts regarding the relationship to surrounding uses would be less than significant.

b. Recommended Mitigation Measures

Mitigation Measure for the Proposed Project and the Equivalency Program

Land Use:

- Prior to recordation of the tract map, the Proposed Project development standards and guidelines shall be incorporated as tract map conditions including, but not limited to, building height, setbacks, lot coverage, density, and land uses, as analyzed in

ENV-2002-6129-EIR. Any changes shall be subject to additional environmental review and implementation of proper mitigation measures if additional impacts associated with such changes are identified.

- Lot 113 of VTTM 49104 shall remain as open space unless the Advisory Agency determines that this lot is not need to meet the open space requirements of VTTM 49104.

Additional Mitigation Measure for the Off-Site Improvements

- Any private property that is affected during the construction of off-site improvements shall be restored to be consistent with conditions prior to construction, to the extent feasible.

c. Unavoidable Adverse Impacts

The Proposed Project, inclusive of the Equivalency Program, would be implemented via amendments to the existing Specific Plan and it zoning designations, establishing new boundaries for R4(PV) and C2(PV) zone areas in place of existing R4(PV) and M(PV) zone areas. The Specific Plan amendment and zone changes would enable the Project's proposed development of housing uses in place of office, retail, and hotel uses allowed under the existing Specific Plan. The exchange is offered in the context of the overall planning concept for the Proposed Project. The Proposed Project would provide development that is compatible with the land use/density designation in the Community Plan and Specific Plan, and the policies, goals and objectives of applicable plans and would therefore be compatible with the regulatory framework. The Proposed Project (inclusive of the Equivalency Program and the Project's off-site improvements) would not disrupt, divide or isolate any existing neighborhoods, communities, or land uses. Land Use Impacts would be less than significant.

d. Cumulative Impacts

Regulatory Framework

The Westchester-Playa del Rey Plan, the community plan in which the Proposed Project is located, is currently being updated under the City's Community Plan Update (CPU) Program. It is anticipated that the plan update will address growth in the area and address land use issues. The only known related project which would likely require an amendment to this plan is the proposed expansion of LAX. The City of Los Angeles is currently considering various alternatives for extensive improvements at LAX, as envisioned to occur within the context of a proposed LAX Master Plan. Other future Plan amendments would not preclude, nor be precluded by the Proposed Project's Plan amendments. The Proposed Project, inclusive of the Equivalency Program and the Project's off-site improvements, would be compatible with the regulatory framework and therefore would not contribute to a significant cumulative impact regarding regulations. It is anticipated that other development would be consistent with applicable regulations and the updated Community Plan, or would amend the plan through appropriate review and CEQA analysis as required by law. Cumulative impacts regarding the regulatory framework would be less than significant.

Relationship to Existing Uses

Other development from related projects, in conjunction with the Proposed Project, would contribute to the general development character of the West Los Angeles region. In a general sense, the West Los Angeles region, including the immediate vicinity of the Project site, is predominantly developed. While some intensification of activity is occurring due to infill on the remaining undeveloped land parcels, and conversion to more intense uses on a parcel by parcel basis, the basic land use character, and major distribution patterns of the region have been established, and would not be altered by cumulative development. Intensification of development will have cumulative impacts on particular environmental issues such as traffic, noise and air pollution. Such impacts are the focus of other sections of the EIR that address cumulative impacts associated with the Proposed Project.

One related project, the Playa Vista First Phase Project, is currently under construction. Future Playa Vista First Phase development will be consistent with the previously approved plan, and the existing/under development uses on the First Phase site. The Playa Vista First Phase Project and Proposed Project would form a unified development pattern with a continuity of uses – a cluster of development within the area bounded by the bluffs on the south, Lincoln Boulevard on the west, Jefferson Boulevard on the north, and Centinela Avenue on the east. The Proposed Project (inclusive of the Equivalency Program and the Project's off-site improvements) in conjunction with related projects would not disrupt, divide or isolate existing neighborhoods, communities, or land uses. Cumulative impacts on land use compatibility would be less than significant.

10. MINERAL RESOURCES

a. Environmental Impacts

The Proposed Project is not located in a MRZ-2 area or other known or potential mineral resource area, including those noted in the Conservation Element as being of local importance, and would not result in loss of access to any such mineral resource area. As such, a less than significant impact would occur with implementation of the Proposed Project.

b. Recommended Mitigation Measures

No significant impacts are expected relative to mineral resources; hence, no mitigation measures are required for the Proposed Project, inclusive of the Equivalency Program and off-site improvements.

c. Unavoidable Adverse Impacts

Implementation of the Proposed Project would not result in any significant impacts relative to mineral resources. The Proposed Project would not result in the permanent loss of, or loss of access to, a mineral resource that is located in a MRZ-2 area, or other known or potential mineral resource area, including those noted in the Conservation Element as being of local importance. Therefore, no mitigation measures are required. These impacts are inclusive of the Proposed Project, the Equivalency Program and the Project's off-site improvements.

d. Cumulative Impacts

Based on the fact that there are no MRZ-2 areas, or other known or potential mineral resource areas, including those noted in the Conservation Element as being of local importance in or near the Proposed Project site, implementation of the Proposed Project in conjunction with all related projects would not result in a permanent loss of, or loss of access to, mineral resources within such areas.

With respect to off-site mineral resources (e.g., sand and gravel, and petroleum), the consumption of such resources for the construction of other projects in the local vicinity is expected to be typical of new development, as provided for by the building materials and transportation fuels industries. The consumption of natural resources associated with the Proposed Project is relatively small, compared to the overall amount of resources that the market provides.

Overall, the Proposed Project in conjunction with the related projects is not anticipated to have a significant cumulative impact to a mineral resource that is located in a MRZ-2 area, or other known or potential mineral resource area and there are no mineral resources at or near the Proposed Project site that are noted in the Conservation Element as being of local importance. These impacts are inclusive of the Proposed Project, the Equivalency Program and the Project's off-site improvements.

11. SAFETY/RISK OF UPSET

a. Environmental Impacts

Hazardous Materials Management

Construction: The demolition and removal of Buildings 22 and 45, and the various other sheds and storage buildings in the former Salvage Yard Area, would include the removal and disposal of asbestos-containing materials and/or lead-based paint. Abatement activities would be preceded by the completion of a work plan, and would be conducted in accordance with all applicable federal, state, and local regulations. As such, the construction of the Proposed Project would not expose people or structures to substantial risk resulting from the release of a hazardous material, or from exposure to a health hazard, in excess of regulatory standards, and impacts would be less than significant.

Operations: The operation of certain uses allowed within the Proposed Project site and vicinity may involve hazardous materials and wastes. However, compliance with applicable federal, state, and local requirements would serve to minimize the health and safety risks to people or structures associated with such uses and materials/wastes within the Proposed Project site. Therefore, the Proposed Project would not expose people or structures to substantial risk resulting from the release of a hazardous material, or from exposure to a health hazard, in excess of regulatory standards, and impacts would be less than significant.

Soil/Groundwater Contamination

Construction: The demolition and removal of Buildings 22 and 45, and the other various sheds and small storage buildings in the former Salvage Yard Area, would expose underlying soils that were previously inaccessible for evaluation. There is the potential for site grading to encounter contaminated soil; however, compliance with the requirements of the Occupational Safety and Health Administration (OSHA) Safety and Health Regulations for Construction (29 CFR Part 1926) would serve to avoid exposure of workers or the public to hazards in excess of regulatory standards. Consequently, construction of the Proposed Project would not expose people to substantial risk resulting from the release of a hazardous material, or from exposure to a health hazard, in excess of regulatory standards, resulting in a less-than-significant impact.

Construction-related dewatering could encounter contaminated groundwater, particularly along the southern portion of the Proposed Project site. Compliance with the requirements of the OSHA Safety and Health Regulations for Construction (29 CFR Part 1926) would serve to avoid exposure of workers or the public to hazards in excess of regulatory standards. Therefore, the

Proposed Project would not expose people to substantial risk resulting from the release of a hazardous material, or from exposure to a health hazard, in excess of regulatory standards, and impacts would be less than significant.

Areas of known contamination have been identified and evaluated, and remediation options will be proposed in accordance with the Regional Water Quality Control Board's (RWQCB) Cleanup and Abatement Order (CAO) No. 98-125; however, it is possible that previously unknown areas of contamination may be encountered during project grading activities. Any such hazardous materials/wastes uncovered by construction activities are required by existing statutes to be removed or otherwise managed, such that impacts relating to human exposure would be reduced to levels acceptable to federal, state, and local regulatory agencies. Therefore, the Proposed Project would not expose people or structures to substantial risk resulting from the release of a hazardous material, or from exposure to a health hazard, in excess of regulatory standards, and impacts would be less than significant.

Operations: The potential for safety/risk of upset impacts that may occur in conjunction with implementing various remediation options at the majority, if not all, of the areas of concern would have no significant aboveground impacts and only beneficial subsurface impacts. The release of the treated by-products is regulated by, and is subject to the permitting authority of, the South Coast Air Quality Management District (SCAQMD Rules 1401 [New Source Review of Carcinogenic Air Contaminants] and 1402 [Control of Toxic Air Contaminants from Existing Sources]). The design and operation of remediation systems will include safety provisions in accordance with accepted professional practices, and inspection of the system is within the purview of Cal/OSHA. The option of soil excavation, retrieval, and off-site disposal may result in temporary on-site impacts such as dust, equipment noise, and truck travel. Impacts associated with truck travel would extend off-site as well. Potential human health impacts associated with the soil vapors from exposed soils and from dust during excavation and loading would be minimized through compliance with Rule 1166 of the SCAQMD Rules and Regulations (potential impacts associated with dust generation are discussed in Section IV.B, Air Quality). It is anticipated that remediation of contaminated areas within the Proposed Project site can be successfully accomplished using options other than soil excavation and off-site disposal (e.g., in-situ remediation technologies). However, if excavation is the preferred remedial option, it would be carried out in accordance with Rule 1166. As such, remediated areas would pose no health risk to residents and employees on-site during Project operation. Impacts would be less than significant, because the Proposed Project would not expose people or structures to substantial risk resulting from the release of a hazardous material, or from exposure to a health hazard, in excess of regulatory standards.

Soil Gas

Construction: Soil gas surveys conducted in 1999 and 2000 found some sampling locations with elevated methane concentrations, and only very low, if any, concentrations of hydrogen sulfide and BTEX at the Proposed Project site. As such, grading or construction activities occurring within confined spaces on-site could pose a potential for soil gas build-up, resulting in a possible safety/risk of upset impact. Adherence to the construction safety measures, as well as compliance with Cal/OSHA safety requirements would serve to avoid substantial risk in the event that elevated levels of these soil gases are encountered during grading and construction. Based on such monitoring and safety provisions, grading and construction activities associated with development on-site are not expected to substantially expose workers or nearby residents to elevated levels of methane or other soil gases. Therefore, impacts would be less than significant, since the Proposed Project would not expose people or structures to substantial risk resulting from the release of a hazardous material, or from exposure to a health hazard, in excess of regulatory standards.

Operations: Future uses proposed in the subject area generally include Community Serving, Open Space, Residential, and Mixed-Use, as well as new roadways. Development in such areas poses the potential to expose Project occupants to elevated levels of methane or other soil gases; however, it is anticipated that City of Los Angeles Department of Building and Safety (LADBS) would require a methane safety program, which would provide appropriate safety measures in the design, construction, and long-term operation of such development. A soil gas report will be required for each development project to address the methane characteristics specific to the development site and identify the appropriate applicable methane safety requirements. As such, implementation of a methane safety program would provide a substantial level of safety for Project occupants throughout the operation of the Proposed Project. As such, with implementation of appropriate mitigation measures, the Proposed Project would not expose people or structures to substantial risk resulting from the release of a hazardous material, or from exposure to a health hazard, and impacts would be less than significant.

In addition to the potential impacts described above related to new buildings, the installation of subsurface utility improvements, such as underground utility vaults and underground utility line corridors that have gravel beds, could pose potential safety/risk of upset impacts. These potential impacts can be reduced to a level less than significant through measures similar to those described above for buildings and, for utility corridors, through the use of bentonite plugs.

With respect to hydrogen sulfide and BTEX, only very low, if any, concentrations were found to occur on-site and are not considered to pose a significant safety/risk of upset hazard for long-term operation of uses within the Proposed Project.

Aviation Hazards

Based on proposed flight paths for subject heliports and proposed building heights on-site, impacts relative to aviation hazards from operation of the subject heliports would be less than significant, as the Proposed Project would be designed not to interfere with, or expose people or structures to substantial risk from, heliport flight operations.

Safety/Risk of Upset impacts resulting from implementation of the Project's Equivalency Program would be similar to those of the Proposed Project and would be less than significant, due to the similarity in construction activities, proposed land uses, and site characteristics. Additionally, impacts resulting from implementation of the Project's off-site improvements, though the improvements would occur at various locations within the Project vicinity, would be reduced relative to those of the Proposed Project and would be less than significant.

b. Recommended Mitigation Measures

Mitigation Measures for the Proposed Project and the Equivalency Program

Hazardous Materials Management

- Prior to issuance of demolition permits for Buildings 22, 45, and other sheds and small storage buildings, evidence shall be provided to the City of Los Angeles Planning Department that the demolition contract provides for a qualified asbestos and lead based paint removal contractor/specialist to remove or otherwise abate asbestos and lead based paint prior to or during demolition activities in accordance with federal, state, and local regulations.

- Prior to issuance of demolition permits for Buildings 22, 45, and other sheds and small storage buildings, evidence shall be provided to the City of Los Angeles Planning Department that the demolition contract provides continuous compliance with all applicable government regulations and conditions related to hazardous materials and wastes management.

Soil/Groundwater Contamination

- Any contaminated soil, groundwater and/or toxic materials removed during remediation activities or discovered during excavation and grading shall be evaluated and excavated/disposed of, treated in-situ (in-place), or otherwise managed in accordance with the RWQCB requirements. If contamination is discovered during grading activities, grading within such an area shall be temporarily halted and redirected around the area until the appropriate evaluation and follow-up measures are implemented so as to render the area suitable for grading activities to resume.

- To address the potential that contaminated soils, groundwater, and/or toxic materials may be encountered during excavation and grading, the applicant contractor(s) selected for excavation and grading work shall maintain a valid South Coast Air Quality Management District (SCAQMD) Rule 1166 permit plan (i.e., approval of a Contaminated Soil Mitigation Plan) for areas of known or suspected contamination, and be prepared to control nuisance odors per SCAQMD Rules and Regulations.

- Any contaminated soils stockpiled at the site shall be stored in such a manner that underlying soils are not cross-contaminated. This could be accomplished by the use of heavy-duty plastic sheeting placed under and on top of the stockpiled materials, or other suitable methods. The management, treatment, or disposal of such material shall comply with all federal, state, and local regulations related to hazardous waste.

- All stockpiled contaminated materials shall be protected in order to prevent material from being washed into storm drains. This could be accomplished by the use of sand bags around the material, heavy-duty plastic sheeting placed on top of smaller stockpiles of materials, or other suitable methods.

- Grading and demolition contractors shall be required by construction specifications to secure approval of haul routes to export or otherwise transport off-site excavated materials prior to commencement of such activity.

- Prior to issuance of a grading permit or B-Permit for activities involving construction dewatering, evidence shall be provided to the LADBS or City of Los Angeles Department of Public Works (LADPW), as appropriate, that a valid National Pollutant Discharge Elimination System (NPDES) or Industrial Waste construction dewatering permit is in place. The NPDES or Industrial Waste permit shall include provisions for evaluating the groundwater for potential contamination, and, if necessary, the need for treatment of dewatering discharge.

- Groundwater extracted in accordance with remedial activities and construction dewatering that may be required during project development shall be conducted in accordance with RWQCB and other agency requirements (i.e., LADPW, LADBS, etc.), as appropriate. In the event that contaminated groundwater is encountered during excavation, grading or construction, the activities that potentially lead to the discharge of such groundwater shall be halted until the dewatering discharge options are evaluated and managed pursuant to RWQCB or other agency requirements, as appropriate. RWQCB or other agency reporting requirements shall be implemented, as appropriate.

- Extraction of contaminated soil vapors shall be conducted in accordance with RWQCB and SCAQMD established handling, treatment, and disposal requirements in conjunction with the implementation of remedial activities requiring such extraction.

Methane Safety System for Long-Term Project Operations

- Prior to issuance of a building permit for individual development projects within the Proposed Project site, the permit applicant shall submit to the LADBS a methane safety plan prepared by a licensed engineer. The methane safety plan shall conform to the Village at Playa Vista Building Methane Mitigation Guidelines and Methane Mitigation Standard in Appendix J-14. The methane safety plan shall report the methane concentration levels that exist at the area of the proposed construction/ improvement and shall specify the appropriate methane safety measures that are incorporated into the design, construction, and operation of the subject improvement. Based on the levels of methane identified at specific sites, a gas detection system, pressure sensors, ventilation, monitoring, and emergency procedures, and other measures as provided for in the Village at Playa Vista Building Methane Mitigation Guidelines set forth in Appendix J-14 or in any methane mitigation protocol adopted by LADBS shall be required, as appropriate. Mitigation systems for each building shall be based on a site investigation in combination with the Village at Playa Vista Building Methane Mitigation Guidelines in Appendix J-14. Any variations to the Village at Playa Vista Building Methane Guidelines and Table XX set forth in Appendix J-14 are subject to the joint approval of the LADBS and the Los Angeles Fire Department (LAFD) when engineering and other data and analysis demonstrates an equivalent level of building safety. The specific design elements of the methane requirements shall be subject to the review and approval of the LADBS in consultation with the LAFD. In the event the City adopts a subsequent ordinance providing for methane regulations applicable to the Proposed Project site, the requirements set forth in that ordinance shall supersede the Village at Playa Vista Building Methane Mitigation Guidelines set forth in Appendix J-14, provided that the requirements in that new ordinance continue to reduce the potentially significant impact to a less than significant level.

- Prior to issuance of a B-Permit for public works projects or subsurface utility improvements with the Proposed Project site, the permit applicant shall submit to the LADPW, a methane safety plan prepared by a licensed engineer who is acceptable to LADPW. The methane safety plan shall indicate the methane concentration levels that exist at the area of the proposed construction/improvement and shall specify the appropriate methane safety measures that are incorporated into the design, construction, and operation of the subject facility. The specific contents of the methane safety plan and the nature and extent of safety provisions described therein shall be subject to the discretion, review, and approval of the LADPW in consultation with the LAFD.

Other

- Should any unrecorded oil well be found during excavation and grading, it shall be abandoned in accordance with the California Department of Conservation, Division of Oil, Gas and Geothermal Resources (DOGGR) under Title 124, Chapter 4 of the California Administration Code or recorded per DOGGR regulations. Prior to issuance of any building permit within a lot affected by discovery of an unrecorded oil well, the Applicant shall submit a final clearance letter issued by DOGGR regarding the proper abandonment of the well(s).

- Prior to issuance of any building permit on a lot where oil or gas wells are found, an engineering plan that includes proper safety measures and timing of the implementation of those measures shall be submitted and approved by LADBS.

Additional Mitigation Measures for the Off-Site Improvements

- Construction contracts shall include provisions requiring continuous compliance with all applicable federal, state, and local government regulations and conditions related to hazardous materials and wastes management.

- Any known or discovered soils with contamination above applicable regulatory limits shall be excavated/disposed of, treated in-situ, or otherwise managed in accordance with the requirements of the affected regulatory agencies.

- To address the potential that contaminated soils may be encountered during excavation and grading, the contractor(s) selected for excavation and grading work shall maintain a valid SCAQMD Rule 1166 permit, be prepared to control nuisance odors per SCAQMD Guidelines and Rules, and have an appropriate number of 40-hour, health and safety-trained workers for excavation areas that may contain hazardous waste. The contractor(s) shall also prepare a health and safety plan to monitor the excavation and/or donning of personal protection devices. Soil handling requirement for the contractor(s) shall be included in the construction specifications for development areas.

- In the event that contaminated groundwater is encountered during excavation, grading, or construction, the dewater discharge shall be evaluated and managed pursuant to RWQCB requirements.

- Cal/OSHA worker safety requirements provide for air monitoring during subsurface excavation activities, including borings, trenching, and grading, to check for unsafe levels of methane, hydrogen sulfide, oxygen, and carbon monoxide. Should unsafe levels occur, appropriate safety measures shall be implemented as required.

c. Unavoidable Adverse Impacts

Significant adverse impacts would be avoided through implementation of the above mitigation measures. As discussed above, the Proposed Project would not expose people or structures to substantial risk resulting from the release or explosion of a hazardous material, or from exposure to a health hazard, in excess of regulatory standards; and would not interfere with, or expose people or structures to substantial risk from, heliport flight operations. As such, impacts would be less than significant, aside from potentially significant impacts from groundwater contamination during construction activities. These impacts are inclusive of the Proposed Project, the Equivalency Program and the Project's off-site improvements.

d. Cumulative Impacts

For the most part, the safety/risk of upset impacts of the Proposed Project would be unique to the site, not lending to cumulative effect in conjunction with related projects. The only other development of note in close proximity to the Proposed Project would be the adjacent Playa Vista First Phase Project. No significant cumulative impacts are expected to occur because the safety evaluation and resultant design, engineering, and construction recommendations related to the two development projects already anticipate the potential impacts of the total adjacent Playa Vista First Phase Project and Proposed Project buildout. With respect to soil gas, the methane management system provided for individual development proposals within the adjacent Playa Vista First Phase Project and Proposed Project sites would be designed to protect buildings and other occupiable structures from methane intrusion even in areas with high concentrations of methane. A key component of such methane management systems is the venting of soil gases. Such venting would occur in several ways including passive or active ventilation systems. The venting systems would be designed to handle methane at any concentration and are not expected to affect, or be affected by, adjacent development. As such, the combined development of the adjacent Playa Vista First Phase Project and Proposed Project is not expected to have a significant cumulative impact relative to the safety and effectiveness of methane management systems installed in conjunction with either project, or relative to the ability of methane to continue to safely vent into the atmosphere. As such, the adjacent Playa

Vista First Phase Project and Proposed Project would not expose people or structures to substantial risk resulting from the release or explosion of a hazardous material, or from exposure to a health hazard, in excess of regulatory standards; and neither project would interfere with, or expose people or structures to substantial risk from, heliport flight operations. As such, no significant cumulative safety/risk of upset impacts are anticipated. These impacts are inclusive of the Proposed Project, the Equivalency Program and the Project's off-site improvements.

12. POPULATION, HOUSING AND EMPLOYMENT

a. Environmental Impacts

The development of 2,600 dwelling units would increase the local population by 5,720 persons. The proposed office, retail and community serving uses would generate a total of 1,180 permanent jobs. Based on these characteristics, the Project would have a jobs/housing ratio of 0.45. The Project is consistent with SCAG subregional growth projections and compatible with the applicable policies set forth in SCAG's Regional Comprehensive Plan & Guide. The Project is also compatible with City General Plan Housing Element policies, as well as other relevant General Plan policies. As a result, Project development results in less-than-significant impacts. Furthermore, the Project would have a beneficial and, thus, a less-than-significant impact on the jobs/housing balance in the study area by reducing the existing jobs/housing ratio of 1.30 for the SCAG subregion (City of Los Angeles) within which the Project is located.

b. Recommended Mitigation Measures

Population, housing, and employment increases, anticipated under the Proposed Project, do not exceed SCAG 2010 projections for the three analysis areas and Project impacts, thus are concluded to be less than significant. In addition, the Project would be compatible with adopted housing policies, and as such, Project impacts are less than significant. As the Project does not result in any significant impacts, mitigation measures are not required for the Proposed Project, inclusive of the Equivalency Program and off-site improvements.

c. Unavoidable Adverse Impacts

No unavoidable adverse impacts on population, housing, and employment would occur with the development of the Proposed Project. Specifically, the Proposed Project would not exceed SCAG's 2010 population, employment and housing forecasts for the Local, Subregional and Regional Areas. Thus, Project development results in less-than-significant impacts. The Proposed Project is also concluded to result in a less-than-significant impact with regard to local and regional housing policies since the Project would be compatible with applicable housing policies. These conclusions are also applicable to the proposed Equivalency Program, as well as the proposed off-site improvements.

d. Cumulative Impacts

The Project, in combination with the related projects, and background growth (25% of known residential projects, and 10% of known commercial projects), would generate 14,240 new residential units in 2010. Compared with the SCAG-projected increase of 9,256 housing units in the Related Projects Study Area, the cumulative projects represent approximately 153.8% of the SCAG-projected housing unit growth. The cumulative population increase of the Project, related projects and background growth, would be 30,736. Compared with the SCAG-projected population increase of 56,693 in the study area, the cumulative projects represent 54.2% of the SCAG-projected growth in the Related Projects Study Area.

The cumulative increase in employment represented by the Project, related projects and background growth is expected to be 94,434 permanent jobs in the year 2010. Compared with the SCAG-projected growth in employment of 45,401 jobs in the study area, the cumulative projects represent a doubling of the SCAG-projected employment forecast. With the exception of the jobs-rich LAX Master Plan (Related Project #34), related projects would be generally consistent with the commercial and residential development designated in the local Community and District Plans, and with the housing goals of the City of Los Angeles General Plan and SCAG's RCPG. Notwithstanding, related project growth would have an adverse impact on the jobs/housing balance ratio as the cumulative projects would have a more jobs-rich ratio than is forecasted for the area by SCAG. This impact is concluded to be significant since the total number of cumulative jobs is much greater than SCAG's forecasted employment growth.

The anticipated cumulative housing and employment growth would exceed the SCAG RTP housing and employment forecasts for 2010 in the Related Projects Study Area. Thus, the Project's cumulative impacts on housing and employment are significant. As the anticipated cumulative population growth would not exceed SCAG's forecast, cumulative population impacts are less than significant.

13. TRAFFIC AND CIRCULATION

a. Environmental Impacts

Population and activities associated with the Proposed Project would potentially generate 24,220 daily trip ends. Of these, 1,626 trip ends would occur in the A.M. peak hour, and

2,302 trip ends would occur in the P.M. peak hour. Of the 1,626 A.M. peak hour trips ends and the 2,302 P.M. peak hour trip ends, 1,502 and 2,182 trips, respectively, are Project-generated external trips. The Proposed Project's Equivalency Program has been designed to generate equivalent or lesser traffic than the Proposed Project, and, as such, the following summary of Project impacts is inclusive of the Equivalency Program.

The potential impact that these trips might generate was evaluated for six impact categories: impacts on intersections, freeways, neighborhood streets, access, and public transit, and impacts from construction activities.

Impacts on Intersections

Of the 218 intersections included in the traffic analysis, the Proposed Project prior to mitigation would result in a significant impact to a total of 8 intersections operating at LOS C or LOS D, 8 intersections operating at LOS E and 15 intersections operating at LOS F during the A.M. peak hour. During the P.M. peak hour, the Proposed Project would, prior to mitigation, result in a significant impact to 8 intersections operating at LOS C or LOS D, 14 intersections operating at LOS E, and 25 intersections operating at LOS F. The Proposed Project would not result in a significant impact to the remaining study intersections (187 intersections in the A.M. peak hour and 171 intersections in the P.M. peak hour). This evaluation of Project traffic impacts could be moderated by traffic mitigation measures associated with other related projects for which mitigation measures have been identified but not yet funded as well as mitigation measures or other projects that have not yet been established and therefore not taken into account.

The impacts identified in this analysis are based on the total buildout of the Proposed Project. However, the Proposed Project would be built over several years with new site population, and related traffic impacts occurring incrementally over time. Therefore, the mitigation measures for the Proposed Project have been placed into a sequence of improvements that would occur roughly commensurate with the increase in Project impact. This sequence has been incorporated into a subphasing plan that has been included in the mitigation measures.

Impacts on Freeways

The future background traffic growth combined with the Project traffic would contribute to LOS E or LOS F conditions on certain segments of the I-405, I-10, and I-105 during the A.M. and P.M. peak hours; however, some of these freeway segments are currently operating at LOS E and LOS F during the peak hours. The SR-90 is projected to continue operating at acceptable levels of service (LOS B and LOS C) during the A.M. and P.M. peak hours, even with the addition of Project traffic. Motorists using the SR-90 would not experience much change in average travel speeds even as compared to current conditions.

Under the future "With Project" conditions before mitigation, approximately 35% of all freeway miles located within the traffic study area would operate at LOS D or better during the A.M. peak hour. Approximately 11% and 54% would operate at LOS E and LOS F, respectively. During the P.M. peak hour, approximately 24% of all freeway miles within the traffic study area would operate at LOS D or better and 12% and 64% would operate at LOS E and LOS F, respectively.

The Proposed Project adds a maximum of approximately 85 trips or less in any direction along the analyzed freeway segments of the I-405 during the A.M. peak hour. This translates to a maximum increase in demand to capacity (D/C) ratio of 0.008 or 0.8% of the overall freeway capacity. Using the Los Angeles County Congestion Management Program criteria for significant impact (0.02 increase in D/C at Level of Service F), this estimated increase would not result in any significant impact. Similarly, the Proposed Project's maximum increase in D/C ratio of 0.015 along the SR 90 freeway segment west of the I-405, would also not result in any significant impact. During the P.M. peak hour, the Proposed Project results in a maximum increase in traffic along the I-405 of 97 trips or less which would increase the D/C ratio by 0.009 or 0.9%. Again, this increase would not result in any significant impact per CMP significance criteria. Along the SR 90 freeway, the Proposed Project would increase the D/C ratio by a maximum of 0.007 or 0.6% of its capacity, which would also not result in any significant impact in the P.M. peak hour.

Impacts on Neighborhood Streets

The analysis on neighborhood streets identified neighborhoods where impacts might occur from travelers leaving the main arteries, to cut through neighborhoods and avoid traffic. Four neighborhood were identified that may be subject to significant neighborhood intrusion impacts. They include the areas bounded by the following:

- Inglewood Boulevard, Ballona Creek, Sawtelle Boulevard, Bray Street/Port Road
- Kentwood Avenue, 77th Street, Sepulveda Boulevard, Manchester Avenue
- Sepulveda Boulevard, 74th Street, La Tijera Boulevard, Manchester Avenue
- Rayford Drive, 83rd Street, Lincoln Boulevard, La Tijera Boulevard

The City of Los Angeles Department of Transportation has a neighborhood traffic management process in place to address such impacts in consultation with all affected parties.

Accordingly, a mitigation measure is recommended which provides mechanisms for the development of neighborhood traffic management plan(s) in the potentially impacted neighborhoods.

Impacts on Project Access

With implementation of the Proposed Project and its Project Design Features/mitigation measures, there will be seven intersections that provide access to the Proposed Project site. Year 2010 operating conditions with the Proposed Project would be at LOS A during both the A.M. and P.M. peak hours at all of the intersections except one. This is considered excellent service. Conditions at Jefferson Boulevard and Centinela Avenue would be at LOS C during the A.M. peak hour, and LOS D during the P.M. peak hour, good and fair levels of services, respectively. Since none of the intersections providing access into the Proposed Project site would be operating at LOS E or F during the A.M. or P.M. peak hours, Project impacts with regard to operational accessibility would be less than significant. Project roadways would be required to meet all current roadway standards and protocols for safety, no project design features would create any other safety hazards for pedestrians, bicyclists and vehicles.

Impacts on Public Transit

Currently, there are six MTA bus lines, six Culver City lines, three Santa Monica bus lines, and three LADOT lines that operate within the Project Study Area. There is currently overcrowding on some of the lines serving the Project area, primarily along the north-south travel corridors, including Lincoln Boulevard, Sepulveda Boulevard, and Centinela Avenue-Inglewood Boulevard. At the same time, the overall transit system within the 100-square mile study area operates satisfactorily.

The Proposed Project would be expected to generate 1,187 daily transit trips, 80 A.M. peak hour trips and 113 P.M. peak hour trips. The addition of Project transit trips to the lines that are currently overcrowded may cause the capacity of some individual transit lines to be exceeded, and impacts to these specific lines are considered potentially significant prior to mitigation. Although impacts on these individual lines may be considered potentially significant, the bus transit system within the study area as a whole will continue to have excess capacity and operate satisfactorily.

Mitigation measures are recommended to enhance public transit services. In addition to meeting the additional demand generated by the Proposed Project, the enhancements would address deficiencies that currently exist on Culver City Line 6 and Line 2 that are projected to worsen in the future without service improvements.

Construction-Related Impacts

Traffic impacts from construction activities would be expected to occur as a result of the increased in truck traffic, increases in automobile traffic and reductions in existing street capacity. Estimates of average daily truck travel range from 114 trips per day during the average month to 376 trips per day during the peak month. On an average hourly basis, assuming a uniform distribution of trips over the workday, these daily trip totals would translate to 11 trips per hour in the average month and 36 trips per hour in the peak month.

Construction worker traffic would depend on not only the level of effort during various construction phases, but also on the mode and time of travel used by the workers. The hours of construction typically require workers to be on-site prior to the A.M. commute peak and allow them to leave prior to the evening peak. Many workers carpool to the job site and others stage off-site at contractors' yards and are transported to the job site in groups. There would be about 325 worker trips per day during the average month of construction, which would rise to about 578 trips per day during the peak month.

Impacts from construction traffic would primarily affect the following roadways in and around the Proposed Project site:

- Dawn Creek Drive, Runway Road, Bluff Creek Drive, Discovery Creek, Playa Vista Drive, Pacific Promenade, Seabluff Drive, Celedon Road, Alla Road, Millennium Drive, Westlawn Avenue, Centinela Avenue, Campus Center Drive, and Jefferson Boulevard.

Potential impacts associated with physical construction of the Proposed Project; e.g., lane closures, would be limited to those locations immediately adjacent to the Proposed Project site. The most notable impact would occur with the road widening along the south side of Jefferson Boulevard, adjacent to the Proposed Project site. Widening of the roadway from its current three eastbound lanes to four eastbound lanes would require a temporary reduction in service to two eastbound lanes, and could cause delays for eastbound travelers. Otherwise, the physical effects of construction would be limited. There would be no parking utilization within the construction zones and there would be no impact on parking.

In addition to these construction impacts, there would be impacts associated with implementation of the Proposed Project's off-site mitigation measures. Roadway widening at six locations would cause noticeable traffic delays, in a manner typical of such roadway improvements. Impacts on traffic conditions associated with construction of projects are typically considered temporary, short-term adverse impacts, but not significant. Nonetheless, there is a potential that motorists would be substantially inconvenienced by the implementation of anticipated roadway improvements. In particular, the construction activities along the Centinela Avenue Corridor, and the widening along Centinela Avenue at the intersection of La Tijera Boulevard could cause impacts that may be considered substantial by the travelers.

b. Recommended Mitigation Measures

Mitigation Measures for the Proposed Project and the Equivalency Program

Introduction

The traffic mitigation measures, referred to collectively as the Village at Playa Vista Transportation Improvement Program, include several mechanisms for reducing potential traffic impacts. These mechanisms consist of: (a) public transit improvements which support and encourage the use of public transit systems; (b) improvements to major and secondary arterial roadways and intersections in the vicinity of the Project site; (c) improvements to the signalized intersections in the study area to upgrade locations to include the latest generation of computerized traffic signal system controls; (d) neighborhood traffic management plans; and (e) measures to reduce potential impacts from construction activity. All of the mitigation measures have been organized in a subphasing plan that addresses the timing and sequencing of the mitigation measures.

All traffic mitigation measures within the City shall be completed to the satisfaction of LADOT. If any of the traffic mitigation measures within the City of Los Angeles or any other jurisdiction are determined to be infeasible, or necessary permits/approvals to implement the mitigation measures cannot be obtained, then a significant impact (or impacts) may remain.

All traffic mitigation measure improvements within the responsibility and jurisdiction of the public agencies other than the City shall be monitored through LADOT at the time of tract recordation and implemented to the extent feasible. If improvements within the responsibility and jurisdiction of public agencies other than the City of Los Angeles (i.e., County of Los Angeles, City of Culver City, City of Inglewood, Caltrans, Coastal Commission, etc.) cannot be implemented, significant traffic impacts may remain at such locations.[1]

The Applicant shall implement or provide funding for traffic mitigation measures as required below. Funding for measures may be provided by various sources. Measures that

[1] *Under CEQA Section 15091(a)(2), a Lead Agency may approve a project with significant impacts, if there is a finding that ". . . changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding . . . [and that] such changes have been adopted by such other agency or can and should be adopted by such other agency."*

require funding may be guaranteed with the applicable agency or by a commitment from a funding source that may be allocated to that improvement, including, but not limited to, funds from: Mello-Roos, homeowner/property owner associations, as well as any other method of guaranteeing the measure that is acceptable to the City. In the event funding is provided for an agency to implement a measure but the measure is not implemented, there is a potential that a significant impact may remain.

If any of the traffic mitigation measures are determined to be infeasible or if superior mitigation measures are identified in the future, the Applicant may provide substitute mitigation, subject to the approval of LADOT. Any such substitute mitigation measure must be approved by the agency with jurisdiction over the location of the measure, upon demonstration that the substitute measure is equivalent to, or superior to the original mitigation measure.

Transportation Improvement Program/Phasing

- The Transportation Improvement Program shall be implemented according to the traffic mitigation measure subphasing plan presented in Table 1 on page 84, as may be modified and approved by LADOT in accordance with this measure. The subphasing plan may be revised, where appropriate and as determined by LADOT: (1) upon demonstration that measures for each subphase in the revised subphasing plan are equivalent or superior to the original mitigation measures; and/or (2) upon demonstration that approval or implementation of measures has been delayed by other governmental entities, provided that the Applicant has demonstrated reasonable efforts and due diligence to the satisfaction of LADOT.

- Prior to the issuance of any building permit for each subphase, all on- and off-site traffic mitigation measures required for that subphase shall be completed or suitably guaranteed satisfactory to LADOT.

- Prior to the issuance of the final Certificate of Occupancy in the final subphase, all required improvements in the entire mitigation phasing plan shall be funded, completed, or resolved to the satisfaction of LADOT.

Public Transit System Improvements

- The Proposed Project shall provide four additional buses (to be operated by the City of Culver City) to supplement regional bus transit service along key travel corridors. The Proposed Project shall provide one bus each to supplement peak-hour operations for Lines 2 and 6, and two buses to supplement peak-hour operations and to extend Line 4 to provide all-day bus service from Fox Hills Transit Center along Jefferson

Table 1

VILLAGE AT PLAYA VISTA
DRAFT MITIGATION SUBPHASING PLAN [a]

Subphase [b]	P.M. Peak-Hour Trips per Subphase [b]	Transportation System Improvements [c, d, e, f]	Jurisdiction
Village Subphase 1	575	1. Provide funding for 1 bus for Culver City Bus Line 6 (CC6)	Culver City
		2. Provide funding for 1 bus for Culver City Bus Line 2 (CC2)	Culver City
		3. Provide funding for Airport System ATCS	City of Los Angeles
		4. Provide funding for Transit Priority System (TPS) on Lincoln Corridor	City of LA/Caltrans
		5. Signal improvement (phasing) at Lincoln Bl/83rd St	City of LA/Caltrans
		6. Provide funding for neighborhood traffic management	City of Los Angeles
Village Subphase 2	575 (1,150 cumulative)	1. Provide funding for 2 buses for CC4 (includes extension to Playa Del Rey)	Culver City
		2. Physical and/or operational improvements at:	
		2a. Centinela Av/Venice Bl	City of LA/Caltrans
		2b. Green Valley Circle/Centinela Avenue	Culver City
		2c. La Tijera Bl/Centinela Av	City of Los Angeles
		2d. Overland Av/Culver Bl	Culver City
		2e. Sawtelle Bl/Culver Bl	Culver City
		3. Provide funding for signal improvement at Aviation Bl/Florence Av/Manchester Av	City of Inglewood
		4. Project component – Jefferson Boulevard corridor improvement (between Beethoven Av to Centinela Av) [g]	City of Los Angeles
Village Subphase 3	575 (1,725 cumulative)	1. Provide funding for Smart Corridor System ATCS	City of Los Angeles
		2. Extension of internal shuttle to off-site locations	LA/Culver City/LA County
		3. Physical and/or operational improvements at:	
		3a. Centinela Av/Culver Bl	City of Los Angeles
		3b. Centinela Av/Washington Pl	Culver City
		3c. La Brea Av/Centinela Av	City of Inglewood
		3d. Palawan Way/Admiralty Way	Los Angeles County

Table 1 (Continued)

VILLAGE AT PLAYA VISTA
DRAFT MITIGATION SUBPHASING PLAN

Subphase [b]	P.M. Peak-Hour Trips per Subphase [b]	Transportation System Improvements [c, d, e, f]	Jurisdiction
Village Subphase 4	575 (2,300 cumulative)	1. Provide funding for 2 buses for CC6 Limited	Culver City
		2. Operational improvement at I-405 NB Ramps/Jefferson Bl	Culver City/Caltrans
		3. Centinela Avenue corridor improvement (Culver to SR-90)	City of Los Angeles
		4. Project component – complete Bluff Creek Dr corridor improvement (Dawn Creek to Westlawn) [g]	City of Los Angeles

[a] *The subphasing plan may be revised, where appropriate and as determined by LADOT: (1) upon demonstration that measures for each subphase in the revised subphasing plan are equivalent or superior to the original mitigation measures; and/or (2) upon demonstration that approval or implementation of measures has been delayed, provided that the Applicant has demonstrated reasonable efforts and due diligence to the satisfaction of LADOT.*

[b] *P.M. peak-hour trip generation for each subphase would determine the specific traffic improvements shown. P.M. peak-hour trip generation to be estimated as subphases develop using the following factors:*

Dwelling Units – 0.54 trip per unit
Office – 1.74 trips per 1,000 sf
Retail – 3.83 trips per 1,000 sf (includes pass-by reduction)
Community Serving Uses – 0.45 trip per 1,000 sf (includes internal capture reduction)

[c] *Prior to the issuance of any building permit for each subphase, all on- and off-site mitigation measures for the subphase shall be complete or suitably guaranteed satisfactory to LADOT.*

[d] *Temporary Certificates of Occupancy may be granted in the event of any delay through no fault of the Applicant, provided that, in each case, the applicant has demonstrated reasonable efforts and due diligence to the satisfaction of LADOT.*[e] *Substitute mitigation measures may be provided subject to approval by the agency with jurisdiction over the location of the measure, upon demonstration that the substitute measure is equivalent or superior to the original mitigation measure.*

[f] *Prior to the issuance of the final Certificate of Occupancy in the final subphase, all required improvements in the entire mitigation phasing plan shall be funded, completed, or resolved to the satisfaction of LADOT.*

[g] *The Jefferson Boulevard and Bluff Creek Drive corridors are components of the Proposed Project. Neither improvement serves to mitigate any Project impact; they are included in this table to establish timing for completion.*

Boulevard to the west. The Proposed Project shall also fully fund operations and maintenance costs for each new bus for a period of three years and compensate for the unsubsidized portion of the operations and maintenance costs for an additional seven years to ensure continued operations. Farebox revenues shall be credited against operating costs. The City shall be provided a copy of the agreement between the applicant and Culver City regarding implementation of the measure prior to tract recordation.

- The Proposed Project shall provide design and implementation costs for implementation of the Transit Priority System (TPS) associated with the Metro Rapid Expansion Project at twenty-five (25) intersections along the Lincoln Boulevard Rapid Bus Route corridor. The TPS hardware includes updated traffic signal controllers at signalized intersections and other associated bus vehicle identification system components that contribute to a system of real-time signalization control.

- The Proposed Project shall extend and expand the Internal Shuttle System, creating an intelligent demand-responsive Expanded Shuttle System which provides enhanced transit service for Project residents, visitors, employees, and the surrounding community, focusing on providing connections to key destinations such as Marina del Rey, Howard Hughes Center, the adjacent Playa Vista First Phase Project, and the Fox Hills Mall. Connections to regional transit service shall be provided at Lincoln Boulevard/Jefferson Boulevard and Fox Hills Mall Transit Center. This shuttle shall consist of the following key features:

  – <u>Core Service Area</u> – The central portion of the service area includes the area within the Proposed Project and Playa Vista First Phase Project sites. This core service area shall be continuously served by a core route along Runway Road from Crescent Park on the west side of the development to the Campus on the east. Minimum 15-minute headways shall be provided during the morning and evening peak hours along this core route. Key neighboring destinations, including Marina Del Rey, Fox Hills Mall, and Howard Hughes Center, shall be included as part of the demand-responsive component within the service area.

  – <u>Specially Equipped Buses</u> – Buses shall be low-emission or zero-emission buses sized appropriate to their role within the project (approximately 20 to 25 passenger vehicles). The buses shall be equipped with GPS (global positioning system) or other vehicle tracking system devices and communications systems in order to be able to provide the "Next Bus" locational and status information and to respond to calls from the extended service areas on a real-time basis.

  – <u>"Next Bus" Real Time Information</u> – Information on bus location and status shall be available over the internet and at bus shelters

- Bus Call Ability – Patrons at bus stops outside of the central system core shall have the ability to call for the shuttle bus at the bus stop; whereby the shuttle operator would proceed to the requested location. Information on the status of the bus and the anticipated wait time would then be given to the patron.

- The Proposed Project shall provide two additional buses for the implementation of a Limited Service Bus Stop (to be operated by the Culver City Bus) during peak hours. Service frequency shall be approximately 30 minutes during the peak hours. This Limited Bus shall originate from the Fox Hills Mall Transit Center and shall serve the areas along the Sepulveda, Jefferson, and Centinela corridors, including the office, studio, and residential uses within the Proposed Project and adjacent First Phase Playa Vista project; the retail and office complex at Howard Hughes Center; downtown Westchester; and the Century Boulevard Office Corridor. The Limited Bus Service would offer connections and potentially coordinated transfers with other regional bus service and the Playa Vista intelligent shuttle. The Proposed Project shall also fully fund operations and maintenance costs for each new bus during peak hours for a period of three years and compensate for the unsubsidized portion of the operations and maintenance costs for an additional seven years to ensure continued operations. Farebox revenues shall be credited against operating costs. The City shall be provided a copy of the agreement between the applicant and Culver City regarding implementation of the measure prior to tract recordation.

Roadway and Intersection Improvements

City of Los Angeles

Widening, restriping, signal system improvements such as Adaptive Traffic Control Systems (ATCS)[2] and/or public transit enhancements at the following intersections shall be required in a manner satisfactory to LADOT.

- *Centinela Avenue Corridor.* This corridor is proposed to be improved between Culver Boulevard and the SR-90 Freeway. This improvement consists of provision of an additional northbound lane along Centinela Avenue within the corridor along

[2] *This system includes provisions of ATCS-associated signal equipment, additional loop detectors, communications set-up, and the associated controller hardware/software, if required. The ATCS is a PC-based traffic signal control program that provides full-response signal control based on real-time traffic operating conditions. ATCS automatically adjusts and optimizes traffic signal timing in response to current traffic demands on the entire signal subsystem such that the number of stops and the amount of delay are minimized along with improved traffic signal coordination throughout the subsystem. Currently, the Mar Vista subsystem within the City of Los Angeles is under ATCS control. LADOT estimates that the ATCS improves intersection capacity by an additional 3% over that operating under ATSAC only.*

with a central turn lane where feasible. This improvement would result in three lanes northbound and two lanes southbound and effectively extend the three-lane-per-direction improvement provisions of the adjacent Playa Vista First Phase Project between Jefferson Boulevard and SR-90 to the north to Culver Boulevard. All the intersections along this corridor would also be improved with the additional travel lane in the northbound direction. The implementation of this corridor improvement would occur in two phases. The first phase of this improvement involves widening the Centinela Avenue roadway to provide two lanes in each direction plus a central two-way left turn lane and parking on both sides of the street. In the second phase, on-street parking would be restricted on the east side of the roadway during peak commute hours to facilitate provision of a third northbound lane between SR 90 and Culver Boulevard. This second phase improvement would not be considered until traffic demands reveal the need for added roadway capacity.

- *La Tijera Boulevard/Centinela Avenue.* Add a westbound through lane along Centinela Avenue so that the westbound approach would provide two through lanes, a shared through–right-turn lane, and dual left-turn lanes.

- *Culver Boulevard/Nicholson Street.* Implement the Regional Bus enhancements providing additional service along Culver City Bus Line 4 extending its service to Playa del Rey along Jefferson Boulevard and Culver Boulevard.

- *Sepulveda Boulevard/Howard Hughes Parkway*. Implement the Regional Bus enhancements providing additional service along the Culver City Bus Line 6 and the design and implementation of the expanded internal shuttle system serving the Howard Hughes Center. Additionally, contribute to the design and implementation of a Limited Bus Service along Sepulveda Boulevard between the Proposed Project and Howard Hughes Center and the Century Boulevard Office Corridor.

- *Sepulveda Boulevard/Imperial Highway.* Contribute to the design and implementation of Airport System ATCS or a similar signal system enhancement program.

- *I-405 NB Ramps/Jefferson Boulevard.* Implement the Regional Bus enhancements providing additional service along the Culver City Bus Lines 2 and 4 and its extension, and the design and implementation of the expanded internal shuttle system serving the Fox Hills Mall. Additionally, restripe the intersection’s westbound approach to provide a separate right, through-right, and two through lanes.

- *I-405 SB Ramps/Jefferson Boulevard.* Implement the Regional Bus enhancements providing additional service along Culver City Bus Lines 2 and 4 and its extension, and the design and implementation of the expanded internal shuttle system serving the Fox Hills Mall.

- *Lincoln Boulevard/83rd Street.* Contribute to the provision of additional signal equipment, if required, to obtain the following overlapping right-turn arrow signal indications: Westbound 83rd Street right turns overlapping with the Lincoln Boulevard north-south left-turn phase. Contribute to the design and implementation of Airport System ATCS.

- *Lincoln Boulevard/Manchester Avenue.* Contribute to the design and implementation of Airport System ATCS.

- *Lincoln Boulevard/Venice Boulevard.* Implement the Regional Bus enhancements providing additional service along the Culver City Bus Line 2. Contribute to the design and implementation of a Transit Priority System (signal system components) along Lincoln Boulevard.

- *Sepulveda Boulevard/Manchester Avenue.* Implement the Regional Bus enhancements providing additional service along the Culver City Bus Line 6. Contribute to the design and implementation of a Limited Bus Service serving Howard Hughes Center and the Century Boulevard Office Corridor. Contribute to the design and implementation of Airport System ATCS.

- *Sepulveda Boulevard/I-105 WB Off-Ramp.* Contribute to the design and implementation of Airport System ATCS.

- *Sepulveda Boulevard/76th and 77th Streets.* Contribute to the design and implementation of a Limited Bus Service between the Proposed Project, Howard Hughes Center, and the Century Boulevard Office Corridor.

- *Bundy Drive/Ocean Park Boulevard.* Contribute to the design and implementation of Smart Corridor System ATCS.

- *Bluff Creek Drive/Centinela Avenue*. Restripe northbound Bluff Creek Drive to have a left-turn lane, two through lanes, and two right-turn lanes.

- *Lincoln Boulevard/La Tijera Boulevard.* Contribute to the design and implementation of Airport System ATCS.

- *Sepulveda Boulevard/79th and 80th Streets.* Implement the Regional Bus enhancements providing additional service along the Culver City Bus Line 6. Contribute to the design and implementation of the Limited Bus Service serving Howard Hughes Center and the Century Boulevard Office Corridor.

- *Sepulveda Boulevard/Westchester Parkway.* Implement the Regional Bus enhancements providing additional service along the Culver City Bus Line 6.

- *Centinela Avenue/Venice Boulevard.* Restripe to provide a separate southbound right-turn lane so that this Centinela Avenue approach would have a separate right-turn lane, two through lanes, and a single left-turn lane. Contribute to the design and implementation of Smart Corridor System ATCS.

- *Centinela Avenue/Culver Boulevard.* Provide a westbound right-turn lane so that the Culver Boulevard westbound approach would have a separate right-turn lane, two through lanes, and a single left-turn lane.

- *Inglewood Boulevard/Culver Boulevard.* Provide left-turn lanes along eastbound and westbound Culver Boulevard, such that the eastbound and westbound approaches would each have a separate left-turn lane, a through lane, and a shared through–right-turn lane.

- *Centinela Avenue/Jefferson Boulevard.* Implement the Regional Bus enhancements providing additional service along the Culver City Bus Line 4 and its extension between Fox Hills Mall and Playa del Rey along Jefferson Boulevard. Also, contribute to the design and implementation of the expanded internal shuttle system serving the Fox Hills Mall and its environs. Contribute to the design and implementation of the Limited Bus Service serving the Proposed Project, Howard Hughes Center, and the Century Boulevard Office Corridor.

- *Culver Boulevard/Jefferson Boulevard.* Implement the Regional Bus enhancements providing additional service along the Culver City Bus Line 4 and its extension between Fox Hills Mall and Playa del Rey along Jefferson Boulevard.

- *Lincoln Boulevard/Jefferson Boulevard.* Implement the Regional Bus enhancements providing additional service along the Culver City Bus Line 4 and its extension between Fox Hills Mall and Playa del Rey along Jefferson Boulevard. Contribute to the design and implementation of the expanded internal shuttle system serving the Marina del Rey area. Also, contribute to the design and early implementation of a Transit Priority System (signal system components) along Lincoln Boulevard.

- *La Cienega Boulevard/Centinela Avenue.* Contribute to the design and implementation of Airport System ATCS.

- *Sepulveda Boulevard/La Tijera Boulevard.* Implement the Regional Bus enhancements providing additional service along the Culver City Bus Line 6. Contribute to the design and implementation of the Limited Bus Service serving Howard Hughes Center and the Century Boulevard Office Corridor.

- *Lincoln Boulevard/Marina Expressway (SR 90).* Contribute to the design and implementation of Transit Priority System (signal system components) along Lincoln Boulevard.

- *Lincoln Boulevard/Maxella Avenue.* Contribute to the design and implementation of Transit Priority System (signal system components) along Lincoln Boulevard.

- *Lincoln Boulevard/Washington Boulevard.* Contribute to the design and implementation of a Transit Priority System (signal system components) along Lincoln Boulevard.

- *Lincoln Boulevard/Bluff Creek Drive.* Contribute to the design and implementation of a Transit Priority System (signal system components) along Lincoln Boulevard.

- *Lincoln Boulevard/Loyola Marymount (LMU) Drive.* Contribute to design and implementation of Transit Priority System (signal system components) along Lincoln Boulevard. Also, contribute to the design and implementation of the Limited Bus Service serving Howard Hughes Center and the Century Boulevard Office Corridor, and provide for the expansion of the internal shuttle system.

- *Inglewood Boulevard/Jefferson Boulevard.* Implement the Regional Bus enhancements providing additional service along the Culver City Bus Line 4 and its extension between Fox Hills Mall and Playa del Rey along Jefferson Boulevard, and toward additional service along the Culver City Bus Line 2. Also, contribute to the design and implementation of the expanded internal shuttle system serving the Fox Hills Mall and its environs. Contribute to the design and implementation of the Limited Bus Service serving Howard Hughes Center and the Century Boulevard Office Corridor.

<u>County of Los Angeles</u>

The Proposed Project shall provide the following intersection improvements to the satisfaction of the Los Angeles County Department of Public Works (LACDPW).

- *Admiralty Way/Mindanao Way.* Contribute to the design and implementation of an expanded internal shuttle system serving the Marina del Rey area.

- *Palawan Way/Admiralty Way.* Contribute a fair share towards the intersection improvement consistent with the Los Angeles County Department of Public Works proposed Admiralty Way Corridor Improvements. The improvement required by the Proposed Project consists of providing dual southbound left-turn lanes which is consistent with the County planned improvements at this location. The southbound approach would have dual southbound left-turn lanes, a through lane and a separate right-turn lane.

- *Sherbourne Drive/Centinela Avenue*. Contribute to the design and implementation of ATCS or any other signal system enhancement similar to it.

- *Lincoln Boulevard/Marina Freeway*. Contribute to the design and implementation of a Transit Priority System (signal system components) along Lincoln Boulevard.

- *Lincoln Boulevard/Bali Way*. Contribute to the design and implementation of a Transit Priority System (signal system components) along Lincoln Boulevard.

- *Lincoln Boulevard/Fiji Way*. Contribute to the design and implementation of a Transit Priority System (signal system components) along Lincoln Boulevard. Contribute to the design and implementation of an expanded internal shuttle system serving the Marina del Rey area.

- *Lincoln Boulevard/Mindanao Way*. Contribute to the design and early implementation of a Transit Priority System (signal system components) along Lincoln Boulevard.

City of Culver City

The following intersection improvements shall be provided in a manner satisfactory to the City of Culver City:

- *Sepulveda Boulevard/Centinela Avenue.* Contribute to the design and implementation of ATCS. Implement the Regional Bus enhancements providing additional service (one bus) along the Culver City Bus Line 6 and the design and implementation of the expanded internal shuttle system serving Howard Hughes Center. Contribute to the design and implementation of Limited Bus Service serving Howard Hughes Center and the Century Boulevard Office Corridor.

- *Inglewood Boulevard/Washington Boulevard.* Implement the Regional Bus enhancements providing additional service (one bus) along the Culver City Bus Line 2.

- *Jefferson Boulevard/Overland Avenue.* Implement the Regional Bus enhancements providing additional service (two buses) along the Culver City Bus Line 4 and its extension.

- *Sepulveda Boulevard/Jefferson Boulevard and Playa Street*. Implement the Regional Bus enhancements providing additional service (two buses) along the Culver City Bus Line 4 and its extension. Also, contribute to the design and implementation of additional service (one bus) along the Culver City Bus Line 6.

- *Sepulveda Boulevard/Slauson Avenue*. Implement the Regional Bus enhancements providing additional service (one bus) along the Culver City Bus Line 6.

- *Green Valley Circle/Centinela Avenue*. Restripe in order to provide a separate westbound right-turn lane on Centinela Avenue. The westbound approach would have a separate right lane and two through lanes.

- *Centinela Avenue/Washington Place*. Add a second left-turn lane to both eastbound and westbound approaches on Washington Place. The eastbound approach would have dual lefts, a shared through-right lane, and a separate through lane. The westbound approach would have dual lefts, two through lanes, and a separate right-turn lane.

- *Overland Avenue/Culver Boulevard*. Add a right-turn lane along the westbound approach on Culver Boulevard. This approach would have a separate right-turn lane, a left-turn lane, and two through lanes. In addition, provide a southbound right-turn–only lane on Overland Avenue at this location, resulting in a separate right-turn lane, two through lanes, and dual left-turn lanes.

- *Sepulveda Boulevard/Culver Boulevard*. Implement the Regional Bus enhancements providing additional service (one bus) along the Culver City Bus Line 6.

- *Sawtelle Boulevard/Culver Boulevard*. Contribute toward provision of separate northbound and southbound right-turn lanes along Sawtelle Boulevard consistent with the Caltrans-proposed improvement at this location. Both northbound and southbound Sawtelle Boulevard approaches would have a separate right-turn lane, two through lanes, and a left-turn lane.

- *Hannum Avenue/Playa Street*. Implement the Regional Bus enhancements providing additional service (one bus) along the Culver City Bus Line 2.

- *Jefferson Boulevard/Duquesne Avenue*. Implement the Regional Bus enhancements providing additional service (two buses) along the Culver City Bus Line 4 and its extension.

- *Centinela Avenue/Washington Boulevard*. Implement the Regional Bus enhancements providing additional service (one bus) along the Culver City Bus Line 2.

- *Jefferson Boulevard/Sepulveda Boulevard (N).* Implement the Regional Bus enhancements providing additional service (two buses) along the Culver City Bus Line 4 and its extension.

- *Sepulveda Boulevard/Sawtelle Boulevard.* Implement the Regional Bus enhancements providing additional service (two buses) along the Culver City Bus Line 4 and its extension. Also, implement the Regional Bus enhancements providing additional service (1 bus) along the Culver City Bus Line 6.

City of Inglewood

The following intersection improvements shall be provided in a manner satisfactory to the City of Inglewood Department of Public Works.

- *Aviation Boulevard/Manchester Boulevard*. Contribute to the design and implementation of ATCS or any other similar computerized signal system enhancement.

- *La Brea Avenue/Centinela Avenue*. Restripe in order to add a westbound right-turn lane on Centinela Avenue. The westbound approach would have a right-turn lane, a left-turn lane, and two through lanes.

City of El Segundo

Proposed improvements to the following intersection (which lies on the boundary of the City of El Segundo and the City of Los Angeles) shall be required in a manner satisfactory to the respective City Departments of Transportation/Public Works.

- *Sepulveda Boulevard/Imperial Highway (El Segundo)*. Contribute to the design and implementation of ATCS at this location or a similar signal system enhancement program.

Caltrans

The following improvements, which are described above, are located on State Roadways and shall be implemented to the satisfaction of Caltrans working closely with the jurisdictions in which the cross-streets are located. The proposed improvements at each of these intersection locations are described in more detail under the discussion of the mitigation measures for the various other jurisdictions, above. These improvements shall be coordinated with the City of

Los Angeles, the County of Los Angeles, and the City of El Segundo, as applicable. They include the following locations:

1. Lincoln Boulevard (SR 1)/Marina Freeway (SR 90) intersection (Contribution to Transit Priority System (signal system components) (City of Los Angeles)
2. Lincoln Boulevard/Maxella Avenue (City of Los Angeles)
3. Lincoln Boulevard/Venice Boulevard (City of Los Angeles)
4. Lincoln Boulevard/Washington Boulevard (City of Los Angeles)
5. Lincoln Boulevard/83rd Street (City of Los Angeles)
6. Venice Boulevard/Centinela Avenue (City of Los Angeles)
7. Sepulveda Boulevard/I-105 WB Off-Ramp (City of Los Angeles)
8. Sepulveda Boulevard/Imperial Highway (City of Los Angeles/El Segundo)
9. I-405 NB Ramps/Jefferson Boulevard (City of Los Angeles)
10. I-405 SB Ramps/Jefferson Boulevard (City of Los Angeles)
11. Lincoln Boulevard/Jefferson Boulevard (City of Los Angeles)
12. Lincoln Boulevard/Bluff Creek Drive (City of Los Angeles)
13. Lincoln Boulevard/Loyola Marymount University (LMU) Drive (City of Los Angeles)
14. Lincoln Boulevard/Fiji Way (Los Angeles County)
15. Lincoln Boulevard/Mindanao Way (Los Angeles County)
16. Lincoln Boulevard/Bali Way (Los Angeles County)
17. Lincoln Boulevard/Manchester Boulevard (City of Los Angeles)
18. Lincoln Boulevard/La Tijera Boulevard (City of Los Angeles)

Neighborhood Traffic Management

- Pursuant to the schedule established in the final adopted subphasing program, the project applicant shall provide a funding mechanism acceptable to LADOT for necessary City staff support for development of neighborhood traffic management plan(s) and for subsequent implementation of traffic calming measures contained in the plan(s). Development of a plan for any particular community would be initiated at the request of the residents in the community. Eligible communities would consist of the residential neighborhoods within the boundaries listed below:

– Inglewood Boulevard, Ballona Creek, Sawtelle Boulevard, Bray Street/Port Road

– Kentwood Avenue, 77th Street, Sepulveda Boulevard, Manchester Avenue

– Sepulveda Boulevard, 74th Street, La Tijera Boulevard, Manchester Avenue

– Rayford Drive, 83rd Street, Lincoln Boulevard, La Tijera Boulevard

Construction Impact Measures for the Proposed Project

- Prior to the issuance of any building or grading permit for the Project, construction traffic management plans, including street closure information, detour plans, haul routes, and staging plans shall be prepared, satisfactory to LADOT. All construction contracts shall include provisions requiring compliance with the approved construction traffic management plans. Construction traffic management plans shall include, but are not limited to, the following:

  – Configure construction parking to minimize traffic interference to the extent feasible.

  – Provide temporary traffic control during all phases of construction activities to improve traffic flow on public roadways (e.g., flag person).

  – Schedule construction activities that affect traffic flow on public roadways to off-peak hours to the extent feasible.

  – Reroute construction trucks off congested streets.

  – Consolidate truck deliveries.

  – Provide dedicated turn lanes for movement of construction trucks and equipment on- and off-site, to the extent feasible.

  – Construction-related vehicles shall not park on any residential street, with the exception of active construction sites within the Project.

  – No construction activity shall block access to any residence or place of business, without prior notice.

- Safety precautions shall be provided for pedestrians and bicyclists through such measures as alternate routing and protection barriers.
- All contractors shall be required to participate in a common carpool registry during all periods of contract performance monitored and maintained by the Applicant's Monitor.
- All construction-related deliveries, other than concrete and earthwork-related deliveries, shall be restricted to non-peak travel periods to the extent feasible.

- Construction vehicle travel through neighboring jurisdictions other than the City of Los Angeles shall be conducted in accordance with the standard rules and regulations established by the respective jurisdictions where such jurisdictions would be subject to construction impacts. These include allowable operating times for construction activities, truck haul routes, clearance requirements, etc.
- Prior to the issuance of any permit for the Project, required permits for the truck haul routes shall be obtained from LADOT, Caltrans, and other affected jurisdictions.

Additional Construction Mitigation Measures for the Off-Site Improvements

- Provide temporary traffic control during all phases of construction activities to improve traffic flow on public roadways (e.g., flag person).
- Schedule construction activities that affect traffic flow on public roadways to off-peak hours to the extent feasible.
- Reroute construction trucks off congested streets.
- Consolidate truck deliveries.
- Provide dedicated turn lanes for movement of construction trucks and equipment on- and off-site, to the extent feasible.
- Construction-related vehicles shall not park on any residential street, with the exception of active construction sites within the Project.
- No construction activity shall block access to any residence or place of business, without prior notice.
- Safety precautions shall be provided for pedestrians and bicyclist through such measures as alternate routing, and protection barriers.

- There shall be coordination with applicable transit agencies for temporary alternative pick-up/drop-off points if bus stops are affected by construction of the off-site improvements.

c. Unavoidable Adverse Impacts

Six separate analyses were performed addressing the Proposed Project's adverse impact. Those sections and the conclusions reached for each analysis are as follows:

- Intersection Analysis: The Proposed Project's mitigation program would eliminate the significant impacts at all intersections except Jefferson Boulevard and Centinela Avenue. Operating conditions at this intersection, located within the City of Los Angeles, would be LOS C (good service) during the A.M. peak hour and LOS D (fair service) during the P.M. peak hour. No significant impacts would remain in any of the other jurisdictions included in the Traffic Study. The number of intersections operating at LOS E or F would increase during the A.M. peak hour from 84 intersections (2010 base) to 85 intersections with the Proposed Project and mitigation. During the P.M. peak hour the number would decrease from 104 intersections to 102 intersections. These impacts would be the same under the Proposed Project's Equivalency Program, which would generate no greater number of trips during the A.M. and P.M. peak hours than the Proposed Project. Implementation of the Project's off-site improvements would not generate additional traffic, but would implement the mitigation program.

- Freeway Analysis: The Proposed Project would not have a significant impact on the CMP freeway system, prior to mitigation, during either the A.M. or P.M. peak hours. The Project's net impacts would be the same after mitigation as prior to mitigation, and would be less than significant. These impacts would be the same for the Proposed Project and the Equivalency Program.

- Impacts on Neighborhood Streets: Four neighborhoods were identified as being subject to potentially significant impacts on neighborhood streets. Project mitigation measures provide mechanisms for the development of neighborhood traffic management plan(s) in the potentially impacted neighborhoods, should such plans be requested by the residents in the community. Implementation of mitigation measure would reduce potential impacts to less-than-significant levels. These impacts would be the same under the Proposed Project's Equivalency Program, which would generate no greater number of trips during the A.M. and P.M. peak hours than the Proposed Project. Implementation of the Project's off-site improvements would reduce the pressure for drivers to use neighborhood streets.

- Impacts on Project Access: Impacts at all intersections providing access to the Project site would operate at services levels rates as having excellent, good, or fair levels of service. Access to the Project site through these intersections would be less than significant. Project design would avoid hazardous conditions at points of site access, and access impacts with regard to safety of Project accessibility would be less than significant. Impacts would be the same under the Project's Equivalency Program. The implementation of the off-site improvements would have no long term impacts on accessibility to adjacent areas. Potential construction impacts on accessibility at off-site locations would be short term, mitigated, and less than significant.

- Impact on Public Transit: Per the Project's mitigation measures, the Proposed Project provide improved bus service. The available seating capacity on a system-wide bases would be increased by approximately 189 seats, with 80 seats for Project population in the A.M. peak hour and 113 in the P.M. peak hour. The balance would be available to serve other regional population. Frequency of service would be improved on Culver City Line 6 from 12-minute intervals to 10-minute intervals. On Culver City Bus Lines 2 and 4, the frequency would be improved from one-hour intervals to 30-minute intervals. These are net beneficial impacts. The Project's off-site improvements would support implementation of the public transit programs.

- Construction-Related Impacts: Overall, the construction impacts on the transportation system would be temporary in nature and would cause an intermittent reduction in street and intersection operating capacity and efficiency. A potentially significant, short-term impact was identified from construction traffic occurring during the time one lane would be temporarily closed on the south side of Jefferson Boulevard for construction activities. Otherwise, the impacts were identified above as adverse, but not significant. In addition to the Project's direct and indirect impacts on traffic, secondary traffic impacts would occur at off-site locations that would be improved to implement the mitigation measures described in the preceding sections. Potentially significant secondary impacts could occur along the Centinela Corridor improvement, between Culver Boulevard and the SR-90 Freeway, and at the intersection of La Tijera Boulevard and Centinela Avenue. Mitigation measures have been developed to address traffic operations and safety during construction of the Proposed Project, and at the off-site locations. However, even with the implementation of the mitigation measures, delays in traffic at these locations could still be considered substantial by the affected parties, and thus result in short-term, temporary significant impacts after mitigation.

d. Cumulative Impacts

The Proposed Project's year 2010 Baseline conditions include the effects of land use growth and the resulting transportation growth within the entire study area. The travel forecasts, as well as the intersection capacity calculations, the freeway impact analyses, and the neighborhood impact analysis, include the cumulative impacts resulting from Project traffic, as well as regional land use growth.

The cumulative traffic increases associated with the Proposed Project and Related Projects could lead to increased congestion along major travel corridors and increased levels of neighborhood intrusion, with the potential for Project traffic to exceed LADOT neighborhood impact significance threshold identified on local residential streets within four residential neighborhoods, as stated earlier in the Neighborhood Traffic Intrusion Analysis section. Also, the Proposed Project is not expected to have a significant impact on the public transit system since there would be available seating capacity on the transit lines serving the project site during peak periods after the addition of project-generated transit trips.

The Proposed Project has the potential to contribute to cumulative impacts at locations that are operating poorly under cumulative conditions even though the Project's addition of trips does not exceed LADOT or CMP threshold criteria. The Proposed Project is located within the west side of the City of Los Angeles. Traffic congestion is experienced on many freeways and surface streets throughout the greater Los Angeles area, in general, and in the west side, in particular, during peak periods.

The 2002 Congestion Management Program notes that the Los Angeles County freeway system is highly congested, with nearly half of the system operating at the two most congested levels (LOS E and F) during both the morning and afternoon peak hours. In the vicinity of the Proposed Project, data from the 2002 Congestion Management Program shows that the I-405 currently operates at LOS E and F during the morning and afternoon peak hours throughout the west side of Los Angeles and beyond, while the I-10 currently operates at LOS F during peak hours east of the I-405, and segments of the I-105 currently operate at LOS E and F during peak hours. The I-405 segments on the west side of Los Angeles are planned to be improved by Caltrans with the addition of high occupancy vehicle (HOV) lanes between the I-105 and the I-10. This would enhance capacity on these freeways and facilitate bus travel and carpools/ vanpools by completing the gap in the HOV lanes between the I-105 and the I-10. Plans to complete the gap in the HOV system between the I-10 and U.S. 101 are beyond the timeframe of this project.

The intersection analysis shows that 42 and 49 of the 218 study intersections operate at LOS E or F under 2003 baseline conditions during the A.M. and P.M. peak hours, respectively, and that these figures are projected to increase to 90 and 108 intersections operating at LOS E or F under future 2010 cumulative with Project conditions during the A.M. and P.M. peak hours, respectively.

The Proposed Project is projected to add traffic to locations that are either currently experiencing congestion or would experience congestion under cumulative future conditions. The incremental addition of even a small amount of Project-generated traffic to poorly-performing locations, even locations where a significant impact would not be triggered under LADOT or Los Angeles County CMP significant impact threshold criteria, would constitute a contribution to significant cumulative impacts at these locations. This could include intersection or freeway locations projected to operate at LOS E or F under cumulative conditions, local residential streets already experiencing intrusion traffic under cumulative conditions, or public transit lines experiencing overcrowding under cumulative conditions.

Mitigation measures for the Proposed Project would improve cumulative conditions and would alleviate the Project's contribution to cumulative impacts at the mitigated locations. Mitigation measures consisting of improvements to the public transit system would also help to alleviate cumulative conditions not only at locations impacted by the Proposed Project but also at additional locations along the transit corridors to be improved. Funding and implementation of neighborhood traffic management plan(s) for eligible communities as mitigation for potential Project neighborhood intrusion impacts would also help to relieve other cumulative cut-through traffic through the same neighborhoods.

With implementation of the proposed improvement measures, the impact of the Proposed Project on cumulative impacts would be reduced, with the number of intersections projected to operate at LOS E or F reduced to 85 and 102 during the A.M. and P.M. peak hours, respectively, under cumulative conditions with the Proposed Project and mitigation measures. On a system-wide basis, the average performance of the transportation system measured by intersection V/C ratios would be better during both peak hours under future cumulative conditions with the Proposed Project and mitigation measures than that under the future 2010 baseline conditions without the project. The Project's transportation system improvements consisting of roadway corridor and intersection enhancements, signal system improvements, and transit system improvements would improve cumulative intersection operations at 51 and 61 congested LOS E/F locations in the A.M. and P.M. peak hours, respectively. This mitigation effectiveness is much greater in number and magnitude than the impact caused by the Proposed Project's traffic at these locations. Therefore, the Proposed Project improvements would not only mitigate the Project's direct impacts, but would also mitigate some of the cumulative growth forecasted to occur. Furthermore, implementation of the Proposed Project's transit system improvements would add a substantial number of seats to the capacity of the public transit system serving not only the project site but also surrounding areas of the Los Angeles west side.

Cumulative impacts regarding Proposed Project access would be cumulatively less than significant, since the operating conditions at the Project Project's access points are projected to be better than LOS E during both the A.M. and P.M. peak hours inclusive of anticipated cumulative traffic growth and there are no related projects in the immediate vicinity that would contribute to an obstruction of visual conditions for travelers or pedestrians accessing the Proposed Project site. Cumulative impacts from construction may occur on roadways when multiple projects require lane closures in proximity to one another at the same time. Both the Proposed Project and related projects would be expected to implement standard procedures for mitigating construction traffic impacts on roadways and insuring safety. Nonetheless, since the Proposed Project's impacts from construction, inclusive of the Equivalency Program and the off-site improvements, have been identified as potentially significant short-term impacts, cumulative impacts from construction are considered to be potentially significant temporary, short-term significant impacts.

14. PARKING

a. Environmental Impacts

Off-Street Parking

The Proposed Project intends to provide off-street parking as required by the Playa Vista Area D Specific Plan. The parking would be provided under Section 9A that specifies parking amounts based on standard by use or under Section 9B that allows parking in accordance with a demand study. The number of parking spaces that would be required under Section 9A and 9B were estimated for the Proposed Project's uses. Section 9A of the Specific Plan would require 6,337 parking spaces, of which 5,424 spaces would be for residential use and 913 spaces would be for non-residential uses without application of the mixed-use considerations. However, the Project's mixed uses would offer shared parking efficiencies as different non-residential uses vary in terms of the times of day when their respective parking demands would be expected to peak. For example, office uses peak in the late morning hours, while retail uses peak in the mid-afternoon, and restaurants peak in the evening. The number of non-residential parking spaces required with shared parking would be 762 spaces. The total number of spaces required would be 6,186 spaces.

The amount of parking required based on a demand analysis for the types and mix of uses expected at the Project site is 4,568 spaces, of which 3,718 spaces would be for residential uses and 850 spaces would be for non-residential uses. With shared parking, the demand for non-residential uses is estimated to be 751 spaces, and the total for all uses would be 4,469. Since, the demand for parking is less than the requirements under Section 9A, the demand for parking would be met through the mechanisms established in the Area D Specific Plan. Since the demand for parking would be met, impacts would be less than significant.

The demand for parking under the Equivalency Program would be less than that for the Proposed Project, and would be also be met through the requirements of the Area D Specific Plan.

Street Parking

The Proposed Project would also provide street parking throughout the Project site in a manner that is consistent with the City of Los Angeles local and collector street design standards. This parking would be in addition to the off-street parking that is estimated to meet Project demand. As a result, the on-street Project's street parking spaces would supplement the off-street parking supply to provide additional convenience for the on-site population, and make short-term street parking available to the Proposed Project's neighborhood retail and community serving uses.

The Proposed Project is not expected to affect any existing street parking in the Project vicinity. However, one of the Project's off-site mitigation measures would require the implementation of restricted parking during the A.M. and P.M. peak periods and full-time unavailability of some space during construction. Impacts on parking would be less than significant.

b. Recommended Mitigation Measures

The Proposed Project would not result in a significant impact; therefore, mitigation measures are not required or recommended for the Proposed Project, inclusive of the Equivalency Program and off-site improvements.

c. Unavoidable Adverse Impacts

There would be no adverse impacts to existing street parking bordering the Proposed Project site or to the street parking that would be created by the Proposed Project. Specific Plan requirements and the demand for off-street parking would be met with on-site parking facilities. Such parking would be provided for the Proposed Project and the Equivalency Program.

The Proposed Project includes mitigation measures to reduce traffic impacts which would require off-site roadway improvements. These improvements would generate indirect, secondary impacts which would result in the implementation of parking restrictions during the A.M. and P.M. peak hour periods along the Centinela Corridor, between Ballona Channel and Culver

Boulevard, as well as full-time unavailability of some spaces during construction, an adverse impact. Parking impacts of the Proposed Project, inclusive of the Equivalency Program and off-site improvements would be less than significant.

d. Cumulative Impacts

It is expected that all development in related projects would include mitigation measures requiring conformance with the applicable regulations, and other projects would not utilize the same parking facilities as the Proposed Project. The only related project in the immediate vicinity of the Proposed Project site is the adjacent Playa Vista First Phase Project. Both the Proposed Project and the Playa Vista First Phase Project are expected to provide sufficient parking space to meet the demand for parking. Cumulative impacts, inclusive of the Proposed Project, the Equivalency Program, and the off-site improvements, would be less than significant.

15. BICYCLE PLAN

a. Environmental Impacts

The Proposed Project would include development of a new system of bikeways that would serve the Proposed Project and off-site needs for bicycle travel. The implementation of new bikeways would be beneficial, as they would provide for additional ridership capacity, and connections to the existing bikeway network. The Proposed Project would be consistent with existing Bicycle Plans, goals, and polices, and would not adversely interfere with the existing bikeways in the area. A short-term impact may occur to the bike trail at Centinela Avenue and Culver Boulevard and/or Inglewood Boulevard and Culver Boulevard during construction of the Project’s intersection mitigation measures to improve traffic flow at these locations. Any such impact would be reduced through standard practices for rerouting during construction. Mitigation measures that address construction impact on bicycle trails are included in the Traffic section of the EIR. Project impacts on bikeways and bike plans inclusive of the Equivalency Program and off-site improvements would be less than significant.

b. Recommended Mitigation Measures

The Proposed Project would not result in a significant impact; therefore, mitigation measures are not required or recommended for the Proposed Project, inclusive of the Equivalency Program and off-site improvements.

c. Unavoidable Adverse Impacts

The Proposed Project would include development of a new system of bikeways that would serve the Proposed Project and be a beneficial impact of the Project. A short-term impact may occur to the bike trail at Centinela Avenue and Culver Boulevard and/or Inglewood Boulevard and Culver Boulevard during construction of the Project's intersection mitigation at that location. Any such impact would be mitigated. Project impacts on bikeways and bike plans, inclusive of the Equivalency Program and off-site improvements, would be less than significant.

d. Cumulative Impacts

The proposed linkages between the various projects are compatible with one-another and would implement or enhance existing Bike Plans. No known related projects would compromise existing bikeways. Cumulative development with the Proposed Project, its Equivalency Program, and the off-site improvements, would be consistent with Bike Plans and less than significant.

16. FIRE PROTECTION

a. Environmental Impacts

The Proposed Project site is currently within the service areas of Los Angeles Fire Department Stations No. 5, 95, 63, and 62. The service district for these stations currently includes 160,787 residents and 53,981 employees, for a total population of 214,768 persons, and has 11,388 emergency incidents per year. This equates to a rate of 53 emergency incidents per 1,000 residents and employees. Applying this rate to the anticipated 5,720 residents and 1,180 employees estimated to reside and work in the Proposed Project results in an estimated 366 emergency incidents per year. This would be equivalent to about a 3% increase over the 11,388 emergency incidents. The Proposed Project will generate revenues which may be applied toward the provision of required manpower and equipment. Issues pertaining to funding are primarily socioeconomic in nature and may be considered further by the decision-makers in their review of the Proposed Project, who may apply such funds to the provision of fire services.

Stations 5 and 63 are the closest to the Proposed Project site. The distance to these stations is further than the service radius established by the City. However, one of the Conditions of Approval for the First Phase Project is the provision of a Task Force Fire Station, consisting of both Engine and Truck Companies. Such a station has been designated for a parcel at Playa Vista Drive and Fountain Park Drive. Its provision would allow service to the Proposed

Project site in accordance with City Fire Department standards, thereby precluding a need for an additional new station or expansion or consolidation of existing facilities.

Emergency access to the Proposed Project would be provided by the existing and proposed street systems. City review of street widths, street lighting and street signage will be based on an evaluation of requirements for the provision of emergency access. Emergency access from the proposed Playa Vista Fire Station would be along a route that operates at LOS levels of D or better, considered conducive to the flow of emergency vehicles.

As such, impacts would be less than significant. However, if the new Playa Vista station were not provided nor properly staffed, a significant impact could occur.

b. Recommended Mitigation Measures

Mitigation Measures for the Proposed Project and the Equivalency Program

The Proposed Project would be required to meet the requirements of all Municipal Codes for Fire Protection. In addition, the following measures have been added to address: (1) the contingency of the planned Fire Station not being implemented; (2) to address additional design considerations; and (3) to provide appropriate review procedures for Fire Department review of the Proposed Project.

- If the proposed fire station required for the adjacent First Phase Project is not built prior to the issuance of the first building permit, an agreement shall be reached between the Applicant and the Fire Department which provides for adequate fire services/facilities by the Department.

- Prior to the issuance of any building permit, a plot plan shall be submitted to the City Fire Department for approval.

- Prior to the issuance of any building permit, definitive plot plan and specifications, including fire prevention features, for the Project shall be submitted to and approved by the City Fire Department. Sprinklers may be required after review of the plot plans.

- Adequate off-site public and on-site private fire hydrants shall be required. The exact number and location of the hydrants shall be determined after the City Fire Department reviews the plot plan. The Project Developer shall be required to pay for any hydrant installations required by the Fire Department.

- Adequate vehicular accessways around all multi-story buildings shall be required by the Fire Department where buildings exceed 28 feet in height.

- Where fire apparatus will be driven onto the road level surface of a subterranean parking structure, the structural foundation of the subterranean parking structures shall be engineered to withstand a bearing pressure of 8,600 pounds per square foot.

- To mitigate potential significant impacts on access, the Applicant shall covenant that all current public and private streets shall remain open to free travel of emergency vehicles.

- The Applicant shall provide for all infrastructure improvement, including water main improvements, and/or expansion necessary to meet City Fire Department fire flow standards, in accordance with a phasing schedule to the satisfaction of the City Fire Department.

c. Unavoidable Adverse Impacts

Implementation of the Proposed Project would result in the need for increased staffing for existing fire protection facilities and the City's fire protection services load. In addition to the new tax revenues from development of the Proposed Project that could be used for funding of the expansion of fire services and facilities and the City Fire Station required for the Playa Vista First Phase Project, the Applicant will provide resources and improvements as required by all statutory regulations. Further, the Proposed Project would implement its mitigation measures. It is expected that the new fire station in the Playa Vista First Phase Project, with sufficient staffing, will avoid a need for further fire station additions, expansions, or consolidations, and no significant impacts would occur. Nonetheless, a contingency mitigation measure has been included to assure that adequate fire services and facilities are available to meet the needs of the Proposed Project, if the new station is not built. After mitigation, no significant impacts would occur. This conclusion applies the Proposed Project, the Equivalency Program, and the construction of the Project's off-site improvements.

d. Cumulative Impacts

Development of the related projects, as well as the Proposed Project, is subject to review for adequacy of water flow to the respective project sites, and the projects cannot be developed until such flows are available. Off-site facilities to serve the larger area are under the jurisdiction of the Department of Water and Power, which anticipates future water needs on the basis of regional forecasts and familiarity with the related development projects in the vicinity of the Proposed Project.

In addition to the existing fire stations, the cumulative development would be served by three new fire stations, including an Engine and a Truck Company that is required as a Conditions of Approval for the Playa Vista First Phase Project and two new station relocations and expansions that are funded and expected to be completed in 2006: Station 5 and Station 62. New development would, in most cases, fall within recommended distances of one of the five anticipated fire stations. If a development should fall beyond the recommended distances, the fire department can require sprinkler systems as mitigation measures under the Municipal Code (LAMC 57.09.07). Developers of the individual related projects, as well as the Proposed Project, would provide for all statutory and Fire Department-required improvements to facilitate the provision of fire services.

The Proposed Project and the other related projects would add an additional 22,580 residents to the service areas of the City Fire Station Nos. 5, 95, 63, and 62. The Proposed Project and related projects would also generate 48,961 employees, for a total population of 71,541 (including a growth factor of 25% for residential population and a growth factor of 10% for employees). This population could generate an additional 3,792 emergency incidents annually. This would be equivalent to a 33% increase over the existing 11,388 incidents within the primary response area of Stations No. 5, 95, 63, and 62. Therefore, the Proposed Project and the identified related projects would increase the workload of Stations No. 5, 95 63, and 62 with a potential reduction in the level of service to the existing community if there is no corresponding increase in manpower and equipment. With development of the anticipated new facilities, cumulative impacts would be less than significant. If anticipated new facilities are not built and sufficiently staffed, a potentially significant cumulative impact could occur. This conclusion applies the Proposed Project, the Equivalency Program and the construction of the Project's off-site improvements.

17. POLICE PROTECTION

a. Environmental Impacts

Based on the existing service ratios for the Pacific Division in which the Proposed Project is located, the Project's site population of approximately 5,720 residents and 1,180 employees would generate a need for eight new officers to serve the increased population. Under the Project's Equivalency Program, the population could be increased by 234, requiring an additional 0.3 officer. If the new officers were not provided, the ratio would fall from 1.17 officers per 1,000 population to 1.14 officers per 1,000 population. The Project's off-site improvements would not have an adverse effect on police services.

The Proposed Project would generate revenues to the City which could be applied toward the provision of new police facilities, with related staffing. The sufficiency of such funds, and a decision to allocate such funds accordingly, is a socio-economic issue which may be addressed further by the decision-makers. Since it cannot be guaranteed that the Proposed Project's revenue contributions would be applied to police services, it is conservatively concluded that the Proposed Project's demand may result in a substantial reduction in the service ratio, and impacts prior to mitigation would be significant.

Emergency access to the Project site would be provided by the existing and proposed street systems. City review of street widths, street lighting, and street signage will be based on an evaluation of requirements for the provision of emergency access. Because of the Proposed Project's size, the Los Angeles Police Department has expressed its concern on accessibility to parking areas for patrol vehicles, lighting issues for nighttime use, and provisions for private security throughout the Project site. Mitigation measures have been included to assure that the Proposed Project has addressed these issues in a manner that is satisfactory to the Police Department.

b. Recommended Mitigation Measures

Mitigation Measures for the Proposed Project and the Equivalency Program

The following mitigation measures will address impacts on police service level and facilities as well as the issues pertaining to crime prevention:

- Prior to the issuance of the first building permit, the Applicant shall consult with the Los Angeles Police Department, Pacific Division, regarding site-wide crime prevention features, which may include: provision of call boxes in parks and/or other strategic locations for police and medical emergencies; payphones restricted to outgoing calls only; and "graffiti" cameras in strategic locations to discourage problem graffiti areas from arising.

- Prior to the issuance of each temporary or permanent Certificate of Occupancy, a diagram of the Proposed Project shall be provided to the Pacific Area Commanding Officer, which will include access routes, unit numbers (as available), and any additional information that would facilitate police response.

- Prior to the issuance of each building permit, the Applicant shall incorporate crime prevention features, pursuant to the Los Angeles Police Department (LAPD), Pacific Division, and the LAPD Crime Prevention Unit, appropriate to the design of the property involved in the Proposed Project. Those may include the following elements:

- The incorporation of access for emergency service personnel and vehicles including provision of security access codes for police personnel;
- Standard security measures for residential and employee access to buildings;
- Use of video cameras and private security guards to monitor and patrol the project site during project construction and operation;
- Entryways, elevators, lobbies, and parking areas with lighting that eliminates areas of concealment; and
- Solid core doors with deadbolt locks to all offices, shops, and hotel units.

c. Unavoidable Adverse Impacts

The Proposed Project impacts may result in the need for increased staffing for existing police protection facilities and to maintain the City's police protection services load. In addition to the new tax revenues from development of the Proposed Project (inclusive of the Equivalency Program) that could be used for the funding of expansion of the police services and facilities, the Applicant will provide resources and improvements required by all statutory regulations. Since it cannot be guaranteed that the Proposed Project's revenue contributions would be applied to police services, it is conservatively concluded that the Proposed Project's demand may result in a substantial reduction in the service ratio, and impacts after mitigation would be potentially significant.

d. Cumulative Impacts

The cumulative increase for police officers, from the Proposed Project and other related projects in the Pacific Division service area would create a cumulative demand for 79 new officers within the service district. If the new officers were not provided, the police service ratio would fall from 1.17 officers per 1,000 population to 0.96 officer per 1,000 population. These conclusions are inclusive of the Proposed Project and the Equivalency Program. Construction of the Project's off-site mitigation measures would not contribute to cumulative impacts on police services.

Each related project will contribute additional tax revenue not accounted for herein from which allocations can be made for commensurate expansion of police services. If such allocations are made by the City Council from such revenues, significant cumulative adverse effect upon police service would be avoided. Since it cannot be guaranteed that the revenue contributions from future development would be applied to police services, it is conservatively concluded that cumulative demand may result in a substantial reduction in the service ratio, and impacts after mitigation would be potentially significant.

18. SCHOOLS

a. Environmental Impacts

Development of the Proposed Project would generate a total of 616 students, distributed as follows: 304 elementary school students, 145 junior high school students, and 167 high school students.

Elementary school enrollment attributable to the Proposed Project would exceed the forecasted unused capacity at Playa del Rey Elementary School. This constitutes a significant impact on school capacity. However, with the addition of new classroom capacity, sufficient capacity would be available to accommodate the elementary school students generated by the Project. Under this scenario, development of the Proposed Project would have a less-than-significant impact on elementary school capacity. With the additional capacity provided by the Playa Vista Elementary School, the significant impacts on the available capacity at Playa del Rey Elementary School would be lessened, but not eliminated. As the addition of new classroom capacity at Playa del Rey Elementary School and the availability of the Playa Vista Elementary School cannot be assured, it is conservatively concluded that development of the Proposed Project would have a significant impact on elementary school capacity. However, with the payment of one-time school fees by the developer, Proposed Project impacts, pursuant to the provisions of SB 50, would be fully mitigated.

The Proposed Project is located within the attendance boundaries of Marina del Rey Middle School and Venice High School. Middle and high school enrollment attributable to Project development would be within the forecasted unused capacity of these two schools. This constitutes a less-than-significant impact on school capacity, as sufficient capacity would be available to accommodate Project-generated students without the construction of new school facilities and/or modifications to the existing operational characteristics of Marina del Rey Middle School or Venice High School.

b. Recommended Mitigation Measures

Under the provisions of SB 50, a project's impacts on school facilities are fully mitigated via the payment of the requisite new school construction fees established pursuant to Government Code Section 65995. Since the Applicant is required to pay these fees at the time of building permit issuance, impacts of the Project, inclusive of the Equivalency Program, would be fully mitigated. Therefore, no mitigation measures are required for the Proposed Project, inclusive of the Equivalency Program and off-site improvements. Implementation of the off-site measures would have no impact on schools.

c. Unavoidable Adverse Impacts

As future development will comply with the provisions of Government Code Section 65995, development of the Proposed Project, inclusive of the Equivalency Program and the identified off-site improvements, would not result in any adverse impact.

d. Cumulative Impacts

The Proposed Project and the relevant related projects would generate a total of 3,690 students: 1,157 elementary school (K-5) students, 1,145 middle school (6-8) students, and 1,388 high school (9-12) students. These levels of student generation exceed the capacities of the local schools to accommodate the cumulative demand generated by all of the related projects. As such, a significant cumulative impact on school facilities would occur. Under the provisions of State law, mitigation is limited to the imposition of new development fees per Government Code Section 65995. The payment of these fees, which is required of all cumulative development, would reduce the significant impact to a less-than-significant level.

19. PARKS AND RECREATION

a. Environmental Impacts

The Proposed Project's 2,600 dwelling units are estimated to generate 5,720 residents which would create a demand for park space. At the same time, the Proposed Project would provide new parks and open space to meet increased demand. The Proposed Project would provide 11.4 acres of parks and 1.0 acre of bike lanes, exclusive of private, open space, such as courtyards and plazas, that would help to meet the Project's demand. In addition, if the assisted living component of the Proposed Project's Equivalency Program was implemented, an additional 0.12 acre of park space would be provided for each 50 assisted living units.

Besides providing this parkland, the Proposed Project would include the improvement of these parks with landscaping; hardscaping; walking, jogging, and bicycle trails; children's play areas; recreational fields; and other recreational facilities, (i.e. basketball courts, skating rings, etc.) with an emphasis on active activities, as appropriate. Further, maintenance of the parks within the Proposed Project would be provided in perpetuity by a property owners' association. The Proposed Project also includes 1.0 acre of bicycle lanes within several of the Project's right of ways. In addition, the Proposed Project proposes to provide 5.76 acres of park space within the adjacent Playa Vista First Phase Project or on land controlled or improved by the applicant and its affiliates (i.e., nearby off-site locations).

The provision of 11.4 acres of active open space within the Proposed Project is equivalent to 2.0 acres of active open space per 1,000 residents and would increase the service ratio in the District Plan area from 0.7 acre per 1,000 population to 0.8 acre per 1,000 population. The 11.4 acres would meet the PRP's short- and intermediate-range standards for community and neighborhood parks of 2.0 acres per 1,000 residents.

The State's Quimby Act allows a local jurisdiction to require a subdivision to provide a maximum of 3.0 acres per 1,000 population in land dedication or fees, unless it is already exceeding that ratio. Municipal Code Section 17.12, the City's parkland dedication ordinance enacted under the Quimby Act, provides a formula for satisfying park and recreational uses through land dedication and/or in-lieu fees. Based on this formula, the Proposed Project would be required to dedicate approximately 17.65 acres of park and recreation space, pay in-lieu fees totaling $8,057,400, improve park and recreational facilities serving residents of the subdivision, or provide a combination of all three. If the Proposed Project were to satisfy this requirement exclusively through 17.65 acres of parkland dedication, the City would be responsible for the cost of both improvements and ongoing maintenance.

The parks and recreational space provided by the Proposed Project would exceed the requirements established in LAMC Section 17.12 by providing 11.4 acres of parks, as well as improving those parks with landscaping; hardscaping; walking, jogging, and bicycle trails; children's play areas; recreational fields; and other recreational facilities, as appropriate. Further, maintenance of the parks within the Proposed Project would be provided in perpetuity by a property owner's association. The value of these improvements is conservatively estimated to be in excess of the $8.1 million of in-lieu fees established in LAMC 17.12. Therefore, the Proposed Project is providing: (1) parkland at a ratio in excess of 2.0 acres per 1,000 population; (2) improvements valued in excess of the fees established within the City's parkland dedication ordinance (which is equivalent to 3.0 acres per 1,000 population); and (3) ongoing maintenance in perpetuity.

Thus, under any of these measures of demand, the demand for park or recreational facilities generated by the Proposed Project would be adequately accommodated by existing or planned facilities and service, and no significant impacts on parks and recreation would occur. Mitigation measures are proposed below to require implementation of the Project Design Features which serve to eliminate the Project's potentially significant impacts

b. Recommended Mitigation Measures

Mitigation Measures for the Proposed Project and the Equivalency Program

- The proposed Project shall provide park space in an amount equivalent to not less than a total of 17.16 acres (3 acres per thousand residents). A minimum of 11.4 acres shall be provided (2 acres per thousand residents) within the Proposed Project; the remaining park space may be satisfied through provisions of additional park space within the adjacent Playa Vista First Phase Project or on land controlled or improved by the applicant and its affiliates (i.e., nearby off-site locations)

- Prior to the issuance of the temporary or permanent Certificate of Occupancy for each 455 residential units, two acres of parks shall be provided and improved within the Project site; and an additional acre of off-site parks shall be provided concurrently (i.e., three acres in total), per the provisions outlined in the preceding mitigation measure.

- Prior to the recordation of any phase of the tract map for the Proposed Project, the required on-site and off-site parks shall be identified, including improvement and maintenance responsibilities, satisfactory to the local Council Office.

- In addition to the provision of park space identified above, the Proposed Project shall be responsible for providing improvements for the parks within the Project with landscaping, hardscaping, walking, jogging and bicycle trails, children's play areas, recreational fields and other recreational facilities (i.e. basketball courts, skating rings, etc.), with an emphasis on active activities as appropriate. The cost of the park improvements shall not be less than and is not limited by the amount of fees that the Project would be required to pay under LAMC Section 17.12D as though the Proposed Project was not dedicating any land for parks.

- Prior to recordation of any phase of the tract map for the Proposed Project, the applicant shall submit to the Advisory Agency for approval, in consultation with the Department of Recreation and Parks and the local Council office, a plan for the improvement of the parks to be provided by the Proposed Project.

- Prior to recordation of any phase of the tract maps, all parks within the Proposed Project in such tract map shall either be designated as active open space on such final tract maps or committed to open space through recorded deed restrictions and covenants, subject to the approval of the Advisory Agency.

- Prior to recordation of tract maps, lots designated for parks in tentative maps shall be offered for dedication to the Department of Recreation and Parks. If the Department of Recreation and Parks does not accept dedication of the park areas, a property owners' association shall be formed to maintain the park and recreational facilities in a manner satisfactory to the City of Los Angeles, together with the appropriate trails and easements guaranteed to the City. The property owners' maintenance responsibility for the park/recreational facilities shall be recorded in a Conditions, Covenants and deed Restrictions (CC & R) and a Covenant and Agreement. Any Covenant and Agreement to maintain park, open space and recreational fields/facilities shall be reviewed by the City Attorney prior to its acceptance by the Advisory Agency. Said covenant and agreement shall be recorded at tract map recordation. The property owner's association shall enter into a usage agreement with the Department of Recreation and Parks if requested.

Additional Mitigation Measure for the Equivalency Program

- Additional park space shall be provided at the rate of 0.12 acres for every 50 assisted living units developed.

c. Unavoidable Adverse Impacts

The Proposed Project would provide an increase in the level of park and open space in the existing area, increasing the per capita ratio service level set forth in LAMC Section 17.12. The Proposed Project would also meet the short- and intermediate-range goal of 2.0 acres per 1,000 population for community and neighborhood parks set forth in the PRP, would exceed the requirements of LAMC Section 17.12 and would meet the demand for park services. No significant impacts are anticipated. This conclusion applies the to Proposed Project, inclusive of the Equivalency Program and the construction of the Project's off-site improvements.

d. Cumulative Impacts

The 5,720 residents for the Proposed Project, plus the 18,104 residents for all of the other related projects in the City of Los Angeles within a two-mile radius of the Project perimeter and other related background growth of 4,526 residents, are expected to generate a cumulative population increase of approximately 28,350 residents. Under the Project's Equivalency Program, this number could increase by 240 to 28,790 residents. The park space requirement to meet the various standards for the additional population would be as follows: 57.6 acres to meet the PRP's short- and intermediate-range standards for community and neighborhood parks of 2.0 acres per 1,000 residents; 86.4 acres to meet a 3.0-acre-per-1,000-resident standard per Quimby requirements, and 115.2 acres to meet the PRP's long-range goal of 4.0 acres per 1,000 residents, or in-lieu payments as applicable.

New park space to help meet future demand is included in four of the related projects used in the cumulative analysis of the EIR. These related projects would add approximately 40 acres of park space to the area. The provisions of the new park space will contribute to attainment of the required needs and will improve the existing community service ratio.

Future related projects within the City would be subject to LAMC requirements for the provision of open space. However, it can not be assured that all related projects within the City of Los Angeles would provide parks in accordance with the City's parks standards. As such, other related project development could have significant impacts. However, contributions of the Proposed Project to the availability of park space after the proposed mitigation measures would meet the demand for park provision and, therefore, would not contribute to a significant adverse effect with regard to cumulative impacts. This conclusion is inclusive of the Proposed Project, the Equivalency Program, and the construction of the Project's off-site improvements.

20. LIBRARIES

a. Environmental Impacts

The proposed urban development program would include up to 2,600 residential units that would generate new site population and related impacts on library services. The estimated population in these units is 5,720. The Proposed Project would be primarily served by the Playa Vista Library, located within the adjacent Playa Vista First Phase Project. The 10,500-sq.ft. Playa Vista Library will have the capacity to serve a population of 35,001 to 50,000. The estimated population increase associated with the Proposed Project and the 19,603 residents who would find the Playa Vista library closer than other libraries in the area would not exceed the capacity of the library (35,001 to 50,000).

Population from the Proposed Project would combine with the existing service population in the service area analyzed and, to the extent that crossover between library service occurs, be a consideration in the adequacy of library services in a larger district context. The capacity of libraries in the area (not including the Loyola Marymount University Library, a private facility), after completion of the new facilities, per the 1998 Los Angeles Public Libraries Branch Facility Plan and funding under the Proposition DD Library Construction Bond Program adopted in November 1998, is anticipated to be 85,002 to 150,000. The service population, inclusive of the Proposed Project, would be 70,806, less than the capacity.

Under the Project's Equivalency Program there could be an additional 240 residents within the Project site. This would still be within the available capacity. Impacts would be less than significant.

b. Recommended Mitigation Measures

The Proposed Project would not result in a significant impact on library services. Existing, recently completed, and under-construction libraries, including the new Playa Vista

Library, would be sufficient to meet future library needs associated with the Proposed Project. Mitigation measures are not required or recommended for the Proposed Project, inclusive of the Equivalency Program and off-site improvements.

c. Unavoidable Adverse Impacts

New Project population would increase the demand for library services, but would not cause the capacity of any libraries within 2 miles of the Proposed Project site to be exceeded. Impacts would be less than significant. This conclusion is inclusive of the Project's Equivalency Program and construction of the off-site improvements.

d. Cumulative Impacts

The cumulative population increase within the Westchester/Loyola Village Library Service area would be 3,915. The total cumulative population increase from the related projects would be 11,086. In addition, a residential "background" growth of 25% is added to the total related residential projects since it is assumed that additional residential development within each library's service area, particularly projects involving less that 35 units, would not require discretionary approval and, thus, would not appear on the related projects list. All residential development within the cumulative impact study area, including the Proposed Project, would result in a population increase of 19,578. Under the Proposed Project's Equivalency Program, the cumulative population would increase to 19,818.

The City public library capacity within the local service area would be 85,002 to 150,000. This capacity includes the Westchester/Loyola Village and Playa Vista Libraries. The current service population is 65,086. The cumulative increase would not exceed the anticipated capacity of the Los Angeles Public Branch Libraries in the local service area (85,002 to 150,000). Under the Proposed Project's Equivalency Program, the population could increase to 84,904, still below the capacity. The only related Project within the boundaries of the Playa Vista Branch Library is the First Phase Project. With its population of 7,171, plus a 25% growth factor, the Proposed Project and the existing service population would be 34,287. This population would not exceed the capacity of the Playa Vista Branch Library and would, in fact, be less than the lower range capacity of the Playa Vista Library of 35,001. Under the Equivalency Program, the population could increase to 34,527, still below the capacity.

The cumulative development would not exceed the capacity of the Los Angeles public libraries within a 2-mile radius of the Proposed Project site and, therefore, would not significantly impact City of Los Angeles Public Library facilities or services. Further, the cumulative population within the service area of the Playa Vista library would not exceed its capacity, and no significant cumulative impacts on the Playa Vista Branch Library would occur.

This conclusion is inclusive of the Project's Equivalency Program and construction of off-site improvements.

21. ENERGY CONSUMPTION

a. Environmental Impacts

Construction Impacts

Because the construction of the Proposed Project would only consume minimal quantities of electricity (i.e., temporary use for lighting, construction trailer office equipment, small power tools, etc.) and is not anticipated to consume natural gas, construction impacts to energy resources would not result in an increase in demand for energy that exceeds available supply or distribution infrastructure capabilities. As such, construction impacts would be less than significant.

As pertains to the Project's Equivalency Program and off-site improvements, construction activities associated with implementation of the Equivalency Program and off-site improvements, similar to the Proposed Project, would have less-than-significant energy impacts.

Operational Impacts

Operation of proposed uses would consume an estimated total of 53.01 megawatt hours (MWh) of electricity per day and 484.73 thousand cubic feet (kcf) of natural gas per day. The electricity and natural gas consumption demands estimated for the Proposed Project at buildout are not expected to exceed available supplies or distribution infrastructure capabilities. Additionally, numerous energy conservation measures that go beyond the City's requirements would be incorporated into the design and operation of the Project. Mitigation measures are proposed to require implementation of the Project Design Features, which serve to eliminate potential significant impacts. As such, the Proposed Project would not result in significant impacts related to energy.

Operation of land uses under the Project's Equivalency Program would result in similar energy impacts relative to the Proposed Project, though electricity and natural gas consumption would increase by a maximum of 3,082,2 kWh per day (7.7% increase) and 33.51 kcf per day (6.9% increase), respectively. Operation of the Project's off-site improvements would not require notable quantities of electricity or natural gas. Energy impacts of the Project's Equivalency Program and off-site improvements would be similar to those of the Proposed Project and would be less than significant.

b. Recommended Mitigation Measures

Mitigation Measures for the Proposed Project and the Equivalency Program

- The Applicant and builders shall consult with the Los Angeles Department of Water and Power (LADWP) and Southern California Gas Company (SCGC) to maximize gains in building design efficiency & reduce building energy requirements to the extent feasible. Technologies and site design features to be considered include high performance glass (low-e and heat mirror), increased R value insulation, natural ventilation strategies, solar building orientation, daylighting strategies and shade tree planting, which shall be incorporated into the final building plans to the extent feasible.

- All buildings shall employ passive heating and cooling design strategies to the extent feasible. Strategies to be considered include orientation; natural ventilation, including cross-ventilation in residential units; high insulation values; energy efficient windows, including high performance glass; daylighting (in commercial buildings); light-colored or high-albedo (reflective) roofing and exterior walls; window shading; and landscaping that provides shading during the appropriate seasons, especially of the south and west exposures.

- All buildings shall utilize energy efficient mechanical and electrical systems to the extent feasible. Strategies to be considered in commercial buildings include efficient heating, ventilation, and air conditioning (HVAC) equipment; variable air volume systems; air economizer cycles that utilize 100% outside air when appropriate; under floor air distribution; and building control systems for lighting, HVAC, and other systems. Strategies to be considered in residential buildings include fans to assist natural ventilation, centralized water and space conditioning systems, high-efficiency individual heating and cooling units, and automatic setback thermostats.

- Solar systems shall be installed to supplement the heating of all swimming pools, as well as hot tubs when provided together with swimming pools, to the extent feasible.

- All residential buildings shall be equipped with Energy Star-rated appliances, where applicable.

- Energy efficient lighting, which exceeds the California Title 24 Energy Efficiency standards to the extent feasible, shall be installed to satisfy interior lighting requirements within all buildings. Automatic devices to turn off lights when they are not needed shall also be used to regulate interior lighting for office common spaces, such as conference rooms and bathrooms.

- All fixtures used for exterior lighting of common areas shall be regulated by automatic devices to turn off lights when they are not needed. Energy efficient exterior lighting fixtures, as might be specified by the LADWP, shall be used to the extent such lighting is available and feasible.

- All residential and commercial buildings shall be equipped with electric vehicle charging stations to the extent required by the California Air Resources Board at the time of construction of the given building.

- Shade-producing trees shall be planted at the Proposed Project site to the extent feasible to provide localized, as well as overall, community cooling.

- All buildings shall employ passive heating and cooling design strategies to the extent feasible.

- All buildings shall be designed to accommodate renewable energy sources, to the extent feasible.

c. Unavoidable Adverse Impacts

The Proposed Project would result in a net incremental increase in the amount of non-renewable resources consumed through the use of electricity and natural gas. LADWP, as a public utility, has not experienced electricity supply shortfalls as were experienced during the recent statewide energy shortage, and is anticipated to have ample supplies to meet future demands. No current shortage of natural gas exists, and future shortages are not expected. Energy conservation measures incorporated as Project Design Features would reduce energy consumption from levels that would otherwise occur. The Proposed Project would not result in an increase in demand that exceeds available supply or distribution infrastructure capabilities. Additionally, numerous energy conservation measures that go beyond the City's requirements are proposed to be incorporated into the design and operation of the Project. Therefore, no significant impacts with respect to energy consumption are anticipated to occur. These impacts are inclusive of the Proposed Project, the Equivalency Program, and the Project's off-site improvements.

d. Cumulative Impacts

The projected electricity and natural gas consumption for the Proposed Project, in conjunction with that of cumulative projects and other background growth, would be approximately 352,004 MWh/yr and 156.1 million cubic feet per month, respectively. Based on existing information from the California Energy Commission relative to projected energy consumption for 2010 (those projections from which affected utilities determine future demand

and associated supply requirements), the projected demands on electricity and natural gas consumption from operation of uses within the Proposed Project site, in conjunction with those of the related projects, are anticipated to be within the service capabilities of LADWP and SCGC.

Overall, the Proposed Project, in conjunction with related projects, is not anticipated to result in an increase in demand for energy that exceeds available supply or distribution infrastructure capabilities; hence, cumulative energy consumption would be a less-than-significant impact.

The cumulative increase in local energy consumption will constitute an incremental increase in the depletion of non-renewable resources. It is anticipated that all projects would, at a minimum, meet state Title 24 energy conservation standards. Based on the requirements for energy efficient design in new development projects (e.g., Title 24 efficiency standards) and the Project Design Features to be implemented as part of the Proposed Project, it is expected that the design of the Proposed Project and related projects would incorporate energy conservation measures that, at a minimum, meet City requirements. Consequently, cumulative impacts relative to energy efficiency would be less than significant. These impacts are inclusive of the Proposed Project, the Equivalency Program, and the Project's off-site improvements.

22. WATER CONSUMPTION

a. Environmental Impacts

Construction Impacts

During construction within the Urban Development Component, water would be used for dust suppression, the mixing and pouring of concrete, and other construction-related activities. In addition to development construction, the Proposed Project's Habitat Creation/Restoration component would require water for temporary irrigation during plant establishment. This temporary irrigation system would be designed to avoid over-irrigation of the slope areas included within the Proposed Project's bluff restoration program. It is not possible to quantify the water usage attributable to development construction and plant establishment activities with any level of certainty. Water usage for such purposes would, however, be temporary in nature and would not exceed that of the completed development.

Reclaimed water may be used for dust suppression, temporary irrigation, and various construction-related activities, reducing the use of potable water. It is unlikely that such water use would exceed the available supply, given the current and planned utilization of recycled "product" water serving the Proposed Project site and vicinity (i.e., recycled water customers currently consume only about 60% of the water treated at WBWRP, and planned expansions will meet, if not exceed projected demands). No significant impact is anticipated to occur due to project construction activities because the water demands associated with such activities are not anticipated to exceed available supplies or distribution infrastructure.

As pertains to the Project's Equivalency Program and off-site improvements, construction activities associated with implementation of the Equivalency Program and off-site improvements, similar to the Proposed Project, would not require notable quantities of potable or reclaimed water and would, therefore, have less-than-significant water consumption impacts.

Operational Impacts

With respect to the operation of uses proposed for the Proposed Project site, an estimated total of 0.50 mgd of potable water and 63,589 gpd of reclaimed water would be consumed on an average day, 0.86 mgd of potable water and 135,275 gpd of reclaimed water on a maximum day, and 1,048 gpm of potable water and 189 gpm of reclaimed water during the peak hour. Based on LADWP's average water demand of 640 mgd projected for the year 2010, for which adequate water supplies are planned, the water consumption associated with the Proposed Project at buildout would represent approximately 0.08% of LADWP's future water demand. As indicated by the LADWP in the Water Supply Assessment for the Proposed Project, it is not anticipated that the total estimated water demand of the Project at buildout would exceed available supplies; hence, a less-than-significant impact on water supplies is anticipated.

Implementation of the Proposed Project would not result in significant impacts related to water consumption. The total estimated potable water demand for the Proposed Project at buildout is not anticipated to exceed available supplies planned by LADWP. With implementation of water distribution system improvements currently planned by LADWP, the water service needs for the Proposed Project would not exceed distribution infrastructure capabilities. Development of the Proposed Project would not exceed the growth projections of the Westchester-Playa del Rey Community Plan, as such projections were used in the planning for future water supplies to meet regional needs. Additionally, the Proposed Project includes a number of water conservation design features that reduce or offset water service impacts. Such features include, but are not limited to, requirements for the use of water-efficient appliances and flow control devices, as well as the use of reclaimed water for irrigation and for certain aspects of non-residential building operations.

Operation of land uses under the Project's Equivalency Program would result in similar water consumption impacts relative to the Proposed Project, though water consumption would increase by a maximum of 0.024 mgd on an average day and 0.040 on a maximum day (4.7%

increase). Operation of the Project's off-site improvements would consume negligible quantities, if any, reclaimed water. As such, water consumption impacts of the Project's Equivalency Program and off-site improvements would be similar to those of the Proposed Project and would be less than significant.

b. Recommended Mitigation Measures

Mitigation Measures for the Proposed Project and the Equivalency Program

- Prior to issuance of any building permit, on- and off-site water infrastructure for potable and recycled water necessary for the development approved under such permit shall be constructed or suitably guaranteed, satisfactory to the City of Los Angeles' Department of Water and Power, Department of Public Works, and Department of Transportation; California Department of Health Service and Department of Transportation (Caltrans); and the West Basin Municipal Water District, as applicable. Off-site water infrastructure shall consist of construction of a regulator station south of the Jefferson Boulevard/Mesmer Street intersection and provision of design and construction fees to provide a back-up source of emergency water supply to serve the project area.

- The Project shall install low-flow toilets, low-flow showerheads, low-flow fixtures, and Energy Star-rated appliances (dishwashers and washing machines, if built in), where applicable.

- In office, retail, and other public buildings, water faucet fixtures with activators shall be installed that automatically shut off the flow of water when not in use.

- If available, reclaimed water shall be used for irrigation, office building toilet flushing, and office building cooling towers.

- Compliance with all applicable water conservation ordinances (No. 170,978 and subsequent ordinances) shall be required.

- Automatic sprinkler systems shall be set to irrigate landscaping during early morning hours or during the evening to reduce water losses from evaporation. Sprinklers shall be reset to water less often in cooler months and during the rainfall season so that water is not wasted by excessive landscape irrigation.

c. Unavoidable Adverse Impacts

The total estimated water demand for the Project at buildout is not anticipated to exceed available supplies or distribution infrastructure capabilities (i.e., water infrastructure), or exceed the projected employment, housing, or population growth projections of the applicable Community Plan, as assumed in the planning for future water infrastructure needs. Therefore, no significant unavoidable adverse impacts relative to water consumption are expected to occur. These impacts are inclusive of the Proposed Project, the Equivalency Program and the Project's off-site improvements.

d. Cumulative Impacts

The projected potable water consumption for the Proposed Project in conjunction with that of cumulative projects within the LADWP service area and other background growth would be 4.81 mgd on an average day, 8.27 mgd on a maximum day, and 10,140 gpm during a peak hour. This would represent an increase of approximately 0.8% in LADWP's average daily water demand of 640 mgd (daily average consumption, normal year) projected for the year 2010. Major improvements necessary to provide adequate service to the Proposed Project have been previously identified by LADWP; as such, off-site water system infrastructure is anticipated to be adequate to meet the water demands of the Proposed Project by 2010. It is uncertain, however, if such improvements have also been identified for the cumulative projects and other background growth addressed herein, since many of the related projects are located outside of the LADWP service area. As such, development of the cumulative projects and other background growth would have a potentially significant impact on the local infrastructure. However, this impact would be mitigated by the City requirement that, prior to issuance of a building permit, all projects must demonstrate that adequate distribution infrastructure exists to serve projected demand. If such adequacy cannot be demonstrated by the project applicant, the project cannot connect to the LADWP water distribution system, thereby avoiding a significant impact. As discussed previously, the planning for future water supplies to meet regional needs is based primarily on growth assumptions reflected in local general plans. The level of development associated with the cumulative projects is within SCAG regional growth projections for the area. As such, the potable water demand associated with such development has been accounted for in existing regional water supply planning programs, and no significant cumulative impact to regional water supply is considered to occur. However, at the local level, the population, housing, and employment growth projections reflected in the applicable Community Plan (i.e., the Westchester-Playa del Rey Community Plan) would be exceeded in 2010 by 77.4%, 149.9%, and 73.0%, respectively, based on the growth associated with the Proposed Project and other related projects within the Community Plan area. (see Section IV.J, Population, Housing and Employment, for a detailed discussion of growth projections). Therefore, although no significant cumulative impact to regional water supply would occur, the cumulative impacts of the Proposed Project, including the Equivalency Program, relative to local population growth would be considered significant. The Project's off-site improvements would not create additional population or induce population growth directly or indirectly, and would therefore not result in any impacts on water consumption.

LADWP, as a public water service provider, is required to prepare and periodically update a Urban Water Management Plan (UWMP) to plan and provide for water supplies to serve existing and projected demands. The UWMP prepared by LADWP accounts for existing development within the City as well as projected growth anticipated to occur through redevelopment of existing uses and development of new uses. Additionally, under the provisions of Senate Bill (SB) 610 (Costa) and SB 221 (Keuhl), LADWP is required to prepare a comprehensive water supply assessment for every new development "project" (as defined by Section 10912 of the Water Code) within its service area. The types of projects subject to the requirements of SB 610 and SB 221 tend to be larger projects (i.e., residential projects with more than 500 dwelling units, shopping centers employing more than 1,000 persons or having more than 500,000 sq.ft. of floor space, commercial office building employing more than 1,000 persons or having more than 250,000 sq.ft. of floor space, etc.) that may or may not have been included within the growth projections of the UWMP. The water supply assessment for such projects, in conformance with the UWMP, evaluates the quality and reliability of existing and projected water supplies, as well as alternative sources of water supply and how they would be secured if needed. Given that the UWMP plans and provides for water supplies to serve existing and projected needs and that the requirements of SB 610 and SB 221 provide means to ensure that the water supply needs of notable development projects have been carefully considered, relative to LADWP's ability to adequately meet future needs, it is anticipated that LADWP will be able to supply the demands of the Proposed Project and related projects through 2010 and beyond. These impacts are inclusive of the Proposed Project, the Equivalency Program, and the Project's off-site improvements.

23. WASTEWATER

a. Environmental Impacts

Construction Impacts

During construction of the Proposed Project, a negligible amount of wastewater would be generated by construction staff. It is anticipated that portable toilets would be provided by a private company and the waste disposed of off-site. Wastewater generation from construction activities is not anticipated to cause a measurable increase in wastewater flows at a point where, and a time when, a sewer's capacity is already constrained or that would cause a sewer's capacity to become constrained. Additionally, construction is not anticipated to generate wastewater flows that would substantially or incrementally exceed the future scheduled capacity of any one treatment plant by generating flows greater than those anticipated in the Wastewater Facilities Plan or General Plan and its elements. Therefore, no significant impact is expected to occur. As such, construction impacts to the local wastewater conveyance and treatment system would be less than significant.

As pertains to the Project's Equivalency Program and off-site improvements, construction activities associated with implementation of the Equivalency Program and off-site improvements, similar to the Proposed Project, would not generate notable quantities of wastewater and would, therefore, have less-than-significant wastewater impacts.

Operational Impacts

With respect to the operation of uses proposed for the Proposed Project site, an estimated average total of 0.47 million gallons per day (mgd) and a peak flow of 1.12 mgd of wastewater would be generated. These projected wastewater flows would be conveyed to the existing facilities operated by the City of Los Angeles Department of Public Works (LADPW) Bureau of Sanitation, which has indicated that it will serve the Proposed Project's wastewater collection and treatment needs. Sewers to convey wastewater to LADPW facilities would be constructed on-site to serve the proposed development and would be sized according to projected flows, including peak day flows. The on-site and other local sewers would convey wastewater via the Ballona Creek Pump Station to the North Central Outfall Sewer (NCOS), which is projected to have substantial surplus capacity during peak months in 2010 (i.e., 144 mgd). The estimated 1.12 mgd peak wastewater generation for the Proposed Project, therefore, would use only about 0.8% of the projected available peak flow capacity (144 mgd) within the NCOS. Operation of the Proposed Project would contribute an average of 0.47 mgd of wastewater to local conveyance, treatment, and disposal facilities, which would not constitute a measurable increase in wastewater flows at a point where, and a time when, a sewer's capacity is already constrained or that would cause a sewer's capacity to become constrained, or substantially or incrementally exceed the future scheduled capacity of any one treatment plant by generating flows greater than those anticipated in the Wastewater Facilities Plan or General Plan and its elements; therefore, impacts would be less than significant. During peak months, the current available treatment capacity to serve the Proposed Project is projected to be exceeded by 20 mgd; however, the Proposed Project would not be allowed to contribute wastewater flows to the local wastewater collection and treatment system unless adequate collection and treatment capacity demonstrably exists to handle such flows, as required by the City's Sewer Allocation Ordinance. The Proposed Project, therefore, could not substantially or incrementally exceed the future scheduled capacity of any one treatment plant (e.g., Hyperion Treatment Plant - HTP) by generating flows greater than those anticipated in the Wastewater Facilities Plan or General Plan and its elements. As such, the Proposed Project's additional wastewater flows would result in a less-than-significant impact, even during peak months, because Proposed Project-generated wastewater could not enter the Hyperion Treatment System - HTS (i.e., exceed the existing capacity of a treatment plant).

Operation of land uses under the Project's Equivalency Program would result in similar wastewater impacts relative to the Proposed Project, though wastewater generation would increase by a maximum of 0.020 mgd on an average day and 0.048 on a maximum day (4.3% increase). Operation of the Project's off-site improvements would not generate wastewater. As such, wastewater impacts of the Project's Equivalency Program and off-site improvements would be similar to those of the Proposed Project and would be less than significant.

b. Recommended Mitigation Measures

Mitigation Measures for the Proposed Project and the Equivalency Program

- Prior to issuance of any building permit, construction of on-site infrastructure improvements necessary for the conveyance of project wastewater to the 42" Marina Interceptor Sewer in Jefferson Boulevard shall be completed, or suitably guaranteed, to the satisfaction of the City Department of Public Works and other applicable responsible agencies.

c. Unavoidable Adverse Impacts

Impacts to the local and regional sewer system would be less than significant, as the Proposed Project is not anticipated to cause a measurable increase in wastewater flows at a point where, and a time when, a sewer's capacity is already constrained or that would cause a sewer's capacity to become constrained. The Proposed Project would create an incremental increase in wastewater generation in the City of Los Angeles. The incremental amount of average wastewater generated by the Proposed Project would not be substantial; however, during peak months, even without the development of the Proposed Project, a wastewater treatment deficit of approximately 20 mgd is expected to occur by 2010. The additional wastewater flows from the Proposed Project during peak months could potentially contribute to the exceedance of the future scheduled capacity of the HTP; however, the wastewater flows from the Proposed Project would not be allowed to enter the HTS unless adequate treatment capacity at HTP is demonstrated to LADPW, pursuant to the City's Sewer Allocation Ordinance. Given that the Proposed Project could not contribute to an exceedance of wastewater collection or treatment capacity, impacts would be less than significant. With implementation of mitigation, as well as Project Design Features discussed in Section IV.N(1), Water Consumption, no significant adverse impacts with respect to wastewater are anticipated to occur. These impacts are inclusive of the Proposed Project, the Equivalency Program, and the Project's off-site improvements.

d. Cumulative Impacts

All the related projects are either within the City of Los Angeles or one of its contract agencies (i.e., non-City of Los Angeles jurisdictions that have contracts for discharge of their wastewater into the City of Los Angeles' system for conveyance and/or treatment and are under a contract with the Bureau of Sanitation for wastewater services); as such, it is assumed for the purposes of the cumulative analysis that all the related projects and the Proposed Project would be serviced by the HTS. The daily average and peak-month wastewater generation for the Proposed Project in conjunction with cumulative projects and other background growth would be 6.97 mgd and 16.72 mgd, respectively, all of which would be treated at HTP.

Cumulative impacts to the local and regional sewer system from implementation of the Proposed Project, related projects, and other background growth would be less than significant, as the Proposed Project and related growth is not anticipated to cause a measurable increase in wastewater flows at a point where, and a time when, a sewer's capacity is already constrained or that would cause a sewer's capacity to become constrained. As discussed previously, the HTS is anticipated to have sufficient capacity to treat projected wastewater flows from the Proposed Project, related projects, and other background growth through 2010, with the exception of peak months, with a projected annual average excess capacity of 14 mgd. The additional wastewater flows from the Proposed Project, related projects, and other background growth during peak months would incrementally exceed the future scheduled capacity of the HTP by generating flows greater than those anticipated in the City's Wastewater Facilities Plan. In addition to the fact that wastewater generated by the operation of the Proposed Project could result in a potentially significant impact, the projected additional deficit anticipated by local and regional jurisdictions for wastewater treatment capacity indicates that there could be a significant cumulative impact. Regardless of whether the Proposed Project is developed, the HTS will experience a projected capacity deficit of approximately 20 mgd during peak flow months. The City of Los Angeles is currently evaluating various means and options for providing additional treatment capacity to meet future needs. The provision of additional treatment capacity in the future would eliminate the potentially significant impact for both Project-related and cumulative wastewater generation. In the meantime, adherence to the City's Sewer Allocation Ordinance would limit the amount of cumulative development that could proceed within the City of Los Angeles prior to such additional treatment capacity being secured. As pertains to those related projects located in jurisdictions other than the City of Los Angeles (which are not necessarily subject to the Sewer Allocation Ordinance), inasmuch as those respective jurisdictions are under service contracts with the Bureau of Sanitation for conveyance and/or treatment of wastewater, it is assumed that the Bureau of Sanitation would consider such flows from these jurisdictions when evaluating the availability of treatment capacity for projects located within the City of Los Angeles. It is anticipated that all contributions to the HTS from the City of Los Angeles and other "member" jurisdictions would be quantified or otherwise included as part of the Bureau of Sanitation's assessment of the availability of sewer and treatment capacity for projects subject to the Sewer Allocation Ordinance. As such, no significant cumulative impacts are expected to occur. These impacts are inclusive of the Proposed Project, the Equivalency Program and the Project's off-site improvements.

24. SOLID WASTE

a. Environmental Impacts

Construction Impacts

In summary, construction activities would generate a total of 10,343 tons of inert waste; however, the Proposed Project would not create a need for additional inert solid waste disposal facilities to adequately handle project-generated inert waste. Thus, construction-related waste would result in a less-than-significant impact.

As pertains to the Project's Equivalency Program and off-site improvements, construction activities associated with implementation of the Equivalency Program and off-site improvements, similar to the Proposed Project, would not generate notable quantities of solid waste aside from temporary generation of minor quantities of inert waste and would, therefore, have less-than-significant water consumption impacts.

Operational Impacts

Operation of the Proposed Project would generate Class III solid waste (i.e., 9.6 tons per day (tpd) after diversion, or a 0.07% increase in overall disposal at the four City-serving landfills) that would require disposal at regional landfills, although diversion and recycling programs would reduce the amount requiring disposal. It is anticipated that the existing landfill disposal capacity available at the four landfills that currently serve the City of Los Angeles may be fully consumed at project buildout in late 2010. The Sanitation Districts of Los Angeles County are, in cooperation with affected jurisdictions, currently pursuing such options to increase future landfill disposal capacity, including expansion of existing landfills, permitting of new landfills, and the use of rail haul. However, there is presently no guarantee that new or expanded disposal facilities will be permitted to operate prior to 2010. Consequently, the Proposed Project would create a need for additional solid waste disposal facilities to adequately handle project-generated Class III waste. Impacts to Class III solid waste disposal facilities would, therefore, be considered potentially significant. Because the Proposed Project could create a need for additional solid waste collection routes to adequately handle project-generated waste, impacts to solid waste collection routes would be considered potentially significant. With implementation of on-site diversion and recycling programs during construction and operation, the Proposed Project would not conflict with solid waste policies and objectives in the Source Reduction and Recycling Element (SRRE) or its updates, City of Los Angeles Solid Waste Management Policy Plan, Framework Element, or the Curbside Recycling Program, including consideration of the land use-specific waste diversion goals contained in Volume 4 of the SRRE. Impacts relative to adopted solid waste diversion programs and policies would be less than significant.

Operation of land uses under the Project's Equivalency Program would result in similar solid waste generation impacts relative to the Proposed Project, though solid waste generation would increase by a maximum of 1.091 tpd (5.8% increase). Operation of the Project's off-site improvements would generate negligible quantities, if any, of solid waste. As such, solid waste generation impacts of the Project's Equivalency Program would be similar to those of the Proposed Project and would be potentially significant, due to the projected landfill capacity shortfall. Solid waste generation impacts of the Project's off-site improvements would be reduced relative to the Proposed Project and would be less than significant.

b. Recommended Mitigation Measures

Mitigation Measures for the Proposed Project and the Equivalency Program

- All buildings constructed or uses established within any part of the site shall be designed to be permanently equipped with clearly marked, durable, commingled recyclables bins at all times to facilitate the separation and deposit of recyclable materials therein by tenants and groundskeepers; and the placement of, and approaches to, such bins shall be designed to facilitate mechanized collection of such recyclable wastes for transport to off-site recycling facilities, in a manner satisfactory to the City Department of Public Works, prior to issuance of building permits.

- The Applicant shall execute a covenant satisfactory to the City Planning Department which shall obligate the owner, lessee, heirs, assigns, or successors to: continuously maintain in good order for the convenience of tenants, clearly marked, durable and separate bins on the same lot or parcel to facilitate the commingled recyclables and deposit of recyclable or commingled waste metal, cardboard, paper, glass, and plastic therein; maintain accessibility to such bins at all times, for collection of such wastes for transport to on- or off-site recycling plants; and require waste haulers to utilize local or regional material recovery facilities as feasible and appropriate.

- The Applicant and its successors, including future buyers or lessees of the property, heirs, and assigns, shall comply with applicable existing and future regulations and procedures for the collection and disposal of household hazardous waste, providing such future compliance does not conflict with existing tract map requirements.

- The Applicant and its successors, including future buyers or lessees of the property, heirs, and assigns, shall be required to implement a recycling program for demolition and construction debris, where economically feasible, to the satisfaction of the City Departments of Public Works, Building and Safety, and/or City Planning, as applicable.

- Recycled materials, including drywall, steel, aluminum, ceramic tile, cellulose insulation, and composite engineered wood products, shall be incorporated into building design and construction where economically feasible and where compatible with design objectives.

- Determination of new solid waste collection routes shall be coordinated with existing collection routes in the project area, depending on the waste haulers serving the Proposed Project site.

c. Unavoidable Adverse Impacts

The Proposed Project would create an incremental increase in solid waste disposal in the City of Los Angeles. Construction of the Proposed Project would not result in an increase in inert solid waste generation that would create a need for additional inert solid waste disposal facilities to adequately handle project-generated inert waste. Thus, construction-related waste would result in a less-than-significant impact. Operation of the Proposed Project would generate an estimated 9.6 tons per day of Class III solid waste (3,504 tons per year), which would require landfill disposal. This additional refuse will add to the demand for a comprehensive, long-term solution for solid waste disposal. It is anticipated that the existing landfill disposal capacity available at the four landfills that currently serve the City of Los Angeles may be fully consumed by late 2010. Despite efforts to site and permit solid waste disposal facilities, there is presently no guarantee that new or expanded disposal facilities will be permitted prior to 2010. Consequently, the Proposed Project would result in an increase in solid waste generation (i.e., a 0.09% increase in overall disposal at the four City-serving landfills) that would create a need for additional Class III solid waste disposal facilities to adequately handle project-generated waste. Therefore, impacts to Class III solid waste disposal facilities would be considered a significant unavoidable adverse impact.

Additionally, the Proposed Project could create a need for additional collection routes to adequately handle project-generated waste; however, the mitigation measure identified above would reduce the impact to a level less than significant.

The Proposed Project would not conflict with solid waste policies and objectives in the Source Reduction and Recycling Element (SRRE) or its updates, City of Los Angeles Solid Waste Management Plan (CiSWMPP), Framework Element, or the Curbside Recycling Program, including consideration of the land use-specific waste diversion goals contained in Volume 4 of the SRRE. Consequently, impacts relative to adopted solid waste diversion programs and policies would be less than significant.

These impacts are inclusive of the Proposed Project, the Equivalency Program and the Project's off-site improvements.

d. Cumulative Impacts

The projected inert waste from construction of the Proposed Project, in conjunction with that from construction of related projects throughout the Los Angeles region and other background growth, would be approximately 155,500 tons. This amount of inert solid waste would be generated over a number of years, as in the case of the Proposed Project, whereas the daily increase in inert waste disposal at inert waste landfills in the Los Angeles region would be a small percentage of the total amount, the specific amount of which is dependent upon the respective construction schedules of the related projects. Nonetheless, given the inert waste disposal capacity (1995) within Los Angeles County of 53.1 million tons, the total cumulative construction-related inert waste (155,500 tons) would represent 0.3% of the total inert disposal capacity in the region. The Proposed Project in conjunction with related projects and other background growth would not create a need for additional inert waste disposal facilities to adequately handle project-generated inert waste.

The projected Class III solid waste generation for the Proposed Project in conjunction with that of related projects located within the City of Los Angeles (i.e., projects within the City of Los Angeles that would utilize the four City-serving landfills discussed above) and other background growth would be 611.9 tpd. The volume of Class III solid waste generated by the Proposed Project, related projects, and other background growth would adversely impact regional landfill capacity. The potential impacts will be partially offset by ongoing efforts and programs involving waste diversion and recycling. It is anticipated that such diversion and recycling as related to cumulative development and other background growth will occur primarily through local jurisdictional requirements for new development. Assuming a similar level of waste diversion is applied to the waste streams of the related projects (49.3% diversion), which is generally consistent with the requirements of Assembly Bill (AB) 939 that all cities and counties achieve a 50% diversion rate by 2000, approximately 310.2 tpd would require landfill disposal. These impacts are inclusive of the Proposed Project, the Equivalency Program and the Project's off-site improvements.

25. VISUAL QUALITIES (AESTHETICS AND VIEWS)

a. Environmental Impacts

The analysis of impacts on visual qualities addressed two visual qualities of the environment: Aesthetics and views.

Aesthetics

The analysis of the Proposed Project's impact on aesthetics addressed three aesthetic topics: impacts on valued resources, impacts on the visual character of the surrounding area, and impacts regarding the regulatory setting in which the Project's impacts would occur.

Impacts on Valued Resources

The Proposed Project's Urban Development Component includes 99.3 acres of mostly undeveloped area in a somewhat degraded/unnatural state within an area of urban development. This undeveloped land has resource value as it provides relief from urban development for local residents and travelers along Jefferson Boulevard and offers a view of the Westchester Bluffs from certain vantage points.

Development of the Proposed Project would place urban development within large portions of the Proposed Project site. It would alter the current undeveloped appearance of the site to one of urban development. This would be a substantial alteration of the visual character of the Proposed Project site and a significant impact prior to mitigation.

Impacts on Visual Character of the Surrounding Area

The Proposed Project would alter the character of the Project site, converting its undeveloped appearance to that of a mixed-use community. The Proposed Project site currently has an altered and somewhat degraded appearance. The site is currently used as a staging area for construction equipment, soil storage, and as temporary detention basin used in developing the Playa Vista First Phase Project. Much of the Project site lacks vegetation or other aesthetic treatments and is currently in a visually degraded state.

The resulting appearance of the Project for local residents and travelers north of the area would be shaped by the Project features facing Jefferson Boulevard. These include the predominantly residential, although in some cases mixed, uses which could be up to 95 feet AMSL (approximately 68 to 72 feet above finished grade). The appearance of the Project site from Jefferson Boulevard would be shaped by the vegetated parkway and adjacent slopes with intermittent retaining walls lying beyond the parkway and the landscaped edge of development and setbacks atop the slopes. Development along Jefferson Boulevard could be taller than some of the existing uses on that corridor, but would still be mid-rise in nature, and would have impacts which are softened by the landscape buffering of buildings. The Project would replace the existing, degraded vegetation and disturbed appearance of the Project site with new landscaping and development. Therefore, the Proposed Project would result in a less than significant impact, as it would not contrast substantially with neighboring development along Jefferson Boulevard nor cause a degradation of the developed character of the area.

The Project height limits designated for the southern edge of the Proposed Project site are restricted to a level well below the edge of the bluffs (with heights up to 112 feet AMSL versus the 140 foot (AMSL) heights along the top of the bluffs) and would not alter the character of the residential or University uses atop the bluffs. Areas adjacent to the Proposed Project site on the east and west include lands approved for development and partially developed, with residential development under construction further west, and the existing light industrial uses to the east of the Proposed Project site. These areas are being developed with Playa Vista First Phase mixed use development to the west and the Campus at Playa Vista to the east. Residents atop the bluffs would see an in-fill development, punctuated by open space, blending with surrounding uses.

The aesthetic impacts of the proposed development would be lessened by the following: (1) the height limits and lot coverage restrictions; (2) landscaping throughout the public and private open space areas; (3) the park areas distributed throughout the Project site; (4) restored bluff faces; and (5) an open space area at the foot of the bluffs, which would be improved and integrated visually with the adjacent, First Phase Riparian Corridor. The Bluffs and Riparian Corridor within the Proposed Project's Habitat Creation/Restoration component would add an important aesthetic amenity to the area which would be visible from portions of the bluff edge and to travelers along Bluff Creek Drive (formerly known as Teale Street).

The various Project Design Features described above would result in a less-than-significant impact, as they would address existing degraded conditions on the site and would not contrast with the visual character of the surrounding development so as to cause a degradation of the environment.

Development of the Proposed Project would also cause changes in the aesthetic conditions of the Project site during the time of construction. Construction would occur over several years. Activities would include grading of the site, provision of infrastructure/streets, the sequential addition of buildings, and, finally, the provision of landscaping and other aesthetic treatments. During Proposed Project development, the site's current construction-like appearance would be expanded. Construction impacts would be of a temporary and unavoidable nature and would be typical of aesthetic impacts caused by construction of other projects.

Potential impacts would be reduced limited viewing conditions. Impact from construction activities would be less than significant.

Impacts Regarding the Regulatory Setting

The Proposed Project includes design standards that would be implemented through amendments to the Area D Specific Plan and as Conditions of Approval to the Project's Tract Map. The Applicant proposes to establish design criteria that are comparable to the existing standards.

Additional standards are proposed to address such items as building materials, screening of mechanical equipment, etc., within the Proposed Project areas. The design requirements of the Area D Specific Plan pertains to design characteristics which are applicable to the design of individual building projects and which can be implemented during the plan check stage in the development review process. Specific plan requirements would be implemented during plot plan review. Therefore, implementation of the Project would result in a less-than-significant impact with regard to the regulatory framework as it would not preclude the attainment of existing aesthetic regulations.

Impacts of Off-Site Improvements

Proposed Project development could result in secondary impacts arising from implementation of the Project's mitigation measures, as well as the direct impacts described above. Impacts could occur due to the reductions in landscaping at some location where road widening would be required to implement the Project's recommended mitigation measures.

These impacts are limited as the off-site improvements are located in urban developed areas, and the areas affected would be small. The most notable impacts would occur along the Centinela Corridor that is proposed for roadway. Improvements at the intersections of Culver Boulevard and Inglewood Boulevard and Culver Boulevard and Centinela Avenue would result in small reductions in the landscaped median between North and South Culver Boulevards.

The design of the roadway improvements includes re-landscaping of affected parkway and median areas and the planting of new trees. Mitigation measures are proposed that would reduce potential impact. The implementation of the off-site improvements would not substantially alter the visual character of their surrounding areas, and their impacts would be less than significant.

Views

The analysis of impacts on specific views identified view impacts which would occur with implementation of the Proposed Project and which are unavoidable effects of the Project. The Project's off-site improvements would have no effects on views nor would they contribute to a cumulative impact on views. The impacts from the various view locations would be as follows:

- Westchester Bluffs: The Proposed Project site's undeveloped character would take on a developed appearance, moving the edge of the cityscape closer to the foot of the bluffs. However, the Proposed Project would not interfere with the panoramic views along the Westchester bluffs. Buildings would vary in height but would not exceed 112 feet AMSL, which is approximately 28 feet below the approximate average height of the bluffs at 140 feet AMSL. For the most part, building tops would blend with surrounding development and would not substantially alter existing views. Viewers at the easternmost end of the Bluffs could have their long-range view slightly foreshortened but would still see the ocean and marina entryway. These impacts are considered less than significant, as Project development would not substantially obstruct an existing view of a valued view resource from a prominent view location.

- Mixed-Use Areas North of the Project Site: Views over the Proposed Project site, toward the bluffs, would be altered for some offices and residential units along Jefferson Boulevard. As the loss of bluff views has been identified as a significant impact for public uses along Jefferson Boulevard and the view loss for residential units along Jefferson Boulevard would be substantial, the loss of private views along Jefferson Boulevard is also considered significant.

- Jefferson Boulevard Thoroughfare: Views of the Westchester Bluffs would be altered for travelers along Jefferson Boulevard and replaced with new development. Impacts would be somewhat off-set by Project design features (e.g., landscaped slope along Jefferson Boulevard and new views for travelers along Bluff Creek Drive). Nonetheless, there would be a substantial obstruction of a prominent view resource from a prominent (i.e., public roadway) location, and impacts on views along Jefferson Boulevard would be significant.

b. Recommended Mitigation Measures

Mitigation Measures for the Proposed Project and the Equivalency Program

- Prior to recordation of tract maps, parks/open space and major open space areas, such as the riparian corridor and bluffs, shall either be designated as open space on final tract maps or committed to open space through recorded deed restrictions and covenants, subject to the approval of the Advisory Agency.

- All rooftop structures (including mechanical equipment), garbage dumpsters, and other unsightly equipment, shall be screened from views at the adjoining street.

- Open areas not used for streets, walkways, plazas, and other hardscape areas or driveways shall be landscaped. Structures which face onto public throughways shall be attractively landscaped with a landscape plan prepared by a licensed landscape architect, and shall be subject to review and approval from the Planning Department and Bureau of Street Maintenance, Street Tree Division.

Other Mitigation Measures for the Off-Site Improvements

- Existing trees affected by construction at off-site locations shall be relocated in proximity to their current locations if sufficient space is available. If trees cannot be located in immediate proximity, then trees shall be replaced at alternate locations in a public parkway location with similar specimens at a ratio of not less than one-to-one.

- Landscaping plans shall be prepared for each of the off-site road improvements that impact landscaping and shall be submitted to the appropriate regulatory agencies for approval.

c. Unavoidable Adverse Impacts

Aesthetics

Proposed development, inclusive of the Equivalency Program, would alter the existing character of the site from predominantly undeveloped, vacant land to a developed appearance. This would result in a loss of visual relief amidst the urban environment, a valued resource. Although the site has a disturbed appearance, with remnants of past use, the loss of the visual relief is considered a substantial alteration of the site and a significant impact. The Proposed development would replace the existing degraded site conditions (construction activities, power lines, ruderal vegetation, and remnants of past use) with a development offering a planned arrangement of buildings surrounded by newly landscaped slopes, buffers, and open space areas. The Proposed Project would provide a continuity of design between the eastern and western portions of the Playa Vista First Phase Project. The bluffs separate the proposed development from the communities to the south. Proposed development would have massing characteristics that are compatible with existing, adjacent development to the north. Therefore, the change in the aesthetic character of the site would be less than significant, as the Proposed Project would not contrast with the visual character of the surrounding development so as to cause a degradation of the environment. During construction, short-term, non-significant impacts would occur to the aesthetic character of the site. These impacts would be experienced by a few private viewers along the edge of the bluffs, a few private locations north of the Project site, and along Jefferson Boulevard, a public thoroughfare. These conditions would cease as new development projects are completed.

In addition to these impacts, implementation of the Project's off-site mitigation improvements would result in small reductions in the amount of landscaping at some roadway widening locations. Also, construction activities at these locations would have short-term impacts on the aesthetic character of those locations. These impacts associated with the off-site improvements would be less than significant.

Views

The analysis of impacts on specific views identified view impacts which would occur with implementation of the Proposed Project and which are unavoidable effects of the Project. The Project's off-site improvements would have no effect on views nor would they contribute to a cumulative impact on views. The impacts from the various view locations would, for the most part, be limited. Viewers atop the Westchester Bluffs would continue to have panoramic views over the Project site. The Proposed Project site's undeveloped character would take on a developed appearance, moving the edge of the cityscape closer to the foot of the bluffs.

Views over the Proposed Project site, toward the bluffs, from development to the north, would be limited due to constrained viewing conditions. However, views of the Westchester Bluffs would be altered for travelers along Jefferson Boulevard and replaced with new development. Impacts would be somewhat off-set by Project design features (e.g., landscaped slope along Jefferson Boulevard and new views for travelers along Bluff Creek Drive). Nonetheless, there would be a substantial obstruction of a prominent view resource from a prominent (i.e., public roadway) location, and impacts on views along Jefferson Boulevard would be considered a significant impact.

d. Cumulative Impacts

Except as described below, new development from related projects is essentially outside of the Proposed Project's visual setting in which cumulative impacts could occur. Related projects would contribute further to the loss of visual relief in the urban setting, an impact that is designated as significant for the Proposed Project alone and would, hence, be cumulatively significant, as well.

With regard to the general appearance of new development, Related Project 40, the Playa Vista First Phase Project, would increase the developed appearance of lands adjacent to the east and west of the Proposed Project site. Implementation of the Playa Vista First Phase Project would lessen the marginal impact of the Proposed Project; and the two Projects together would cause a greater alteration to the aesthetic character of the area than either would alone. The First Phase Project, like the Proposed Project, would include landscaping and other design features to maintain a continuity of design and avoid a degradation of the aesthetic character of the area. Therefore, cumulative impacts on aesthetic character from the related projects, in combination with the Proposed Project, would be less than significant. This conclusion is inclusive of the Proposed Project, the Equivalency Program and the Project's off-site improvements.

With regard to cumulative effects arising from regulations controlling the implementation of related projects, there are no known planned amendments that would alter the conclusions regarding the cumulative effects described above for views and aesthetics. Individual related projects noted above have been or would be subject to environmental review under CEQA and have been or would be reviewed for compliance with their applicable regulatory guidelines.

With regard to view impacts, the Playa Vista First Phase Project would contribute to the Proposed Project's view impacts that would reduce views of the Westchester Bluffs for travelers along Jefferson Boulevard. This impact would contribute to the obstruction of a view resource, which was considered significant for the Proposed Project alone and would be cumulatively significant as well.

With regard to the views from the top of the Westchester Bluffs, the First Phase Project would contribute with the Proposed Project to an alteration of the near-view site appearance, but would not substantially obstruct the panoramic views available from the top of the bluffs. The Project's off-site improvements would have no effect on views, nor would they contribute to a cumulative impact on views.

26. PALEONTOLOGICAL RESOURCES

a. Environmental Impacts

This Proposed Project would include the placement of new buildings throughout the Project site and require grading to accommodate the development proposed. Potential impacts to paleontological resources could occur if there is excavation or covering of sites which contain the Holocene alluvium that underlies the Project site or the Palos Verdes Sand rock units south of the proposed development area in the Project's Habitat Creation/Restoration Component.

The Project would include restoration activities in the areas of the Palos Verdes Sand, but not building placement. Buildings would occur over areas underlain with Hallocene alluvium. This soil unit is considered to have a high impact potential at depths below the water table. As the Proposed Project would involve excavation into this soil, any resources that may be encountered and not made available for recovery and evaluation could be destroyed. The Proposed Project could also expose or facilitate access to fresh exposures of fossiliferous rock units and create a potential for unauthorized fossil collecting. Therefore, the project could result in the permanent loss of paleontological resources and a significant impact could occur.

Beyond, these potential resource impacts resulting from construction activities, the placement of buildings within the Project site would cover substantial portions of the Project site and could, thereby, limit future access to excavations within the Holocene alluvium lying below the water table at some locations. Such ground coverage is not likely to have an actual effect on resources, due to a number of mitigating factors: (1) any potential resources would remain undisturbed, in situ; (2) large areas of the Project site would remain accessible for future excavation/boring into this soil unit (e.g., habitat creation/restoration areas, parks and private open space); (3) there are no known resources lying below the Project buildings; and (4) there is currently no desire or impetus from the scientific community to perform research at the Proposed Project site, and Proposed Project excavations provide an opportunity to discover resources, should they be present.

However, the placement of the buildings at some locations could limit future access to the Holocene alluvium lying below the water table, which has been identified as having high resource potential. Therefore, a potentially significant impact could occur as there could be a potential loss of access to a paleontological resource. However, access to potential resources underlying the Project site would continue to be available within large portions of the Project site, including the park and landscaped areas throughout the Urban Development Component area, as well as the Project's Habitat/Restoration Component area, allowing continued access at these locations. Mitigation measures are proposed to reduce potential impacts.

b. Recommended Mitigation Measures

Mitigation Measures for the Proposed Project and the Equivalency Program

- Prior to issuance of grading/excavation permits, a qualified paleontologist shall be retained to develop an acceptable monitoring and treatment plan and to monitor construction activities at the Project site that might adversely impact potential paleontological resources in the Proposed Project area. The qualifications of the paleontologist and its designee shall be evaluated, and the development of the monitoring and treatment plan shall be made in consultation with the Vertebrate Paleontology Department of the Natural History Museum of Los Angeles County to ensure Project compliance with Society of Vertebrate Paleontology standard guidelines as appropriate.

- A monitoring and treatment plan for paleontological resources shall include the following measures:

  – A qualified paleontologist or qualified designee shall monitor ground-disturbing activities at the Project site on a full-time basis along the lower part of the bluff where the Palos Verdes Sand would be disturbed. Monitoring shall consist of visually inspecting fresh exposures of rock for fossil remains large enough to be seen and, where appropriate, collecting and processing rock samples or excavated spoils to allow for the recovery of smaller fossil remains that are too small to be seen in the field.

  – If auguring or excavation is implemented in the alluvium of the Project site north of the bluff and extends to a depth below the water table, a qualified paleontologist or qualified designee shall monitor these activities on a full-time basis. Excavation or auguring in the alluvium at a depth above the water table shall be monitored on a half-time basis. Monitoring shall not be implemented until these activities have penetrated 5 feet of previously undisturbed strata under any artificial fill

  – If fossil remains large enough to be seen are uncovered by earth-moving activities, a qualified paleontologist or qualified designee shall divert these activities temporarily around the fossil site until the remains have been recovered, a rock sample has then been collected to process to allow for the recovery of smaller fossil remains, if warranted, and construction has been allowed to proceed through the site by a qualified paleontologist or qualified designee. If potentially significant resources are encountered, a letter of notification shall be provided in a timely manner to the Department of City Planning, in addition to the report (described below) that is filed at the completion of grading.

  – A qualified paleontologist or qualified designee shall collect all identifiable vertebrate fossil remains and samples of megainvertebrate fossil remains. All fossil sites shall be plotted on a topographic map of the Project site.

  – If a qualified paleontologist or qualified designee is not present when fossil remains are uncovered by earth-moving activities, these activities shall be stopped, and a qualified paleontologist or qualified designee shall be called to the site immediately to recover the remains.

- At a qualified paleontologist or qualified designee's discretion and to reduce any construction delay, a construction worker shall assist in removing fossiliferous rock samples to an adjacent location for temporary stockpiling pending eventual transport to a laboratory facility for processing.

- A qualified paleontologist or qualified designee shall conduct the processing (wet and/or dry screening and heavy-liquid flotation) of the rock samples to allow for the recovery of smaller fossil remains. Additional rock samples shall be collected from a fossil site considered sufficiently productive to warrant processing. However, no more than 6,000 pounds each from either the Palos Verdes Sand or the alluvium will be processed (12,000 pounds total).

- All fossil remains recovered in the field as a result of monitoring or by processing rock samples shall be prepared, identified, catalogued, curated, and accessioned into the fossil collections of the Natural History Museum of Los Angeles County or another museum repository complying with the Society of Vertebrate Paleontology standard guidelines. Accompanying specimen and site data, notes, maps, and photographs also shall be archived at the repository.

- Within 6 months following completion of the above tasks, a qualified paleontologist or qualified designee shall prepare a final report summarizing the results of the mitigation program and presenting an inventory and describing the scientific significance of any fossil remains accessioned into the museum repository. Moreover, any site or geologic data indicating the possible presence and locations of additional fossil sites underlying the Project site will be discussed in the report so that future access to these sites will be maintained in the event of any future demolition, alteration, or removal of buildings built in connection with the Project. The report shall be submitted to the City of Los Angeles Planning Department and the museum repository. The report shall comply with the Society of Vertebrate Paleontology standard guidelines for assessing and mitigating impacts on paleontological resources.

c. Unavoidable Adverse Impacts

The recommended mitigation measures and associated potential to provide paleontologic benefits, as well as the possibility that potential paleontologic resources within the open space portions of the Proposed Project area would remain undisturbed and accessible to scientific investigation, lessens potential impacts. The Proposed Project's potential adverse impacts to paleontologic resources from construction activities, inclusive of the Equivalency Program and the off-site improvements, is expected to be reduced to a less-than-significant level since there would not be a permanent loss of a paleontological resource by allowing for the recovery of some remains and data, thereby ensuring their preservation in a museum and their availability for future study by qualified investigators.

As paleontological resources may occur below the Project site in soils having a high paleontologic impact potential, the long-term placement of buildings on the Project site, under both the Proposed Project and the Equivalency Program, would limit but not ultimately preclude future access. Further, the paleontological treatment plan requires the archiving of any data regarding the extent and location of any potential resources. The Project's off-site improvements would not limit future access to any potential paleontological sites. Therefore, the Project's impact on paleontological resources after mitigation is not considered to be significant.

d. Cumulative Impacts

The Proposed Project, in combination with other projects in the region where a project site is underlain by the Palos Verdes Sand or alluvium, might lead to cumulative impacts on paleontologic resources. These impacts could include the loss of paleontologic resources as a result of earth-moving activities and unauthorized fossil collecting, as well as the loss of access to these resources where they are covered by the construction of new buildings.

However, the Proposed Project would not result in a loss of access to the Palos Verdes Sand at the foot of the Westchester Bluffs, and therefore there would be no cumulative impact on the paleontologic resources of the Palos Verdes Sand. Moreover, lands in the Project vicinity, including some areas within the Proposed Project site, the Playa Vista First Phase Project site, and in the areas west and north of the First Phase Project would remain undeveloped. These areas underlain by alluvium remain accessible. Continued access to these areas would substantially reduce the cumulative impact of the Proposed Project on paleontologic resources.

It is expected that the City of Los Angeles policies for the protection of paleontological resources, and mitigation for related projects via CEQA review would be implemented. In addition, the Project's mitigation measures would reduce potential cumulative impacts. By allowing for the recovery of some fossil remains that would not have been exposed without the Proposed Project site and continued access to some areas underlain by the alluvium, as well as the implementation of mitigation measures, cumulative impacts inclusive of the Proposed Project would be less than significant. This conclusion applies to the Project, Equivalency Program, and construction of off-site improvements.

27. ARCHAEOLOGICAL RESOURCES

a. Environmental Impacts

Both the Village specific Plan and Habitat/Restoration components of the Proposed Project include activities that would cause earth disturbance in areas that may contain cultural resources. Construction-related activities, including grading and excavation for underground parking, open space, and other development, could disturb or destroy archaeological sites and artifacts or encourage unauthorized collection. Impacts would be significant if any archaeological or historical resources were disturbed or removed without an analysis of their cultural significance or without documentation of their context in relation to the surrounding environment.

The Project site, based on past investigations, is known to contain archaeological and/or historical resources of note. As such, development of the Proposed Project is subject to the provisions of a Programmatic Agreement developed for the Playa Vista Project among the U.S. Army Corps of Engineers, the California State Historic Preservation Office (SHPO), and the Federal Advisory Council of Historic Preservation.

Some of the archaeological sites on the Proposed Project site, as well as throughout the Ballona region, have been evaluated as eligible for listing in the National Register of Historic Places as a historic district. This district has been named the Ballona Lagoon Archaeological District. Sites formally recorded within the proposed district that are included in, or overlap a portion of, the Proposed Project site include CA-LAN-62, CA-LAN-211/H, CA-LAN-1932H, and CA-LAN-2769. Of these cultural loci, CA-LAN-211/H and CA-LAN-62 have been identified as potentially significant cultural resources. These loci were tested, and CA-LAN-62 has been determined to be eligible for listing in the National Register, while CA-LAN-211/H is under review. CA-LAN-2769 and CA-LAN-1932H have been tested and are not recommended to be eligible for listing in the National Register. Based on the completed archaeological evaluations, beyond the sites within the District, no other potential archaeological site within the Project site is eligible for the California Register as a historical archaeological resource.

Project impacts on potential on-site archaeological resources would occur during excavation and grading activities. Other aspects of Project construction and/or Project operations would not have an adverse impact on potential on-site resources. As part of the Project, the Applicant is proposing that encountered resources would be evaluated and treated per the protocols established in the Programmatic Agreement and ATP for CA-LAN-62 and CA-LAN-211/H. Such evaluation and treatment would allow for scientific discovery and contributions to the body of knowledge regarding California and American prehistory and history. The evaluation and treatment undertaken pursuant to these requirements would preclude, through approved and required mitigation techniques, significant impacts from the disturbance, damage, or degradation of unique archaeologic resources or archaeologic historic resources that may be encountered. Furthermore, the riparian corridor has been designed to ensure that sections of the significant archaeological sites along the bluffs are preserved. These will be protected within the open space designated as part of the riparian corridor. The corridor itself, however, cannot be placed in such a way as to avoid all portions of these archaeological sites and still function as a hydraulic feature. With the implementation of the Project Design Features impacts would be reduced to a less-than-significant level.

As of this date, five Archaeological Treatment Plans (ATPs) have been approved by the USACE, the State Historic Preservation Officer, and the Federal Advisory Council on Historic Preservation. These five ATPs have been implemented. Of these, one is for a site located within the Proposed Project area, and the remaining four are for off-site locations in the vicinity of the Proposed Project. The ATP within the Proposed Project site was prepared in 1991 and involved CA-LAN-62 and CA-LAN-211. Subsequently, it was found that, as previously defined, CA-LAN-62 and CA-LAN-211 were one large site. This combined site is now referred to as CA-LAN-62. The designation CA-LAN-211 was reused for another archaeological site in the Proposed Project site. A new ATP has been prepared for the newly designated site, CA-LAN-211/H, and is currently under review by the USACE, the State Historic Preservation Officer, the Advisory Council on Historic Preservation, and two groups representing the Gabrielino Indians.

b. Recommended Mitigation Measures

Mitigation Measures for the Proposed Project and the Equivalency Program

- Prior to the issuance of any grading/excavation or building permits, the measures required within the approved Archaeological Treatment Plans for the properties designated as LAN-211/H and LAN-62, which have been determined eligible for listing in the National Register of Historic Places and accepted by the U.S. Army Corps of Engineers, the State Historic Preservation Officer, and the Advisory Council on Historic Preservation shall be implemented. The archaeological treatment plans shall be consistent with the following: the Secretary of Interior Guidelines for Archaeological Documentation; the California Office of Historic Preservation's Archaeological Resource Management Reports: Recommended Contents and Format, and Guidelines for Archaeological Research Designs; the Department of the Interior's Guidelines for Federal Agency Responsibilities under Sections 106 and 110 of the National Historic Preservation Act; and take into account the Council's publication, <u>Treatment of Archaeological Properties – A Handbook</u>.

- Prior to issuance of grading/excavation or building permits, a professional archaeologist who meets the Secretary of Interior's guidelines and is listed in the Register of Professional Archaeologists shall be retained to implement the Research Design and comply with the Programmatic Agreement.

- Historic resources eligible for listing in the National Register of Historic Places shall be avoided or unavoidable disturbance be mitigated through data recovery, documentation, analysis, and curation. Archeological treatment plans required by the Programmatic Agreement shall be developed and implemented, as applicable. All materials and records resulting from implementation of the Programmatic Agreement shall be curated in accordance with 36 Code of Federal Regulations Part 79.

- In addition to a qualified archaeologist, a representative of the Gabrielino Indians shall be retained to monitor subsurface archaeological excavations. Prior to issuance of grading or building permits, evidence shall be provided for placement in the subject file with the City Planning Department that a Native American monitor has been retained.

- In the event that previously unknown archaeological and historical resources are discovered during construction, grading/excavation/construction shall temporarily be halted. The U.S. Army Corps of Engineers and the State Historic Preservation Officer shall immediately be notified to provide these agencies with the opportunity to assess the resources and offer recommendations for treatment required by the Programmatic Agreement.

- The Project archaeologist shall monitor ground disturbing activities in areas where significant archaeological or historical materials are discovered or detected. If cultural resources are discovered during grading/excavation/construction monitoring, such resources shall be evaluated for their eligibility for listing in the National Register of Historic Places. If potentially significant resources are encountered, a letter of notification shall be provided in a timely manner to the Department of City Planning, in addition to the report (described below) that is filed at the completion of grading. If eligible, an archaeological treatment plan shall be developed and implemented in accordance with the Programmatic Agreement.

- Following completion of grading activities, a qualified archaeologist who meets the Secretary of Interior Guidelines and is listed in the Register of Professional Archaeologists shall prepare a report of the results of archaeological investigations to the City of Los Angeles Department of City Planning, other appropriate public agencies, and concurring parties as specified in the Programmatic Agreement. The report shall be submitted to the above parties according to the schedules established in the respective ATPs.

- If a commemorative display center for items of cultural significance should be provided in the Playa Vista First Phase Project, representative artifacts from the Proposed Project site, should they be discovered, or accurate replicas shall be made available for the display at the display center.

c. Unavoidable Adverse Impacts

The impact analysis identified several potential direct and indirect adverse impacts on archaeological or historical resources associated with excavation and incidental unauthorized collecting. These impacts would be similar under both the Proposed Project and the Equivalency Program. Encountered resources would be evaluated and treated per the protocols established the Programmatic Agreement and related Archaeological Research Design. Such evaluation and treatment would allow for scientific discovery and contributions to the body of knowledge regarding California and/or American prehistory and history. The evaluation and treatment undertaken pursuant to these requirements would preclude, through approved and required mitigation techniques, significant impacts from the disturbance, damage, or degradation of unique archaeological resources or archaeologic historic resources that may be encountered. With the implementation of the Programmatic Agreement and mitigation measures, impacts for the Proposed Project and Equivalency Program would be reduced to a less-than-significant level. No adverse impacts on archaeological resources are expected from the construction of the Project's off-site improvements.

d. Cumulative Impacts

Development of the Proposed Project, inclusive of the Equivalency Program and the construction of the off-site improvements, in combination with the related projects, could contribute to the cumulative loss of cultural (archaeological and historical) resources within the region, city, and state as a whole. All potential sites are required to be evaluated prior to construction activities. Depending on the outcome of these evaluations, there could be possible effects on cultural (archaeological and historical) resources.

One of related projects in the vicinity of the Proposed Project, the Catellus project on the West Bluffs, is developing an area where several archaeological sites are located. These sites have been known since the 1930s, and previous data recovery has mitigated the loss of information associated with these two sites. Recent monitoring during grading activities has uncovered a variety of cultural resources, including human remains, which are being dealt with in accordance with the mitigation measures adopted for that project and applicable federal and state regulations.

At the same time, construction activity conducted under regulations often provides a vehicle for preservation of historic structures and discovery of new archaeological resources that would otherwise remain unknown. To the extent individual related projects would be required to comply with applicable laws, the potential disturbance, damage, or degradation of unique archaeological resources or archaeologic historic resources could be mitigated. The cumulative total of all related project development creates the potential for additional impacts upon archaeological resources. Although each project must develop adequate mitigation measures to substantially lessen or avoid impacts on an individual basis, the incidental loss of all project-study area archaeological resources may constitute a significant cumulative impact.

28. HISTORICAL RESOURCES

a. Environmental Impacts

Historic resources in proximity to the Project site consist of the Hughes Industrial Historic District (District), located east of the Project site, within the adjacent Playa Vista First Phase Project site. The existing on-site structures, while a part of the Hughes Aircraft Company complex, are all located outside of the identified Hughes Industrial Historic District and an adjacent transition zone and, as such, are considered to be non-contributors to the District. All on-site structures were evaluated and determined to not meet the regulatory standards for classification as a historic resource. As such, the Proposed Project would not demolish, destruct, relocate, or alter a historical resource such that the significance of a historical resource would be materially impaired. Furthermore, Project development would have no effects regarding the implementation of the Historic Resource Treatment Plan for the Hughes Industrial Historic District, nor its criteria to maintain the integrity of the District. Therefore, the Proposed Project would not reduce the integrity or significance of important resources on the site or in the vicinity. As such, Project impacts are less than significant.

b. Recommended Mitigation Measures

The Proposed Project, inclusive of the Equivalency Program and the proposed off-site improvements, would have no impacts on historic resources. Therefore, no mitigation measures are recommended or required for the Proposed Project, inclusive of the Equivalency Program and off-site improvements.

c. Unavoidable Adverse Impacts

The Proposed Project, inclusive of the Equivalency Program and the proposed off-site improvements, would have no impacts on any historic resources.

d. Cumulative Impacts

As the Proposed Project, inclusive of the Equivalency Program and the proposed off-site improvements, would have no impact on historic resources, there would also be no contribution to cumulative impacts on historic resources. Except as noted below, the related projects are somewhat distantly located from the Proposed Project, inclusive of the Equivalency Program, and, for the purposes of resulting in a cumulative historic resources impact, do not bear a close physical relationship to it or the proposed off-site improvements. Further, based on available information, none of these related projects are known to contain historic resources. To the extent that historic resources within these related projects are identified at a later date, adverse impacts may occur. However, it is anticipated that should this occur, any activities that did occur involving these related projects would be subject to review under CEQA and would be mitigated to avoid or limit potential impacts. In addition, the Proposed Project, inclusive of the Equivalency Program, and the proposed off-site improvements are located sufficiently far from the Hughes Industrial Historic District to avoid impacts on the integrity of the District. The Proposed Project, inclusive of the Equivalency Program, and the proposed off-site improvements would not contribute incrementally to the demolition, destruction, relocation, or alteration of any historical resources nor the reduction in the integrity of important resources. Therefore, cumulative impacts on historical resources would be less than significant.

II. PROJECT DESCRIPTION
A. LOCATION AND BOUNDARIES

The Village at Playa Vista (the "Proposed Project" or "Project") is comprised of 111 acres located within the Westside area of the City of Los Angeles, approximately 2 miles inland from Santa Monica Bay. The Proposed Project includes the development of 2,600 dwelling units, 175,000 sq.ft. of office space, 150,000 sq.ft. of retail space, and 40,000 sq.ft. of community-serving uses. The Proposed Project would also include an Equivalency Program to allow a limited exchange of office uses for additional retail uses and/or assisted living uses. The Project includes 11.4 acres of parks, as well as 1.0 acre of on-site bicycle lanes. The Project also includes the construction of a 6.7-acre Riparian Corridor and the restoration of a 5-acre portion of the Westchester Bluffs within the southern portion of the Project site.

The Proposed Project site is generally bounded by the Playa Vista First Phase Project to the east and west, Jefferson Boulevard to the north, and the Westchester Bluffs to the south. The Westchester Bluffs rise approximately 120 feet above the Project site. The City of Los Angeles' Westchester community and Loyola Marymount University lie atop the bluffs.

In a larger context, the Proposed Project is surrounded by the existing City of Los Angeles communities of Westchester on the south, Del Rey to the northeast, Venice/Mar Vista further to the north and Playa del Rey further to the west. The Los Angeles County community of Marina del Rey lies further to the northwest, and the City of Culver City further to the east. Figure 1 through Figure 3 on pages 151 through 153, respectively, further illustrate the Project's relationship to its surrounding communities.

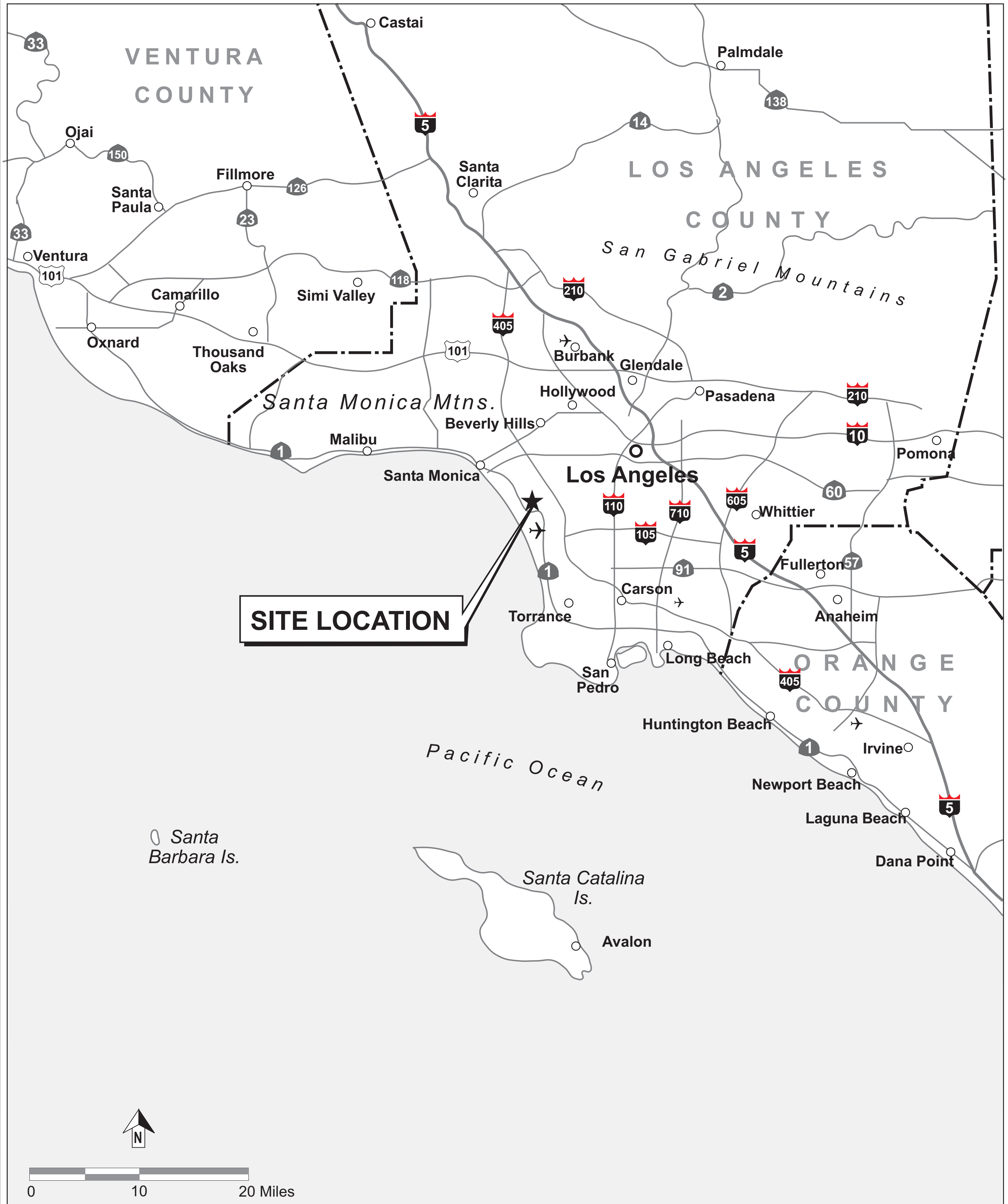

Figure 1
Regional Location Map

Source: PCR Services Corporation, July 2003

Figure 2
Community Location Map

Source: PCR Services Corporation, July 2003

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Proposed Village at Playa Vista

Figure 3
Aerial Photograph of Site Locale

Source: Playa Capital Company, July 2003

1.0 INTRODUCTION

The Proposed Project, as shown in Figure 4 on page 155, consists of the following two components: (1) development of a mixed use community ("Urban Development Component") and (2) construction of a Riparian Corridor and restoration and maintenance of a portion of the Westchester Bluffs adjacent to the Riparian Corridor (the "Habitat Creation/Restoration Component"). The Urban Development Component area is generally bounded by the Playa Vista First Phase Project to the east and west, Jefferson Boulevard to the north, and the Habitat Creation/Restoration Component to the south. The Habitat Creation/Restoration Component (which includes the Riparian Corridor and Bluffs) is located south of the Urban Development Component area and is generally bounded on the east and west by the Riparian Corridor approved as part of the Playa Vista First Phase Project, on the north by the Urban Development Component area, and on the south by Cabora Road (about midway up the Westchester Bluffs).

The primary component of the Project, the Urban Development Component would enable the development of a master planned community composed of residential, commercial, recreational, and community-serving uses. This development would occur on an approximately 100 acre site. The proposed development includes 2,600 dwelling units, 175,000 sq.ft. of office space, 150,000 sq.ft. of retail space, and 40,000 sq.ft. of community-serving uses. The Proposed Project would also include an Equivalency Program to allow a limited exchange of office uses for additional retail uses and/or assisted living uses. The Urban Development Component also would provide a comprehensive program of parks and open space areas that would contribute to the aesthetic character of the area and complement the land use program described above. A total of 11.4 acres of parks would be available at multiple locations within the Project site. In addition to this park acreage, the Project includes a total of 1.0 acre of on-site bicycle lanes.

The Habitat Creation/Restoration Component includes a total of 11.7 acres, of which the Riparian Corridor involves approximately 6.7 acres, with the restoration of the adjoining portion of the Westchester Bluffs occurring over the remaining five acres. Implementation of the Riparian Corridor would include excavation of the corridor, planting with native vegetation, monitoring and maintenance to meet performance standards, and corrective action as necessary. The construction of the Riparian Corridor would complete a 25-acre riparian corridor that also includes sections east and west of the Riparian Corridor, ultimately feeding into the Playa Vista First Phase Freshwater Marsh. The proposed Bluffs restoration program would enhance the bluffs adjacent to the Riparian Corridor as a coastal sage scrub community with increased habitat

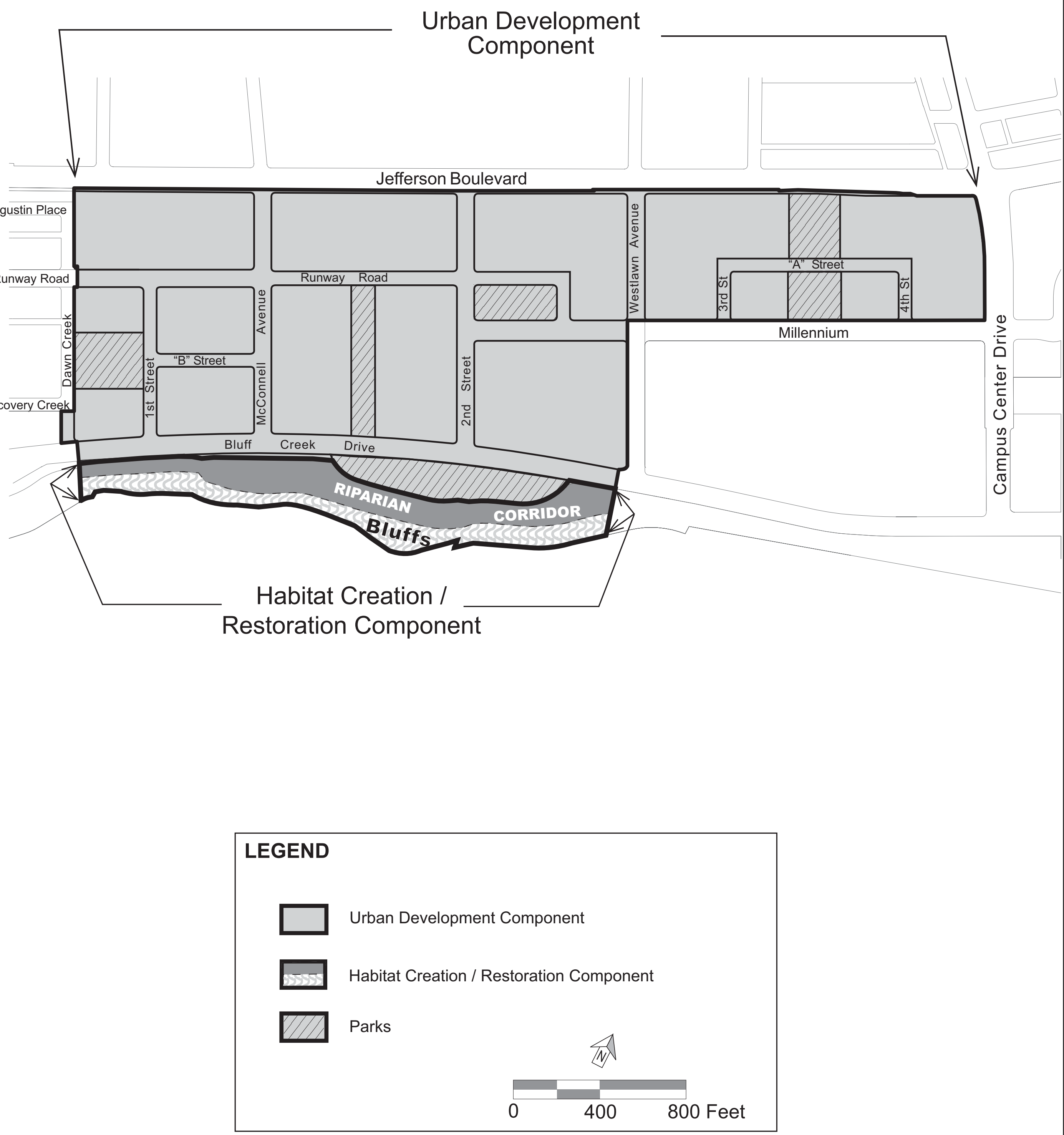

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Figure 4
Proposed Project Components

Source: PCR Services Corporation, July 2003

value. Once the Bluffs have been restored, the Applicant would undertake, and be responsible for, an ongoing maintenance program that would include the removal of non-native plant species and the replacement of dead native plant specimens with new native plants.

The implementation of these Project components would occur via amendments to the Westchester/Playa del Rey Community Plan; amendments to the Playa Vista Area D Specific Plan, and the adoption of the Development Criteria and Guidelines as a condition of approval, as well as other discretionary actions described in Subsection 3.0, below. The balance of this section describes the following: (1) an overview of the Project's two components, as described above; (2) the discretionary actions requested by Playa Capital Company, LLC (the "Applicant"), and the permits required, to implement the Proposed Project; and (3) a discussion of the Project's anticipated construction and development schedule.

2.0 OVERVIEW OF PROJECT COMPONENTS

The Proposed Project, as previously described, includes the following two components: (1) Urban Development Component; and (2) Habitat Creation/Restoration Component.

2.1 Urban Development Component

2.1.1 Proposed Project Development

The Urban Development Component would include the development of up to 2,600 dwelling units, 175,000 sq.ft. of office space, 150,000 sq.ft. of retail space, and 40,000 sq.ft. of community-serving uses. In addition, it would include 11.4 acres of parks as well as 1.0 acre of on-site bicycle lanes. The following description of the Project's Urban Development Component starts with an overview of its design principles. This discussion is followed by a description of the Project's proposed Development and Circulation Plans. The Development Plan addresses issues pertaining to proposed land uses and development standards (e.g., building setbacks, height, landscaping, etc.). The Circulation Plan addresses issues pertaining to vehicular circulation, transit system improvements, parking and bicycle circulation.

2.1.1.1 Design Principles

The Project's Urban Development Component includes a series of residential neighborhoods organized around a Village Center. The Village Center is envisioned as an area defined by mixed-use development centered on a public plaza that may include ground floor retail uses with additional retail, office and/or residential uses located above. The Urban Development Component has been designed to create an integrated and internally oriented mixed-use project that optimizes the synergy among its proposed uses, while creating a compatible interface with adjoining development and adjacent communities. Proposed Project buildings would support the mixed-use concept by placing interrelated uses in proximity to one another. The various on-site activity centers would be connected via walkways, the internal shuttle system and bicycle trails. These connections, or linkages, would be extended to the development that is occurring immediately east and west of the Proposed Project site.

The Project design, recognizing the importance of parks as a building block in creating an attractive and active urban environment, includes a number of public parks of varying sizes that offer a wide variety of activities. In addition to providing recreational opportunities, these parks also serve as organizing elements within each of the Project's neighborhoods, while also serving as buffer areas at several locations.

The design of the Project's residential areas would also be enhanced via a variety of private and semi-private open space areas, such as courtyards, gardens, plazas and landscaped edges. While these areas would not necessarily be accessible to the general public, they would affect the overall aesthetic character of the Project by creating a continuity of streetscape and landscape.

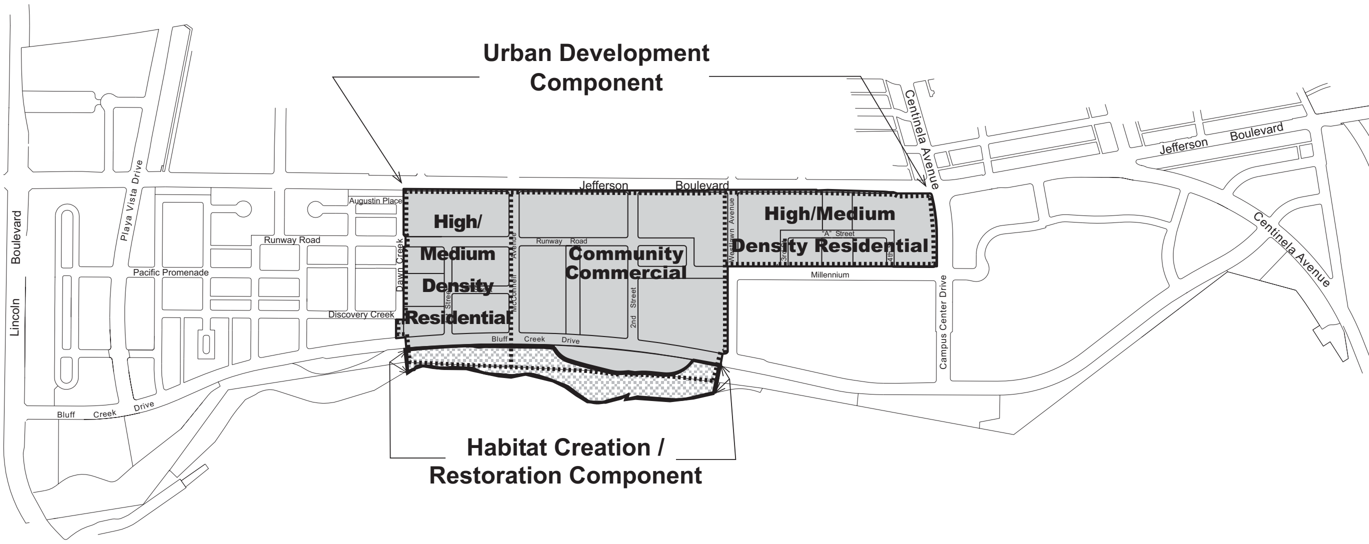
2.1.1.2 Development Plan

The Proposed Project's Development Plan includes land use designations, a land use program that specifies allowable uses, and development standards that would guide and shape the Projects' physical form. The Proposed Project would be implemented via amendments to the existing Specific Plan and its zoning designations, establishing new boundaries for R4(PV) and C2(PV) zone areas in place of existing R4(PV) and M(PV) zone areas. The General/Community Plan and Zoning designations that are proposed are illustrated in Figure 5 on page 158. The Project's land use program is summarized in Table 2 on page 159. The land use program and design principles are further discussed, below.

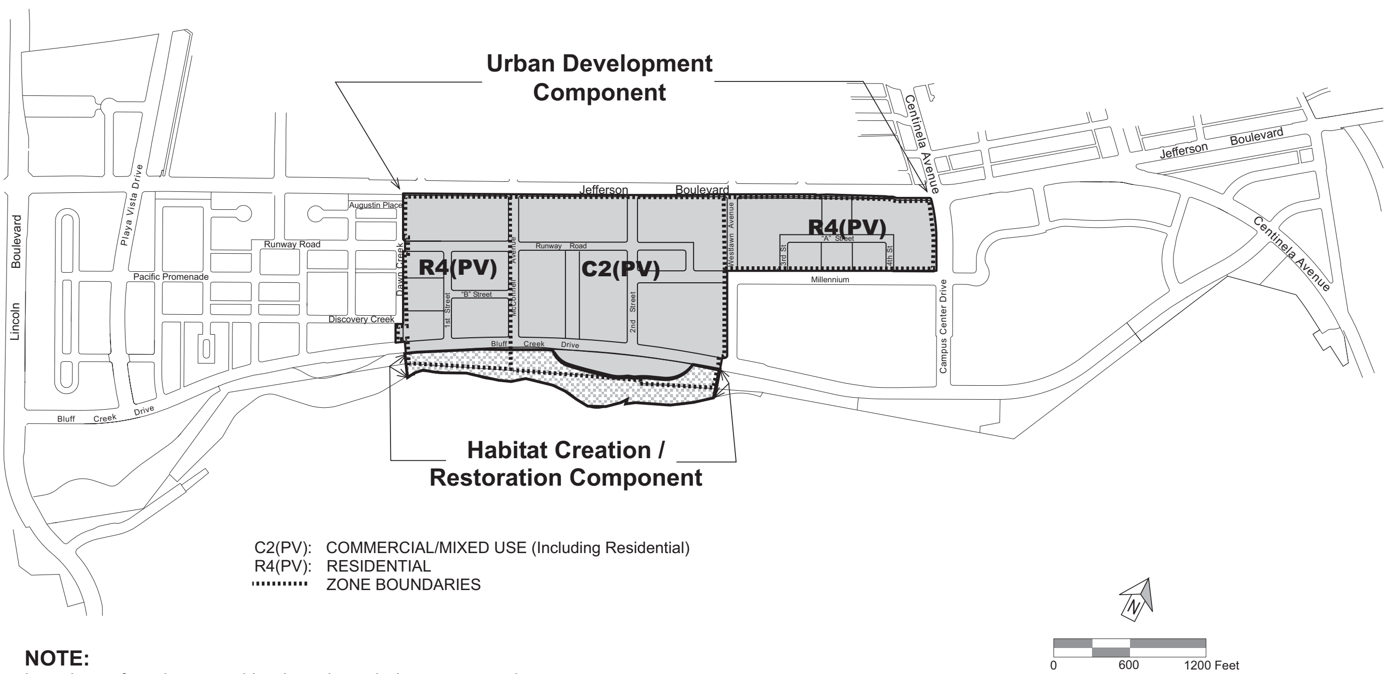
2.1.1.2.1 Proposed Land Uses

As noted in Section 2.1.1.1, above, the Proposed Project would consist of an integrated, mixed-use, master planned community comprised of residential, commercial, recreational, and community-serving uses. The proposed development includes 2,600 dwelling units, 175,000 sq.ft. of office space, 150,000 sq.ft. of retail space, and 40,000 sq.ft. of community-serving uses. The Proposed Project would also include an Equivalency Program to allow a limited exchange of office uses for additional retail uses and/or assisted living uses. Supporting this proposed set of land uses are infrastructure systems dedicated to accommodate planned storm drains, sewers, water supply lines, and other utility lines such as electricity, natural gas and cable television. The Project's Development Plan also includes requirements for the

Proposed General Plan Designations



Proposed Specific Plan/Zoning Designations



NOTE:
Locations of roadways and land use boundaries are approximate.
Precise placement will be determined as part of subdivision process.

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Figure 5
Proposed Plan Amendments

Source: Playa Capital Company, July 2003

Table 2

PROPOSED PROJECT DEVELOPMENT COMPONENTS

Land Areas	Size (acres)	Total Acreage
Urban Development Component		
Urban Development	87.5 [a]	
Parks	11.4 [b]	
Passive Open Space	0.4 [c]	
Subtotal		99.3
Habitat Creation/Restoration Component		
Riparian Corridor	6.7	
Bluffs Habitat Creation/Restoration	5.0	11.7
Total Area		111.0

Urban Development Program [d]

Land Uses	Size
Office	175,000 sq.ft.
Residential Units	2,600 du
Retail	150,000 sq.ft.
Community-Serving	40,000 sq.ft.

[a] *Includes 1.0 acre of bicycle lanes.*
[b] *Park acreage is approximate. Actual park acreage will be provided in accordance with the Project's adopted conditions of approval.*
[c] *A landscaped area located along the south side of Bluff Creek Drive, just to the north of the Proposed Project's Habitat Creation/Restoration Component.*
[d] *The Proposed Project would also include an Equivalency Program to allow a limited exchange of office uses for additional retail uses and/or assisted living uses.*

Source: Playa Capital Company, 2003.

development of 11.4 acres of parks and 12.1 acres of passive open space area that would contribute to the aesthetic character of the Project and complement the land use program described above (see Table 2).

2.1.1.2.2 Development Standards

The Proposed Project's urban design provisions include a framework to guide and shape future on-site development. As an urban design framework, the design provisions do not specify the architectural design or siting of specific structures or facilities. However, they establish standards regulating the physical organization of buildings and other spaces. The Project's urban design provisions are identified and discussed below under separate subheadings:

- Building Height and Massing

- Building Setbacks
- Signage
- Landscaping

2.1.1.2.2.1 Building Height and Massing

Proposed Project development would be subject to numerous restrictions regarding the location and massing of buildings. The shapes of the building envelopes in which development could occur would be limited by restrictions on building heights, on developable floor area as a percentage of lot area and minimum setbacks. The proposed height limit designations for the site are shown in Figure 6 on page 161. The height limits are expressed in feet above mean sea level (AMSL). By expressing these limits in terms of elevation rather than height above ground, direct comparisons can be made to the elevations associated with the various visual vantage points outside of the Proposed Project area, such as the Westchester Bluffs. For descriptive purposes, building heights, as expressed in feet above sea level, are correlated to building heights above ground level in the legend for Figure 6.[4]

The Project further restricts the massing of development by placing limits on the percentage of total lot area which may be developed. The limitations on floor area varies according to land uses, as follows:

- Residential Lots: The maximum lot coverage would be 55%;
- Commercial and Mixed Use Lots: The maximum lot coverage would be 60%; and
- Park Sites: The maximum lot coverage would be 25% (for recreational and park support structures).

Height limits are higher along the southern edge of the Project site, although well below the top of the bluffs, and lower along the northern edge of the site, diminishing with distance from the bluffs, creating a tiered effect.

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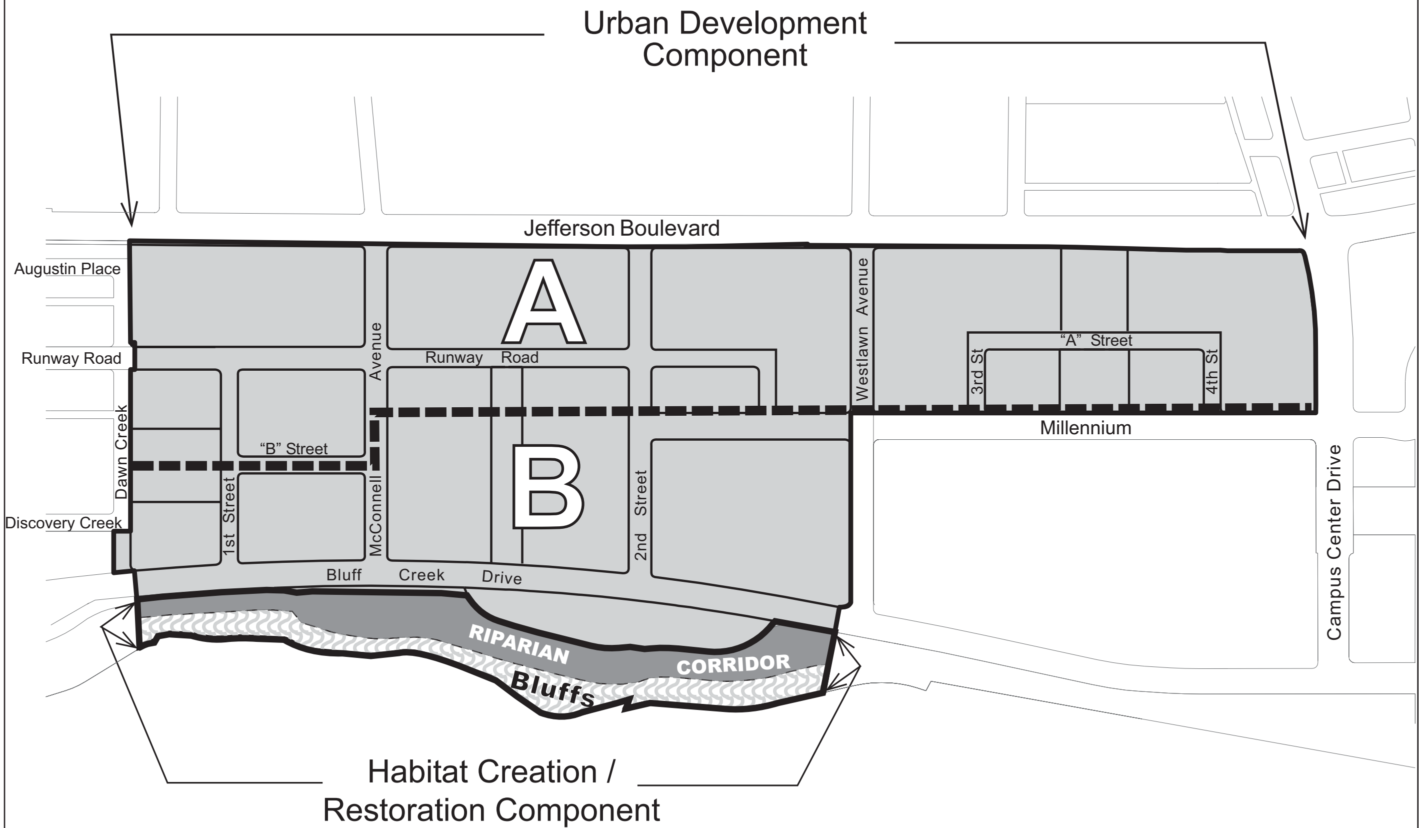
[4] *The Project's building height envelopes are inclusive of all functional roof top appurtenances. This includes parapets; pitched roofs; chimney; vent stacks; antennas; radar, microwave or television dishes; aircraft warning lights; lightning protection; elevator penthouses; stairwell enclosures; mechanical equipment; skylights; roof decks; helipads and other functional elements. One ornamental architectural feature (such as a belvedere, cupola, steeple, spire, flags, ornamental tower, clock and bell tower or weather vane) may exceed the established height limits, provided: (1) it is no more than 625 sq.ft., (2) has no plan dimension greater than 25 feet, and (3) does not exceed the maximum height envelope by more than 30 feet. Within the maximum height envelope, and regardless of the style of the roof, all roof top equipment will be properly screened from the view of adjacent structures within the Proposed Project and adjacent Playa Vista First Phase Project. Wherever feasible, efforts would be made to screen the equipment from the view available atop the Westchester Bluffs.*



LEGEND

Height District	Above Mean Sea Level (AMSL)	Above Finished Grade [a]	Above Existing Grade [a]
A	95'	68' - 72'	71' - 88'
B	112'	85'-89'	88'-105'

[a] Height above finished grade and above existing grade are approximate. Finished grades will be approximately 23' to 27' AMSL. Existing grades vary from approximately 7' to 24' AMSL.
Westchester Bluffs: Approximately 140' AMSL

Urban Development Component

Habitat Creation / Restoration Component

N

0 400 800 Feet

Figure 6
Proposed Height Limits

Source: PCR Services Corporation, July 2003

2.1.1.2.2.2 Building Setbacks

The Proposed Project also includes design standards that pertain to the portions of individual development sites within which development can occur. This is accomplished by establishing roadway and side-lot setbacks from adjoining lots. The proposed setback standards are shown in Table 3 on page 163.

2.1.1.2.2.3 Signage

The Proposed Project also includes design standards intended to establish an on-site signage program that reflects the character and nature of the development envisioned to occur. These standards are based on Los Angeles Municipal Code requirements. The proposed signage standards focus on the unique attributes of the Village Center as well as the need for directional signage and the permitting of signage within residential setback areas subject to a prescribed set of principles.

2.1.1.2.2.4 Landscaping

The Proposed Project includes a landscaping program that shapes the character of future on-site development, and provides continuity throughout the Project site. Major features of the proposed landscaping program include the following:

<u>Jefferson Boulevard</u>. Generally, the area adjacent to Jefferson Boulevard would include a 5-foot-wide parkway, a 5-foot-wide concrete public sidewalk, and a planted slope, with intermittent retaining walls rising to the building pads above the roadways. The Jefferson Boulevard parkway would be landscaped with Canary Island Pines as the dominant tree species, planted 40 feet on center, and ground cover. The sloped area would be planted with shrubs and ground cover.

<u>Interior Roadways</u>. Individual streets or small groups of adjacent streets would have a distinguishing tree type. Like the street tree plantings found in older Los Angeles neighborhoods, the tree types would vary, and would likely include; but are not limited to the following: *Washingtonia robusta, Ulmus parvifolia, Tipuana tipu, Pinus canariensis, Magnolia grandiflora, Liguidambar styraciflua, Koelreuteria bipinnata, Jacaranda mimosifolia, Erythinia caffra, Cupressus sempervirens, Cedrus deodora, Arecastrum romanzoffianum, and Albizia julibrissin*. Parkway areas would also include a variety of ground covers, including turf.

<u>Neighborhood Parks and Open Space</u>. These areas would typically include clustered shade trees, walkways, and open lawn areas. Most of the parks would include park furnishings such as benches, tables and chairs. Other features proposed for many of the parks include small structures such as band shells, kiosks, or fountains. The open space areas along the southern

Table 3

PROPOSED SETBACK REQUIREMENTS

Location	Required Setback	
Thoroughfares		
Jefferson Boulevard	15 Feet	(From the right-of-way/property line, regardless of which way the building orients on the lot. This setback excludes retaining walls.)
Bluff Creek Drive	15 Feet	
Runway Road (Dawn Creek to McConnell)	15 Feet	
Runway Road (McConnell to 2nd Street)	0-5 Feet	(Street front retail will characterize this block.)
Runway Road (2nd Street to Millennium Road)	15 Feet north side; 10 Feet south side	
Millennium Road	15 Feet	
McConnell Avenue	10 Feet	
McConnell Avenue (100 feet north and south of Runway Road)	0-5 Feet	(Street front retail will characterize this block.)
Westlawn Avenue	10 Feet	
Campus Center Drive	15 Feet	
1st, 2nd, 3rd, and 4th Street	10 Feet	
2nd Street (100 feet north and south of Runway Road)	0-5 Feet	(Street front retail will characterize this block.)
A and B Streets	10 Feet	
Dawn Creek	10 Feet	
Setbacks from Adjacent Lots [a]		
Adjacent to a Residential or Commercial Lot	10 Feet	
Adjacent to a Park or Open Space Lot	5 Feet	

[a] *Multi-family structures in two separately developed Projects shall be separated by no less than 20 feet.*

Source: Playa Capital Company, 2003.

edge of Bluff Creek Drive would include landscaping selected to provide a transition between the native landscaping of the adjacent Riparian Corridor, and the plant species found in the urban neighborhoods north of Bluff Creek Drive.

2.1.1.3 Circulation Plan

Another integral component of the Proposed Project is its circulation plan, which sets forth design concepts for vehicular circulation, transit system improvements, parking and bicycle circulation. Each of these four components of the circulation plan is described below under separate subheadings.

2.1.1.3.1 Vehicular Circulation

The Proposed Project's vehicular circulation plan emphasizes channeling motor vehicle travel onto the regional transportation network with access to the regional systems occurring via the major arterials that adjoin, and are in proximity to, the Project area. The use of local streets to accommodate travel attributable to Project development is de-emphasized. This objective will in part be realized via improved access to the Project site, as well as the roadway system serving surrounding areas.[5]

Within the Project site itself, a network of collector and local streets would be constructed that would connect with the roadway network established in areas immediately east and west of the Project site. In addition to the on-site local street network, certain on-site roadway improvements would contribute to the regional roadway network as well. Specifically, Bluff Creek Drive would be completed, thereby connecting with the portions of Bluff Creek Drive that will be constructed as part of the adjacent off-site, Playa Vista First Phase Project. Upon completion, Bluff Creek Drive would extend from Lincoln Boulevard easterly to Centinela Avenue, generally, as a four-lane divided roadway consistent with secondary highway standards. Also, Jefferson Boulevard would be widened on its south side between Beethoven Street and a location just east of Centinela Avenue. This widening would link with similar widening that will be completed by the adjoining off-site, Playa Vista First Phase Project. Once all improvements are completed, Jefferson Boulevard would provide for four eastbound lanes and three westbound lanes.

Access into the Proposed Project site from Jefferson Boulevard and Bluff Creek Drive would occur at signalized intersections with both Westlawn and McConnell Avenues. In addition, several right in and out driveways would also offer access to the Project site.

2.1.1.3.2 Internal Shuttle System

The Proposed Project includes an internal shuttle system to promote the reduction of vehicular trips within the Project site and the surrounding area. Specific shuttle system improvements include the following: (1) an internal shuttle carrying residents and workers within the Proposed Project site and adjacent Playa Vista First Phase Project site on a bus; (2) provision of real-time information to all Proposed Project residents and workers, as well as those associated with the adjacent Playa Vista First Phase Project, on the operation and location

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[5] *The improvements described here are roadways that are components of the Proposed Project, referred to as Project Design Features. In addition to these improvements, the Proposed Project would implement and/or contribute to the implementation of other road improvements throughout the community as mitigation measures which reduce the Project's traffic impacts. The traffic analysis, Project Design Features, and Mitigation Measures are described in the Traffic and Circulation section of the EIR.*

of the internal shuttle; and (3) provision of fare-free shuttle service for Project residents and employees at all times and the provision of subsidized fares for visitors not residing or working on the Project site during peak hours (8 to 9 A.M. and 5 to 6 P.M.).

2.1.1.3.3 Parking

Parking within the Proposed Project site would be provided to meet the needs of residents, employees and visitors. Shared parking may be permitted when it is demonstrated that the same parking spaces can be utilized by two or more uses at different times without having a negative affect on the overall availability of parking. As such, parking would be provided to meet the projected parking demand of the Project.

Parking would occur at both off-street and on-street locations. All parking required to support anticipated on-site development would be provided within the Project site.

The Applicant is forecasting that between 4,500 and 6,200 off-street parking spaces would be required to support the Project's proposed land uses. The actual number of required parking spaces will be determined in accordance with the provisions set forth within the Playa Vista Area D Specific Plan. Additional on-street parking would be available along some of the new streets that would be created within the Project site. The on-street parking would be provided in a manner that is consistent with the City of Los Angeles' local and collector street design standards, thereby avoiding any sight-distance or other hazards at driveways and intersections. The specific location and number of on-street parking spaces would be dependent upon the final design and approval of subdivision maps where location of driveways, fire hydrants and other infrastructure details are taken into consideration.

2.1.1.3.4 Bicycle Circulation

The Proposed Project also includes new delineated Class II bikeways within several roadway rights-of-way. The Class II Bicycle Lanes would be located in on-street lanes adjacent to traffic lanes, with bike lane markings. The bicycle lanes would be located along Bluff Creek Drive, and portions of McConnell Avenue, 2nd Street, Runway Road, and Millennium.

The proposed system of bikeways would be designed to meet applicable standards for bikeway construction. The evaluation of bike path design for conformance with the standards would be made at the time of Plan Check.

2.1.2 Equivalency Program

The Proposed Project includes an equivalency program that would provide development flexibility so that the Project could respond to the future needs of those who live and work at the

Project site. The equivalency program is intended to allow a limited exchange of office uses for retail and/or assisted living uses in order to meet these future needs, if needed, while providing a balanced project consistent with the mixed-use concept. Under the proposed equivalency program, a maximum of 125,000 square feet of office development may be exchanged for up to 56,832 square feet of retail uses or up to 200 assisted living units, or a combination thereof (e.g., an increase of both retail and assisted living development) (the "Equivalency Program"). Land uses may be exchanged based on specific equivalency factors and subject to the limits set forth above. These factors were developed and result in an equivalent number of motor vehicle (traffic) trips for the identified land uses, as discussed the EIR's Traffic and Circulation Section, Section IV.K.(1), and in greater detail in the Traffic Study, Appendix K of the EIR. The following are the established equivalency factors:

- 1,000 square feet of Office floor area is equivalent to 454.66 square feet of Retail development; and
- 1,000 square feet of Office floor area is equivalent to 8.3 Assisted Living/Skilled Nursing units/rooms.

Table 4 on page 167, summarizes the land use development program for the following: (1) Proposed Project, (2) Proposed Project with transferring the maximum allowed office development to retail use only, (3) Proposed Project with transferring office development to the maximum number of assisted living units permitted, and (4) Proposed Project with transferring the maximum allowed office development to retail and assisted living uses.

The proposed Equivalency Program applies only to the limited transfer of land uses discussed above, which occur within the Project's Urban Development Component. No changes are proposed under the Equivalency Program to the Project's Habitat Creation/Restoration Component. Furthermore, under the Equivalency Program, there would be no change to the Project's lot or street configurations, depth of excavation, building pad elevations, or design criteria (e.g., height limits, setbacks, etc.).

An analysis of the potential environmental impacts attributable to the proposed Equivalency Program is provided within each environmental analysis in Section IV, Environmental Impact Analysis, of this EIR. The environmental analysis for the Equivalency Program evaluates each of the different equivalency scenarios to determine its impacts, including whether the impacts of any scenario are equal to or greater than the impacts of the Proposed Project. If the impacts in any given equivalency scenario are equal to or less than the impacts from the Proposed Project, then the analysis of the Proposed Project's impacts and any mitigation measures are applied to the given equivalency scenario. If the equivalency scenario would result in a greater or different impact than the Proposed Project, then such impact is

Table 4

PROPOSED PROJECT AND EQUIVALENCY SCENARIOS

Development Scenario	Residential (units)	Office (sq. ft.)	Retail (sq.ft.)	Community Serving (sq.ft.)	Assisted Living (units/rooms)
Proposed Project	**2,600**	**175,000**	**150,000**	**40,000**	**0**
Equivalency Scenarios					
Transfer 125,000 sq.ft. of office to:					
All Retail					
Land Use	2,600	50,000	206,832	40,000	0
Over/(Under) Proposed Project	0	(125,000)	56,832	0	0
All Assisted Living					
Land Use	2,600	150,900	150,000	40,000	200
Over/(Under) Proposed Project	0	(24,100)	0	0	200
Retail/Assisted Living					
Land Use	2,600	50,000	195,877	40,000	200
Over/(Under) Proposed Project	0	(125,000)	45,877	0	200

specifically discussed in greater detail and additional mitigation measures are proposed as appropriate.

2.2 Habitat Creation/Restoration Component

The Project's Habitat Creation/Restoration Component includes the construction of a 6.7-acre Riparian Corridor and the restoration and maintenance of a 5-acre portion of the Westchester Bluffs, located to the south of the Riparian Corridor. This component would be restricted from future development.

The Riparian Corridor is located south of the Urban Development Component and is bounded on the east and west by the riparian corridor approved as part of the Playa Vista First Phase Project and on the south by the Westchester Bluffs. The proposed Riparian Corridor would include wetland habitat such as emergent, willow scrub woodlands and mixed riparian woodlands, as well as native grasslands. Implementation of the Riparian Corridor would include excavation of the corridor, planting with native vegetation, monitoring and maintenance to meet performance standards, and corrective action as necessary. The construction of this Project component would complete a 25-acre riparian corridor that also includes sections east and west of the Riparian Corridor, required as part of the adjacent Playa Vista First Phase Project, ultimately feeding into the Playa Vista First Phase Freshwater Marsh (west of Lincoln Boulevard and south of Jefferson Boulevard), thus establishing a 51-acre Freshwater Wetland System. Figure 4 on page 155 identifies the location of the Project's Riparian Corridor.

The Habitat Creation/Restoration Component also includes the restoration of a 5-acre section of the Westchester Bluffs located immediately south of the Proposed Project's riparian corridor. This 5-acre area is currently populated with a high percentage of non-native vegetation. The Applicant proposes to enhance this system via the introduction of native vegetation. The proposed restoration program would enhance the bluffs as a coastal sage scrub community with increased habitat value. Three major efforts are proposed to implement the Project's Bluffs restoration program. They include: (1) seed collection of existing native plants and weed removal by hand; (2) planting by hand as necessary with container stock and seeding; and (3) maintenance and monitoring. To the extent feasible, no mechanical grading shall occur on the bluffs. Figure 4 on page 155 identifies the location of the Project's bluffs restoration program.

Once the restoration has been completed, the Applicant is also proposing to conduct on-going maintenance of the restoration area by a Property Owner's Association. Maintenance activities include the removal of invasive, non-native plant species, the removal of dead plants and the replanting of replacement native plant species for those native plant specimens that have died.

3.0 DISCRETIONARY ACTIONS REQUESTED AND PERMITS REQUIRED

Development of the Project site is governed by the Playa Vista Area D Specific Plan (City of Los Angeles Ordinance No. 160,523), and the Westchester-Playa del Rey Community Plan.

Implementation of the Project as proposed requires a General Plan amendment to amend the Westchester/Playa del Rey Community Plan. In addition, the Applicant is requesting amendments to the existing Area D Specific Plan which would modify the land uses and densities currently allowed by this Plan. Amendments to the Plans and other actions to permit the proposed development would include, but may not be limited to, the following:

- Amendment of the General Plan to amend the Westchester/Playa del Rey Community Plan, to revise the General Plan Land Use designations and corresponding map designations within the portion of the Area D Specific Plan within which the Project is located from Light/Limited Industry and High/Medium Density Residential to Community Commercial and High/Medium Density Residential.

- Amendments to the Playa Vista Area D Specific Plan to adjust the zone boundaries and designation within the Proposed Project site, adjust the land use entitlement allowed in the Area D Specific Plan, consistent with the Proposed Project and previous Playa Vista First Phase Project approvals (VTTM 49104 and TTM 52092), and other procedures necessary to implement the Proposed Project.

In addition, the following actions and approvals may be requested to implement the proposed development:

- Approval of a Tract Map for the Village at Playa Vista by the City;
- In conjunction with the approval of the Village Tract Map, adoption of Conditions of Approval, including the Project's proposed design guidelines;
- Inclusion within the Village Tract Map of a resubdivision of Lot 113 of VTTM 49104 (a portion of the previously approved Playa Vista First Phase Project). The City's Deputy Advisory Agency would be requested to make a determination in conjunction with its approval of the subdivision that Lot 113 of VTTM 49104 is not needed to meet the open space requirements of VTTM 49104;
- Approval of a Development Agreement with the City of Los Angeles;
- Approval of CUPs for alcohol sales (on- and off-site); community-serving uses; and other uses that require conditional use permits by the City;
- Approval by the City of grading permits, building permits, and other permits issued by the Department of Building and Safety associated with the development of the Proposed Project, any necessary public works permits for infrastructure improvements for development associated with the Project, Project mitigation measures, and other permits reasonably necessary for the implementation of the Project;
- Plot plan/site plan approvals by the City for development within the Proposed Project area;
- Approval of a National Pollutant Discharge Elimination System (NPDES) construction permit for development in the Proposed Project area by the RWQCB;
- Other actions from local, regional, state, and federal agencies, as may be required to implement the Proposed Project and its mitigation measures. These may include, but are not limited to the following: creation of service or special districts (e.g., Mello-Roos), financing actions, off-site infrastructure improvements and implementation agreements, and/or approvals, permits and licenses from regulatory agencies associated with Project construction and post-construction operations, including, but

not limited to, soil and groundwater remediation, stationary source air emissions, and repair, replacement and maintenance of on- and off-site infrastructure. Agencies may include the California Department of Fish and Game, Caltrans, the U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, California Department of Toxic Substances Control, SCAQMD, SWQCB/RWQCB, ARB, the Cultural Affairs Commission, the Cultural Heritage Commission, the Native American Heritage Commission, and other local, regional, state, or federal agencies having jurisdiction over the Proposed Project or its mitigation measures.

4.0 PROJECT CONSTRUCTION AND SCHEDULE

The Proposed Project would be developed over a period of approximately 5 to 6 years in a number of subphases. The Applicant anticipates that construction would commence before the end of 2004 and conclude in Summer 2010.

Larger infrastructure improvements, such as the construction of McConnell Avenue, Westlawn Avenue and Bluff Creek Drive within the Project Site, would occur during site preparation activities, as would implementation of the Project's Habitat Creation/Restoration Component. More localized infrastructure improvements associated with the Project, such as local streets, utility services, and park space, would be constructed simultaneously with the specific portions of the Project that these improvements support. It is anticipated that overall site preparation activities may continue in some areas of the Project while more localized infrastructure and building construction has commenced in other portions of the Project.

II. PROJECT DESCRIPTION
C. STATEMENT OF OBJECTIVES

The overall purpose of the Proposed Project is to create a new residential community located around a "Village Center" that provides public gathering places, retail shops and offices. The Village Center would serve the needs of the Playa Vista community itself as well as offering opportunities for nearby surrounding residences.

In the last few years, regional and City of Los Angeles policies have been developed focusing on the management of the growth forecasted to occur in the future. It is out of these policies that the ideas of "smart growth" and the creation of "livable communities" have arisen.[6] The Proposed Project's design has integrated these policy initiatives by addressing the relationships between land use, transportation and air quality. The objectives of the Proposed Project are as follows:

- To develop an integrated new community with an unique identity that would generate housing, recreational activities and jobs of a substantial scale and magnitude.

- To develop a new mixed-use community that would promote the internal relationship of mutually supportive uses such as employment, housing, recreation, and community-serving activities, so as to decrease dependency on the automobile, encourage pedestrian activity and alternative transportation modes, make efficient use of land and infrastructure, reduce energy consumption, and foster a strong sense of community.

- To create a new community whose design and development is consistent with that of the adjacent Playa Vista First Phase Project, and where appropriate, to form linkages to transportation, development and conservation aspects of the Playa Vista First Phase Project.

- To create an ecologically sound development that implements a comprehensive program of resource protection, enhancement, and conservation (e.g., habitat creation and restoration) and encourages recycling for both construction operations and long-term community activities.

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[6] *City of Los Angeles Citywide General Plan Framework Element and SCAG's Southern California COMPASS project.*

- To create an internally oriented residential community oriented around a Village Center, a major outdoor gathering place hosting a variety of community activities and special events.

- To interconnect various portions of the site, and its environs via a system of pedestrian trails, bicycle trails, and public transit features, (e.g., shuttle).

- To provide up to 2,600 new houses and apartments to help meet the market demand for housing at a wide range of prices in Southern California, and in Los Angeles' Westside, in particular.

- To create a public parks and active recreation space system, as an integral part of the community, which offers a broad range of recreational experiences, social interaction, and cultural opportunities. Varying in size, the parks will be easily accessible throughout the Proposed Project site and be connected by a network of paths, sidewalks and nature trails.

- To provide open space and landscaping throughout the Project site to enhance the visual character of the development.

- To establish the Proposed Project's ecological components via the creation of a riparian corridor along the base of the Westchester Bluffs; and the restoration of coastal sage scrub habitat adjacent to the riparian corridor on the bluff face itself. The proposed riparian corridor would connect with the riparian corridor immediately to the east and west of the Project and would complete the Riparian Corridor portion of the Freshwater Wetlands System, which would support natural habitat, flood control and cleansing of waters entering Santa Monica Bay.

- To develop the Proposed Project in a manner that would also link the residential communities currently under construction near Lincoln Boulevard to the west, with the commercial development to the east by providing an integrated and interconnected series of neighborhoods and districts, streets and trails.

- To establish height and lot coverage restrictions which are generally more restrictive than those in existing plans. These new development standards would result in a development which is typically low- to mid-rise in nature, with the taller of such buildings being limited by amount, location, and maximum height.

- To improve the transportation systems in the area in a manner that addresses changes brought about by the Proposed Project.

- To create thousands of construction jobs and provide a substantial boost to the local economy.

In addition, the City of Los Angeles has adopted policies and objectives, which relate directly to the implementation of the Proposed Project. The manner in which the Proposed Project aids in the achievement of Citywide objectives is discussed in more detail in Section IV.G, of this Draft EIR (Land Use). Such objectives and policies include the following, which constitute where applicable the City's objectives for the Proposed Project:

- Accommodate expected population and employment growth within the City and each Community Plan Area and plan for provision of adequate supporting transportation and utility infrastructure and public services.

- Encourage new multi-family residential, retail commercial, and office development in the City's neighborhood districts, community, regional, and downtown centers as well as along primary transit corridors/boulevards, while at the same time conserving existing neighborhoods and related districts.

- Accommodate a diversity of uses that support the needs of the City's existing and future residents, businesses and visitors.

- Identify areas sufficient for the development of a diversity of uses that serve the needs of existing and future residents (housing, employment, retail, entertainment, cultural/institutional, educational, health, services, recreation, and similar uses), provide job opportunities, and support visitors and tourism.

- Identify areas for the establishment of new open space opportunities to serve the needs of existing and future residents. These opportunities may include a citywide linear network of parklands and trails, neighborhood parks, and urban open spaces.

- Provide for the spatial distribution of development that promotes an improved quality of life by facilitating a reduction of vehicular trips, vehicle miles traveled, and air pollution.

- Establish patterns and types of development that improve the integration of housing with commercial uses and the integration of public services and various densities of residential development within neighborhoods at appropriate locations.

- Provide for the development of land use patterns that emphasize pedestrian/bicycle access and use in appropriate locations.

- Provide for the stability and enhancement of multi-family neighborhoods and allow for growth in areas where there is sufficient public infrastructure and services and residents' quality of life can be maintained or improved.

- Ensure that the character and scale of stable single-family residential neighborhoods is maintained, allowing for infill development, provided that it is compatible with and maintains the scale and character of existing development.

- Reinforce existing and establish new Neighborhood Districts[7] which accommodate a broad range of uses that serve the needs of adjacent residents, promote neighborhood activity, are compatible with adjacent neighborhoods, and are developed as desirable places to work and visit.

- Reinforce existing and encourage new Community Centers, which accommodate a broad range of uses that serve the needs of adjacent residents, promote neighborhoods and community activity, are compatible with adjacent neighborhoods, and are developed to be desirable places in which to live, work and visit, both in daytime and nighttime.

- Accommodate land uses, locate and design buildings, and implement street amenities that enhance pedestrian activity.

[7] *Neighborhood Districts are defined as focal points of surrounding residential neighborhoods and serve populations of 15,000 to 25,000 residents. They contain a diversity of uses that serve daily needs.*

II. PROJECT DESCRIPTION
D. HISTORY AND EVOLUTION OF THE PROPOSED PROJECT

1.0 BACKGROUND AND CONTEXT FOR THE PROPOSED PROJECT

The Proposed Project reflects an approach to development that has evolved over the past two decades. The Project site is part of a larger area known as Playa Vista. Historically, the Playa Vista Master Plan has included land on both sides of Lincoln Boulevard and north and south of the Ballona Channel, as shown in Figure 7 on page 176. As indicated in Figure 7, the areas were denoted by the letter designations A, B, C and D. In 1986, Area B, Area C and Area D were annexed from the County of Los Angeles to the City of Los Angeles. Area A remained in the County of Los Angeles. Areas A, B and D were owned by the predecessor in interest to the Project Applicant. Area C is owned by U. S. Trust Company of California in trust for the State of California and subject to certain rights held by Playa Vista. Pursuant to certain agreements with the State, Playa Vista was obligated to plan and seek approvals for the development of Area C. Those obligations to plan and seek approvals for Area C have lapsed. Area C is still under the ownership of U.S. Trust Company of California.

Concurrent with the annexation of Area D was the adoption of a Specific Plan by the City for Area D, the area in which the proposed Village at Playa Vista Project is located. The Playa Vista Area D Specific Plan envisioned the development of a regional-serving retail center, commercial office uses, and light industrial uses, along with a high/medium density residential component. Over the years of 1991 to 1995 several actions and approvals were taken approving development in the First Phase area of Area D and a portion of Area B. In 1991 to 1993, as shown in Figure 8 on page 177, the City of Los Angeles and the California Coastal Commission approved the development of the Playa Vista First Phase Project over a portion of Area D and Area B.[8] The United States Army Corps of Engineers (USACE), also during this period, issued a permit (USACE Permit No. 90-426-EV), pursuant to Section 404 of the federal Clean Water Act, to allow, among other things, the filling of isolated wetlands in areas that included parts of Area A, Area B, Area C, and Area D, including the Project site.

In 1995, as shown in Figure 9 on page 178, the City approved a revision to the First Phase Project to permit the development of an Entertainment, Media and Technology District at the east end of the Area D property, and approved the redevelopment of the former Howard Hughes/McDonnell Douglas plant site located at the eastern end of Area D.

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[8] *The Playa Vista First Phase Project includes VTTM 49104, TTM 52092, and the Freshwater Marsh System west of Lincoln and south of Jefferson Boulevard. In addition, a riparian corridor along the base of the Westchester Bluffs adjoining the First Phase site is part of the Playa Vista First Phase Project.*

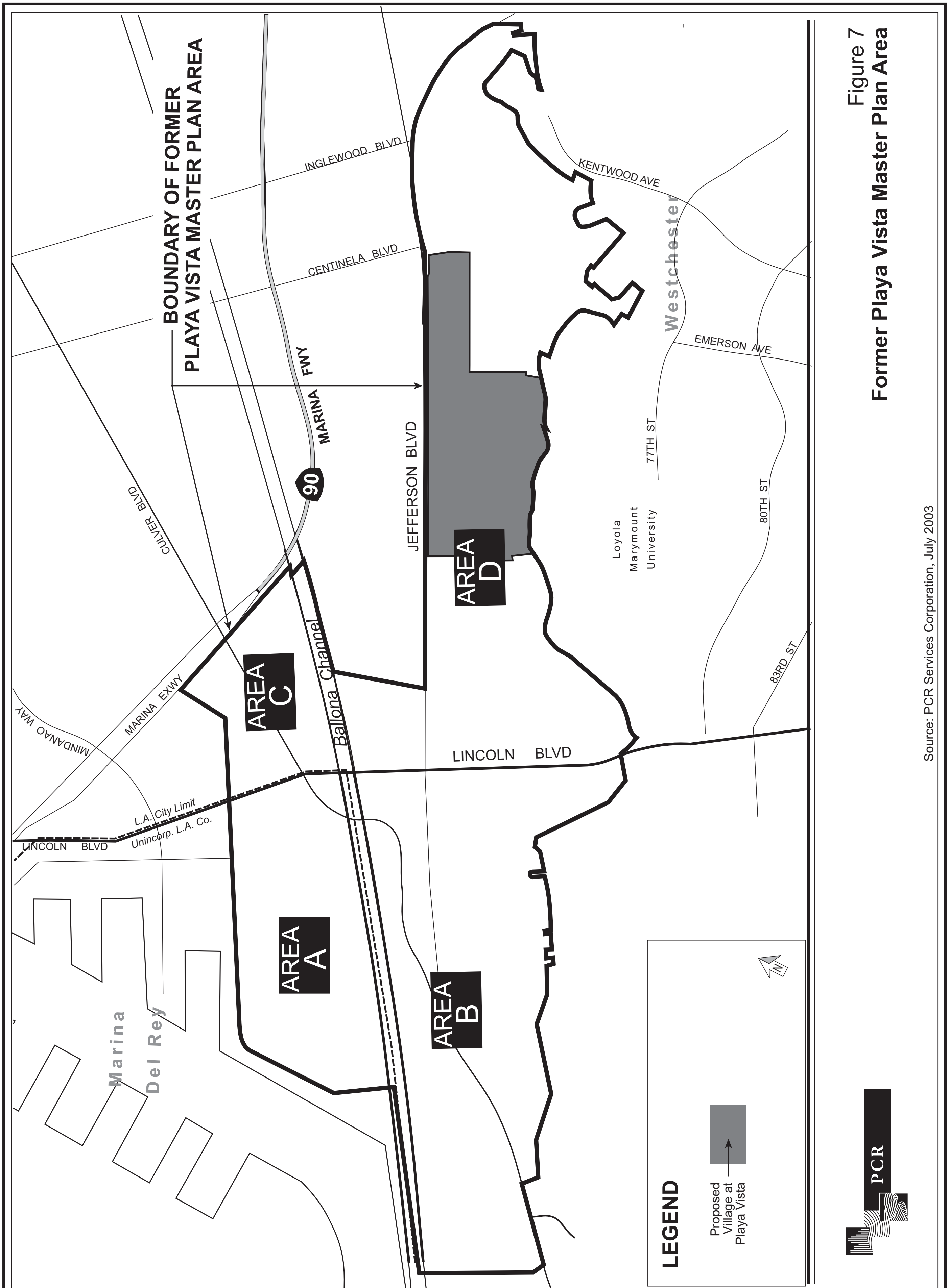

Figure 7
Former Playa Vista Master Plan Area

Source: PCR Services Corporation, July 2003

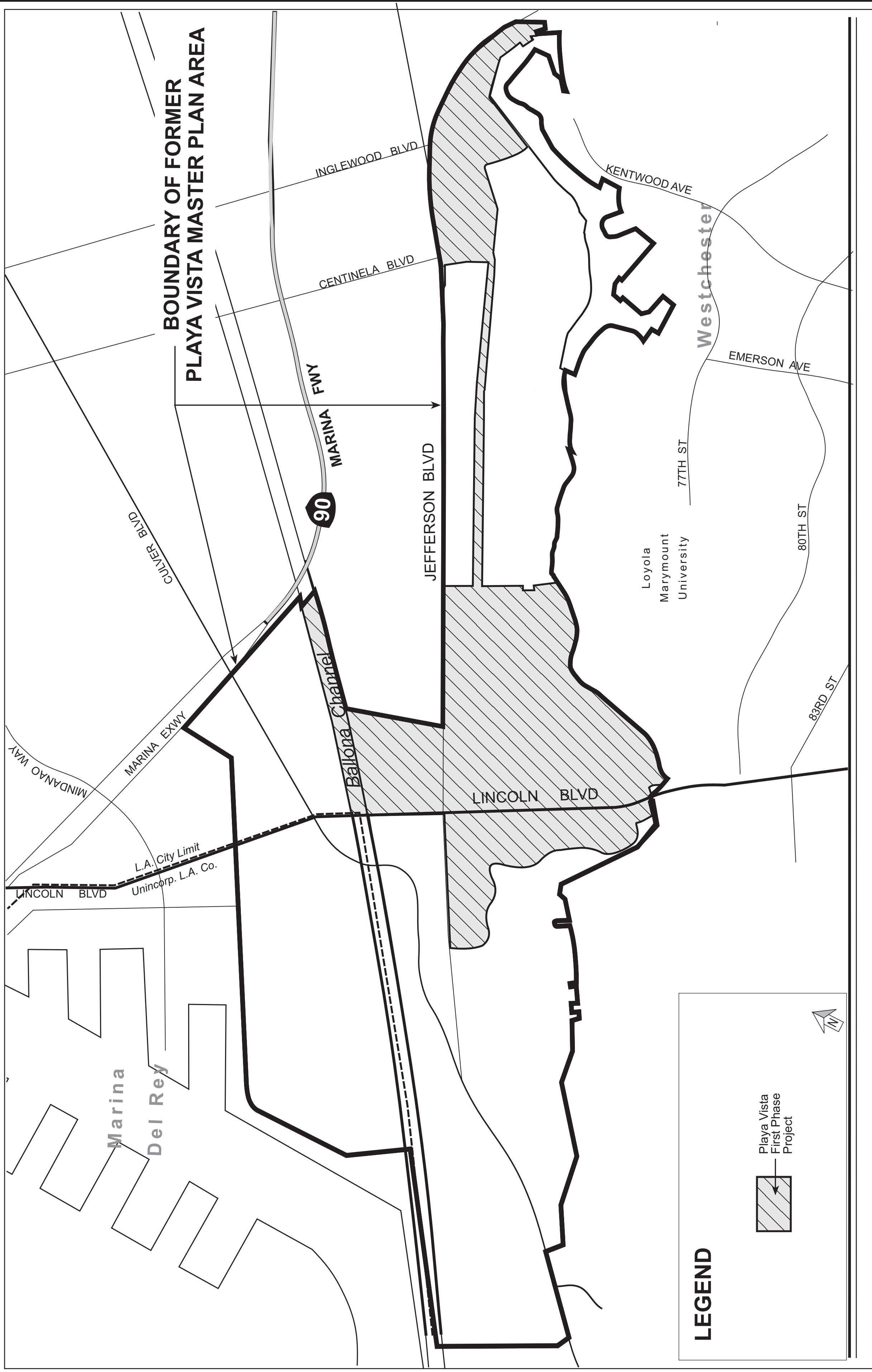

Figure 8
Playa Vista First Phase Project Approved for Development in 1993

Source: PCR Services Corporation, July 2003

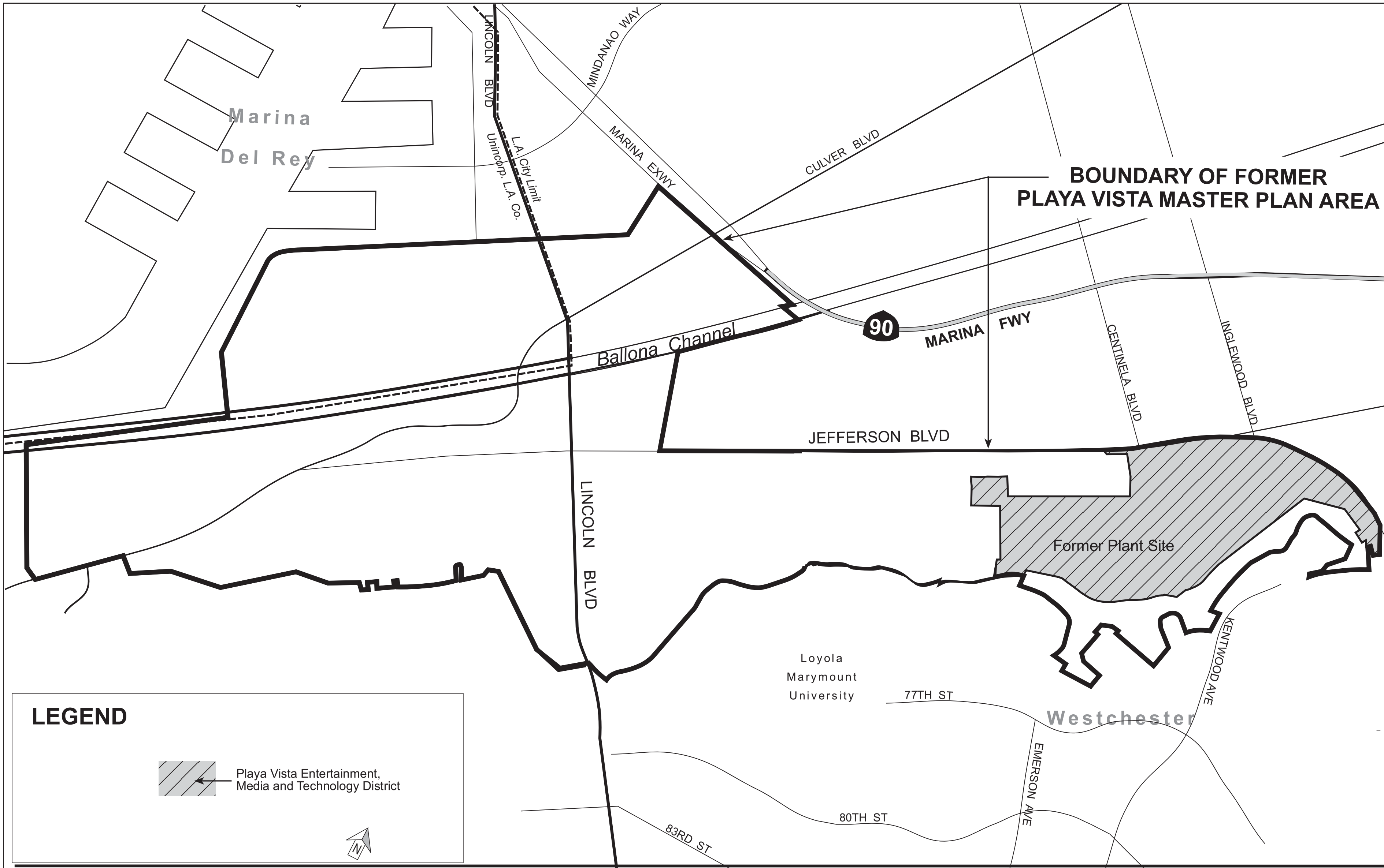

Figure 9
Playa Vista Entertainment, Media and Technology (EMT) District Approved in 1995

Source: PCR Services Corporation, July 2003

The Playa Vista First Phase Project, as described in this Draft EIR and shown in Figure 10 on page 180, includes development previously approved by the City of Los Angeles within Vesting Tentative Tract Map ("VTTM") 49104 and Tentative Tract Map ("TTM") 52092. VTTM 49104 addressed development within the eastern and western portions of Area D. TTM 52092 is located south and west of the eastern portion of VTTM 49104 and covers the former Howard Hughes/McDonnell Douglas plant site. The Playa Vista First Phase Project is 363 acres in size, and includes the former offices, manufacturing facilities and runway of Hughes Aircraft/McDonnell Douglas, as well as a number of new buildings have been completed or are currently under construction.

Also in 1995, the City circulated a Notice of Preparation for a Project EIR that included the remainder of the former Playa Vista property,[9] exclusive of the First Phase Project (EIS/EIR 95-0086, State Clearinghouse No. 1995051011) and the USACE issued a Notice of Intent to prepare an Environmental Impact Statement. The Notice of Preparation included Area A, Area C and portions of Area B and Area D not included in the First Phase Project. This joint EIS/EIR was intended to address the development of the former Playa Vista Planning Areas, exclusive of the First Phase Project.

In 1997, the Applicant acquired the Playa Vista Project and continued to explore options for further Playa Vista development. On August 8, 2001, Playa Vista entered into an Option Agreement with the Trust for Public Land (TPL) which provided an option for TPL to acquire all of Area A and a portion of Area B, including all of Area B that was formerly intended for development. The Applicant is working with TPL and the State of California to complete the sale of these properties whereby the State would acquire the property for open space and other recreation use. As a result of these actions, development within Area A and Area B is no longer proposed. In addition, as a result of other actions, the Applicant no longer has an obligation to plan and entitle Area C for the benefit of the State of California. As a consequence, Area C is not part of the Proposed Project.[10]

The Proposed Project greatly reduces the scale of the Playa Vista development by limiting development to the remaining portion of Area D, on approximately 111 acres adjacent to the Playa Vista First Phase Project. In so doing, none of Area A or Area B (other than the Freshwater Marsh), are part of the Playa Vista Project since they are under contract to TPL and Area C is not part of the Playa Vista Project because the Applicant no longer has an obligation to plan or entitle Area C. Thus, other than the Freshwater Marsh in Area B and potential traffic

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[9] *Historically, the Playa Vista property included four areas designated Areas A, B, C, and D. Areas A and B were located west of Lincoln Boulevard and north and south of the Ballona Channel, respectively. Areas C and D were located east of Lincoln Boulevard and north and south of the Ballona Channel, respectively.*

[10] *Playa Vista retains certain acquisition rights with respect to Area C, as well as rights to build certain infrastructure (e.g. road, sewers, etc) in and across Area C to benefit the remaining areas of Playa Vista.*

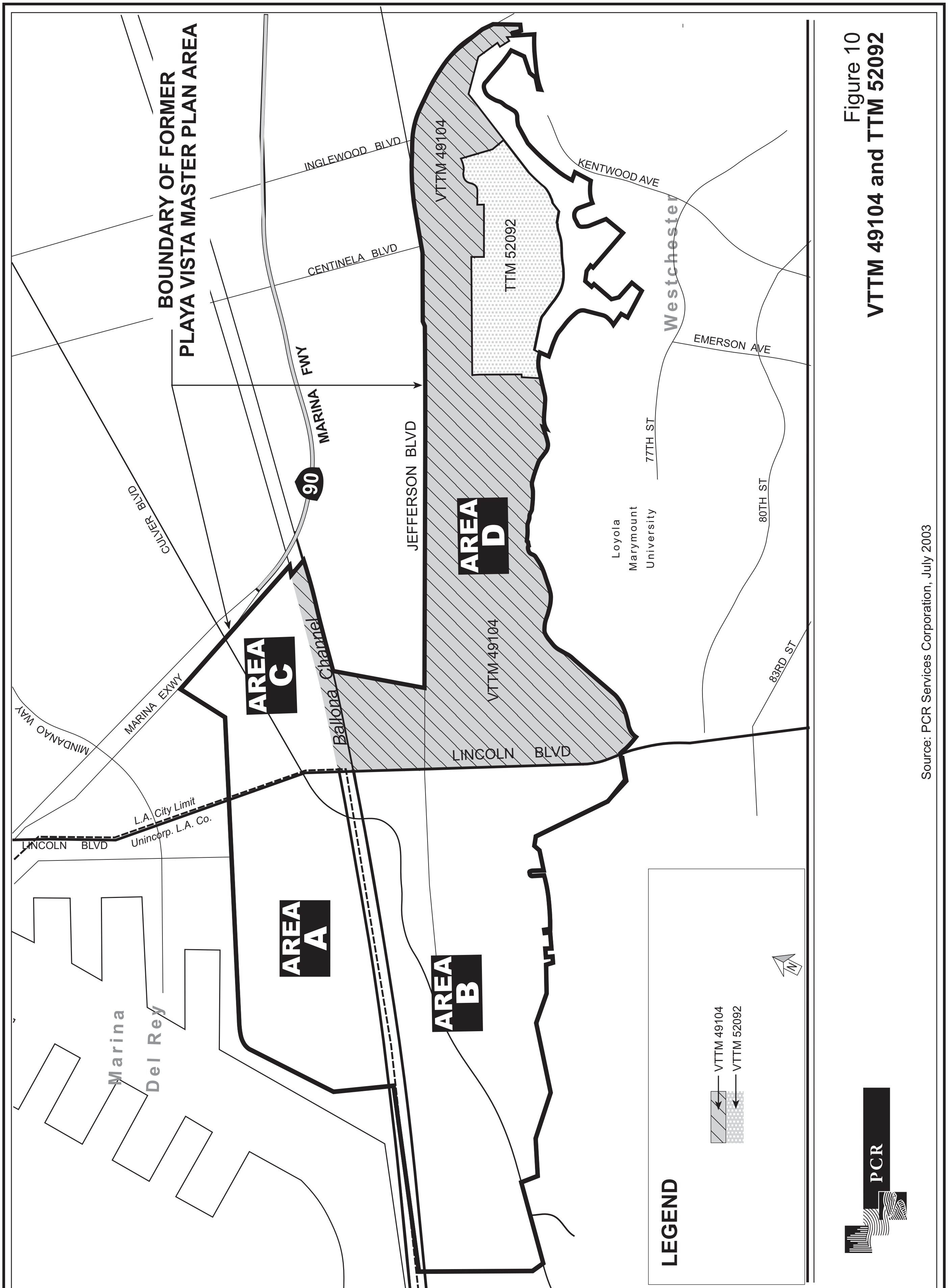


Figure 10
VTTM 49104 and TTM 52092

Source: PCR Services Corporation, July 2003

mitigation measures affecting Lincoln, Culver and Jefferson Boulevards, no Playa Vista development would occur west of Lincoln Boulevard or north of the Ballona Channel.

The Project's bluff restoration program, as described in the NOP, indicated that the Proposed Project included 53.6 acres of bluff face/habitat restoration. Based on comments received in response to the NOP and a review of detailed mapping and existing physical conditions, the Applicant has revised its development proposal to exclude from the Project the acreage south of the Campus portion of the previously approved First Phase Project. Restoration has already occurred on most of this area, and the Applicant retains on-going maintenance obligations regarding the entire area. As a result, the Proposed Project has been revised to reflect the 5 acres of bluff face restoration immediately adjacent to the Proposed Village area.

With the refinements in Project boundaries, the Proposed Project contains 111 acres, with approximately 99.3 acres designated for urban development and approximately 11.7 acres designated for habitat creation and restoration.

III. GENERAL DESCRIPTION OF ENVIRONMENTAL SETTING
A. OVERVIEW OF ENVIRONMENTAL SETTING

This section provides a general description of the Proposed Project site, and a brief summary of the existing conditions by the following issue areas: Earth; Air Quality; Water Resources; Biotic Resources; Noise; Light and Glare; Land Use; Natural Resources; Safety/Risk of Upset; Population, Housing and Employment; Transportation; Public Services; Energy Consumption; Utilities; Visual Qualities (Aesthetics and Views); and Cultural Resources. Each of the environmental analysis sections in the EIR includes a more detailed description by issue area of the existing conditions, and the regulatory framework that is applicable to the Proposed Project.

The Proposed Project site comprises 111 acres located within the Westside area of the City of Los Angeles, approximately 2 miles inland from Santa Monica Bay. It is located approximately 11 miles southwest of downtown Los Angeles and 1.5 miles east of Marina del Rey.

The site is bounded on its east and west sides by the Playa Vista First Phase Project. It is bounded on the north by Jefferson Boulevard, and on the south by the Westchester Bluffs that rise approximately 120 feet above the Project site.

In a larger context, the Proposed Project is surrounded by the existing City of Los Angeles communities of Westchester on the south, Del Rey to the northeast, Venice/Mar Vista further to the north, and Playa del Rey to the west. The Los Angeles County community of Marina del Rey lies further to the northwest, and the City of Culver City further to the east.

Earth (Topography and Geology) – The topography of the Proposed Project site is basically flat and low-lying, ranging from approximately 7 to 24 feet above mean sea level (AMSL). The Project site is located in the southern portion of the Ballona Gap, an ancient floodplain consisting of unconsolidated sedimentary deposits (alluvium) of Recent Age. Artificial fill (i.e., materials placed by man) overlies native sediments in several areas on the site.

The Proposed Project site is currently used for a number of permitted activities associated with the construction of the adjacent Playa Vista First Phase Project. Since 1987, the City of Los Angeles Department of Building and Safety has issued over 10 grading permits and almost 30 compaction modifications to allow the Applicant to maintain several stockpiles within the Proposed Project site. By the early 1990s, a stockpile of more than 2,000,000 cubic yards of dirt covered the northern half of the Proposed project site. Currently, one of the stockpiling permits allows up to 500,000 cubic yards of excavated soils to be stored within the southern portion of the Proposed Project site south of Runway Road, generally west of Building 45. In addition, the City of Los Angeles Department of Public Works has approved the excavation and maintenance of temporary detention basins near the 500,000-cubic yard stockpile as part of the adjacent Playa Vista First Phase Project's Stormwater Pollution Prevention Plan (SWPPP) and Erosion Control Plan.

The Proposed Project site is not located within a City of Los Angeles Fault Rupture Studies Zone or an Alquist-Priolo Special Studies Zone. The Compton-Los Alamitos Fault is an inferred blind-thrust fault that could pass beneath the Proposed Project site at considerable depth (approximately 3 to 6 miles below surface); however, there is uncertainty as to the existence and location of the fault and its relationship to the site. The closest potentially active fault to the site is the postulated Charnock Fault. This postulated fault is not, however, present beneath the Proposed Project site. The location of the site in relation to known active faults indicates that the site is not exposed to greater seismic risk than other locations within the Los Angeles Coastal Plain.

Slope stability is a consideration in the Habitat Creation/Restoration Component area along the southern edge of the site where the Ballona Escarpment (Westchester Bluffs) abuts the Proposed Project site. The entire Escarpment is located within a designated City of Los Angeles Hillside Grading Area. A bluff stability investigation concluded that the Escarpment is stable with respect to deep sliding. Deep-seated stability of the slope below Cabora Road varies from place to place along the length of the slope. Portions of the slope below Cabora Road are marginally stable (i.e., likely to fail at some time).

The City of Los Angeles General Plan Safety Element indicates that the Playa Vista area is subject to potential liquefaction and the Proposed Project site is within an official Liquefaction Zone. The site is not located in an area of known significant ground subsidence. Any settlement that has been observed is localized.

Air Quality (Atmospheric Conditions) – The Proposed Project site is located within the South Coast Air Basin. This basin is an area of poor air quality, particularly from June through September. This condition is generally attributed to light winds and shallow vertical atmosphere mixing. This frequently reduces pollutant dispersion, thus causing elevated air pollution levels. Ozone concentrations, for example, tend to be lower along the coast and higher in the near inland valleys.

Water Resources (Hydrology and Water Quality) – The total tributary area of the adjacent Playa Vista First Phase and the Proposed Project, which includes the upstream areas that drain to the property, encompasses approximately 1,056 acres. Waterbodies that directly or indirectly receive surface water runoff from the watershed include the Freshwater Wetlands System (including the Freshwater Marsh and Riparian Corridor), Ballona Wetlands, Ballona Channel and Santa Monica Bay. The Proposed Project site is primarily undeveloped; thus, there currently is little need or provisions for storm drain improvements to serve on-site uses. There are, however, several drainage facilities that serve off-site areas, and pass through or near the Proposed Project site. The Freshwater Wetlands System, approved as part of the adjacent Playa Vista First Phase Project, except for the central segment of the Riparian Corridor located within the Proposed Project area, was designed to provide for treatment of the runoff from the entire Playa Vista Project (including both the adjacent Playa Vista First Phase Project and Proposed Project) areas and from off-site tributary areas.

The Proposed Project site is located in the Ballona Gap which is underlain by the Bellflower Aquitard, Ballona Aquifer, and the Silverado Aquifer. Beneath portions of the Proposed Project site, the lower, more permeable portion of the Bellflower Aquitard and the Ballona Aquifer come together to compose a single, hydraulically connected hydrogeologic unit, which is referred to as the Merged Bellflower/Ballona Aquitard. Groundwater flow within the shallow groundwater units is generally to the north.

Urban runoff from the adjacent Playa Vista First Phase Project, Proposed Project and off-site areas surrounding the Project are currently treated by the Freshwater Marsh prior to being directed to the Ballona Channel, which is responsible for transporting runoff directly to the Santa Monica Bay. Under Section 303(d) of the Clean Water Act, the State of California assigned the Santa Monica Bay, Ballona Creek Estuary, and Ballona Wetlands an “impaired” rating, which means that the waters preclude, compromise, or do not fully support their designated use. All three of these waterbodies receive runoff from the Proposed Project.

The local groundwater system consists of the Bellflower Aquitard (approximately near the surface to 35 feet deep), the Ballona Aquifer (approximately 35 to 50 feet below the surface), and the Silverado Aquifer (approximately 100 to 200 feet below the surface). Groundwater within the Ballona and Silverado Aquifer systems is considered degraded as a consequence of past overproduction of groundwater and resultant seawater intrusion. Monitoring wells have indicated high total dissolved solids (TDS), which is a general measure of salinity. The groundwater beneath the site and vicinity has been contaminated from previous industrial uses. Changes in factors affecting groundwater quality include the reduced levels of contamination with the ongoing soil and groundwater remediation activities occurring in the adjacent Playa Vista First Phase Project area. A network of groundwater monitoring wells within the Proposed Project site are sampled for volatile organic compounds and/or total petroleum hydrocarbons (depending on the well location) under the direction of the Regional Water Quality Control Board. Currently no wells on or near the Proposed Project site extract groundwater for domestic uses (including drinking water) or irrigation.

Biotic Resources – The biotic resources of the Proposed Project site vary in their history of disturbance and vegetation/habitat type, ranging from ruderal communities on a majority of the site to small stands of native upland shrubs. The Ballona Wetlands, one of only two remaining salt marshes in Los Angeles County, is located approximately 1.1 miles west of the Proposed Project site.

Because of historic and existing disturbances, only small stands of native plants remain on-site, and even these have a high proportion of non-native species. The majority of the Proposed Project site is barren ground or is vegetated by non-native ruderal plant communities. Due to the presence of a high percentage of non-native species and long history of disturbance, upland scrub on the site is highly fragmented and of marginal quality. No threatened or endangered species occur within the site. Special status species may occur as transitory or migrant individuals in passage to/from the Ballona Wetlands or, as in the case of certain raptor species, include the site in their foraging range over the Ballona area.

Noise – Vehicular traffic along roadways is the dominant source of noise on, and in the vicinity of, the Proposed Project site. Other sources of noise in the area include construction noise, aircraft flights associated with Los Angeles International Airport, and residential and non-residential uses. Existing noise levels on the northern portion of the Proposed Project site are characteristic of an urbanized environment. Lesser noise levels occur away from the existing urban development, with some noise from construction activities and vehicles that support the adjacent Playa Vista First Phase Project construction activities (e.g., soil stockpiling).

Light and Glare (Natural Light/Shading and Artificial Light and Glare) – Residential, school, hospital and recreational uses, and unique habitat areas, are sensitive to shading. The only such uses adjacent to the Proposed Project site are apartments located across from the site on the north side of Jefferson Boulevard. The nearest existing residential units within the adjacent Playa Vista First Phase Project site are located approximately ¼ mile west of the Proposed Project site. The Proposed Project site itself is mostly undeveloped, containing only a few buildings within the former plant site. None of these buildings currently cause adverse shading effects on off-site locations.

Adjoining residential development areas are also sensitive to potential impact from artificial light and glare. The Proposed Project site, itself, is mostly unlit.

Land Use – The Proposed Village at Playa Vista Project contains a total of 111.0 acres. Of these, 99.3 acres are located within the Project's Urban Development Component, and 11.7 acres are located within the Habitat Creation/Restoration Component.

The Urban Development Component, the portion of the Proposed Project site that is slated for mixed-use development, is flat and vacant except for two former plant site buildings, with remnants of past manufacturing and airstrip uses. Two buildings remain from the former Hughes Aircraft Company/McConnell Douglas Helicopter plant. Building 22 is a warehouse used for storage and Building 45 is used occasionally for filming and other activities. Other small buildings, such as shed, minor storage structures, and construction trailers associated with development of the adjacent Playa Vista First Phase Project also exist in the former Salvage Yard area of the Proposed Project site.

The Proposed Project site is currently used for a number of permitted activities associated with the construction of the adjacent Playa Vista First Phase Project, including stockpiling excavated soils, temporary stormwater detention, rock crushing and stockpiling, and equipment staging and parking. A roadway that bisects the Proposed Project site (Runway Road) is also under construction as part of the adjacent Playa Vista First Phase Project, to connect the east and west ends of the Playa Vista First Phase Project site.

The Proposed Project's Habitat Creation/Restoration Component includes that portion of the bluffs within the Proposed Project boundary to the south of the proposed urban development area.

Land immediately to the west and east of the Proposed Project site is approved for development as part of the Playa Vista First Phase Project, with construction already underway approximately ¼ mile to the west of the Proposed Project site and extending to Lincoln Boulevard. The vacant land adjacent to the Proposed Project site contains support activities for the current First Phase development and preparation for future development. When construction is completed, the land adjacent to the west of the Proposed Project site will include predominantly residential uses, with some mixed uses, in mid-rise buildings. Buildings will range from two to six stories.

Land immediately to the east of the Proposed Project site is approved for office and commercial uses, including entertainment, media and technology uses. The land is currently vacant in some locations, and developed with former plant site buildings in other locations. Eleven former plant site buildings remain within the Playa Vista First Phase Project site, which are to be preserved as components of the Hughes Industrial Historic District.

Land uses along the northern boundary of the Proposed Project site include mixed office/commercial/apartment uses across the street from the site. The Proposed Project site is bounded on the south by the Westchester Bluffs that rise approximately 120 feet above the site (140 feet AMSL). Loyola Marymount University and the Westchester community lie atop the bluffs.

In a larger context, the Proposed Project is surrounded by the existing City of Los Angeles communities of Westchester on the south, Del Rey to the northeast, Venice/Mar Vista further to the north and Playa del Rey further to the west. The Los Angeles County community of Marina del Rey lies further to the northwest, and the City of Culver City further to the east.

Mineral Resources– Although some sand and gravel is found within the geologic materials below the Proposed Project site, the area is not recognized as having a significant potential for mineral extraction and is not designated a Mineral Resource Zone by the California Geological Survey.

Safety/Risk of Upset – The Southern California Gas Company (SCGC), now a subsidiary of Sempra Energy, operates and maintains the Del Rey Hills storage facility which is a natural gas reservoir that underlies portions of the area approximately 1.25 miles west of the Proposed Project site at a depth of more than 1 mile (approximately 6,200 feet) below the surface.

Past land uses on the Proposed Project site included aircraft manufacturing, cleaning and maintenance, metal plating, painting and machining, and small armament development, manufacturing, and testing. These past land uses on and adjacent to the Proposed Project site have released hazardous materials and waste to the environment.

The Proposed Project site has six areas where previous activities have resulted in known soil and/or groundwater contamination. All these areas have undergone preliminary soil and groundwater characterization. The need to implement further activities will be determined by the Regional Water Quality Board (RWQCB) in conjunction with the continued implementation of Cleanup and Abatement Order (CAO) No. 98-125. Groundwater extraction for remedial purposes had previously occurred at the groundwater treatment facility located in the eastern portion of the adjacent Playa Vista First Phase Project site. In June 2000, operation of the groundwater extraction system was suspended with (RWQCB) approval due to grading and construction of the adjacent Playa Vista First Phase Project, and the groundwater treatment facility was temporarily decommissioned. Since September 2000, a new and more efficient groundwater treatment system, designed to treat a wider range of contaminants, was installed for remediation-related activities and for groundwater construction dewatering associated with the adjacent Playa Vista First Phase Project. A permanent groundwater treatment program for the adjacent Playa Vista First Phase Project and the Proposed Project will be implemented, as necessary, in accordance with RWQCB requirements and CAO No. 98-125.

Soil gas surveys to determine the presence/absence of methane within the Proposed Project area showed elevated methane levels were found in the southwest and south central portions of the Proposed Project site. The concentration levels and areal extent of methane found in the Proposed Project site are substantially less than those found in the adjacent Playa Vista First Phase Project area. Several recent studies have illustrated that the methane does not originate from the nearby SCGC storage facility reservoir. No elevated levels of hydrogen sulfide or benzene, toluene, ethylbenzene, or xylenes (BTEX) were detected within the Proposed Project area.

Aviation hazards include structures that pose height, electronic, or visual interference threats to aviation. The Proposed Project site is within the 3.75-mile radius covered by the Los Angeles International Airport Hazard Area. Development on the Proposed Project site is also subject to Federal Aviation Regulation Part 77 requirements regarding objects within navigable airspace. Three heliports within Playa Vista, including one within the Proposed Project site, are currently permitted by the California Department of Transportation and have approved approach/departure routes to minimize safety risks. Presently none of the three permitted heliports are used on a regular basis.

Population, Housing and Employment – No residential or commercial uses are currently located within the Proposed Project site. Two buildings remain from the former Hughes Aircraft Company/McDonnell Douglas Helicopter plant. Building 22 is a warehouse used for storage and Building 45 is used occasionally for filming and other activities. Surrounding the Proposed Project site, the Local Area had an estimated 2002 residential population of 54,851 persons, while the estimated population within the City of Los Angeles Subregion is 3.9 million and the Regional Area is 5.0 million persons.[11, 12] Estimated 2002 employment within these three geographic areas is approximately 62,000 persons in the Local Area, 1.8 million in the City of Los Angeles Subregion and approximately 2.5 million persons within the Regional Area. Approximately 50 percent of all employment in the Local, Subregion and Regional Areas involves retail trade and services. In terms of housing units, the Local Area contained an estimated 23,333 housing units in 2002, and approximately 1.4 and 1.8 million housing units in the Subregion and Regional Areas, respectively. Based on 2000 Census statistics, the housing vacancy rates within the Local, Subregion and Regional Areas are 3.6 percent, 4.6 percent, and 4.5 percent, respectively. Within the Local, Subregion and

[11] *The Local Area consists of the Westchester-Playa del Rey District Plan Area. The Subregional Area is the City of Los Angeles Subregion as defined by the Southern California Association of Governments (SCAG). The Regional Area consists of three subregions as defined by SCAG for the purposes of regional planning. The three subregions are as follows: (1) City of Los Angeles; (2) West Side Cities; and (3) South Bay Cities. The Westside Cities and South Bay Cities Subregions are included in the Regional Area because of their close proximity to the Project site, and the likely strong relationship with the activities and population occurring on the Project site.*

[12] *Population, housing, and employment projections for 2005 and 2010 are based on the Regional Transportation Plan Projections (RTP), July 2001. The same source is used for year 2000 estimates for employment in the local, subregion, and regional areas; and for population and housing in the SCAG subregion and regional areas. Year 2000 estimates for the Local Area are based on the 2000 Census. Estimates for 2002 are based on interpolation between the applicable 2000 estimates and 2005 projections.*

Regional Areas, multi-family housing constituted between 55 percent and 71 percent of available housing. The Local, Subregion and Regional Areas offer a variety of housing opportunities for all economic levels. However, the Local Area had fewer affordable units than the Regional Area as a whole. Rental and for-sale housing is generally more expensive closer to the Pacific Ocean to the west and the Santa Monica Mountains to the north, and generally less expensive towards the east and southeast.

Transportation/Circulation (Traffic and Access, Parking, and Bicycle Plan) – Three regional freeways serve the Proposed Project's traffic study area. The Santa Monica Freeway (I-10) provides an east-west link to downtown Los Angeles. The San Diego Freeway (I-405) is the major north-south facility in western Los Angeles. The Marina Freeway (SR-90) provides an east-west link from the San Diego Freeway to Marina del Rey. The Proposed Project vicinity is also served by a network of local and arterial streets. Major arterials in the study area that currently serve the Proposed Project site are Lincoln Boulevard, Jefferson Boulevard, Sepulveda Boulevard, Culver Boulevard and Centinela Avenue. Currently, there are six MTA bus lines, six Culver City lines, three Santa Monica bus lines, and three LADOT lines that operate in the vicinity of the Project site.

There are currently no bikeways within the Proposed Project site. However, the Playa Vista First Phase Project will include new bike lanes adjacent to the Proposed Project site. The South Bay and Ballona Creek Bicycle Trails are regional trails in the vicinity. They lie north and west of the Project site.

Public Services/Infrastructure – The Proposed Project is located within the boundaries of the City of Los Angeles. The following public services are provided within the Proposed Project area.

- **Fire Protection:** Fire prevention, fire protection, and emergency services are provided throughout the City of Los Angeles, including the Proposed Project site, by the Los Angeles City Fire Department. There are currently four fire stations in the vicinity of the Proposed Project site: Fire Station Nos. 5, 62, 63, and 95. The two closest stations are Fire Station No. 5, a task force station with a truck and engine company, and Fire Station 62, a single engine company. These stations are located approximately 2.7 miles and 3.0 miles from the Proposed Project site, respectively.

- **Police Protection:** Police protection services are provided throughout the City of Los Angeles, including the Proposed Project site, by the Los Angeles Police Department. The Proposed Project site is included within the Los Angeles Police Department's 25.62 square mile Pacific Area. The Pacific Area headquarters station is located approximately 1.6 miles northeast of the Proposed Project site.

- **Schools:** The Los Angeles Unified School District provides primary and secondary public education services for the Proposed Project area. The Proposed Project site is located within the school attendance boundaries of Playa del Rey Elementary School, Marina del Rey Middle School, and Venice Senior High School.

- **Parks and Recreation:** Parks and recreational facilities in the Proposed Project vicinity are operated by the City of Los Angeles Recreation and Parks Department, the Los Angeles County Parks and Recreation Department, the Los Angeles County Department of Beaches and Harbors, and the Culver City Parks and Recreation Division. These facilities include City and County parks, City and State beaches, a marina, and bicycle paths. In addition, new neighborhood parks have recently been provided within the Playa Vista First Phase Project.

- **Libraries:** The City of Los Angeles operates a library system for its citizens, inclusive of the Project area. There is currently one library serving the area (the Westchester/Loyola Branch approximately one mile south of the Proposed Project site). The Playa Vista Branch library is currently under construction on a site that is approximately 0.4 miles west of the Proposed Project site.

Utilities – There currently exists on the Proposed Project site two large buildings, various minor sheds, and storage buildings associated with past industrial use of the site, and construction trailers associated with the adjacent Playa Vista First Phase Project. These buildings have relatively minor utility consumption. Existing water, wastewater, and solid waste utility services for the Proposed Project site are as follows:

- **Water Consumption:** The Los Angeles City Department of Water and Power (LADWP) is the agency responsible for supplying domestic potable water to the Proposed Project site. LADWP is responsible for ensuring that the delivered water quality meets all applicable state standards. Reclaimed water is provided to the Proposed Project vicinity by the West Basin Municipal Water District (WBMWD), from its West Basin Water Recycling Plant (WBWRP). WBMWD is responsible for ensuring that the delivered reclaimed water meets all applicable reclaimed water quality standards (i.e., Title 22).

- **Wastewater:** The City of Los Angeles, Department of Public Works, Bureau of Sanitation provides wastewater collection to the Proposed Project site. Wastewater collected from the Proposed Project site is conveyed and treated at the City of Los Angeles' Hyperion Wastewater Treatment Plant, located approximately four miles south of the Proposed Project site on the coast west of El Segundo, and the treated effluent is discharged into Santa Monica Bay through two outfalls. In addition, the biosolids (sludge) resulting from the treatment process is processed to recover energy and used off-site for land applications.

- **Solid Waste:** The management of solid waste within the Proposed Project site involves public and private refuse collection services, and various public and private waste transfer and disposal facilities.

Energy Consumption – Electrical service is provided to the Proposed Project site by LADWP, and the Southern California Gas Company (SCGC) provides natural gas service to the site. Since the Proposed Project site is primarily vacant, relatively little energy is currently being consumed. There are two buildings on the Proposed Project site, Building 22 and Building 45, and various minor sheds and storage buildings at the former Salvage Yard area that are buildings remaining from the former Hughes Aircraft Company/McDonnell Douglas Helicopter Company plant. Construction trailers associated with the adjacent Playa Vista First Phase Project are also currently located on the Proposed Project site. Existing energy consumption associated with these uses is minimal.

Visual Qualities (Aesthetics and Views) – There are five major physical features which serve as view resources in the vicinity of the Proposed Project: the Proposed Project site itself along with adjacent undeveloped land in the First Phase Playa Vista Project, the surrounding cityscape (developed areas which are viewed from more distant locations), the Santa Monica Mountains, Marina del Rey Channel/Santa Monica Bay, and the Westchester Bluffs, a notable geological feature in the area. The Proposed Project site is mostly undeveloped and provides a window for viewing the bluffs, a visually notable geologic feature, which rise approximately 120 feet above the elevation of the site. The site itself shows disturbance from past use, and includes two former industrial buildings (Building 22 and Building 45) that are slated for demolition, along with other small buildings, such as shed, minor storage structures, and construction trailers associated with development of the adjacent Playa Vista First Phase Project. The site's appearance reflects a number of currently permitted activities associated with the construction of the adjacent Playa Vista First Phase Project, including stockpiling excavated soils, temporary stormwater detention, rock crushing and stockpiling, and equipment staging and parking. Most of the existing vegetation is considered ruderal, a term used to describe an environment where natural vegetative cover has been disturbed through past use, and which has taken on an appearance which is weedy and varied from its former, native appearance.

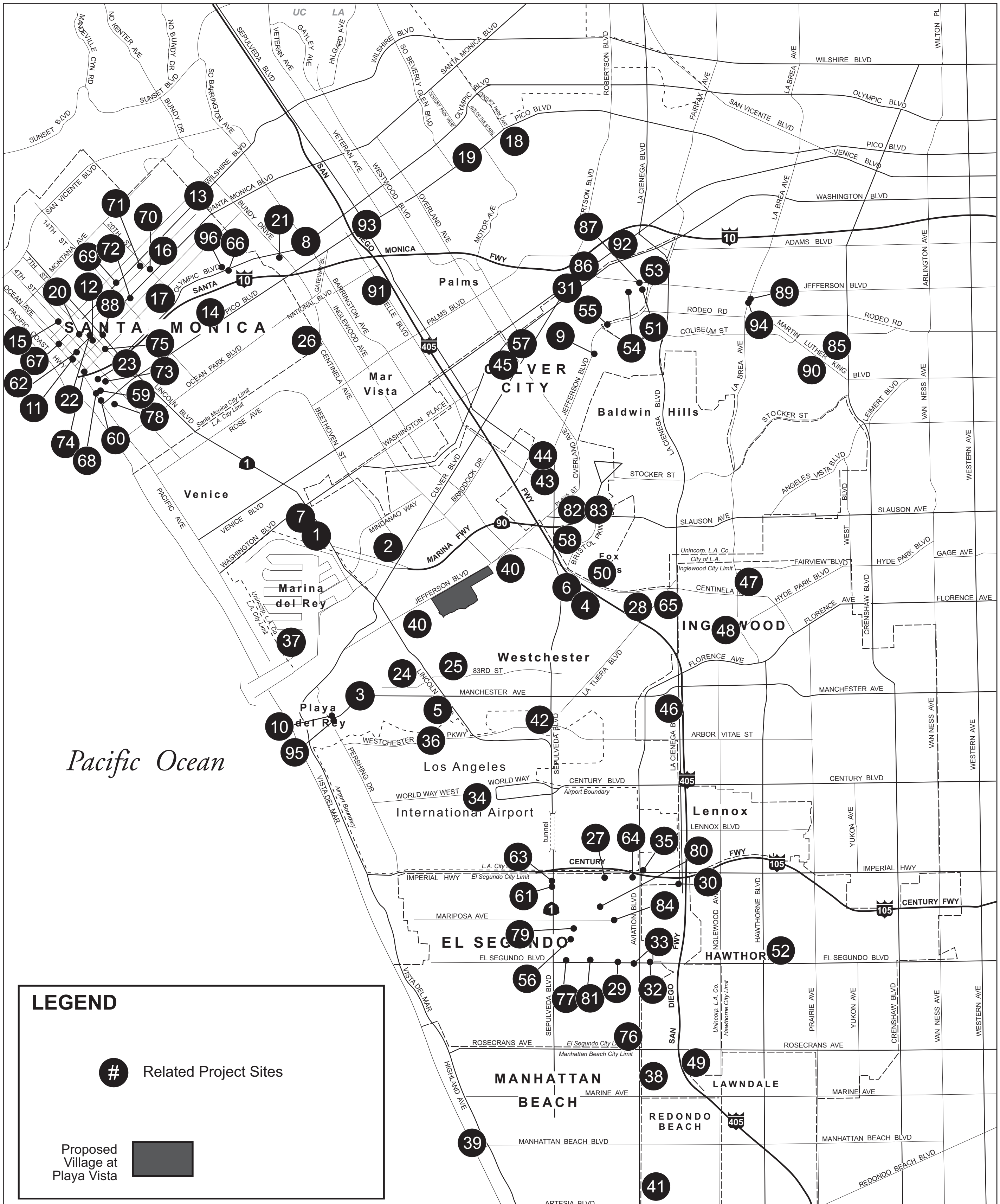
Cultural (Paleontological and Archaeological Resources) – The Proposed Project site potentially contains various paleontological resources, which include fossil-bearing rock units, fossil remains, associated scientific data, and fossil sites. Archaeological sites have been identified within the Proposed Project site, consisting primarily of bits of shell and organic materials from prehistorical camp sites. There are no historical structures located within the

Proposed Project site. The Hughes Industrial Historic District is located to the east of the Proposed Project site in the adjacent Playa Vista First Phase Project.

III. GENERAL DESCRIPTION OF ENVIRONMENTAL SETTING
B. IDENTIFICATION OF RELATED PROJECTS

For purposes of cumulative impact analysis, a list of known construction projects has been identified for a large area surrounding the Proposed Project site. This list of projects was developed as a component of the traffic analysis for the Proposed Project and is used throughout the EIR for identifying related growth impacts. The area encompasses an approximate 100-square mile area located on all sides of the Proposed Project site.

A total of 96 related projects have been identified within the designated area, and the approximate locations of each related project is identified by individual listing number in Figure 11 on page 194. The project name, location, land use, and size are shown in Table 5 on pages 195 through 202. Implementation of the related projects would result in various uses such as residential, commercial, office, public facilities, airport, and industrial. This listing was compiled in several stages and represents input from several sources. The listing within the City of Los Angeles was initiated with a compilation of related projects in other environmental documents on file with the Los Angeles Department of City Planning and the Department of Transportation. Listings of related projects in the Cities of Culver City, Santa Monica, El Segundo, and Manhattan Beach, and in the Marina del Rey area of unincorporated Los Angeles County, were in each case furnished upon request from those jurisdictions, respectively.



Source: Kaku Associates and Raju Associates, 2002

Figure 11
Related Projects

Table 5

VILLAGE AT PLAYA VISTA
LIST OF RELATED PROJECTS

Map No.	Project Name	Location	Land Use	Size
1	Marina Pointe/Channel Gateway Regatta	4251 Lincoln Bl	Condominium	812 units
2	Multi-Media Office	4755 S. Alla Rd	Multi-Media Office	48,000 SF
3	Apartment Complex	8000 Manchester Avenue	Apartment	246 Units
4	Center Drive	6060 Center Dr.	Office	280,000 SF
5	Decron Project	Lincoln Bl/Manchester Av	Apartment	547 units
			Retail	29,000 SF
6	Howard Hughes Center	Sepulveda / H. Hughes Pkwy	Office	1,467,081 SF
			incl. Retail	100,000 SF
			incl. Health Club	64,368 SF
			Hotel	600 rooms
7	Bartlet's Harley Davidson	4141 Lincoln Bl	Dealer/Retail/ Restaurant/Office	51,470 SF
8	Wilshire Bl Temple School	Barrington Av / Olympic Bl	Office	32,000 SF
			School	69,150 SF
			Synagogue	25,150 SF
			Gym	5,500 SF
			Dining	4,250 SF
9	Westway	10100 Jefferson Bl	Flex Office/Light Industrial	123,293 SF
			(2 Buildings)	119,657 SF
10	Apartments	Pershing/Manchester	Apartment	49 units
11	Tierra Sol y Mar	1420 2nd St.	Commercial Office	11,000 SF
			Specialty Retail	11,000 SF
12	Mixed Used (Residential/ Commercial)	1443 6th St.	Residential	48 units
			Specialty Retail	1,000 SF
13	Bob Champion (II)	11937 Wilshire Bl	Retail	70,115 SF
14	Virginia Avenue Park	Pico Bl./Cloverfield Bl.	Park Expansion	4 acres
15	100% Affordable Senior Apartments	1136-44 4th St.	Senior Units	66 units

Table 5 (Continued)

VILLAGE AT PLAYA VISTA
LIST OF RELATED PROJECTS

Map No.	Project Name	Location	Land Use	Size
16	St. Johns Medical Center & Master Plan	1328 22nd St.	Phase 1 – Medical Facility Phase 2 – Medical Facility	475,000 SF 799,000 SF
17	Crossroads School Expansion	1649 17th St.	School (approx 20 classrooms)	400 stu
18	School	9760 Pico Bl	School	60,000 SF
19	20th Century Fox Expansion	10201 Pico Bl	Movie Studio	771,000 SF
20	Santa Monica YMCA	1332 6th St.	Recreation	16,000 SF
21	Westside Media Project Phase I	S/S Olympic Bl B/W Centinela Av & Bundy Dr	Office Studio/Office/Multi-Media Uses	165,000 SF 74,913 SF
	Phase II	S/S Olympic Bl B/W Centinela Av & Bundy Dr	Office/Retail/Restaurant	165,000 SF
22	Library Expansion	627 Santa Monica Bl.	Library	66,000 SF
23	Rand Corporation	Main/Colorado	Office (Office – Removal)	309,000 SF (295,000 SF)
24	Catellus – West Bluffs	7400 West 80th St	Single Family Homes	120 homes
25	LMU Expansion	7101 West 80th St	Non-Residential Residential/Dormitory	115,000 SF 420,000 SF
26	Airport Park	Douglas Loop	Park Dog Park Playing Fields (Parking Lot – Removal; approx. 105,000 SF)	4 acres 1 acre 1 acre (310 spaces)
27	High Bay Lab	901 N. Nash St.	Office	55,772 SF
28	Gas Station/Fast Food	7300 La Tijera Bl	Gas Station (approx.10,000 SF) Fast Food	10 pumps 1,659 SF
29	Office	2260 E. El Segundo Bl	Office (Industrial – Removal)	38,000 SF (114,000 SF)
30	Office	11855 La Cienega Bl	Office	170,000 SF
31	Culver City Retail / Theater	Washington/Culver	Theater	78,000 SF

Table 5 (Continued)

VILLAGE AT PLAYA VISTA
LIST OF RELATED PROJECTS

Map No.	Project Name	Location	Land Use	Size
32	L.A. Air Force Base – Area A	2400-2460 El Segundo Bl	Retail	640,000 SF
			Hotel	320 rooms
			(Office – Removal)	(835,000 SF)
33	L.A. Air Force Base – Area B	Aviation Bl/El Segundo Bl	Office	713,500 SF
			Warehouse	63,000 SF
			Base Exchange	93,750 SF
			(Office – Removal)	(552,666 SF)
			(Day Care Center – Removal)	(16,681 SF)
			(Gas Station – Removal; approx. 6,000 SF)	(6 pumps)
34	LAX Master Plan	L.A. International Airport	Airport & Related Uses	78.8 MAP [a]
35	Continental City – Phase 1 (2005)	Aviation Bl/Imperial Hwy	Office/High Technology/ Industrial	3,000 ksf
			Commercial/Retail	100,000 SF
36	LAX Northside	Westchester Pkwy/Loyola Bl	Office	1,305 ksf
			Airport-Related Industrial	1,036 ksf
			Office Industrial Park	1,595 ksf
			Hotel	1,050 rooms
			Restaurant	55,000 SF
			Specialty Retail	65,000 SF
37	Marina del Rey Development	Marina Del Rey		
	37a.	Parcel 9U/10R/FF	Hotel (Timeshare)	288 rooms
			Residential	531 units
			Park	2 +acres
	37b.	Parcel 44U	Hotel	226 rooms
			Retail	3,000 SF
			Restaurant	19,000 SF
	37c.	Parcel 77W	Dry Boat Storage	306 spaces
			Parking Structure	645 spaces
	37d.	Parcel 55/56S/W Fisherman's Village	Hotel	144 rooms
			Restaurant	20,900 SF
			Retail	11,700 SF
	37e.	Parcel GR	Hotel	175 rooms
	37f.	Parcel IR	Hotel	200 rooms

Table 5 (Continued)

VILLAGE AT PLAYA VISTA
LIST OF RELATED PROJECTS

Map No.	Project Name	Location	Land Use	Size
	37g.	Parcel NR	Hotel	160 rooms
	37h.	Parcel OT	Public Parking	235 spaces
	37i.	Parcel 145R	Hotel	276 rooms
	37j.	Parcel 27R	Hotel	133 rooms
	37k.	Parcel 100S/101S	Residential	780 units
	37l.	Parcel K-6	Personal Storage	34,488 SF
	37m.	Parcel 140V	Residential	179 units
	37n.	Parcel 95S/LLS	Office/Retail/Restaurant	55,870 SF
	37o.	Parcel 49/ 52/ GG	Retail	295,000 SF
	37p.	Parcel 64	Residential	479 units
	37q.	Parcel 12 & 15 (a)	Residential	614 units
	37r.	Parcel 20(a)(b)	Residential	99 units
	37s.	Parcel 111 & 112(a)	Residential	120 units
38	L.A. Air Force Base–Hawthorne Property	Marine Bl/Aviation Bl	Residential (Office – Removal)	208 units (30,000 SF)
39	Civic Center/Metlox Development	Valley Dr/Manhattan Beach Bl.	Commercial	63,850 SF
			Restaurant Office Retail Hotel	6,400 SF 15,000 SF 16,450 SF 35 rooms

Table 5 (Continued)

VILLAGE AT PLAYA VISTA
LIST OF RELATED PROJECTS

Map No.	Project Name	Location	Land Use	Size
40	Playa Vista Phase I	Playa Vista	Residential Office Retail Community-Serving VSPs Stages Production & Stage Support	3,246 units 2,077,050 SF 35,000 SF 120,000 SF 332,500 SF 797,400 SF
41	Office	330 S. Sepulveda Bl	Office	56,000 SF
42	In-N-Out Parking	6335 W. 92nd St	Parking Structure (approx. 589,875 SF)	1,815 spaces
43	Retail	5299 Sepulveda Bl	Retail	14,728 SF
44	Residential	5250 Sepulveda Bl	Single-Family Housing Private School	57 units 38,500 SF
45	Culver City Senior Center	Culver Bl/Overland Av	Senior Center	27,270 SF
46	Retail	1000 W. Manchester Bl	New Car Sales	801,500 SF
47	School	830 N. La Brea Bl	Elementary School	30,112 SF
48	Faithful Church Center	E. of La Cienega	Church	55,000 SF
49	Auto Dealership	Rosecrans Av/I-405 NB Ramps	Auto Dealership	150,000 SF
50	Airport Marina Ford	Centinela E of Bristol	New Car Sales	73,000 SF
51	Hayden Av Project	3505 Hayden Av	Light Industrial (Warehouse – Removal) Office	102,000 SF (70,000 SF) 68,000 SF
52	Office/Retail	El Segundo Bl/Hawthorne Bl	Office/Retail	850,000 SF
53	Samitaur	5800 Jefferson Bl	Office Light Industrial	69,300 SF [b] 161,600 SF [b]
54	Mica Site	3585 Hayden Av	Light Industrial Office Restaurant	15,000 SF 15,000 SF 1,000 SF
55	Pratt Coffee Architects	9599 Jefferson Bl	Office	38,285 SF
56	Grand Avenue Courtyard	1950 E. Grand Avenue	Office	93,569 SF

Table 5 (Continued)

VILLAGE AT PLAYA VISTA
LIST OF RELATED PROJECTS

Map No.	Project Name	Location	Land Use	Size
57	Sony Pictures Studios	10202 Washington Bl	Office	1,102,500 SF
58	Fox Hills Mall Expansion	Sepulveda Bl	Shopping Center	254,461 GLSF
59	Commercial	1733 Ocean Av	Retail Restaurant Office	8,000 SF 3,720 SF 58,330 SF
60	Hotel	1746 Ocean Av	Hotel Restaurant	175 rooms 5,000 SF
61	888 N. Sepulveda Bl	Sepulveda Bl, El Segundo	Office	120,610 SF
62	Mayfair Theater Site	210 Santa Monica Bl	Commercial	45,000 SF
63	898 N. Sepulveda Bl	Sepulveda Bl, El Segundo	Office – 50% Occupied	87,000 SF
64	2300 E. Imperial Hwy	E. Imperial Hwy, El Segundo	Office (Office – Removal)	100,000 SF (157,225 SF)
65	Knowlton Av Senior Housing	Knowlton/La Tijera	Senior Housing	187 Units
66	Lantana Project	3030 Olympic Bl 3131 Exposition Bl	Office, Studio Office, Studio	64,105 SF [b] 152,000 SF [b]
67	Retail	120 Wilshire Bl	Retail	39,529 SF
68	Sea Castle Apartments	1725 The Promenade	Residential	135,173 SF
69	Santa Monica/UCLA Hospital	1502 Wilshire Bl	Hospital	65,140 SF
70	Convalescent Hospital	1338 20th St	Hospital	148 Beds
71	Hotel	1249-1255 20th St	Hotel	75 rooms
72	Assisted Living Facility	1312 15th St	Residential	81 rooms
73	Santa Monica Public Safety Facility	1685 Main St	Commercial	118,700 SF
74	McDonald's Mixed Use	1540 2nd St	Office	64,485 SF
75	Transportation Facility Master Plan	Colorado Av	Commercial Office	40,000 SF 8,000 SF

Table 5 (Continued)

VILLAGE AT PLAYA VISTA
LIST OF RELATED PROJECTS

Map No.	Project Name	Location	Land Use	Size
76	CDC	2301 Rosecrans	Office	290,096 SF
77	Xerox Phase IV	1951-1961 El Segundo Bl	Office Hotel	255,242 SF 350 rooms
78	Pioneer Boulangerie	2012 & 2029 Main St.	Residential Retail	133 Units 19,000 SF
79	Mattel	445 & 475 Continental	Research & Dev. Bldg.	300,000 SF
80	El Segundo Corporate Campus	700 N. Nash 800 N. Nash	Office Retail Day Care Medical Office Health Club Restaurant Hotel Light Industrial Research & Development	1,740 KSF 75,000 SF 7,000 SF 7,000 SF 19,000 SF 75,000 SF 100 rooms 25,000 SF 140,000 SF
81	Commercial	155-555 N. Nash	Office	125,000 SF
82	Corporate Pointe – I	Slauson Av/SR-90	Office	650,000 GSF
83	Corporate Pointe – II	Slauson Av/SR-90	Office	250,000 GSF
84	Commercial	SW Corner of Douglas & Mariposa	Office Light Industrial Restaurant	99,450 SF 110,000 SF 1,000 SF
85	Shopping Center	3737 Crenshaw Bl	Retail	63,674 SF
86	Shopping Center	8985 Venice Bl	Shopping Center	132,802 SF
87	National Hayden Partners LLC	National Bl/Hayden Ave	Office Light Industrial	37,900 SF [b] 88,500 SF [b]
88	Mixed-Use	1430 Lincoln Bl	Apartment Retail	280 Units 197,000 SF
89	Mixed-Use Project	3480 S. La Brea	Office Shopping Center	20,000 SF 79,750 SF
90	Santa Barbara Plaza	Martin Luther King Jr. Bl/ Buckingham Rd	Mixed-Use	500,000 SF

Table 5 (Continued)

VILLAGE AT PLAYA VISTA
LIST OF RELATED PROJECTS

Map No.	Project Name	Location	Land Use	Size
91	Sawtelle Apartments	3101 Sawtelle Bl	Apartment	206 Units
92	Office Building	8787 Venice Bl	Office	45,712 SF
93	Western Office Building		Office	74,653 SF
94	Warehouse	3450 S. La Brea Av	Warehouse	190,000 SF
95	Apartments	Pershing/Talbert	Apartment	305 units
96	Santa Monica Studios	3025 Olympic Bl @ Nebraska	Studio	379,000 SF

[a] *78.8 MAP represents 78.8 million annual passengers. This analysis also considers buildout the Continental City Project (Related Project 35) and the LAX Northside Development Project (Related Project 36), in addition to LAX growth based on historic and projected future trends. The LAX Master Plan is not an approved project. The assumptions used in this analysis regarding LAX expansion were compared to those for the LAX Master Plan for the No Action/No Project Alternative. Of the LAX Alternatives, the No Action/No Project Alternative generates the greatest trip generation. A comparison of the traffic generation of LAX expansion, including its collateral development estimated by the Proposed Project traffic model to that estimated by the LAX Master Plan model indicated that the Playa Vista methodology generated a greater number of trips, thus providing a conservative analysis.*

[b] *The area shown is the net area of development after the reduction of previous site uses.*

Source: Kaku Associates & Raju Associates, November 2002.

IV. ENVIRONMENTAL IMPACT ANALYSIS

As described in Section 15121 (a) of the CEQA Guidelines, an EIR is an informational document which will inform public agency decision makers and the public of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project. The purpose of this Draft EIR, therefore, is to focus the discussion on those potential effects on the environment of the Proposed Project which the lead agency has determined may be significant.

Accordingly, each of the environmental sections below includes the following subsections.

- Introduction. A brief description of the topic addressed.
- Environmental Setting. A description of the environmental setting against which the Proposed Project's environmental impacts are measured. Each environmental setting sections addresses both the regulatory framework that is applicable to the Proposed Project site, and the environmental conditions that would be affected by the Project.
- Impact Analysis. An analysis of the Proposed Project impacts relative to the applicable thresholds of significance that are used for determining whether the Project would have a significant effect on that environmental topic. Each environmental impact section includes the following topics:
  - Environmental Impacts of the Proposed Project.
  - Environmental Impacts under the Project's Equivalency Program
  - Environmental Impacts that would occur from off-site improvements required to mitigate Project impacts.
- Mitigation Measures. Measures that have been recommended to reduce potential Project impacts.
- Unavoidable Adverse Impacts. An assessment of the Project's impacts after the implementation of the Project's mitigation measures.
- Cumulative Impact. An analysis of the Proposed Project effects in the context of the related projects cited in Section III-B;

The Environmental Impact Analysis section of the EIR assesses the Proposed Village at Playa Vista with regard to potentially significant and other adverse effects in the following environmental subject areas:

A	EARTH
B	AIR QUALITY
C	WATER RESOURCES
C.(1)	HYDROLOGY
C.(2)	WATER QUALITY
D	BIOTIC RESOURCES
E	NOISE
F	LIGHT AND GLARE
F.(1)	NATURAL LIGHT
F.(2)	ARTIFICIAL LIGHT
G	LAND USE
H	MINERAL RESOURCES
I	SAFETY/RISK OF UPSET
J	POPULATION, HOUSING AND EMPLOYMENT
K	TRANSPORTATION
K.(1)	TRAFFIC AND CIRCULATION
K.(2)	PARKING
K.(3)	BICYCLE PLAN
L	PUBLIC SERVICES
L.(1)	FIRE PROTECTION
L.(2)	POLICE PROTECTION
L.(3)	SCHOOLS
L.(4)	PARKS AND RECREATION
L.(5)	LIBRARIES
M	ENERGY
N	UTILITIES
N.(1)	WATER CONSUMPTION
N.(2)	WASTEWATER
N.(3)	SOLID WASTE
O	VISUAL QUALITIES (AESTHETICS AND VIEWS)
P	CULTURAL RESOURCES
P.(1)	PALEONTOLOGICAL RESOURCES
P.(2)	ARCHAEOLOGICAL RESOURCES
P.(3)	HISTORIC RESOURCES

IV. ENVIRONMENTAL IMPACT ANALYSIS
A. EARTH

1.0 INTRODUCTION

This section addresses the potential impacts of the Proposed Project on earth resources, including grading, erosion/sedimentation, dewatering, subsidence, seismic hazards, tsunami/seiches, liquefaction, slope stability, and other geologic conditions. The analysis describes the regulatory setting, the existing above-ground features of the Proposed Project site, including man-made structures and natural and man-made landforms, and the local and regional context for below-ground surface (geological and geotechnical) characteristics. The impacts are addressed in terms of whether implementation of the Proposed Project would result in significant risks to people or structures on-site or would cause a geologic impact to other properties by causing or accelerating instability from erosion or result in sediment runoff or deposition which could not be contained on-site. Issues related to earth, but discussed in detail in other sections include groundwater, which is more fully described in Section IV.C.(2), Water Quality, soil gases (including methane, BTEX, and hydrogen sulfide) and soil/groundwater contamination from past activities at, and adjacent to, the Proposed Project site, which are more fully described in Section IV.I, Safety/Risk of Upset. The analysis addresses the impacts that would occur for the Project as proposed, for the Project's Equivalency Program, and for the Project's secondary impacts that would occur from the implementation of the Project's off-site mitigation measures.

2.0 ENVIRONMENTAL SETTING

2.1 Regulatory Framework

2.1.1 State Level

The Alquist-Priolo Geologic Hazards Zone Act was enacted by the State of California in 1972 to address the hazard and damage caused by surface fault rupture during an earthquake. The Act has been amended ten times and renamed the Alquist-Priolo Earthquake Fault Zoning Act, effective January 1, 1994. The Act requires the State Geologist to establish "earthquake fault zones" along known active faults in the state. Cities and counties that include earthquake fault zones are required to regulate development projects within these zones.

The Seismic Hazard Mapping Act of 1990 was enacted, in part, to address seismic hazards not included in the Alquist-Priolo Act, including strong ground shaking, landslides, and liquefaction. Under this Act, the State Geologist is assigned the responsibility of identifying and mapping seismic hazards zones.

The State Seismic Safety Commission was established by the Seismic Safety Commission Act in 1975 with the intent of providing oversight, review, and recommendations to the Governor and State Legislature regarding seismic issues. The Commission has recently completed a review of the 1994 Northridge earthquake and has provided recommendations for changes in current laws.

2.1.2 County Level

In October 1998, the Los Angeles County Board of Supervisors voted to direct the Office of Emergency Management of the Chief Administrative Office, in conjunction with all affected County Departments and other public and private agencies, to research, develop, and issue a Tsunami Emergency Response Plan, which applies to all coastal areas within the County, including both incorporated cities (i.e., City of Los Angeles, where the Proposed Project is located) and unincorporated areas. While this plan is being developed by the County Office of Emergency Management, the County has issued an interim emergency response plan for tsunami operations within the Los Angeles County Operational Area. This interim plan addresses the risks and emergency response activities associated with a tsunami event, the main conclusions of which are summarized below.

Depending on the magnitude of the tsunami, coastal areas of the County could be inundated, most notably along Santa Monica Bay. Areas potentially affected include Long Beach, Palos Verdes, Redondo Beach, Hermosa Beach, Manhattan Beach, Marina del Rey, Venice, and Santa Monica. Continued development in areas exposed to coastal inundation has increased the risk of property damage and loss of life from future tsunamis. While historical geologic evidence suggests a threat of tsunami is greater in Alaska, Hawaii, and the northern coastal areas of California, the same evidence indicates a potential for events impacting Southern California.

Although not probable, the County interim tsunami plan assumes a worst-case scenario to ensure the maximum level of preparation for such an event. This plan stresses multi-agency, multi-disciplinary coordination to effectively respond to a tsunami event and outlines activities and responsibilities for all involved parties or agencies at several stages during the emergency response scenario. The sequence of operational activities during a tsunami response would include the Alert Phase, Warning Phase, Evacuation Phase, and Damage Assessment Phase, and would involve emergency public information throughout all phases. The County Sheriff's Department is responsible for implementation of the plan activities, including evacuation and coordination of related services and agencies, while the County Office of Emergency

Management is responsible for updating and maintaining the plan itself. The plan calls for specific responsibilities for particular agencies during a tsunami event, including the County Fire Department, Department of Public Works, Internal Services Department, Department of Health Services, Department of Public Social Services, the American Red Cross, various cities' agencies, and the Los Angeles County Operational Area Organizational Matrix.

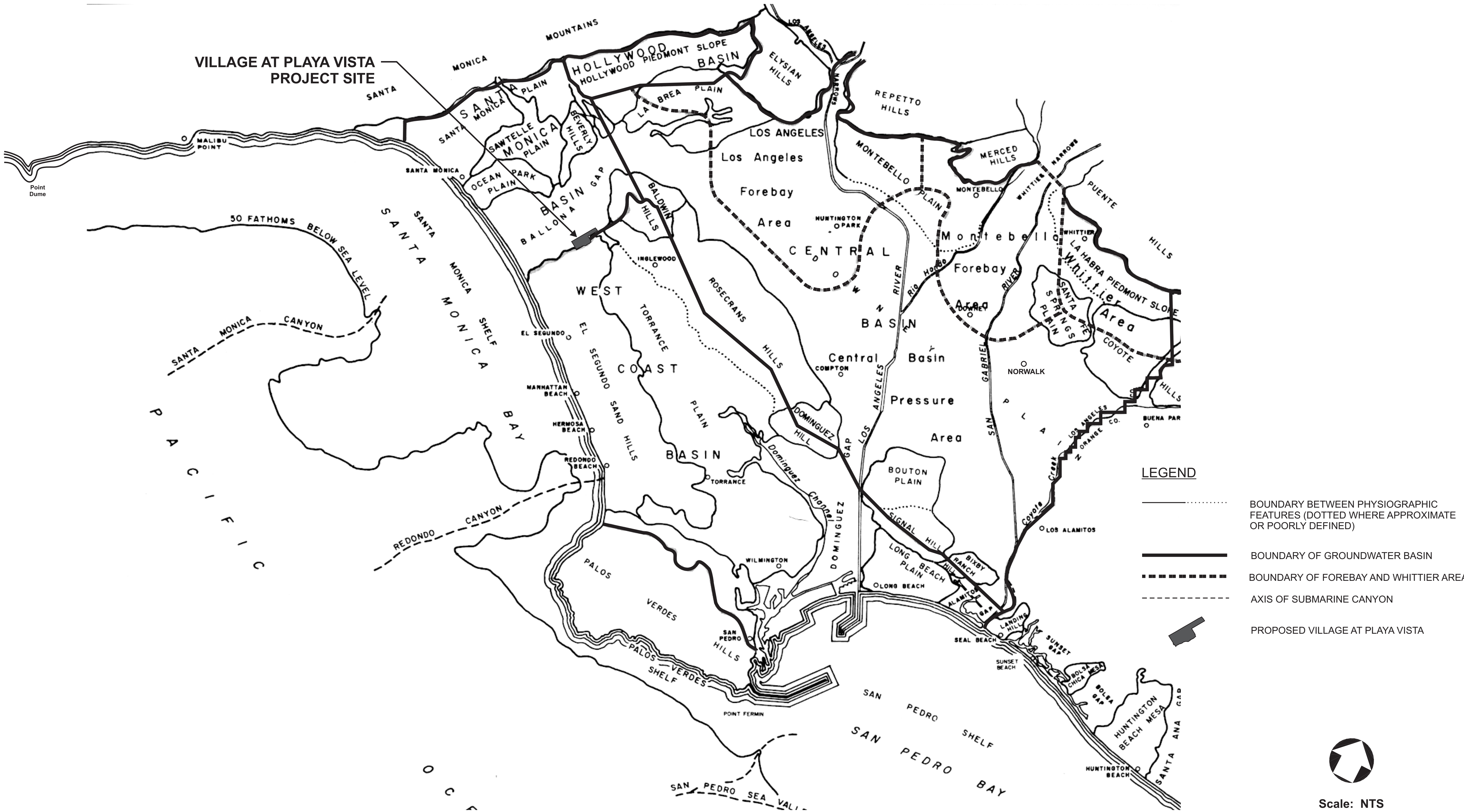
2.1.2 Local Level

The City's primary seismic regulatory document is the Safety Element of the City of Los Angeles General Plan (1996). The objective of the Safety Element is to better protect occupants and equipment during various types and degrees of seismic events. In the Safety Element, specific guidelines are included for the evaluation of liquefaction, tsunamis, seiches, non-structural elements, fault rupture zones, and engineering investigation reports. The City's Emergency Operations Organization (EOO) helps to administer certain policies and provisions of the Safety Element. The EOO is a City department comprised of all City agencies, pursuant to City Administrative Code, Division 8, Chapter 3. The Administrative Code, EOO Master Plan and associated EOO plans establish the chain of command, protocols and programs for integrating all of the City's emergency operations into one unified operation. Each City agency in turn has operational protocols, as well as plans and programs, to implement EOO protocols and programs. A particular emergency or mitigation triggers a particular set of protocols which are addressed by implementing plans and programs. The City's emergency operations program encompasses all of these protocols, plans and programs. Therefore, its programs are not contained in one comprehensive document. The Safety Element goals, objectives and policies are broadly stated to reflect the comprehensive scope of the EOO. As pertains to tsunamis and other flood hazards, the Safety Element refers to the City's Flood Hazard Specific Plan, which addresses areas adjacent to hazards, agency involvement and coordination, and procedures to be implemented during an emergency.

Other City regulatory documents that affect earth resources include the City Building Code and City Grading Standards. These documents include specific requirements for seismic design, slope stability, grading, foundation design, geologic investigations and reports, soil and rock testing, and groundwater. The City Department of Building and Safety is responsible for implementing the provisions of the Building Code and Grading Standards.

2.2 Existing Conditions

Regionally, the Proposed Project site is located in the Los Angeles Coastal Plain, and locally, within the Ballona Gap, an ancient floodplain. The Los Angeles Coastal Plain and other regional geological features are shown in Figure 12 on page 208. In the subsections below, the regional context and local conditions are described separately under each topical heading.



SOURCE: CALIFORNIA DEPARTMENT OF WATER RESOURCES, GROUNDWATER GEOLOGY OF THE COASTAL PLAIN OF LOS ANGELES COUNTY, PHYSIOGRAPIC FEATURES AND GROUNDWATER BASINS.

CDM

Figure 12
Regional Geologic Features

2.2.1 Geology

2.2.1.1 Regional Conditions

The Proposed Project site is located in the Los Angeles Coastal Plain within the Peninsular Ranges Geomorphic Province of California.[13] The Peninsular Ranges Province is characterized by northwest trending ranges and valleys that extend south from the Los Angeles Basin into Baja California. The Peninsular Ranges extend approximately 80 miles offshore to the west and are truncated on the north by the Transverse Ranges, an east-west trending series of mountains that include the Santa Monica and San Gabriel Mountains.

The regional geology of the Los Angeles Coastal Plain reflects both structural and stratigraphic complexities resulting from a long depositional history interrupted by large-scale earth movements. Both the Peninsular Ranges and Transverse Ranges Provinces were affected simultaneously by large-scale deformation (earth processes resulting in folding and faulting of rock units).[14]

In general, the geology in the vicinity of the Proposed Project site consists of Jurassic Age (190 million years old) basement schist (metamorphic rock type) which is unconformably overlain (i.e., a break in continuity of rock strata usually resulting from erosional processes) by Tertiary (65 million years old) marine and river sediments consisting of shales, siltstones, claystones, sands, and gravels approximately 6,500 feet thick. Tertiary sediments are overlain by the Lower Pleistocene (two million years old) San Pedro Formation that is comprised primarily of marine and fluvial (river) deposits of silt, sand, and gravel approximately 300 feet thick. The upper portion of the San Pedro Formation is referred to as Palos Verdes Sands (see Section IV.P.(1), Paleontological Resources, for a detailed discussion). Holocene Alluvium (also referred to as Recent Age Alluvium - deposited within approximately the last 11,000 years) and sand dune deposits of lagoonal and fluvial origin represent surface deposits approximately 100 feet thick.[15] A typical cross-section for the Proposed Project site is shown in Figure 13 on page 210.

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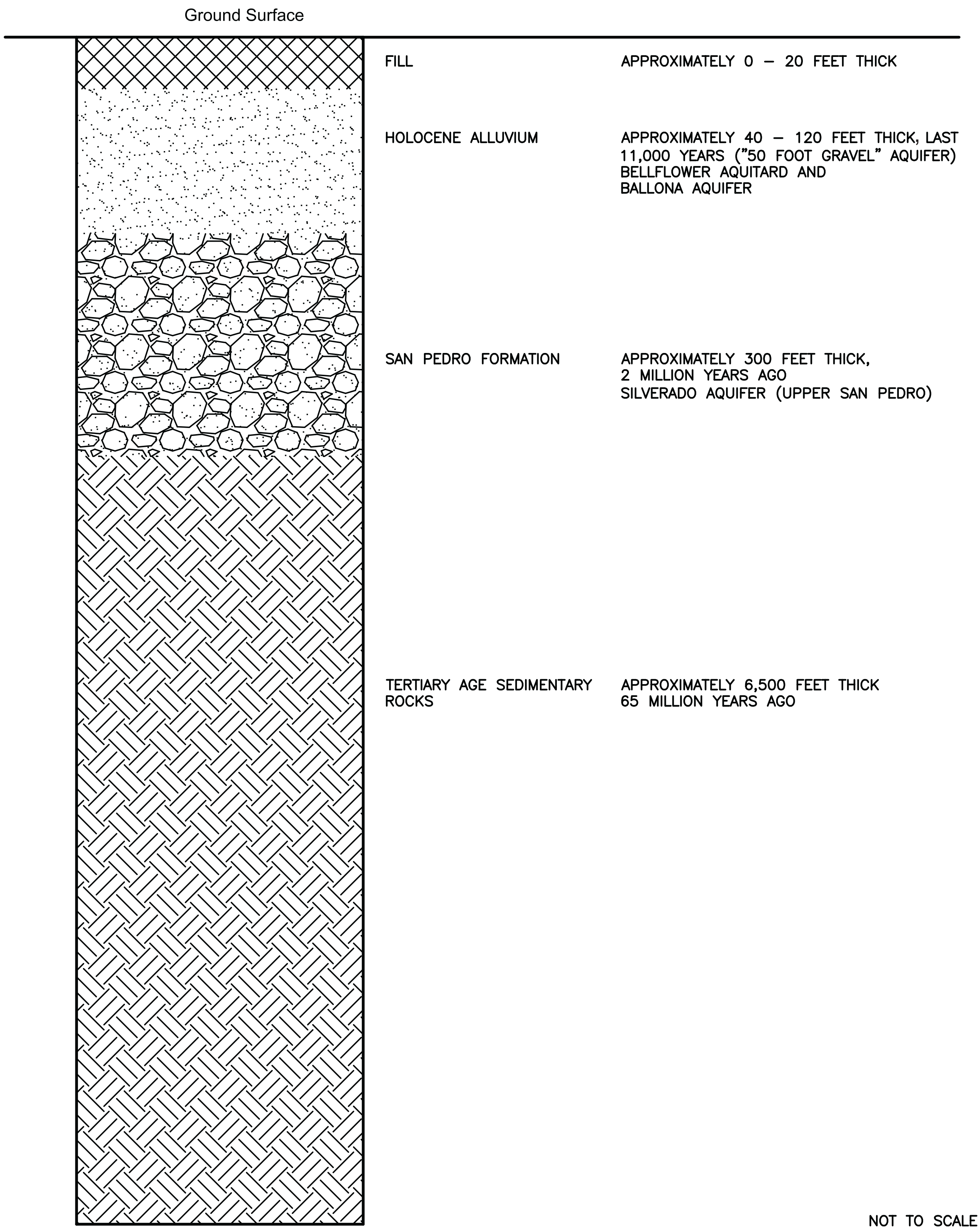
[13] *LeRoy Crandall and Associates, "Geotechnical Studies, Area D, T.T. 49104," for Maguire Thomas Partners, January 3, 1991, page 2.2.*

[14] *California Department of Water Resources, "Planned Utilization of the Ground Water Basins of the Coastal Plain of Los Angeles County," Appendix A, Ground Water Geology, Bulletin 104, 1961, page 8.*

[15] *California Department of Water Resources, "Planned Utilization of the Ground Water Basins of the Coastal Plain of Los Angeles County," Appendix A, Ground Water Geology, Bulletin 104, 1961, pages 123-125.*



CDM

Figure 13
Typical Cross-Section of Local Geology at the Proposed Project Site

2.2.1.2 Proposed Project Site

Overall, the Proposed Project site is primarily flat and low-lying, with elevations ranging from approximately 7 to 24 feet above mean sea level (AMSL). This low-lying area is located in the southern portion of the Ballona Gap, an ancient floodplain, consisting of unconsolidated sedimentary deposits (alluvium) of Recent Age. The Ballona Gap is located between Baldwin Hills to the south and Beverly Hills to the north and extends to the ocean. It was initially formed by headward erosion from the ocean.[16]

The Ballona Escarpment, a portion of which is located along the southern border of the Proposed Project site, is an erosional feature that formed as the ancestral Los Angeles River was naturally diverted from its course and flowed through the Ballona Gap. In 1884, when the concrete-lined Los Angeles River Channel was constructed by the U.S. Army Corps of Engineers (USACE), the river was diverted away from the Ballona Gap into San Pedro Bay.[17] The Ballona Channel runs east-west across the Ballona Gap, approximately 0.33 mile north of the Proposed Project site. The surface of the Proposed Project site is covered primarily by Recent Age alluvium and fill.

Artificial fill material (i.e., material placed by man) overlies Holocene Alluvium (i.e., native sediments) across much of the Proposed Project site.

The Proposed Project site is currently used for a number of permitted activities associated with the construction of the adjacent Playa Vista First Phase Project. Since 1987, the City of Los Angeles Department of Building and Safety has issued over ten grading permits and almost thirty compaction modifications to allow the Applicant to maintain several stockpiles within the Proposed Project site. By the early 1990s, a stockpile of more than 2,000,000 cubic yards of dirt covered the northern half of the Proposed Project site. Currently, one of the stockpiling permits allows up to 500,000 cubic yards of excavated soils to be stored within the southern portion of the Proposed Project site south of Runway Road, generally west of Building 45. In addition, the City of Los Angeles Department of Public Works has approved the excavation and maintenance of temporary detention basins near the 500,000 cubic yard stockpile as part of the adjacent Playa Vista First Phase Project's Stormwater Pollution Prevention Plan (SWPPP) and Erosion Control Plan. The detention basins provide temporary storm drainage and control sediments for First Phase areas currently under construction west of the Proposed Project site that will ultimately drain into the Riparian Corridor, as well as portions of the adjacent Playa Vista First Phase

[16] *California Department of Water Resources, "Planned Utilization of the Ground Water Basins of the Coastal Plain of Los Angeles County," Appendix A, Ground Water Geology, Bulletin 104, 1961, page 35.*

[17] *Converse Consultants, "Comprehensive Geotechnical Report, Playa Vista Parcel, Marina del Rey Area," May 29, 1981, page 8.*

Project site, located east of the Proposed Project site, which will ultimately drain to the Central Storm Drain or the Riparian Corridor. It is expected that temporary drainage facilities will remain on the Proposed Project site pursuant to the SWPPP as may be modified from time to time.

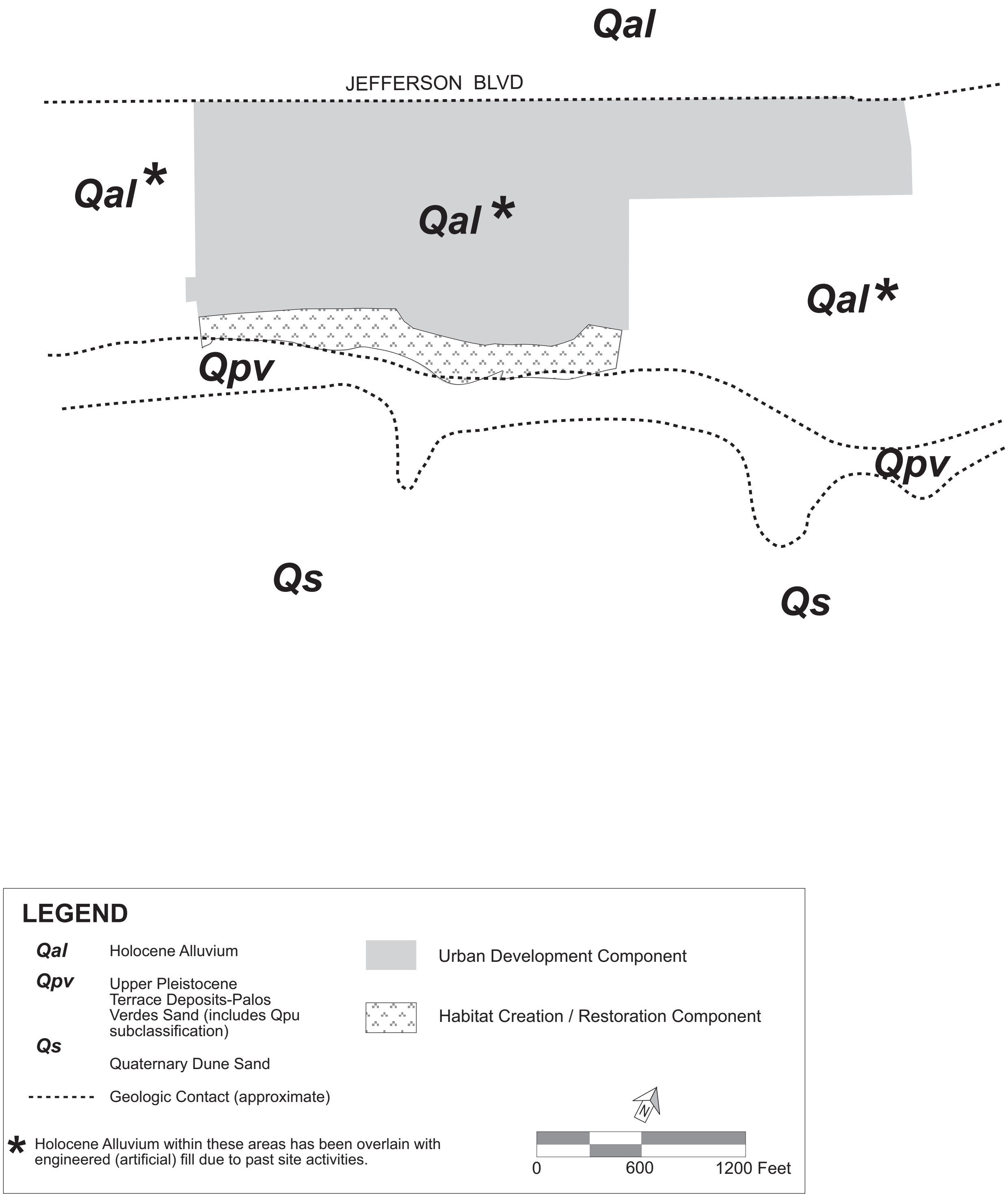
Other activities at the Proposed Project site associated with the construction of the adjacent Playa Vista First Phase Project include rock crushing and stockpiling, and equipment staging and parking.

The construction of the adjacent Playa Vista First Phase Project includes a roadway (Runway Road) connecting the east and west ends of the Playa Vista First Phase Project site, bisecting the Proposed Project site. The finished grade of this roadway would occur at an elevation approximately 15 to 20 feet above the existing topography (i.e., the road would occur as an elevated strip through the Proposed Project site until such time as the Proposed Project development occurs and areas adjacent to the elevated strip are filled to match the roadway).

The following describes the fill and alluvial deposits that are anticipated to be encountered during grading and construction activities, beginning with the most recent fill deposits. A description of the underlying San Pedro Formation below 100 feet, for approximately 300 feet, has also been included although it is not anticipated that such deposits will be encountered during construction. Figure 14 on page 213 shows the local geology for the Proposed Project site and vicinity.

2.2.1.2.1 Fill

Dating to the 1940s, fill material has been imported from a variety of sources covering many portions of the Proposed Project site. Fill thickness within the Proposed Project site ranges from approximately 2 to 11 feet. In the area adjacent to the foot of the Ballona Escarpment (i.e., Westchester Bluffs), fill averages a thickness of approximately 20 feet. The fill material consists of clay, silt, silty sand, and clayey sand. In some areas of the Proposed Project site, the upper portion of the fill material was imported (prior to 1990) from the vicinity of the La Brea tar pits and, as such, has the potential to contain naturally occurring hydrocarbons. These hydrocarbons do not constitute an organic waste such as fuels, or other refined hydrocarbons, that can



PCR

Figure 14
Local Geology

Source: Law/Crandall, Inc., 1996 (As Modified by PCR and CDM), July 2003 sometimes occur as contaminants within fill material.[18] During the most recent investigation, tar sands were not observed in any of the soil samples collected at the Proposed Project site.[19]

2.2.1.2.2 Alluvium

Alluvium is disintegrated rock deposited, permanently or in transit, by streams. It includes all variations and mixtures of gravel, sand, silt and clay. Holocene Alluvium underlying the Proposed Project site ranges from 40 to 120 feet thick.[20] The upper portion consists of soft silty clay and clay with layers of silt and sand. This material is compressible and exhibits low shear strength. This clay is probably representative of the Bellflower Aquitard.[21] *Aquitards* generally consist of fine-grained, relatively impermeable materials (rock or sediment) that do not readily transmit water. Therefore, they inhibit the horizontal and vertical movement of groundwater.

The middle portion of alluvium consists of clay and silt. This material is moderately compressible and exhibits slightly higher shear strength than the upper section of alluvium. This middle section is representative of transition deposits between the Bellflower Aquitard and the underlying Ballona Aquifer.[22, 23] An *aquifer* is defined as a geologic formation (rock or sediment) that is saturated and capable of yielding economically valuable quantities of water to wells and springs.

The bottom section of alluvium is characterized by sand and gravel. This material typically has low compressibility and high shear strength. This water-bearing section of Holocene Alluvium is referred to as the Ballona Aquifer in the vicinity of the Proposed Project

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[18] *LeRoy Crandall and Associates, "Ground Water Monitoring Well Installation and Water Quality Study, Playa Vista Project," Maguire Thomas Partners, August 21, 1990, page 3.*

[19] *CDM, "Soil and Groundwater Investigation Report, Phase 2 Portion of the Area D Project Area," Playa Vista Site, May 15, 2002.*

[20] *LeRoy Crandall and Associates, "Ground Water Monitoring Well Installation and Water Quality Study, Playa Vista Project," Maguire Thomas Partners, August 21, 1990, page 3.*

[21] *McLaren Environmental Engineering, "Site Investigation and Evaluation of Remedial Measures Report, Howard Hughes Properties Plant Site, Los Angeles," May 8, 1987, page II-5.*

[22] *City of Los Angeles, "Draft Environmental Impact Report, Del Rey Addition 1-81," SCH No. 84091907, June 1985, page 2.4-3.*

[23] *McLaren Environmental Engineering, "Site Investigation and Evaluation of Remedial Measures Report, Howard Hughes Properties Plant Site, Los Angeles," May 8, 1987, page II-5.*

site.[24, 25] A stratigraphic column of the alluvium underlying the Proposed Project site is presented in Figure 15 on page 216.

2.2.1.2.3 San Pedro Formation

The San Pedro Formation, which is the Lower (older) Pleistocene material that underlies the fill and alluvium, is approximately 300 feet thick in the Ballona Gap area and consists of poorly consolidated sand and gravel along with beds of silty sand and silt. The formation may also include fragments of slate, schist, and volcanic pebbles.[26, 27] The uppermost layer of the San Pedro Formation is water-bearing and is known as the Silverado Aquifer. Under the Proposed Project site, the Silverado Aquifer ranges from approximately 100 to 300 feet in thickness and is one of the larger groundwater aquifers of the Los Angeles Basin. Beneath the site, this aquifer is believed to be hydraulically connected to the Ballona Aquifer, as there is no evidence of any continuous fine-grained, low permeability material separating the two aquifers within the site boundaries.[28] See Section IV.C(1), Hydrology, for a detailed discussion of groundwater hydrology at the site.

Approximately 6,500 feet of Tertiary Age sedimentary rocks underlie the San Pedro Formation. Natural gas is currently stored by Southern California Gas Company (SCGC) within a portion of this rock formation, which constitutes the Del Rey Hills portion of the former Playa del Rey Oil Field, at depths in excess of 6,200 feet (more than one mile) below the surface in an area approximately 1.25 miles to the west and northwest of the Proposed Project site.[29] No portion of the SCGC storage reservoir exists beneath the Proposed Project site. For a discussion of SCGC operations in the former oil field, refer to Section IV.I, Safety/Risk of Upset, in this EIR.

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24 *City of Los Angeles, "Draft Environmental Impact Report, Del Rey Addition 1-81," SCH No. 84091907, June 1985, page 2.4-3.*

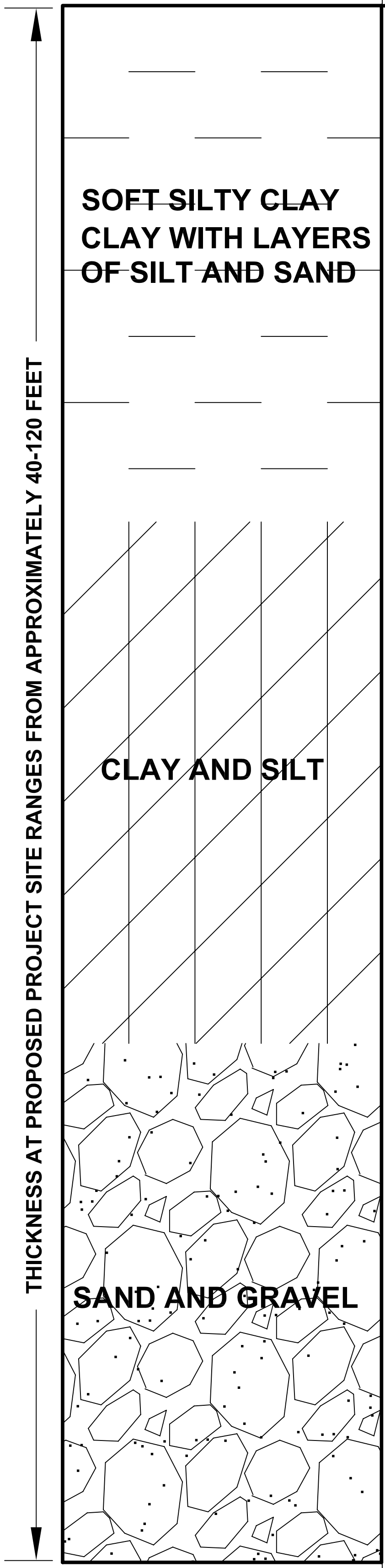
25 *McLaren Environmental Engineering, "Site Investigation and Evaluation of Remedial Measures Report, Howard Hughes Properties Plant Site, Los Angeles," May 8, 1987, page II-5.*

26 *California Department of Water Resources, "Planned Utilization of the Ground Water Basins of the Coastal Plain of Los Angeles County," Appendix A, Ground Water Geology, Bulletin 104, 1961, pages 65, 125.*

27 *City of Los Angeles, "Draft Environmental Impact Report, Del Rey Addition 1-81," SCH No. 84091907, June 1985, page 2.4-3.*

28 *McLaren Environmental Engineering, "Site Investigation and Evaluation of Remedial Measures Report, Howard Hughes Properties Plant Site, Los Angeles," May 8, 1987, page II-6.*

29 *LeRoy Crandall and Associates, "Effect of Natural Gas Storage Reservoir on Proposed Playa Vista Marina Construction, Lincoln Blvd. and Ballona Creek Channel, Marina del Rey," March 31, 1989, page 2.*



GENERAL COMPOSITION	GEOPHYSICAL CHARACTERISTICS	GEOHYDROLOGICAL CHARACTERISTICS
SOFT SILTY CLAY CLAY WITH LAYERS OF SILT AND SAND	* COMPRESSIBLE * LOW SHEAR STRENGTH	* REPRESENTATIVE OF BELLFLOWER AQUITARD * AQUITARDS DO NOT READILY TRANSMIT WATER; THEREFORE THEY INHIBIT HORIZONTAL AND VERTICAL MOVEMENT OF GROUNDWATER
CLAY AND SILT	* MODERATELY COMPRESSIBLE * SLIGHTLY HIGHER SHEAR STRENGTH THEN THE UPPER SECTION OF ALLUVIUM	* TRANSITIONAL DEPOSITS BETWEEN BELLFLOWER AQUITARD AND UNDERLYING BALLONA AQUIFER (SEE BELOW)
SAND AND GRAVEL	* LOW COMPRESSIBILITY * HIGH SHEAR STRENGTH	* REPRESENTATIVE OF BALLONA AQUIFER * AN AQUIFER IS A GEOLOGIC FORMATION THAT IS SATURATED AND CAPABLE OF YIELDING QUANTITIES OF WATER TO WELLS AND SPRINGS

Figure 15

General Stratigraphic Column of Alluvium Typical of the Proposed Project Site

CDM

2.2.1.3 Hydrogeology

Numerous studies to determine current water quality, depth-to-water, and gradient conditions below the vicinity of the Proposed Project site have been conducted, including at the Proposed Project site. The findings of such studies are discussed in greater detail in Section IV.C.(2), Water Quality, Subsection 2.0, Environmental Setting. Land surface elevation at the Proposed Project site varies from about 7 feet AMSL at the western end to approximately 24 feet AMSL at the eastern end. Groundwater elevations beneath the Proposed Project site vary in depth depending on the groundwater unit (aquifer/aquitard) of interest. Three aquifer/aquitard systems (hydrostratigraphic units) are located beneath the Proposed Project site, including the Silverado Aquifer, the Ballona Aquifer, and the Bellflower Aquitard [30] (from greatest to least depth). The uppermost hydrostratigraphic unit beneath the site is the Bellflower Aquitard, which is a sequence of low permeability continental, marine and wind-blown deposits consisting primarily of clay and silty clay. The Bellflower Aquitard occurs beneath the site at depths from near the ground surface to approximately 35 feet below ground surface (bgs). Below the Bellflower Aquitard is the Ballona Aquifer, which is encountered in the Ballona Gap north of the Westchester Bluffs and merges into the Gage/Gardena Aquifer to the southeast. The Ballona Aquifer is often times called the “50-foot Gravel” aquifer because it is generally encountered 50 feet below native grade, and primarily consists of stream deposited coarse sand, rounded to sub-rounded gravel, and cobbles (up to 5 inches in diameter) of granitic and metamorphic origin. The Ballona Aquifer ranges in thickness from less than 10 feet near the coast to 40 feet near Beverly Hills. In some portions of the Proposed Project site the Bellflower Aquitard and the Ballona Aquifer function as a single aquifer system.[31] Further below, the Silverado Aquifer was deposited during the Pleistocene Epoch (San Pedro Formation). The Silverado Aquifer is composed primarily of marine and non-marine sand and gravel. Though the Silverado Aquifer can be up to 500 feet thick in parts of the Los Angeles Basin, locally, the aquifer is estimated to be approximately 200 feet below mean sea level and ranges approximately 100 to 300 feet in thickness.[32,33] For the purposes of this discussion, water level measurements taken by Camp Dresser & McKee Inc. in August 2002 are representative of the site’s affected environment and existing conditions, recognizing that actual groundwater levels may vary from year-to-year and season-to-season depending on many factors as described below. Groundwater elevations in and

[30] *Although the Gage-Gardena Aquifer is thought to occur in depths similar to the Ballona Aquifer, it is not known to occur beneath the Proposed Project site.*

[31] *Camp Dresser & McKee, Inc., “Third Quarter 2002 Groundwater Monitoring and Progress Report,” October 15, 2002.*

[32] *Camp Dresser & McKee, Inc., “Third Quarter 2002 Groundwater Monitoring and Progress Report,” October 15, 2002.*

[33] *McLaren Environmental Engineering, “Site Investigation and Evaluation of Remedial Measures Report, Howard Hughes Properties Plant Site, Los Angeles,” May 8, 1987.*

around the Proposed Project site generally range from approximately 3.0 feet to approximately 5.8 feet AMSL (see Appendix D-3 of this EIR).

2.2.2 Seismic Faults and Other Geological Hazards

2.2.2.1 Regional Faults

Like most of California, the area surrounding the Proposed Project site is characterized by major faults and fault zones that are generally parallel to the San Andreas Fault zone. Most faults in the area are characteristically northwest-trending right-lateral strike-slip faults. A *strike-slip fault* is one in which the movement is horizontal, as shown schematically in Figure 16 on page 219. Strike slip faults are designated as right-lateral or left-lateral depending on how the ground opposite an observer appears to have moved, when the observer is standing looking at the fault. This fault would display movement toward the northwest, with apparent surface movement occurring at the east (or right side) of the fault. These faults are the result of major deformational episodes that have occurred throughout the development of the California mountain ranges. Recent seismic activity in the Los Angeles Basin has raised the issue of hidden faults, including blind-thrust faults, existing in the region. *Blind-thrust faults* are nearly flat geologic structures that do not extend to the Earth's surface. Blind-thrust faults are important sources of regional seismic hazards as more fully described in Subsection 2.2.2.2 below.[34]

Faults are categorized by the California Geological Survey (CGS) as active, potentially active, or inactive, according to most recent seismic activity. *Active faults* are faults on which movement has occurred within historic or recorded time, or have been included in the State of California Fault Rupture Studies Zones in accordance with the Alquist-Priolo Act of 1972. *Potentially active faults* are faults along which no known historical ground surface ruptures or earthquakes have occurred. Classification is instead based on indications of offset or barriers to groundwater flow in rock strata and sharpness of topographic features along the fault. Potentially active faults are further divided into high or low-potential subgroups. For high-potential faults, the characteristics noted above are observed in shallower Holocene (Recent Age) deposits (i.e., movement within the last 11,000 years). For low-potential faults, the characteristics are observed in deeper Pleistocene Age deposits only (i.e., movement within 11,000 to 2 million years). *Inactive faults* are those without recognized Holocene or Pleistocene Age offset or activity (i.e., no movement within two million years).[35]

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[34] *Law/Crandall, Inc., "Geotechnical Issues, Earthquake Hazards, Playa Vista Project," March 7, 1995, page 3.*

[35] *LeRoy Crandall and Associates, "Geotechnical Studies, Area D, T.T. 49104," for Maguire Thomas Partners, January 3, 1991, (Appendix D-11 of this EIR.).*

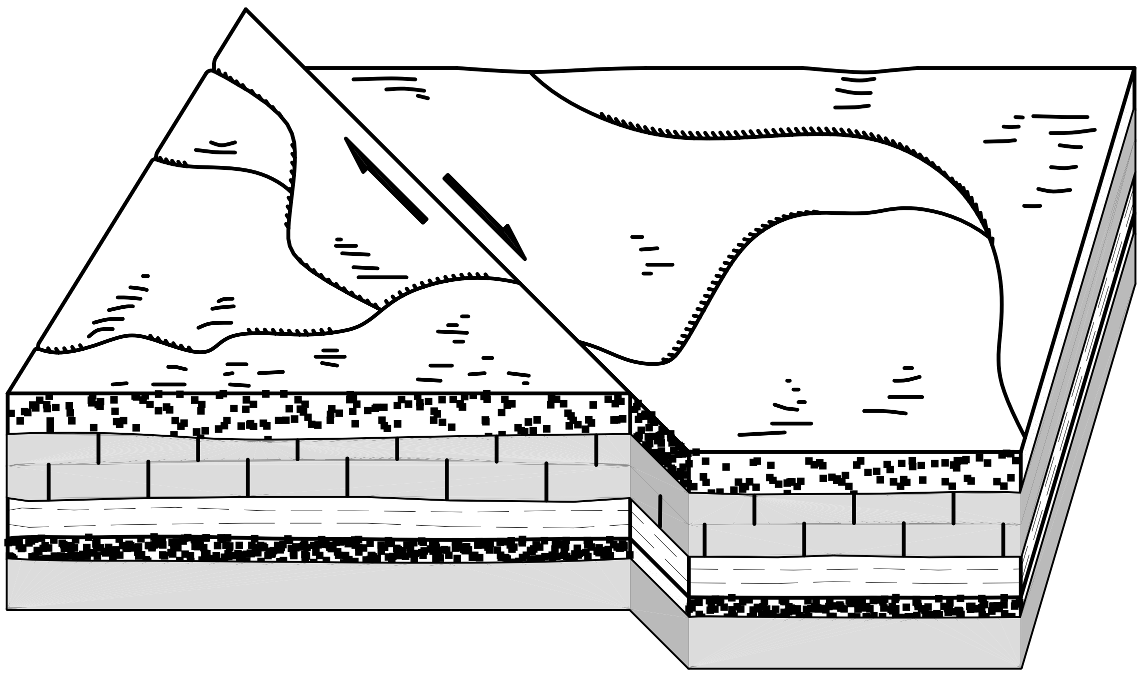

Figure 16

Schematic Drawing of a Right-Lateral Strike Slip Fault

CDM

Faults located within a 70-mile radius of the Proposed Project site that are considered to be active due to evidence of fault movement and displacement of Holocene sediments within historic time, or that have been zoned by the State Geologist per the Alquist-Priolo Act, are considered to be relevant to the Proposed Project and are presented in Table 6 on page 221.

Potentially active faults within a 40-mile radius of the site are listed in Table 7 on page 222. These faults are considered potentially active due to the fact that no known historical ground surface ruptures or earthquakes have occurred on them. The faults listed on these tables are limited by the information available regarding each of the faults (i.e., there may be limited or anecdotal information on past seismic events occurring within the Southern California region; however, there is insufficient scientific data to attribute such activity to specific faults and/or to identify the location of the causal fault).

The fault zones in closest proximity to the Proposed Project site are the Compton-Los Alamitos (could pass beneath the site, but at considerable depth), the Newport-Inglewood (approximately two miles from the site), the Santa Monica (approximately 4.8 miles from the site), and the Palos Verdes (approximately 5 miles from the site). As indicated in Table 6 on page 221, the maximum credible magnitudes[36] for earthquakes along the Compton-Los Alamitos, the Newport-Inglewood, the Santa Monica, and the Palos Verdes Fault Zones are 6.8, 6.9, 6.6, and 7.1, respectively. It should be noted that magnitude is a measure of the strength of an earthquake or strain energy released by it, as determined by seismographic observations. This is a logarithmic value originally defined by Charles Richter (1935). An increase of one unit of magnitude (for example, from 4.6 to 5.6) represents a 10-fold increase in wave amplitude on a seismogram or approximately a 30-fold increase in energy released. There is no beginning or end to this scale; however, rock mechanics seems to preclude earthquakes smaller than about –1.0 or larger than about 9.5. A magnitude –1.0 event releases about 900 times less energy than a magnitude 1.0 earthquake.

[36] *Maximum credible magnitudes are determined by the CGS, and are defined as the largest earthquake magnitudes that appear to be reasonably capable of occurring under the conditions of the presently known tectonic (or geologic) framework. The maximum earthquake is expressed in terms of magnitude which is estimated by 1) using correlations between fault parameters (fault length, fault displacement, and fault area) and earthquake magnitudes, or 2) the largest historical event to have occurred along a particular fault. The correlations applied are derived from historical observations of worldwide earthquakes.*

Table 6

ACTIVE FAULTS [a]

Fault	Date of Latest Major Activity	Maximum Credible Earthquake (Richter Scale)	Distance/Direction from Site
Anacapa-Dum		7.3	17 miles W
Big Pine	1852	6.7	65 miles NNW
Compton-Los Alamitos Thrust	Unknown [b]	6.8	Unknown [b]
Cucamonga	Within last 11,000 years [c]	7.0	44 miles ENE
Elsinore Zone	1910	6.8	45 miles E
Elysian Park Fold & Thrust Belt	1987	6.7	6.8 miles NE
Garlock	(Intermittent creep)	7.1	62 miles NNW
Hollywood		6.4	7.8 miles N
Malibu Coast	1973	6.7	8 miles NW
Newport Inglewood	1933	6.9	2 miles ENE
Northridge [d]	1994	—	unknown
Oakridge Zone	Within last 11,000 years [c]	6.9	35 miles NNW
Palos Verdes	Within last 11,000 years [c]	7.1	5 miles SSW
Raymond	Approximately 200 years	6.5	16 miles NE
San Andreas (southern segment)		7.4	43 miles NNE
San Andreas Zone (Mojave Segment)	1857	8.2	41 miles NE
San Cayetano (Eastern Segment)	Within last 11,000 years [c]	6.8	36 miles NW
San Fernando		6.7	22 miles N
San Gabriel	Within last 11,000 years [c]	7.0	25 miles NNE
San Jacinto Zone	1968 (intermittent creep)	6.7	63 miles ENE
Santa Monica	Within last 11,000 years [c]	6.6	4.8 miles NNW
Santa Monica Mountains Thrust	Within last 11,000 years [c]	7.2	8.9 miles NNW
Sierra Madre-San Fernando Zone	1971	7.0	23 miles NE
Simi-Santa Rosa	Within last 11,000 years [c]	6.7	28 miles NW
Verdugo	Within last 11,000 years [c]	6.7	17 miles NNE
Whittier	1987	6.8	23 miles E

[a] *An active fault is one in which movement has occurred within historic or recorded time or that has been included in the State of California Fault Rupture Studies Zone in accordance with the Alquist-Priolo Act of 1972.*

[b] *Recent academic studies indicate that the Compton-Los Alamitos blind thrust fault could pass beneath the Proposed Project site at considerable depth. (Considerable depth means that there is no fault rupture at the surface; yet the Compton-Los Alamitos fault is still considered active because it meets the requirements as set forth in the Alquist-Priolo Act of 1972.)*

[c] *Zoned by the State Geologist pursuant to the Alquist-Priolo Act of 1972.*

[d] *The exact location of the fault responsible for the Northridge earthquake has not been identified and the fault has not been named. It is believed that the blind-thrust fault associated with the Northridge Earthquake is part of the Oak Ridge Fault System. The Oak Ridge Fault System roughly encompasses the Simi-Santa Rosa-Northridge Fault Zone.*

Source: Law/Crandall, May 8, 1998, and CDM, 2003.

Table 7

POTENTIALLY ACTIVE FAULTS [a]

Fault Name	Maximum Credible Earthquake (Richter Scale)	Distance From Site (Miles)	Direction From Site
Charnock [b]	6.5	< 1 [b]	NE and SE
Chino – Central Avenue	7.0	39	E
Clamshell - Sawpit	6.5	29	E
Coyote Pass	6.7	14	ENE
Duarte	6.7	28	ENE
Holser	6.5	35	NNW
Indian Hill	6.6	34	ENE
Los Alamitos	6.2	20	SE
MacArthur Park	5.7	10.5	NE
Northridge Hills	6.6	19.6	N
Norwalk	6.7	23	ESE
Overland	6.0	3	NE
San Jose	6.7	32	ENE
Santa Cruz Island	6.8	56	W
Santa Susana	6.6	24	NNW

[a] *Potentially Active faults are ones along which no known historical ground surface ruptures or earthquakes have occurred; however, they do show some indications of geologically recent activity.*

[b] *The Charnock Fault has historically been thought to underlie the adjacent Playa Vista First Phase Project site, east of the Proposed Project site. There is, however, no surface trace of the fault at the adjacent Playa Vista First Phase Project or Proposed Project sites , and further investigations completed in 2000 found no evidence of the Charnock Fault beneath the adjacent Playa Vista First Phase Project or Proposed Project sites. See Subsection 2.2.2.2.4, for more information regarding the Charnock Fault.*

Source: Law/Crandall, 1998, and CDM, 2003.

Intensity is a measure of the effects of an earthquake at a particular place on humans, structures, and/or the land itself. The intensity at a point depends not only upon the strength of the earthquake (magnitude) but also upon the distance from the earthquake to the point and the local geology at that point.[37] The hazards associated with rupture along these fault zones include the potential for ground rupture, ground shaking, liquefaction, lurching, tsunamis, and seiches. The locations of recently active faults within the regional area of the Proposed Project site are shown on Figure 17 on page 223. This figure also shows the epicentral area, year, and magnitude of earthquakes with recorded magnitudes greater than 5.0 on the Richter scale. The Richter scale assigns numerical values for earthquake magnitude based on interpretation of

[37] *United States Geological Survey, National Earthquake Information Center, Magnitude and Intensity. http://neic.usgs.gov/neis/general/handouts/magnitude_intensity.html.April 4, 2001.*

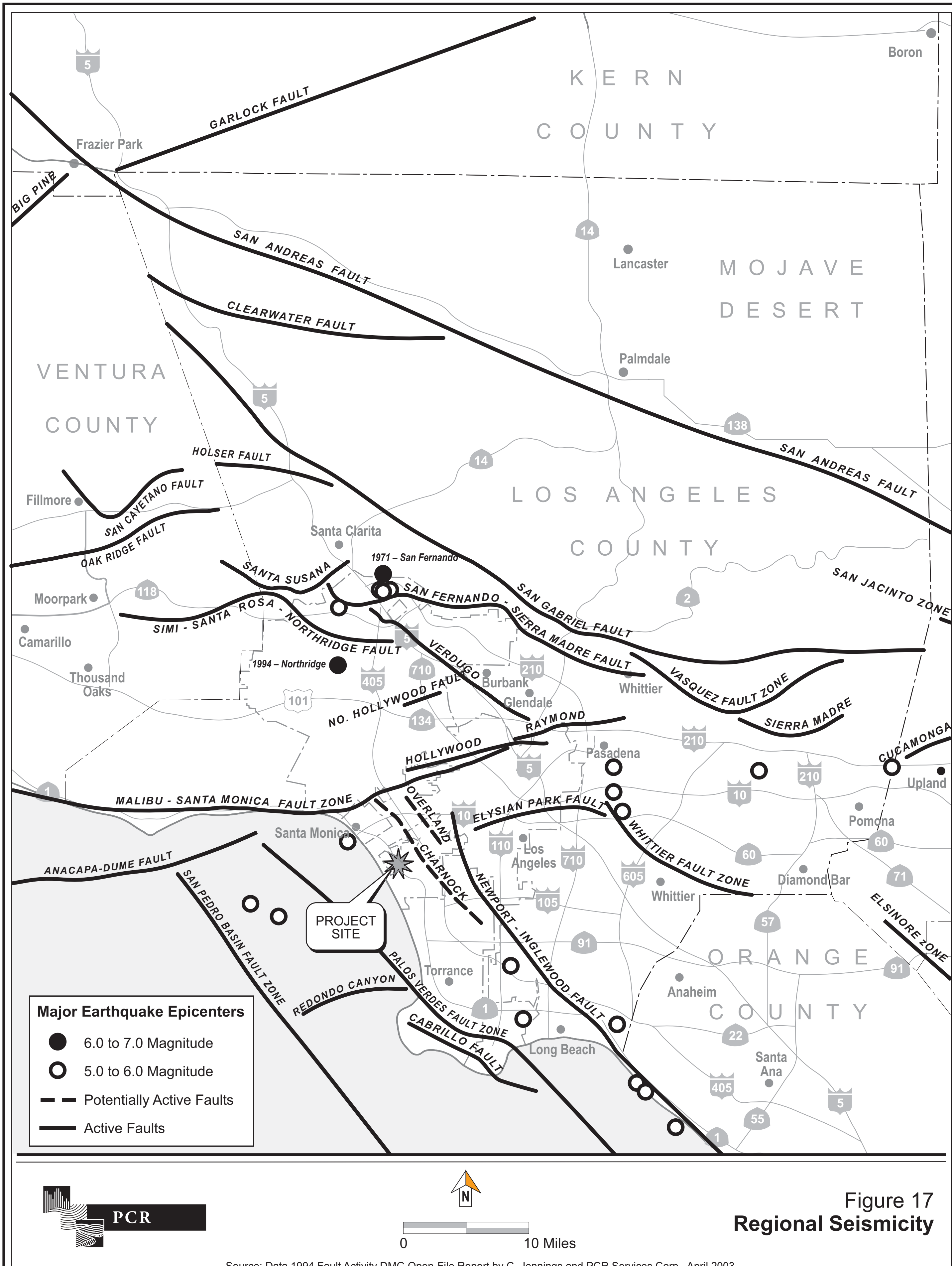

Figure 17
Regional Seismicity

Source: Data 1994 Fault Activity DMG Open-File Report by C. Jennings and PCR Services Corp., April 2003 seismic data collected during earthquakes. For earthquakes which occurred prior to the use of recording instruments, magnitudes were estimated based on damage and intensity reports.[38]

2.2.2.2 Local Faults

2.2.2.2.1 Active Faults

The Proposed Project site is not located within a City of Los Angeles Fault Rupture Studies Zone or within an Alquist-Priolo Special Studies Zone. The Compton-Los Alamitos is an inferred blind-thrust fault that could pass beneath the Proposed Project site at considerable depth (approximately 5 to 10 kilometers or approximately 3 to 6 miles below surface). The maximum credible earthquake produced from this blind-thrust fault is expected to be a magnitude 6.8. There is, however, considerable uncertainty as to the existence and location of the fault and its relationship to the site.[39, 40] This is because there is no direct data on recurrence intervals or characteristic displacements for individual blind thrust segments at this time. As discussed below, recent geotechnical investigations by Earth Consultants International (ECI) and Davis and Namson Consulting Geologists (Davis and Namson) concluded that there is no evidence of surface or shallow subsurface faulting at the Proposed Project site, and, therefore, the potential for surface rupture is considered extremely low (See Appendices D-4 and D-5 for the reports from Davis and Namson and ECI, respectively).

2.2.2.2.2 Potentially Active Faults

The closest potentially active fault to the Proposed Project site is the Charnock Fault (see Figure 14 on page 213). As described below however, in Subsection 2.2.2.2.4, Postulated Faults, recent geotechnical/seismic investigations, using the most advanced technology available, completed at and around the Proposed Project site, suggest that the Charnock Fault is not present beneath the Proposed Project site (see Appendices D-4 and D-5). Various geotechnical consultants performed these studies, in order to provide evidence as to the possible existence of subsurface faults occurring beneath the Proposed Project site, due to the assertion in dated previous studies (e.g., Poland, 1959, described below) that such faulting exists in that location.

The Charnock Fault was initially identified by Poland and others, 1959, on the basis of differing water levels in the early Pleistocene Age San Pedro Formation sediments on opposite

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38 *Association of Engineering Geologists, "Geology Seismicity, and Environmental Impact," Special Publication, 1973.*

39 *Law/Crandall, Inc., "Geotechnical Issues, Earthquake Hazards, Playa Vista Project," March 7, 1995, page 3.*

40 *McArdle, Steve, Law/Crandall, Inc., Written Communication, March 14, 1996.*

sides of the fault, suggesting a groundwater barrier.[41] Since that time, both geotechnical and petroleum companies have attempted to verify the existence and exact location of the Charnock Fault. The Charnock Fault trends northwest-southeast, subparallel to the trend of the Newport-Inglewood Fault Zone and Overland Fault Zone. For the most part, Holocene deposits conceal the fault trace. The total vertical extent of the fault is unknown. Movement along the fault has placed sands and gravels from the Silverado Aquifer adjacent to silty clays and clayey silts of the Upper San Pedro Aquiclude. It is estimated that the base of the early Pleistocene Age San Pedro Formation has been displaced approximately 140 feet, with the dropped block on the east side of the fault.

The Charnock Fault is recognized as a groundwater barrier by the Los Angeles County Flood Control District. The most recent data presented by the Los Angeles County Flood Control District, for water levels obtained in the fall of 1985, indicate a water level difference of about 10 feet adjacent to the inferred fault trace. The barrier effect reportedly increases along the trace of the fault up to the vicinity of the Ballona Escarpment and then decreases as it continues beyond the Ballona Gap. The fault is thought to act as a partial barrier to east-west flow within the Silverado Aquifer. In a groundwater investigation conducted on both sides of the fault in May of 1987, groundwater levels from the down-faulted portion (i.e., the side of a fault where the earth has moved downward) of the Silverado Aquifer were found to be 6.5 to 7.0 feet lower than the other nearby wells, indicating that the down-faulted section may be isolated by the Charnock Fault on the west and by overlying silty clay layers.

A 1991 report by the American Association of Petroleum Geologists, stated that during the 1960s, extensive reflection seismic surveys and exploratory drilling were performed along the proposed alignment of the Charnock Fault for petroleum exploration, and no significant displacements were found that might correlate to the existence of the Charnock Fault.[42] In other words, the groundwater barrier, if present, may be due to channeling (a subsurface erosional feature where eroded rock formed a barrier during deposition) in the Upper Pleistocene sediments rather than the Charnock Fault.

A fault hazard evaluation conducted by Law/Crandall Inc. in 1995 indicated that the contact between the Ballona Aquifer and overlying alluvium does not exhibit any offset, nor were any groundwater anomalies observed. The fault hazard evaluation concluded that the Holocene Alluvium/San Pedro Formation contact is also likely unaffected by faulting. The results of this study are in agreement with other reports, which have concluded that the subject

[41] *Poland, J.F., Garrett, A.A., and Sinnot, Allen, "Geology, Hydrology and Chemical Character of Ground Waters in the Torrance-Santa Monica Area California," U.S. Geological Survey Water-Supply Paper 1461, p. 76-78, 1959.*

[42] *Wright, Thomas L., and Kevin T. Dibble, American Association of Petroleum Geologists, "Structural Geology and Tectonic Evolution of the Los Angeles Basin, California, in Active Margin Basins," Memoir 52, p. 90, 1991.*

offset/groundwater barrier is confined to Pleistocene deposits and does not offset Holocene deposits. This study verified, therefore, that movement along the fault, if present, has not occurred during the past 11,000 years and that its classification as potentially active, as opposed to active, is correct. Because offset is confined to Pleistocene Age deposits, it may be further classified as a low potential fault. Additionally, the potential for surface rupture along the subject offset is considered very low.

On September 16, 2000, a magnitude 3.3 earthquake occurred, with the epicenter believed to be in the vicinity of Marina del Rey, approximately 2 miles northwest of the Proposed Project site. A technical assessment of the subject event was completed by Davis and Namson Consulting Geologists (see Appendix D-1 for copy of assessment letter). The assessment found that the September 16, 2000, earthquake was a small seismic event occurring deep below the surface. Dozens to hundreds of earthquakes in this magnitude range occur throughout southern California each year. Except for aftershocks of major earthquakes, few of these smaller seismic events can be associated with a known fault. The September 16, 2000, earthquake was well recorded and data generated by Caltech provided reliable information regarding the "focal mechanism" of the earthquake. A focal mechanism is a common type of seismological analysis that shows the geometry of the fault plane and the movement direction during an earthquake. The focal mechanism for the September 16, 2000, event shows a 45-degree dipping thrust fault with an east-west striking fault plane. The focal mechanism analysis does not determine whether the fault surface dips toward the north or toward the south. Projection of the faults upward along the 45 degree-dipping planes indicate that the south-dipping fault could project to the surface on the south flank of the Santa Monica Mountains, and the north-dipping fault plane could project to the near surface at Hermosa Beach. In either case, because of the fault dip, the projected fault planes could only intersect the shallow subsurface miles from the Proposed Project site. It should be noted that the earthquake occurred deep in the crystalline basement (Catalina Schist) under the Los Angeles Basin and most likely along a minor fault that does not propagate to shallow levels.

There are several reasons why the September 16, 2000, earthquake could not have occurred along the postulated Charnock fault. First, the focal mechanism shows that the earthquake occurred along an east-west striking fault, whereas the Charnock is a north-south striking fault. Second, the earthquake was a thrust type earthquake, whereas the Charnock, if it exists, is most likely a strike-slip fault based on its strike similarity to nearby strike-slip faults such as the Newport-Inglewood fault. Third, the earthquake focus occurred 7.6 miles below the Proposed Project site and projection of the possible fault plane solutions upward places the surface projections of the faults 7-8 miles to the south or north of the Proposed Project site. In summary, the seismic event of September 16, 2000, was a small earthquake that occurred deep underground, as is common in the Los Angeles area, and is not related to the postulated Charnock Fault.

2.2.2.2.3 Inactive Faults

The Division of Oil and Gas, and Geothermal Resources has also mapped six smaller faults within the Playa del Rey Oil Field which appear to be Upper Miocene Age (approximately 15 million years ago) or older. Four of the faults occur northwest of the Proposed Project site, near the Venice portion of the Playa del Rey Oil Field, and two of the faults occur west of the Proposed Project site, near the Del Rey Hills portion of the Field. Due to their age and extensive overlying sediments, these faults are considered to be inactive and are, consequently, not located within any Alquist-Priolo Special Studies Zone.

2.2.2.2.4 Postulated Faults

In April 2000, Exploration Technology Inc. (ETI)[43] used geochemical data (such as soil gas survey data) to propose that the area immediately east of Lincoln Boulevard (approximately 0.5 miles west of the Proposed Project site) is underlain by a fault. ETI speculated that the fault, which it refers to as the "Lincoln Boulevard Fault", trends north-northwesterly, dips to the west with a normal sense of slip (the west side of the structure has moved down relative to the east side of the structure), and allows methane gas that originates at depths of 500 to 3,400 feet to reach the surface. In postulating the existence of the Lincoln Boulevard Fault, ETI referred to a 1935 report by Metzner[44] that described the Playa del Rey Oil Field and the hills to the south of the oil field, southeast of the Proposed Project site. Metzner identified four separate areas or provinces in these hills based on topographic features, and argued that the two westernmost provinces, closest to the coastline, appear to be controlled by faulting. Metzner also identified several faults in the subsurface in the Playa del Rey Oil Field, to the southwest of the Proposed Project site. However, as discussed below, according to Davis and Namson Consulting Geologists, Metzner did not project faults in the topographic province close to the postulated Lincoln Boulevard Fault.[45] In response to the ETI study, a study was conducted by ECI[46] to evaluate whether or not a fault does underlie the area where ETI postulated the Lincoln Boulevard Fault occurred. To address this issue, ECI undertook a multiphase geological study that included the review of relevant, historical, oil, groundwater and geotechnical studies of the

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[43] *Exploration Technologies Inc. (ETI), Subsurface Geochemical Assessment of Methane Gas Occurrences, Playa Vista Development, First Phase Project, Los Angeles, California. Prepared for the City of Los Angeles, Department of Building and Safety, Project No. 99-2219, April 17, 2000.*

[44] *Metzner, L.H., 1935, The Del Rey Hills Area of the Playa Del Rey Oil Field: California Division of Oil and Gas Summary Operations, v. 21, no. 2, p. 5-26.*

[45] *Davis and Namson Consulting Geologists, An Evaluation of the Subsurface Structure of the Playa Vista Project Site and Adjacent Area, November 2000.*

[46] *Earth Consultants International Inc. (ECI), 2000, Geologic Study to Evaluate the Potential for Active Faulting Near the Intersection of Lincoln and Jefferson Boulevards, at the Playa Vista Site, in the City of Los Angeles, CA.*

area, including Metzner's (1935) report. From this review, ECI concluded that, "none of the published maps, cross-sections and geologic reports that cover this portion of the Los Angeles Basin show any faults or reasons to suspect a fault underlying the area southwest of Lincoln and Jefferson Boulevards, in the area of the proposed Lincoln Boulevard Fault."[47] ECI also conducted a Cone Penetrometer Testing (CPT) study that included confirmatory borings, to evaluate whether shallow subsurface geologic layers are continuous across the area where the Lincoln Boulevard fault had been inferred. These CPTs and borings were used to find the contact between relatively fine-grained alluvium and lagoonal deposits of Holocene age (less than about 10,000 years old), and coarse-grained alluvial deposits that are Pleistocene in age (more than 10,000 years old). An extensive database of CPTs and borings previously drilled in the study area by other investigators was also used to complement the data obtained from ECI's subsurface study. The purpose of the study was to model the surface of this Pleistocene-Holocene boundary, to determine whether or not it is offset by faulting.

ECI prepared several cross-sections (images) of the near-surface sediments down to the gravelly layer that forms the Pleistocene-Holocene boundary and found that although the boundary is locally irregular, the irregularities are not linear, and therefore do not suggest the presence of a fault. ECI also looked at fine-grained sediments (estimated to be about 6,000 years old) above this boundary and found that in the areas where the gravelly layer is irregular, the layers above are laterally continuous and smooth, and therefore not faulted. Lastly, ECI examined geologic reports that had mapped the Westchester Bluffs south of the site. The Bluffs are composed of sediments estimated to be at least 120,000 years old, and therefore significantly older than the Ballona Gap sediments. If the area were underlain by faults that have moved in the last 10,000 years, the sediments in the bluffs would be faulted. The geologic maps reviewed did not show any faults. From all of these data ECI concluded that there is no fault in the area that has ruptured the ground surface in at least the past 10,000 to 100,000 years, and that there is no need to mitigate for potential surface fault rupture.[48]

In May 2000, Davis and Namson Consulting Geologists[49] also undertook a study of the subsurface of the Proposed Project site and adjacent areas to determine the possibility of a Lincoln Boulevard fault as proposed in the ETI report, and to evaluate the possibility of other faults at the site. Davis and Namson's multiphase approach began with a review of existing

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[47] *Earth Consultants International Inc. (ECI), 2000, Geologic Study to Evaluate the Potential for Active Faulting Near the Intersection of Lincoln and Jefferson Boulevards, at the Playa Vista Site, in the City of Los Angeles, CA.*

[48] *Earth Consultants International Inc. (ECI), 2000, Geologic Study to Evaluate the Potential for Active Faulting Near the Intersection of Lincoln and Jefferson Boulevards, at the Playa Vista Site, in the City of Los Angeles, CA, (page 23).*

[49] *Davis and Namson Consulting Geologists, An Evaluation of the Subsurface Structure of the Playa Vista Project Site and Adjacent Area, November 2000.*

geologic literature, in which they found no mention of a Lincoln Boulevard fault prior to the ETI report. Davis and Namson concluded that geologic evidence cited by ETI (Metzner, 1935) does not support the presence of the proposed fault. Davis and Namson also compiled an extensive oil and gas well database, from which they constructed several maps and cross-sections. These maps and cross-sections support the conclusion that no faulting has occurred in the western portion of the adjacent Playa Vista First Phase Project site during the last 2.5 to 3.0 million years.

During May and June 2000, Davis and Namson searched for and reviewed existing seismic data near the Proposed Project site. An east-west trending seismic line acquired by another party[50] was located that should intersect the proposed Lincoln Boulevard Fault. The proposed Lincoln Boulevard fault is not shown on the line, indicating that either the fault is non-existent or it does not extend out to the line. Above the 5,000-foot depth, the line shows a number of layers that are continuous across their entire length, which indicates that no faulting has occurred since these layers were deposited (i.e., during the last 3.0 million years).

During July 2000, an extensive seismic reflection study was initiated under the direction of Davis and Namson and Subsurface Exploration Company (SECO)[51] to more accurately survey the subsurface structure between oil and gas wells, in order to further evaluate the existence of the proposed Lincoln Boulevard Fault. Additionally, the evaluation by Davis and Namson included the bluff areas east of the Proposed Project site where the Charnock Fault had previously been assumed to exist. A 2-dimensional (2D) high-resolution seismic line (an acoustic cross-section of the subsurface layers along a line), located along Jefferson Boulevard, shows no fault breaks in subsurface layers and therefore shows no evidence of the proposed Lincoln Boulevard or Charnock Faults at the Proposed Project site. A 3-dimensional (3D) seismic line (a 3-dimensional acoustic image of subsurface layers, similar to a 2D cross-section, spread over the entire area to a greater depth) over the entire Proposed Project site and some additional surrounding areas shows that nearly the entire site and the surrounding area is underlain by continuous layers which have not been faulted in the last 2.0 million years.[52] In the western end of the Ballona Wetlands, abundant well data indicate that no faulting has occurred in the last 2.5 to 3.0 million years. The continuous Pico Formation layers (2.0 million years old) over most of the site show that the proposed Lincoln Boulevard and Charnock faults are not

[50] *Playa Vista purchased a licensed seismic reflection line from Chevron, known as Line LAB-85-4, which is located about 9,000 to 12,000 feet south of the Playa Vista site, and is oriented in an east-west direction. The Chevron seismic line is licensed data, and thus, the "wiggle trace" presentation could not be reproduced for the Davis and Namson Consulting Geologists report. A discussion of the Chevron seismic line can be found in Section 3.0, Onshore Geophysical Survey, in the Davis and Namson report: Davis and Namson Consulting Geologists, An Evaluation of the Subsurface Structure of the Playa Vista Project Site and Adjacent Area, November 2000.*

[51] *Davis and Namson Consulting Geologists, An Evaluation of the Subsurface Structure of the Playa Vista Project Site and Adjacent Area, November 2000.*

[52] *Reflectors (layers) were not imaged on the western end of the Ballona Wetlands.*

present at that or younger stratigraphic levels. The 3D seismic survey revealed no evidence of either the proposed Lincoln Boulevard or Charnock Faults being present at deeper levels below the middle Pico Formation. Where these proposed faults would cross the 3D survey there are continuous layers to about a 4,500-foot depth. Oil and gas well data show these continuous reflectors are from the middle and upper Repetto Formation (2.5 to 4.0 million years old) and the overlying Pico Formation. Thus, the seismic reflection study concludes there is no evidence for the proposed Lincoln Boulevard or Charnock Faults in layers deposited during the last 4 million years.

In summary, there is no historical geologic data to support the presence of the proposed Lincoln Boulevard Fault. In fact, all evidence from historical records and recent advanced studies, as stated above, points against the presence of the Lincoln Boulevard Fault. Though the Charnock Fault has been previously mapped as a groundwater barrier, new state-of-the-art, detailed geologic studies show no evidence of its existence at the Proposed Project site. Further, oil and gas well data and 2D and 3D surveys show no evidence of the existence of either fault at the Proposed Project site. In response to the Davis and Namson studies, ETI reviewed the most recent data and agreed that a postulated Lincoln Boulevard Fault that would provide a methane gas pathway to the Proposed Project site is unsubstantiated, and the City of Los Angeles Department of Building and Safety accepted these conclusions (see Appendix J-6).[53] These conclusions were reaffirmed by the results of the investigation completed by the City of Los Angeles Office of the Chief Legislative Analysis, including supporting correspondence from the State Geologist (Appendix J-6).

2.2.2.3 Slope Stability

The only portion of the Proposed Project site having slope stability considerations is the Habitat Creation/Restoration Component area, along the southern edge where the Ballona Escarpment abuts the Proposed Project site (i.e., the southern edge of the Urban Development Component).

The Ballona Escarpment (the Escarpment) is situated due south and immediately adjacent to the Proposed Project site as shown in Figure 18 on page 231. The portion of the Escarpment that parallels the southern border of the Proposed Project site is locally referred to as the Westchester Bluffs and is occupied by Loyola-Marymount University and private residences. The Westchester Bluffs and the off-site Riparian Corridor (being constructed as part of the adjacent Playa Vista First Phase Project) are the only distinct and prominent geologic features at,

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[53] *City of Los Angeles, Department of Building and Safety, Grading Section. Personal Communication. Letter to Playa Capital Company from Mr. David Hsu, Chief of Grading Section, regarding the existence of the Lincoln Boulevard fault. December 19, 2000. (Attached as Appendix G to the "City Investigation of Potential Issues of Concern for Community Facility District No. 4 Playa Vista Development Project" by the City of Los Angeles Office of the Chief Legislative Analyst, May 2001.)*

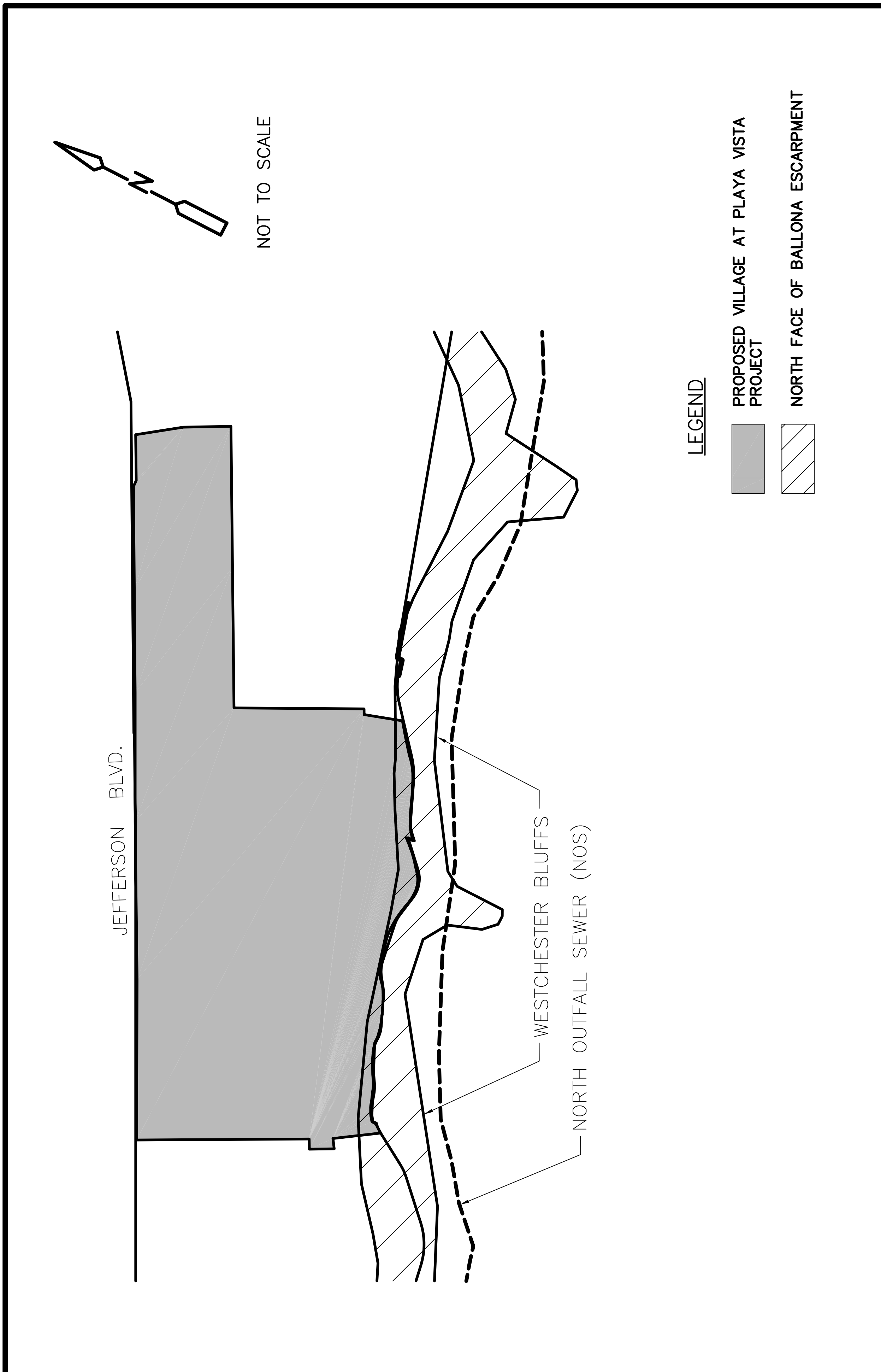

Figure 18

Ballona Escarpment Location

or near, the Proposed Project site. The entire Escarpment is located within a City of Los Angeles Hillside Grading Area, as designated in the City's Building Code.

The Escarpment rises approximately 120 to 140 feet above the ancient flood plain (i.e., 120 to 140 feet AMSL) with the slope in the site vicinity varying from 1.5:1 to 2:1 (horizontal to vertical).[54] It is capped by the Upper (younger) Pleistocene Older Dune Sand which consists of fine to medium sand with minor sandy silt, clay, and gravel lenses.[55] The three zones of the Older Dune Sand include: (1) a deeply weathered surface; (2) an intermediate section of clean sands, basal beach sands, and gravels; and (3) an Older Dune Sand in the Lakewood Formation, which is also an Upper Pleistocene deposit. The upper section of the Lakewood Formation contains typical stream-type alluvium with finer flood plain sediments. The lower section consists of coarser sands and gravels, with basal deposits of sand and gravel and discontinuous lenses of sandy silt and clay. This lower sand and gravel section iswater-bearing and most likely represents the Gage-Gardena Aquifer. The San Pedro Formation underlies the Lakewood Formation, accounting for all Pleistocene deposits within the Escarpment. The San Pedro Formation, as previously discussed, consists of sand, gravel, silty sand, and silt, and most likely includes the Silverado Aquifer, at depths exceeding 100 feet below sea level.[56] A stratigraphic column of the Escarpment is presented in Figure 19 on page 233.

The existing City of Los Angeles' North Outfall Sewer (NOS) is located within the Escarpment some 35 to 45 feet above the base of the bluff. The 10.5-feet diameter (maximum height), semi-elliptical sewer was constructed in 1925. Up to 20 feet of fill was encountered in soil borings located adjacent to the NOS. Additional fill deposits also were noted to overlie the lower portions of the slope (see additional discussion below).

Two nearby developments that have the potential to affect the Escarpment are located on the Westchester Bluffs south of the Proposed Project site. One of the developments is located east of Loyola-Marymount University (Tract 43415) and consists of a 49-unit, single-family residence tract. The other development lies further east, near the eastern tip of the Proposed Project, and consists of 85 single-family homes. Construction has resulted in lowering and flattening of the top of the Escarpment in that vicinity. The portions of the slopes adjacent to

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[54] *Law/Crandall, Inc., "Addendum to Report of Geotechnical Studies, Bluff Stability," September 22, 1995, page 1.*

[55] *LeRoy Crandall and Associates, "Geotechnical Studies, Area D, T.T. 49104," for Maguire Thomas Partners, January 3, 1991, pages 3.1-3.2.*

[56] *LeRoy Crandall and Associates, "Geotechnical Studies, Area D, T.T. 49104," for Maguire Thomas Partners, January 3, 1991, pages 56-79.*

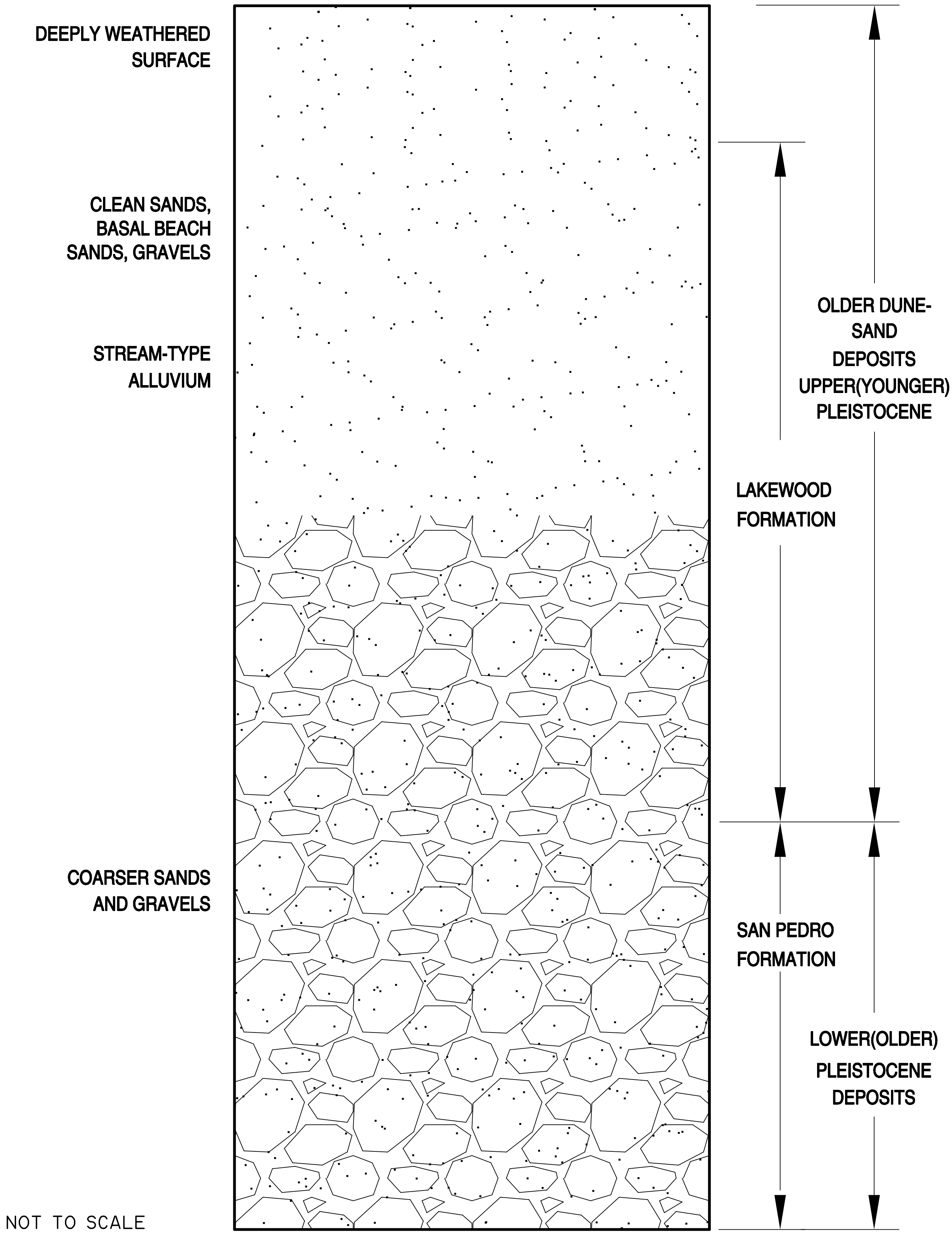

Figure 19

Stratigraphic Column of the Ballona Escarpment

CDM

these developments appear to be performing well, with some erosion problems principally due to incomplete vegetation cover in some areas.[57]

A bluff stability investigation was undertaken by Law/Crandall and Associates in 1991, and a supplemental investigation was completed by Group Delta Consultants (GDC) in 2001 (described below on page 235). The purpose of the 1991 investigation was to determine whether the Westchester Bluffs presents any hazards to the Proposed Project site (primarily those portions of the Proposed Project site within the Habitat Creation/Restoration area, immediately adjacent to the Escarpment) and to identify indicators for the potential effects of grading adjacent to the Escarpment on bluff stability.[58] The Law/Crandall investigation included geological mapping of the surface of the Escarpment and noted areas of water seepage, erosion, slumps, and other indications of potential instability. A total of seven exploratory borings were drilled and various laboratory analyses performed on selected soil samples. The findings of the 1991 study are summarized below.

Geologic investigations indicate that the Escarpment is considered grossly stable throughout the entire slope (i.e., not potentially subject to deep-seated sliding to the top of the bluff).[59] Geologic mapping of the Escarpment did not reveal the presence of any deep-seated rotational or translational landslide failures. The layering within the sedimentary materials was observed to dip in a favorable direction into the slope. It appears that the Escarpment reached an essentially stable slope configuration prior to the construction of the NOS. Cabora Road was cut into the slightly cemented sands, creating oversteepened portions of the slopes, which subsequently retreated by mass wasting (i.e., down-slope movement of rock debris by gravity). The cut slopes above the road are likely to continue slumping until a stable configuration is reached, though many of the old road cuts appear to have already stabilized.

The soils in the Escarpment are susceptible to erosion. Deeply incised erosion gullies were found in areas where surface water runoff had been allowed to flow over the edge of the Escarpment. Surface waters percolating through the dune sand occasionally resurface as springs in the Escarpment face and may contribute to slope erosion. The potential hazard for development at the toe of the Escarpment is related to the accumulation of soil debris at the toe

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57 *Law/Crandall, Inc., "Addendum to Report of Geotechnical Studies, Bluff Stability," September 22, 1995, page 2.*

58 *LeRoy Crandall and Associates, "Geotechnical Studies, Area D, T.T. 49104," for Maguire Thomas Partners, January 3, 1991, pages 3.1-3.15.*

59 *LeRoy Crandall and Associates, "Report of Bluff Stability Investigation Tentative Tract Nos. 44857, 43415, and 43416 South of Jefferson Boulevard Between Lincoln Boulevard and Centinela Avenue Los Angeles, California for Howard Hughes Properties and Howard Hughes Realty," October 16, 1987.*

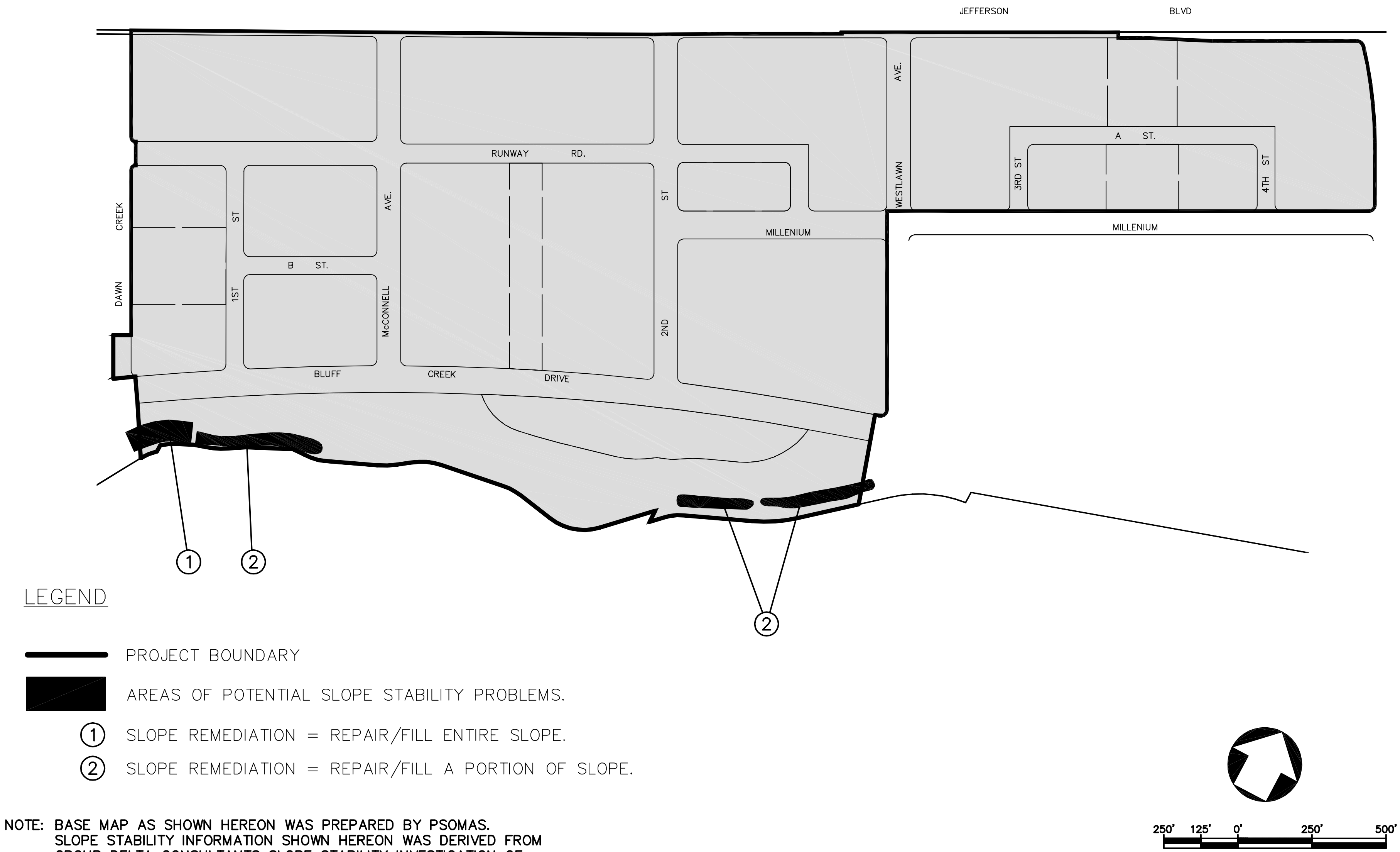
of the slope. The sewer construction and maintenance road (Cabora Road) is approximately 30 feet wide and serves as an effective catch for soil debris from the upper slope.[60]

As indicated above, an additional geotechnical investigation regarding slope stability on the Ballona Escarpment, as it relates to potential impacts to the NOS, including areas adjacent to the Proposed Project site, was completed by GDC in December 2001, the conclusions of which were accepted, with conditions, by the City of Los Angeles, Department of Public Works, Bureau of Engineering, Geotechnical Engineering Division, on February 19, 2002. Copies of the GDC analysis and the Bureau of Engineering memo approving the analysis are included in Appendix D-2. Recognizing that the overall Escarpment, from top of bluff to base of slope, is considered to be grossly stable, the GDC analysis focused on the stability of slopes descending from Cabora Road. As generally described above, Cabora Road occurs over the NOS that was constructed approximately 70 years ago. Soils excavated from the sewer trench were side-cast onto the existing natural slope below, creating an oversteepened and erodible condition. The combination of slope height, steepness, and shape on portions of the slope below Cabora Road have created conditions with the potential for localized slope failure. Slope stability calculations completed by GDC found that slopes greater than 38 feet from toe to crest (at Cabora Road) have a factor of safety (i.e., potential for slope failure) that does not meet geotechnical engineering safety standards. Also, slopes steeper than 1.5:1- H:V (i.e., for every 1.5 feet of horizontal distance the slope rises or drops more than 1 foot in vertical distance) generally have a factor of safety that is less than the acceptable standard. Slopes that are less than 38 feet high with grades (steepness) equal to, or flatter than, 1.5:1 (H:V) are generally stable and have an acceptable factor of safety.

The majority of the slope below Cabora Road, including those areas within the Proposed Project site, is less than 38 feet high and flatter than 1.5:1 (H:V) and thereby meets the acceptable factor of safety. For those limited portions of the slope below Cabora Road that were identified as having the potential for slope stability problems, GDC provided specific recommendations for the repair (stabilization) of such areas. Figure 20 on page 236 shows the portions of the slope below Cabora Road within the Proposed Project site that were identified as having the potential for slope stability problems. Depending on the specific characteristics of each area, different types of repair were recommended by GDC. The two types of repair that apply to slope areas within the Habitat Creation/Restoration Component of the Proposed Project site are as follows.

- *Type 1: Full Slope Height Fill* – The affected portions of the slope would be cut back in benches, a minimum of one equipment width into dense native soil with a 2-foot

[60] *LeRoy Crandall and Associates, "Geotechnical Studies, Area D, T.T. 49104," for Maguire Thomas Partners, January 3, 1991, pages 3.13-3.14.*



NOTE: BASE MAP AS SHOWN HEREON WAS PREPARED BY PSOMAS. SLOPE STABILITY INFORMATION SHOWN HEREON WAS DERIVED FROM GROUP DELTA CONSULTANTS SLOPE STABILITY INVESTIGATION OF 2001–2002.

Figure 20

Areas of Potential Slope Stability Problems at the Proposed Project Site

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deep key at the toe. The removed material would be replaced with material having a minimum cohesion of 200 pounds per square foot (psf) and effective angle of internal friction of 30°, with a slope grade of 1.5:1 (H:V).

- *Type 2: Partial Slope Height Fill* – A portion of the slope height would be cut back into dense native soil and filled with material having a minimum cohesion of 200 psf and effective angle of internal friction of 30°, in 2-foot lifts of 8-inches or less in thickness. The slope grade would match the surrounding grade of 1.5:1 (H:V) or flatter.

The slope stability analysis and repair recommendations would account for and address the geotechnical characteristics of the area below Cabora Road; however, should erosion or other slope problems occur due to leaks from the NOS or from failure to maintain Cabora Road, slope stability problems could develop.

2.2.2.4 Subsidence

Subsidence is the lowering of land surface as a result of the extraction of oil, groundwater, or other materials. The site is not located in an area of known significant ground subsidence. Development of the Playa del Rey Oil Field, located about one mile to the west of the Project site, began in the 1920s with production peaking in 1935. Only minor subsidence was noted in the oil field between the primary production years of 1925 to 1938, with no subsidence noted between 1949 and 1955.[61] Oil extraction is no longer occurring, and the former oil reservoir is pressurized for natural gas storage. Accordingly, the potential for subsidence occurring beneath the site is considered remote. Subsidence related to the extraction of groundwater is considered remote, as groundwater withdrawals have markedly decreased since the 1930s. This reduced pumping was instituted in response to seawater intrusion that had degraded groundwater supplies in the area.[62] Groundwater extraction currently occurring as part of remediation activities within the Proposed Project site and the adjacent Playa Vista First Phase Project site, is not substantial (particularly relative to historical, i.e., pre-1940s, groundwater extraction) and is not anticipated to result in ground subsidence on- or off-site.

In a recent review of survey records (maintained by the City of Los Angeles, Department of Public Works) for the Playa del Rey area, GDC confirmed that subsidence over the last 45 years has been minimal. The records demonstrated that the subsidence in the area between the period from 1955 to 1970 ranged between 0.2 feet and 0.32 feet, which is consistent with the

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[61] *City of Los Angeles, Office of the Chief Legislative Analyst, City Investigation of Potential Issues of Concern for Community Facility District No. 4 Play Vista Development Project, May 2001, Section 3.*

[62] *LeRoy Crandall and Associates, January 3, 1991, op. cit., page 2.10.*

California Division of Oil and Gas Sixtieth Annual Report (1974) indicating a movement of about 0.3 feet during this time period. In 2000, Psomas, a registered survey firm, resurveyed benchmarks that the City of Los Angeles has maintained. This study determined that the subsidence at six benchmark points near the Proposed Project site during the 15-year period from 1985 to 2000 ranges between 0.72 inches and 1.4 inches with an average of 1.02 inches, while the subsidence at eight other benchmarks further east down Jefferson Boulevard during the same period ranges between 0.2 inches and 1.2 inches, with an average of 0.72 inches. The corresponding average subsidence since 1974, a 26-year period, has been 1.6 inches.[63, 64]

To further investigate the issue of regional subsidence, the City of Los Angeles Public Works Department, Bureau of Engineering, Survey Division conducted a survey of areas in, and near, the Proposed Project site. The investigation was conducted as part of a study completed by the City of Los Angeles Office of the Chief Legislative Analyst (CLA) in May 2001. The subsidence evaluation included, but was not limited to, the general area of the Playa del Rey Oil Field. The field investigation included over 50 survey points and review of previous data for those points to determine precise changes in surface elevations between 1985 and 2000. The investigation found elevation changes over this 15-year period to range from –2.66 inches (subsidence) to +0.81 inches (uplift). The conclusion of the investigation was that there is no significant or clearly defined trend of increased subsidence with the Playa del Rey Oil Field or any other specific area; settlement that was observed is localized and may be associated with curb, sidewalk, and gutter settlement along major streets.[65]

Furthermore, GDC assessed the potential for subsidence in response to concerns regarding the operation of dewatering systems for two-level subterranean parking garages and for the methane safety systems to be installed below on-site structures (see Section IV.I, Safety/Risk of Upset, in this EIR, for a description of the methane safety systems). Based on the analysis, GDC concluded that the combined effect of operations of the dewatering systems and the excavation of garages would result in a net heave (ground level rise) of approximately 0.5 inch (see Appendix D-6).

Peat deposits have been known to cause subsidence due to oxidation. Both peat and soft to very soft plastic clays can subside when a surcharge or load is applied or if they are allowed to dry. The potential compression of the peat or plastic clays under load was considered in the

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[63] *Group Delta Consultants, Inc., July 12, 2000, Letter to Playa Capital LLC with the subject of "Subsidence Evaluation Review."*

[64] *Group Delta Consultants, Inc., September 6, 2000, Letter to Playa Capital LLC with the subject of "Response to City of Los Angeles Review Comments, Subsidence Evaluation Review."*

[65] *City of Los Angeles Office of the Chief Legislative Analyst, City Investigation of Potential Issues of Concern for Community Facility District No. 4 Playa Vista Development Project, May 2001.*

various geotechnical investigations, with the conclusion that the Proposed Project site is suitable for development.[66,]

2.2.2.5 Liquefaction Potential

Liquefaction is a process by which saturated clay-free deposits or sediments lose strength and behave as a viscous liquid rather than a solid. When seismic waves or seismic shear waves pass through a loose granular layer of soil, they distort the granular structure, causing the loosely packed groups of grains to collapse. If the grains do not drain during the collapse, the pore-water pressure will increase. If the pore-water pressure approaches the weight of the overlying soil, the granular layer temporarily behaves as a viscous liquid and liquefaction results. Subsidence due to liquefaction can occur if the pressurized water then finds an escape route (usually up to the surface) allowing the soil grains to collapse (taking up less space than before).

The potential for liquefaction depends on several factors, including soil type, particle size and gradation, water level, relative density, confining pressure, intensity of shaking, and duration of shaking. Intensity of shaking and duration of shaking are functions of the maximum anticipated ground accelerations at the site. Potential for subsidence due to liquefaction depends as well upon the overall size of the deposits, especially their thickness, their containment by other non-liquefiable materials, and the potential for the water to escape. Large, loose, poorly contained deposits can show extreme subsidence; whereas, smaller, more compacted, more contained deposits generally show significantly less subsidence. Liquefaction and subsidence potential has generally been found to be greatest where the groundwater level is shallow and loose fine sands occur within a depth of 50 feet or less.

The City of Los Angeles General Plan Safety Element indicates that the Proposed Project site is in an area subject to potential liquefaction. In addition, the State Geologist has zoned parts of Los Angeles County based on their potential for seismically induced liquefaction and landslides. The Proposed Project site is within an official Liquefaction Zone of the Venice 7.5-Minute Quadrangle Seismic Hazard Zones Map. Although this map was originally issued on March 25, 1999, by the State Geologist in compliance with the Seismic Hazards Mapping Act of 1990, an electronic version is maintained and updated on the California Geological Survey website.[67] For both the County and State classifications, site-specific seismic hazard evaluations are required to validate the level of hazard in order to develop appropriate mitigation recommendations. In addition, the City of Los Angeles Department of Building and Safety has

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[66] *LeRoy Crandall and Associates "Geotechnical Studies, Proposed Playa Vista Project Area D, T.T. 49104," for Maguire Thomas Partners, January 3, 1991, page 2.11.*

[67] *California Department of Conservation, California Geological Survey. Seismic Hazard Mapping Program (SHMP) Data Access Page. http://gmw.consrv.ca.gov/shmp/MapProcessor.asp. Accessed February 19, 2003.*

standards to determine the level of mitigation required for specific types of construction projects, based on the results on site-specific liquefaction investigations, which must be carried out by a qualified geotechnical engineer. Such standards establish allowable and unacceptable on-site ground settlements for development projects, depending on the type of occupancy and uses proposed. These standards set forth the rationale for the level of mitigation required to receive approval of grading plans from the Department of Building and Safety. [68]

Throughout the Proposed Project site, localized areas of fine-grained sandy lenses (layers) are found within the upper 30 to 60 feet and could be subject to liquefaction. Under existing soil conditions, a severe earthquake within the Proposed Project vicinity could cause liquefaction of the looser sand and silty sand deposits in the upper 30 to 60 feet. However, the scattered nature (many soil borings exhibit little or no evidence of lenses) and small relative size (up to 5 feet thick in borings) of the lenses would limit the extent of liquefaction.[69] In the event of a severe earthquake on the San Andreas Fault Zone or a moderate earthquake on other nearby capable faults, settlements due to liquefaction in the range of 1 to 2 inches are expected within the Proposed Project site. Such settlement would be localized (i.e., limited to the fine-grained sandy lenses located in shallow groundwater, and not the vast majority of the Proposed Project site), and any effects related to liquefaction can be mitigated by proper engineering design and construction.[70]

2.2.2.6 Lurching

Another geologic (seismic) hazard that was previously investigated within the bluff portion of the Proposed Project is lurching. Lurching is the horizontal movement of soil, located on relatively steep embankments. The movement can cause material to yield in the unsupported direction, forming a series of cracks separating the ground into rough blocks. The Westchester Bluffs (Ballona Escarpment) have been designated as a City of Los Angeles Slope Stability Area. These Bluffs were essentially in their present condition during the 1933 Long Beach and 1857 Fort Tejon earthquakes. If lurching had occurred during these events, the relic blocks would be visible. However, none were found.[71] The natural slope angle of the Bluffs south of

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[68] *Southern California Grading Review Professionals, "Allowable Ground Settlements in Review of Grading Projects," December 2002.*

[69] *LeRoy Crandall and Associates "Geotechnical Studies, Proposed Playa Vista Project Area D, T.T. 49104," for Maguire Thomas Partners, January 3, 1991, page 2.10.*

[70] *LeRoy Crandall and Associates "Geotechnical Studies, Proposed Playa Vista Project Area D, T.T. 49104," for Maguire Thomas Partners, January 3, 1991, page 2.13.*

[71] *LeRoy Crandall and Associates, January 3, 1991, op. cit., page 2.12.*

the Proposed Project site reduces the potential for lurching, according to LeRoy Crandall and Associates.[72]

2.2.2.7 Tsunami and Seiche

The Proposed Project site is located in a very low-lying coastal area and could be subject to inundation by earthquake-generated sea waves known as tsunamis. A tsunami is a long-period wave (usually 15 to 60 minutes) caused by a large-scale movement of the sea floor, from a volcanic eruption, submarine earthquake, or landslide; although usually barely noticeable at sea, its velocity may be as high as 400 knots (approximately 460 miles per hour), so that it travels great distances and in shallow water may reach heights of around 15 meters (approximately 50 feet). The maximum expected run-up from a tsunami wave in the Proposed Project vicinity is 7.9 feet AMSL in a 100-year interval, which is approximately 0.9 feet higher to 16.1 feet lower than the existing elevations within the Proposed Project site.

Locally generated tsunamis have the potential for run-up of an additional two feet,[73] resulting in a maximum run-up of 9.9 feet AMSL. There have been no historical tsunamis generated from local offshore earthquakes from which the potential hazard to the Proposed Project could be more accurately estimated. Although the southwestern portion of the Proposed Project site is 0.9 feet below the predicted maximum run-up of a tsunami and 2.9 feet below the estimated maximum run-off for locally generated tsunamis, it is unlikely that floodwaters would substantially affect the site. This is because Lincoln Boulevard (which will be raised to 11 feet AMSL prior to construction of the Proposed Project), as well as the adjacent Playa Vista First Phase Project structures to the west of the Proposed Project site, would serve as a barrier to inundation that would prevent substantial flooding in low-lying areas on-site. Furthermore, the proximity of the Proposed Project site to major drainage and flood control infrastructure (i.e., Ballona Creek Channel, Centinela Ditch/Riparian Corridor, and various local storm drains) would allow any on-site flooding resulting from a tsunami to drain to the ocean relatively quickly, thereby avoiding long-term flooding on-site.

The City of Los Angeles Flood Hazard Specific Plan (as discussed in the City's Safety Element) sets forth design criteria for development in coastal zones, including increased base building elevations. The City of Los Angeles Department of Building and Safety's Flood Hazard Management Specific Plan Guidelines (Flood Hazard Guidelines) address development requirements for construction within flood risk zones, as delineated in the Los Angeles Flood Hazard Map (LAFHM). The Flood Hazard Guidelines discuss construction limitations in Coastal

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[72] *LeRoy Crandall and Associates, January 3, 1991, op. cit., page 2.12.*

[73] *Latiolat, Tim, Principal Engineer Geologist, LeRoy Crandall and Associates, Telephone Communication, June 19, 1991.*

High-hazard Areas (Zones V and VI-30 on the LAFHM), or areas subject to inundation from tsunamis or other wave action. According to the LAFHM, no portion of the Proposed Project site is within a flood hazard area, as designated by the Federal Emergency Management Agency (FEMA).

USACE is responsible for constructing and maintaining the breakwaters which are designed to mitigate damaging wave action, particularly in harbor areas. The City of Los Angeles Harbor Department (now referred to as "The Port of Los Angeles") works cooperatively with the USACE relative to maintenance and protection of the breakwater facilities. Along with the fire and police departments, it participates in the federal tsunami alert program to warn potentially affected properties and harbor tenants of tsunami threats and to advise them concerning protective response actions. In addition, as discussed above in Subsection 2.1, Regulatory Framework, the County of Los Angeles Office of Emergency Management is in the process of developing a tsunami operations response plan for affected coastal areas within the County (inclusive of incorporated cities and unincorporated County areas), an interim draft of which is currently in place pending completion of the final plan.

Seiches are oscillations in a body of water caused by earthquake shaking. The result of seiching of the existing marina (i.e., Marina del Rey), or various channels (i.e., Ballona Channel and channels within the existing Ballona Wetlands, approximately 1.1 miles west of the Proposed Project site) on or near the Proposed Project site could cause the water level to rise or lower a few inches to a few feet, possibly resulting in limited flooding.

2.2.3 Existing Surface and Subsurface Installations and Uses

Surface and subsurface features have influenced the earth characteristics at the Proposed Project site. These features are discussed in the following subsections. Figure 21 on page 243 illustrates these features.

Easements for a storm drain and the NOS are located along the southern edge of the Proposed Project site. Several structures located within the Proposed Project site were once part of the former Hughes Aircraft Corporation and the former McDonnell Douglas Helicopter Company plant site; two of these structures (Buildings 22 and 45), as well as various other small buildings (sheds and minor storage structures that are located within the former Salvage Yard area), and construction trailers occur within the Proposed Project site. Several utility lines currently traverse the Proposed Project site, including several SCGC lines, LADWP water lines, and telephone lines along Jefferson Boulevard.[74] In addition, there are on-site utilities serving

[74] *Psomas and Associates, "Utility Master Plan, Playa Vista Project" (map), April 5, 1996.*

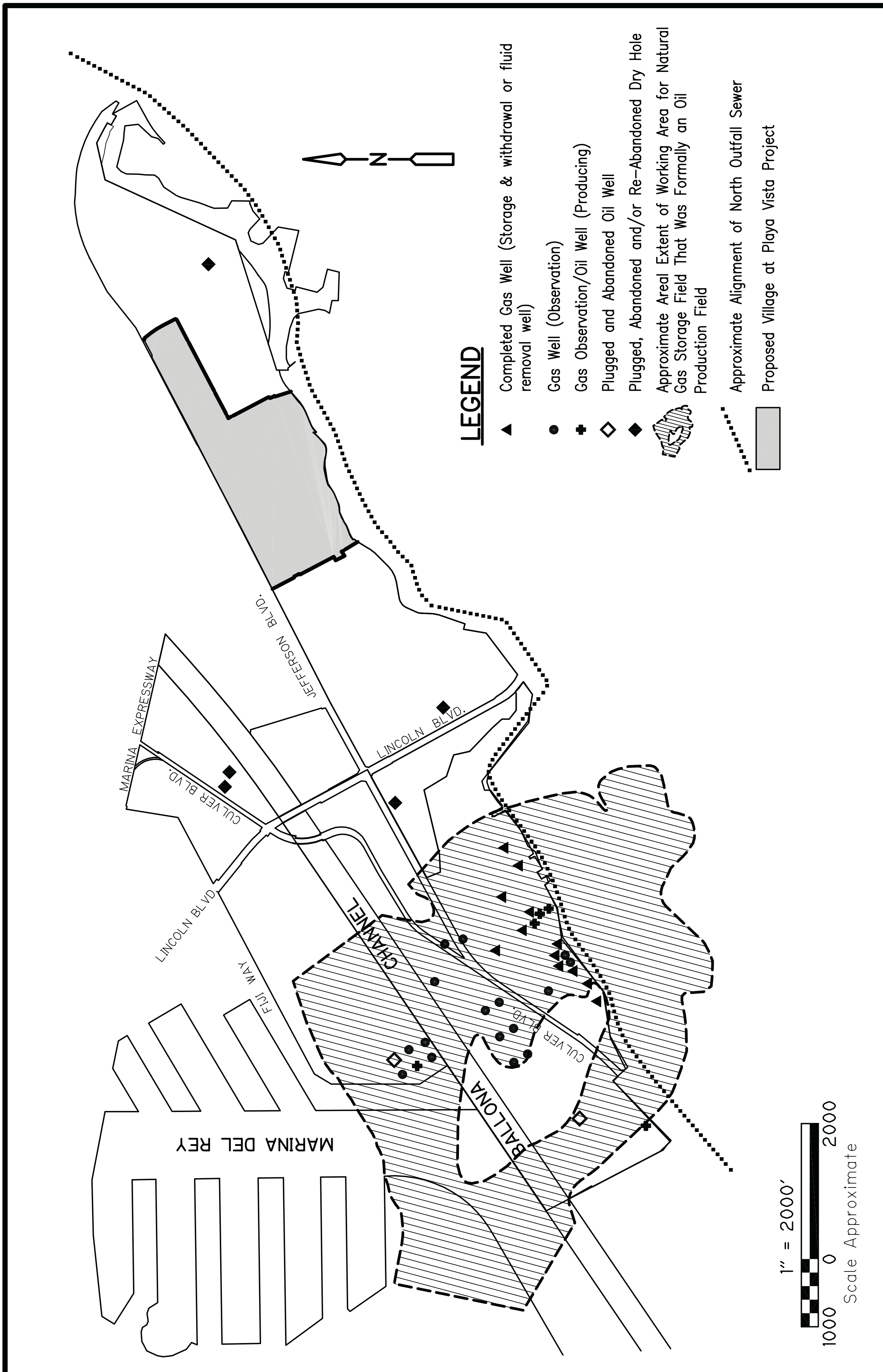


Figure 21
Surface and Subsurface Features in the Vicinity of the Proposed Project Site

the former Plant Site's internal connections. The utilities are reportedly shallow, buried less than five feet below existing grade.

A detailed discussion on energy, water and wastewater infrastructure can be found in Sections IV.M; Energy Consumption; IV.N(1), Water Consumption; and IV.N(2), Wastewater in this EIR.

Historical operations and events on, and adjacent to, the Proposed Project site resulted in potential contamination of soils and groundwater. For a detailed discussion of historical operations adjacent to, and at, the Proposed Project site, and soil and groundwater investigation and remediation, see Section IV.I, Safety/Risk of Upset.

For a description of SCGC's underground natural gas reservoir and various oil and gas wells in the vicinity of the Proposed Project, see Section IV.I, Safety/Risk of Upset.

3.0 IMPACT ANALYSIS

3.1 Methodology

The following evaluation of potential impacts is based upon published geological reports as well as the results of site-specific geotechnical investigations and studies completed for the Proposed Project site. These reports were prepared by geotechnical consulting firms, primarily Law/Crandall Inc. (formerly LeRoy Crandall and Associates), ETI, ECI, and GDC. Geotechnical/geologic reports prepared for, or as otherwise related to, the Proposed Project site, and related correspondence, are included with this document as Appendices D-1 through D-12 and Appendix J-6.

3.2 Significance Thresholds

The Los Angeles CEQA Thresholds Guide addresses impact to earth resources under Section C, Geology. There are four areas of study relative to geology: (1) geologic hazards; (2) sedimentation and erosion; (3) landform alteration; and (4) mineral resources. The first three areas of study are addressed in this section, while the fourth, mineral resources, is addressed in Section IV.H, Mineral Resources, of this EIR.

The Draft Los Angeles CEQA Thresholds Guide (page C.1-4) states that a project would normally have a significant geologic hazard impact if it would:

- Cause or accelerate geologic hazards which would result in substantial damage to structures or infrastructure, or expose people to substantial risk of injury.

The Draft Los Angeles CEQA Thresholds Guide (page C.2-3) states that a project would normally have a significant sedimentation and erosion impact if it would:

- Constitute a geologic hazard to other properties by causing or accelerating instability from erosion; or

- Accelerate natural processes of wind and water erosion and sedimentation, resulting in sediment runoff or deposition which would not be contained or controlled on-site.

Additionally, the Draft Los Angeles CEQA Thresholds Guide (page C.3-2) states that a project would normally have a significant landform alteration impact if:

- One or more distinct and prominent geologic or topographic features would be destroyed, permanently covered or materially and adversely modified. Such features may include, but are not limited to, hilltops, ridges, hill slopes, canyons, ravines, rock outcrops, water bodies, streambeds, and wetlands.

3.3 Project Design Features

Implementation of the Proposed Project would involve grading in order to achieve desired soil conditions and pad elevations within proposed development areas. Engineered fill (i.e., earthen material that meet soils engineering criteria relative to use for development purposes and that is applied in a specific manner) would be used at the Proposed Project site to raise existing elevations of proposed development areas to desired levels (i.e., subterranean parking would be located above groundwater). The placement of fill would also serve to improve, or compensate for, the engineering properties of existing soils on-site. For example, the placement of engineered fill including an additional increment known as “surcharge” (see description below) would result in the consolidation and settlement of compressible natural clays that occur throughout much of the Proposed Project site, consequently providing a more stable base suitable for building foundations.

The grading approach proposed for the Proposed Project would include, where feasible and appropriate, the transfer of excavated materials between development subareas within the Proposed Project site to reduce the import and export needs of the Proposed Project. Additionally, the proposed use of on-site materials for surcharging and backfilling would help reduce the import and export requirements of the Proposed Project. Surcharging involves the placement of extra fill on a proposed development area to use the extra weight of the fill for consolidating and compacting the underlying soils and then, when the desired amount of compaction has occurred, removing the excess materials. Based on the amount of consolidation that occurs, the amount of material removed at the end of the surcharge process would be less than that originally placed.

Backfilling involves mostly the placement and compaction of graded materials around the base of new structures as they are completed. These and other types of measures are proposed to help reduce the overall grading import and export needs of the Proposed Project. Also as part of the grading program, erosion and sedimentation control measures (e.g., Stormwater Pollution Prevention Plan [SWPPP] and Erosion Control Plan) would be implemented during site grading to reduce erosion impacts.

With regard to seismic considerations, all construction proposed in conjunction with the Proposed Project would conform to the requirements of the City Building and Safety Department codes, and the most recent Uniform Building Code, including the provisions related to seismic safety.

Similarly, temporary dewatering activities required during construction would be conducted in accordance with the requirements of the Regional Water Quality Control Board (RWQCB) and would also be subject to the review and approval of the City Building and Safety Department, as appropriate.

3.4 Project Impacts

3.4.1 Urban Development Component

3.4.1.1 Grading

Although the Urban Development Component is relatively flat, grading would be required to accommodate the development proposed. Such grading would include excavation of earthen materials ("cut") and placement of earthen materials ("fill"). Table 8 on page 247 indicates the general nature (i.e., cut and fill) and amount (i.e., cubic yards) of grading associated with the Urban Development Component. It should be noted that the cut and fill quantities indicated in Table 8 on page 247, are general estimates based on approximate existing site elevations and preliminary development plans with assumed building area elevations. In general, development areas would require the addition of fill materials to provide suitable building pad elevations and characteristics (i.e., surcharge of soils to minimize potential subsidence). Portions of the subject fill would subsequently be removed following completion of surcharging and would also be removed in conjunction with building excavation (i.e., development of

Table 8

SUMMARY OF CUT/FILL VOLUMES FOR THE PROPOSED PROJECT
(in Million Cubic Yards)

	Initial Fill	Surcharge Fill	Total Fill	Total Cut	Net Cut/Fill (Export) Import
Urban Development	0.45	0.25	0.70	(0.20)	0.50
Habitat Creation/Restoration	0	0	0	(0.08)	(0.08)
Total	**0.45**	**0.25**	**0.70**	**(0.28)**	**0.42**

Net import of 0.42 mcy would likely occur incrementally throughout the construction period for the Proposed Project.

mcy =million cubic yards

[a] *This column assumes that cut and fill would be balanced on-site to the maximum extent possible. Where the total amount of cut exceeds the total amount of fill, the excess materials would be "export" as shown in parentheses. Where the total amount of cut is less than the amount of fill, the additional material required would be "import."*

Source: Camp Dresser & McKee, Inc., 2003.

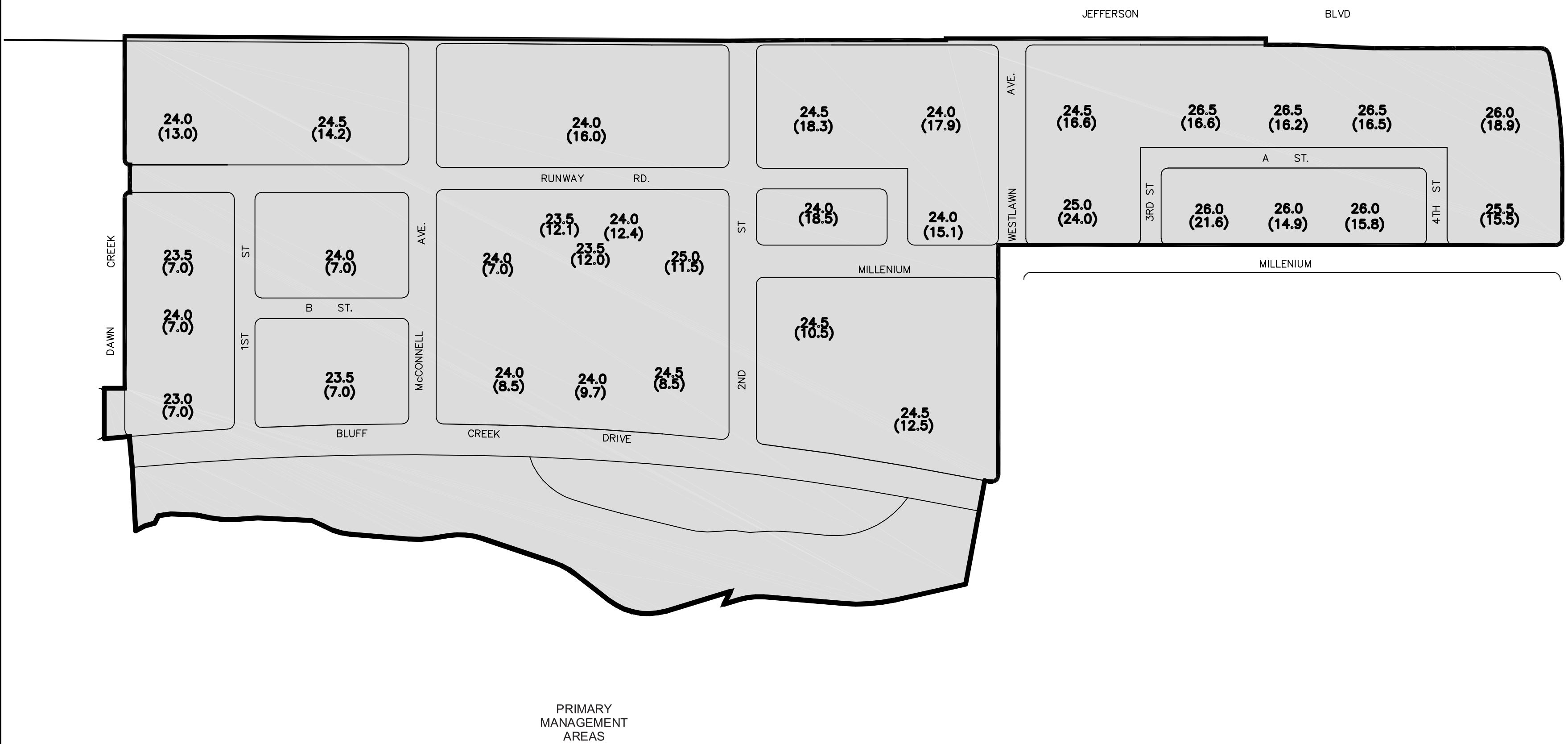
subterranean parking). It should be noted that surcharging is not necessary in all areas, but is an option to aid proper compaction of building pads where appropriate.

Figure 22 on page 248, provides comparisons of existing and proposed surface elevations at various locations within the Urban Development Component.

Excavation and Fill

Excavation (i.e., cut) and fill would be required for the Urban Development Component of the Proposed Project.

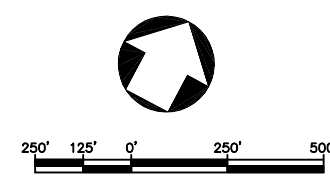
Subterranean (underground) parking for the Proposed Project is anticipated to be predominantly single-level, though in some instances, dual-level parking would be constructed in conjunction with higher density uses. Excavation for subterranean parking would extend down to a maximum of 23 feet below finished pad elevation (as opposed to native grade elevation) for dual-level parking.



LEGEND

18.0 – PROPOSED ELEVATION (IN FEET AMSL)

(12.0) – EXISTING ELEVATION (IN FEET AMSL)



NOTE: BASE MAP AS SHOWN HEREON WAS PREPARED BY PSOMAS. ALL OTHER INFORMATION SHOWN HEREON WAS SUPPLIED BY PLAYA CAPITAL COMPANY.

CDM

Figure 22

Existing and Proposed Ground Elevation

Existing elevations of the Urban Development Component range from a low of 7 feet AMSL to approximately 24 feet AMSL. Proposed building pad elevations would range from 23 feet AMSL to 26.5 feet AMSL. Placement of fill within the Urban Development Component would raise the existing elevations to the desired level. As noted above, the grading approach for the Proposed Project would include, where feasible and appropriate, the transfer of excavated materials between development subareas within the Proposed Project site to reduce the import and export needs of the Proposed Project. As indicated in Table 8, the total amounts of cut and fill associated with the Urban Development Component are approximately 0.20 mcy and 0.70 mcy, respectively. As such, there would be a net deficit of 0.50 mcy of material for the Urban Development Component. A portion (0.08 mcy) of this import need would be provided through grading of the Riparian Corridor (see discussion below) while the remainder would come from off-site areas, which would have to be imported. When import of materials is necessary to meet fill requirements, it is likely that such fill material would originate from within the general Los Angeles metropolitan area. The specific nature and locations of such off-site fill sources would depend largely on the timing and amount of material needed. As the need to import fill occurs, it is anticipated that nearby development projects having excess excavation materials would be evaluated first as potential sources of fill. It is anticipated that such import would occur incrementally over the duration of the Urban Development Component's construction period. Given the types of fill activities that have been successfully completed for similar local development projects, which met the requirements of local grading codes and ordinances, it is anticipated that fill operations for the Proposed Project can be conducted in accordance with applicable codes and ordinances with grading plans to be approved by the City Building and Safety Department. As such, excavation activities would not adversely affect any on-site geologic or topographic features, as no such features exist within the Urban Development Component. Therefore, it is anticipated that a less than significant impact would occur because the proposed grading and excavation activities would not: (1) cause or accelerate geologic hazards which would result in substantial damage to structures or infrastructure, or expose people to substantial risk of injury; and (2) one or more distinct and prominent geologic or topographic features would not be destroyed, permanently covered or materially and adversely modified.

Additionally, major underground utilities (one SCGC line, one LADWP water line, one LADWP power cable, two SCE power cables, and two GTE telephone lines) are located below, or near, several major streets adjacent to the Urban Development Component (i.e., Jefferson Boulevard). These utilities are reportedly shallow, buried less than five feet below the existing grade. In accordance with state requirements and standard construction practices, any grading, excavation, or compaction occurring in proximity to such utilities would be coordinated with the responsible utility company to avoid direct or indirect impacts. Compacted fill would be placed over such existing lines. Settlement of the utilities is expected to be minimal (varying from zero to 1 inch). The engineering, design, and placement of such fill would take into account the potential for settlement and provide the necessary precautions to avoid any damage or weakening of the lines. With adherence to state and local requirements regarding construction activities near utilities, and with coordination/consultation with affected utility agencies, construction within the Urban Development Component would result in a less than significant impact as it would not: (1) cause or accelerate geologic hazards which would result in substantial damage to structures or infrastructure, or expose people to substantial risk of injury; and (2) one or more distinct and prominent geologic or topographic features would not be destroyed, permanently covered or materially and adversely modified. Indirect adverse impacts from grading and excavation activities are addressed in other related sections such as Sections IV.B, Air Quality; IV.P, Cultural Resources; IV.K, Transportation; and IV.D, Biotic Resources, in this EIR.

Grading and excavation within areas having contaminated soils poses the potential to expose workers to health risks. Previously identified contaminated soils in the adjacent Playa Vista First Phase Project site area are currently being remediated. Additional investigations have been conducted within the Proposed Project site in accordance with the requirements of the RWQCB pursuant to Cleanup and Abatement Order No. 98-125. Section IV.I, Safety/Risk of Upset, provides a description of investigations completed at the Proposed Project site related to soils or groundwater contamination and the potential impacts associated with Proposed Project buildout including the potential to expose workers to health risks.

Erosion and Sedimentation

The surface soils of the Proposed Project site are predominately quaternary sands (alluvium), which are subject to erosion. Grading, excavation, and other earth-moving activities in all subareas could potentially result in substantial erosion and sedimentation. As part of the Proposed Project, the Playa Vista Stormwater Pollution Prevention Plan (SWPPP), which was developed for the adjacent Playa Vista First Phase Project, would be modified and updated to address Proposed Project construction. The SWPPP defines temporary BMPs to be implemented in accordance with the General Construction Permit.[75] BMPs deployed during construction include the following categories:

- Drainage Control
- Tracking Controls (from vehicles)

[75] *Requirements for compliance with the state's General Construction Permit, including the need to prepare, maintain, and implement a SWPPP, are described in Water Quality Order 99-08-DWQ and associated fact sheets from the State Water Resources Control Board.*

- Waste Management Practices
- Sediment Controls
- Soil Stabilization (erosion control)
- Management of Pesticides and Fertilizers
- Material Delivery and Storage Controls
- Paving Operations Controls
- Training
- Ponded Water Management
- Vehicle and Equipment Cleaning, Fueling, and Maintenance Controls
- Spill Preventions and Control Procedures
- Contaminated Soil Management
- Measures to Comply with Waste Disposal, Sanitary Sewer, and Septic Regulations
- Concrete and Construction Materials Management
- Wind Erosion Control

The Urban Development Component construction activities would be subject to the requirements of the existing Playa Vista SWPPP, as amended for the Proposed Project, which would adequately address potential water quality impacts associated with general construction activities, as well as for grading. More specifically, the selection and implementation of appropriate BMPs as described in the SWPPP for Playa Vista, and as also reflected in the General Construction Permit for Los Angeles, would specifically address potential construction-related erosion and sedimentation impacts. Erosion/sediment control BMPs can include, as appropriate, measures for: the minimization of disturbed areas; stabilization of disturbed areas through the use of tarps, plastic, vegetation, mulching, geotextiles, etc.; protection of slopes and channels through the use of covering, vegetation, etc.; controlling site perimeter through the use of sandbagging and other diversion techniques; and controlling internal erosion through the use of barriers to slow sediment-laden runoff and/or basins to allow sediment to settle out. Implementation of these and other such measures would enable Proposed Project-related grading, excavation and other earthmoving activities to result in a less than significant impact by not constituting a geologic hazard to other properties by causing or accelerating instability from erosion; or accelerating natural processes of wind and water erosion and sedimentation, resulting in sediment runoff or deposition which would not be contained or controlled on-site. Operation of proposed uses within the Urban Development Component would incorporate stormwater control devices to minimize or avoid erosion and sedimentation on- and off-site. All areas that are not proposed for development of structures would be appropriately landscaped, or otherwise stabilized, in order to reduce the potential for the transport of soil material from the Proposed Project site. Further, stormwater facilities would be designed and constructed to reduce runoff velocities and/or volumes, thereby minimizing the potential for stormwater flows to result in substantial erosion or sedimentation. As such, the Urban Development Component would result in less than significant erosion and sedimentation impacts, since operation of proposed uses would not constitute a geologic hazard to other properties by causing or accelerating instability from erosion, and would not accelerate natural processes of wind and water erosion and sedimentation, resulting in sediment runoff or deposition which would not be contained or controlled on-site. For additional discussion of construction and operational water quality impacts of the Urban Development Component, as relates to erosion and sedimentation, please refer to Section IV.C.(2), Water Quality, in this EIR.

3.4.1.2 Dewatering

Because of the shallow water level conditions that exist throughout the Urban Development Component, dewatering is likely to be required in certain areas requiring subsurface excavation, although this is dependent upon the actual construction techniques employed. Excavation for development of subterranean parking within development areas may also encounter groundwater, particularly for dual-level parking structures which would extend approximately 23 feet below finished pad elevations.

Any dewatering that becomes necessary for development construction on-site would be done in accordance with a dewatering permit obtained from the RWQCB. Prior to initiating any construction dewatering activities that are not included within the scope of the permit provisions, the Applicant/Contractor must update the plans and provisions related to the permit and must notify the RWQCB of any such plan/provisions modifications. The requirements of the dewatering permit include monitoring and reporting of the quantity and quality of dewatering discharge.

Dewatering activities within the Urban Development Component would be coordinated with the existing off-site groundwater remediation program at the former Plant Site, particularly with respect to the potential for construction dewatering to draw from a contaminated groundwater plume.

Construction dewatering in the vicinity of the Proposed Project site has been successfully completed in accordance with RWQCB requirements for a number of years (as part of the adjacent Playa Vista First Phase Project). Accordingly, it is anticipated that construction dewatering for the Urban Development Component can, and will, comply with the applicable regulatory requirements. Permanent, dewatering that may occur as part of the Urban Development Component, such as relates to ongoing groundwater remediation activities and dewatering of subterranean parking structures and for methane safety systems, is not anticipated to be substantial relative to construction dewatering. Furthermore, as discussed above in

Subsection 2.2.2.4, Subsidence, GDC concluded that operation of dewatering systems for subterranean parking and the methane safety systems would not result in any net subsidence at the Proposed Project site. As such, dewatering activities during construction and operation of Urban Development uses are anticipated to result in a less than significant impact since they would not: (1) cause or accelerate geologic hazards which would result in substantial damage to structures or infrastructure, or expose people to substantial risk of injury; (2) constitute a geologic hazard to other properties by causing or accelerating instability from erosion; and (3) accelerate natural processes of wind and water erosion and sedimentation, resulting in sediment runoff or deposition which would not be contained or controlled on-site. For more information on potential impacts resulting from dewatering, please see Section IV.C.(2), Water Quality, and Section IV.I, Safety/Risk of Upset, in this EIR.

3.4.1.3 Subsidence

Although limited subsidence has occurred historically on, or near, property adjacent to the Proposed Project site (i.e., pre-1940, as discussed above in Subsection 2.2.2.4, Subsidence), the subsidence was due directly to the historical withdrawal of subsurface natural (petroleum and groundwater) resources. No significant subsidence has occurred within the last 50 years, and no additional subsidence is anticipated, as no additional subsurface natural resource withdrawal is planned, aside from normal operation of the adjacent natural gas storage reservoir and on-site groundwater remediation. In a recent review of leveling records in the Playa del Rey area, GDC confirmed that subsidence over the last 45 years has been minimal (see description below).[76] In response to comments from the City of Los Angeles Department of Building and Safety regarding their subsidence evaluation report issued during July of 2000, GDC reevaluated subsidence benchmarks (points of reference from which elevation changes may be gauged) and issued a supplementary report in late August of 2000.[77] This report analyzed subsidence on the Proposed Project site and adjacent properties by referencing a benchmark outside the area of potential subsidence, to more accurately estimate the amount of subsidence or heaving (rise) on and around the Proposed Project site. Based on the survey data referenced to the new benchmark, it was concluded that the Proposed Project vicinity has had minor settlement (about 1 inch) during the past 15 years, and 1.67 inches during the past 26 years. This settlement is

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[76] *Group Delta Consultants, Inc., July 12, 2000, Letter to Playa Capital LLC with the subject of "Subsidence Evaluation Review."*

[77] *Group Delta Consultants, Inc., Response to City of Los Angeles Review Comments, Subsidence Evaluation Review, Playa Vista Development, California, August 29, 2000,* and *Earth Consultants International Inc. (ECI), 2000, Geologic Study to Evaluate the Potential for Active Faulting Near the Intersection of Lincoln and Jefferson Boulevards, at the Playa Vista Site, in the City of Los Angeles, CA.*

general settlement over a distance of several miles and has no adverse effect on individual structures. The additional investigation of potential subsidence completed by the City's Bureau of Engineering also found no trend or evidence of notable subsidence in the Proposed Project area. The City's investigation concluded that only localized settlement such as may be associated with curb, sidewalk and gutter settlement along major streets has occurred in the vicinity of the Proposed Project site. Additionally, the GDC analysis concluded that operation of dewatering systems for subterranean parking and the methane safety systems would not result in any net subsidence at the Proposed Project site. Because subsidence is minimal in and around the Proposed Project site, and no significant subsidence is anticipated in the area, development of the Proposed Project uses would not cause or accelerate geological hazards which would result in substantial damage to structures or infrastructure, or expose people to substantial risk of injury. As such, subsidence impacts to or from the Proposed Project would be less than significant.[78]

3.4.1.3 Seismic Hazards

Development of the proposed uses would increase the resident and daytime populations of the Urban Development Component. Such populations would be exposed to the potential for seismic events and associated hazards. Given that all of southern California is subject to seismic events and associated hazards, the potential risk to the resident and daytime populations is not considered to be unique to, or excessive for, the Urban Development Component (please see Subsection 2.2.2.2.4 – Postulated Faults, above). As discussed under Project Design Features, all structures would be designed, located and built in accordance with City Building and Safety Department requirements and the most recent Uniform Building Code. Further, the Proposed Project would not cause or accelerate seismic or geological hazards which would result in substantial damage to structures or infrastructure, and thus seismic and geologic hazards impacts would be less than significant. The following provides the specific information and analysis supporting this conclusion.

Groundshaking and Rupture

The Proposed Project site is not located within the City's Fault Rupture Study Zone. There were no fault or fault-associated features observed on or adjacent to the site during field investigations conducted by LeRoy Crandall and Associates, and recent geotechnical investigations by ECI and Davis and Namson Consulting Geologists found no evidence of

[78] *Group Delta Consultants, Inc., Response to City of Los Angeles Review Comments, Subsidence Evaluation Review, Playa Vista Development, California, August 29, 2000.*

surface or shallow subsurface faulting at the site.[79, 80] The potential for surface rupture within the Proposed Project site is considered extremely low.

Movement on any of the active and potentially active faults previously described in Subsection 2.0, Environmental Setting, could, however, cause ground shaking at the site. In accordance with the City Building and Safety Department's review requirements and/or the UBC, structures would be designed to withstand the effects of an earthquake occurring in the vicinity of the Proposed Project site. Therefore, the risk to Project structures from ground shaking and rupture would be minimized. The groundshaking and fault rupture hazard associated with the Urban Development Component is a less than significant impact, as the Proposed Project would not cause or accelerate groundshaking and fault rupture hazards.

Tsunami and Seiche

As mentioned in Subsection 2.2.2.7 above, the Proposed Project site is located in a very low-lying coastal area and could be subject to inundation by earthquake-generated sea waves known as tsunamis. The maximum expected run up from a tsunami wave in the Proposed Project site is 7.9 feet AMSL in a 100-year interval, which is approximately 0.9 feet higher to 16.1 feet lower than the existing elevations throughout much of the Proposed Project site. Locally generated tsunamis have the potential for run-up of an additional 2 feet resulting in a maximum runup of 9.9 feet AMSL.[81] There have been no historic tsunamis generated from local offshore earthquakes from which the potential hazard to the Proposed Project could be more accurately estimated.

Minimum finished pad and street elevations of the Proposed Project site are generally between 23 and 27 feet AMSL; hence, tsunamis would not significantly affect development within the Proposed Project site. Further, the Proposed Project would comply with any applicable strategic plans developed by the State Office of Emergency Services and the Los Angeles County Office of Emergency Management, as well as the construction limitations contained in the City of Los Angeles Flood Hazard Management Specific Plan Guidelines (as referenced in the City General Plan Safety Element). Tsunami impacts would be less than

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[79] *City of Los Angeles, Draft Program Environmental Impact Report, Master Plan Project for Playa Vista, EIR No. 90-0200-SUB(C)(CUZ)(CUB), September 1992.*

[80] *Davis and Namson Consulting Geologists, An Evaluation of the Subsurface Structure of the Playa Vista Project Site and Adjacent Area, November 2000.*

[81] *Latioloat, Tim, Principal Engineer Geologist, LeRoy Crandall and Associates, Telephone Communication, June 19, 1991.*

significant, as the Proposed Project would not cause or accelerate tsunami hazards, which would not result in substantial damage to structures or infrastructure, or expose people to substantial risk of injury.

Seiches are oscillations in a body of water caused by earthquake shaking. The possibility of seiches occurring in Ballona Channel is considered remote because the height of a seiche is a function of the size of the water body, and the Channel is relatively narrow. The seiche hazard associated with the Proposed Project is minimal due to the distance of the Proposed Project site from the Channel. Thus, seiche impacts would be less than significant as the Proposed Project would not cause or accelerate seiche hazards.

Liquefaction Potential

Throughout the Proposed Project site, localized areas of fine-grained, sandy lenses are found within the upper 30 to 60 feet that are moderately subject to liquefaction. In the event a severe earthquake occurred within the Proposed Project site vicinity, liquefaction of the looser sand and silty sand deposits in the upper 30 to 60 feet could occur. However, the scattered nature (many soil borings exhibit little or no evidence of lenses) and relatively small size (up to 5 feet thick in borings) of the lenses would limit the extent of liquefaction. In the event of a severe earthquake on the San Andreas Fault Zone or a moderate earthquake on the nearby capable faults, settlements due to liquefaction in the range of 1 to 2 inches are expected.[82]

Current seismic codes require dynamic analysis to be performed prior to building design to determine appropriate structural components. Structural components for current projects can include L- and slurry-walls, various types of piles, and increased steel within concrete foundations. New techniques are also available to minimize the possibility of liquefaction within the soil itself, such as stone columns, vibration, and dynamic compaction. On a site-by-site basis and in accordance with all City and other applicable Codes, as described above in Subsection 2.2.2.5, Liquefaction Potential, further soil analyses would be completed in conjunction with building development site engineering to define the appropriate safety standards and measures that will be incorporated into project plans prior to receiving approved grading plans.

In order to avoid possible settlement resulting in structural damage, structures would be designed to resist these effects and/or the underlying soils would be properly prepared. In the application of City structural engineering standards, liquefaction must be considered during

[82] *Leroy Crandall and Associates, "Geotechnical Studies – Proposed Playa Vista Project – Area D, Tentative Tract Map No. 49104," January 3, 1991.*

structural design. Therefore, through compliance with the provisions required by City building and safety codes and by the Uniform Building Code (UBC) a significant impact related to liquefaction is not expected, as the Proposed Project would not cause or accelerate liquefaction hazards which would result in substantial damage to structures or infrastructures, or expose people to substantial risk of injury.

Lurching

With respect to the Urban Development Component's impacts related to lurching, no evidence of potential lurching hazards was found during previous geotechnical investigations, as discussed above in Subsection 2.2.2.6, Lurching. Additionally, the Bluffs are sufficiently remote from the Urban Development Component, and bluff restoration activities (associated with the Habitat Creation/Restoration Component, discussed below) would only occur at the surface such that lurching, if it were ever to occur, would not result in substantial damage to structures or infrastructures, or expose people to substantial risk of injury; therefore, no significant impact is anticipated.

Slope Stability

The southern portion of the Proposed Project site is subject to potential hazards from slope stability associated with the Ballona Escarpment (Westchester Bluffs). However, the areas to be developed with structures as part of the Urban Development Component are not on or near the Escarpment. As such, slope stability impacts pertain almost exclusively to the Habitat Creation/Restoration Component, discussed below.

3.4.2 Habitat Creation/Restoration Component

The following discussion addresses earth impacts as relates to the Habitat Creation/ Restoration Component of the Proposed Project. The only earth impacts that relate to the Habitat Creation/Restoration Component pertain to grading and slope stability; as such, only these topics are addressed below.

3.4.2.1 Grading

Excavation and Fill

Implementation of the Habitat Creation/Restoration Component would require grading activities within the southern portion of the Proposed Project site. Bluff restoration activities would include replacement of non-native vegetation with native species and implementation of erosion control methods (i.e., erosion mat or equivalent), thereby improving the ecological function of the bluff habitat, and no notable grading would be involved. With regard to the Riparian Corridor, the anticipated cut volume associated with excavation of the stream channel, as summarized in Table 8 on page 247, is approximately 80,000 cubic yards (0.08 mcy). Such excavation is minor relative to overall Proposed Project-related grading volumes, and given the Proposed Project's projected deficit of fill materials, this cut volume would be used to supply fill areas within the Urban Development Component. Existing utility easements are located within and adjacent to the Proposed Project site, including an easement for an existing storm drain (Centinela Ditch) and sanitary sewer (NOS) along the southern edge of the Habitat Creation/Restoration area. Compacted fill would be placed over such existing lines. Settlement of the utilities is expected to be minimal, varying from 0 to 1 inch (i.e., utilities buried below compacted fill are expected to settle within trenches as a result of application of such fill materials). However, the engineering, design, and placement of such fill would take into account the potential for settlement and provide the necessary precautions to avoid any damage or weakening of the lines. Also, grading activities would not materially and adversely affect any on-site or nearby off-site geologic or topographic features, such as the Westchester Bluffs or the existing Riparian Corridor. In fact, the excavation of the on-site Riparian Corridor would replace the existing drainage (i.e., the Centinela Ditch), and would improve the health and function of the overall riparian system (i.e., the entire Riparian Corridor, including the new section created under the Habitat Creation/Restoration Component, as well as the existing off-site portion constructed as part of the adjacent Playa Vista First Phase Project). Additionally, the proposed bluff restoration would benefit the health and visual characteristics of the bluffs. Therefore, it is anticipated that grading activities would not cause or accelerate a geologic hazard which would result in substantial damage to structures or infrastructure or expose people to substantial risk of injury. Further, grading activities would not destroy, permanently cover, or materially and adversely modify any distinct and prominent geologic or topographic features. Thus, grading impacts relative to geologic hazards and landform alteration would be less than significant.

Erosion and Sedimentation

As discussed above, the Habitat Creation/Restoration Component would include the creation of a segment of the Riparian Corridor and revegetation of, and application of erosion control measures to, the Westchester Bluffs. Consequently, both the construction of the Riparian Corridor and the stabilization/revegetation of the Bluff surface would serve to reduce erosion and sedimentation on- and off-site. Thus, sedimentation and erosion impacts associated with the Habitat Creation/Restoration Component would be less than significant, as such improvements would not constitute a geologic hazard to other properties by causing or accelerating instability from erosion, and would not accelerate natural processes of wind and water erosion and sedimentation, resulting in sediment runoff or deposition which would not be contained or controlled on-site.

3.4.2.2 Seismic Hazards

Lurching

As discussed above in Subsection 2.2.2.6, Lurching, no evidence of potential lurching hazards was found during previous geotechnical investigations. Additionally, bluff restoration activities associated with the Habitat Creation/Restoration Component would only occur at the surface, and would serve to stabilize the surface of the bluff slope, providing a beneficial impact. Any lurching, if it were ever to occur, would not result in substantial damage to structures or infrastructures, or expose people to substantial risk of injury; therefore, no significant impact is anticipated.

3.4.2.3 Slope Stability

Direct field examination by LeRoy Crandall and Associates revealed that some mass wasting (downward movement of a significant quantity of earth) has occurred in the form of incised erosion gullies at various locations along the Bluffs on- and off-site. The sediments composing the Escarpment to the south of the Proposed Project site are predominantly cohesionless sands, which are highly erodible and subject to gullying if drainage is not properly controlled. However, the soil types present in the Escarpment are not generally susceptible to mud flows.[83]

With development of the Proposed Project's Habitat Creation/Restoration Component, the center segment of the Riparian Corridor (i.e., the segment located between the east and west portions of the adjacent Playa Vista First Phase Project Riparian Corridor improvements) would be completed. As part of that improvement, the Centinela Ditch would be filled, and water flows would be diverted southerly to the newly constructed Riparian Corridor segment near the toe of the Westchester Bluffs. Improvements included in connection with development of this portion of the Riparian Corridor, including energy dissipation structures, trash racks, and revegetation, would reduce the loss of soil from waterborne erosion of the Bluffs during storm events. Such erosion controls minimize the potential for long-term erosional damage to the Bluff face, and

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[83] *LeRoy Crandall and Associates, "Geotechnical Studies, Area D, T.T. 49104," for Maguire Thomas Partners, January 3, 1991, pages 2.12 and 3.9.*

thus reduces the future potential for instability and eventual slope failure. Therefore, a beneficial impact would occur.

There would be no excavation at the base of the Escarpment, except for improvement of the center segment of the Riparian Corridor. The alignment of the Riparian Corridor channel would be such that the toe of the Escarpment would not be disturbed. Channel depths in the center segment would range from 9.2 feet AMSL at the segment's eastern end (adjacent bank elevation of approximately 15 feet AMSL) to 5.2 AMSL at the segment's west end (adjacent bank elevation of approximately 14 feet AMSL). The bottom of the channel, the side slopes, and the area along the toe of the Westchester Bluffs would be revegetated as soon as possible, while avoiding the rainy season or other seasonal restrictions.

The proposed channel of the Riparian Corridor would be set back at least 25 feet from the toe of the Escarpment, or further to the extent necessary to protect the bluffs. No structures are planned for the south side of the Corridor. Also, the Riparian Corridor itself, along with the adjacent linear park and Bluff Creek Drive, would provide additional distance between the bluffs and buildings constructed as part of the Urban Development Component.

Although the Ballona Escarpment is considered to be, overall, grossly stable (i.e., from top of slope to base of slope), some areas on the Escarpment below Cabora Road may be locally unstable. As discussed above, the Riparian Corridor improvements under the Habitat Creation/Restoration Component include removing vegetation on slope areas below Cabora Road, installing an erosion mat (or equivalent), and revegetating the slopes with native plant material. Notwithstanding the erosion correction and control measures that will be implemented, the combination of slope height, steepness, and shape on portions of the slope below Cabora Road have created conditions with the potential for localized slope failure. Consequently, although the bluff would be revegetated and erosion control measures applied, the slope has the potential to fail and adversely impact the Riparian Corridor, and indirectly, the NOS. Therefore, slope stability impacts relative to geologic hazards associated with the Habitat Creation/Restoration Component would be potentially significant, because the Proposed Project could cause or accelerate a geologic hazard which would result in substantial damage to structures or infrastructure or expose people to substantial risk of injury.

Bluff restoration activities and development of the Riparian Corridor would modify the existing landform (geologic and topographic features) of the southern portion of the Proposed Project site. However, such modifications would be beneficial to the existing landform; the Bluffs would be revegetated and erosion-control measures would be applied, but the landform would not be substantially altered in terms of slope or topography, and the Riparian Habitat would be created to improve hydrologic and ecological function (of the entire Riparian Corridor, on- and off-site). As such, implementation of the Habitat Creation/Restoration Component would not destroy, permanently cover, or materially and adversely modify any distinct and prominent geologic or topographic features. No significant adverse slope stability impacts related to landform alteration are anticipated to occur and no mitigation is required.

3.4.3 Summary of Impacts

Grading

Excavation and Fill

Fill and excavation activities during the grading phase of construction would result in a less than significant impact because the proposed grading activities would not cause or accelerate geologic hazards which would result in substantial damage to structures or infrastructure, or expose people to substantial risk of injury, and one or more distinct and prominent geologic or topographic features would not be destroyed, permanently covered or materially and adversely modified.

Erosion and Sedimentation

Grading activities have the potential to result in erosion and sedimentation; however, implementation of BMPs and other erosion and sedimentation control measures would enable Proposed Project-related grading, excavation and other earth-moving activities to avoid a significant impact. As such, construction of Proposed Project components (i.e., the Urban Development and Habitat Creation/Restoration Components) would result in a less than significant impact by not constituting a geologic hazard to other properties by causing or accelerating instability from erosion; or accelerating natural processes of wind and water erosion and sedimentation, resulting in sediment runoff or deposition which would not be contained or controlled on-site. Operation of Proposed Project components would not constitute a geologic hazard to other properties by causing or accelerating instability from erosion, and would not accelerate natural processes of wind and water erosion and sedimentation, resulting in sediment runoff or deposition which would not be contained or controlled on-site. Therefore, operations-related impacts would be less than significant.

Dewatering

Dewatering would be required for the construction and operation of the Urban Development Component. However, dewatering activities during construction and operation of Urban Development uses are anticipated to result in a less than significant impact since they would not: cause or accelerate geologic hazards which would result in substantial damage to structures or infrastructure, or expose people to substantial risk of injury; constitute a geologic hazard to other properties by causing or accelerating instability from erosion; or accelerate natural processes of wind and water erosion and sedimentation, resulting in sediment runoff or deposition which would not be contained or controlled on-site.

Subsidence

Because subsidence is minimal in and around the Proposed Project site, and no significant subsidence is anticipated in the area (i.e., from dewatering activities during construction and operation of proposed uses), development of the Proposed Project components would not cause or accelerate geological hazards which would result in substantial damage to structures or infrastructure, or expose people to substantial risk of injury. As such, subsidence impacts to or from the Proposed Project would be less than significant.

Seismic Hazards

Groundshaking and Rupture

Although the Proposed Project site is located within a region subject to seismic events, development of the Proposed Project is not expected to expose people or structures associated with the Urban Development Component to a higher level of risk from groundshaking or surface rupture than would otherwise occur in other parts of the region. As such, the groundshaking and fault rupture hazard associated with the Urban Development Component is a less than significant impact, as the Proposed Project would not cause or accelerate groundshaking and fault rupture hazards.

Tsunami and Seiche

The Proposed Project site is not expected to be affected by seiching, and the site is not located in a flood hazard zone on the applicable flood hazard map (such as would be subject to tsunami-related flooding). Consequently, impacts would be less than significant, as the Proposed

Project would not cause or accelerate tsunami or seiche hazards, which would not result in substantial damage to structures or infrastructure, or expose people to substantial risk of injury.

Liquefaction Potential

Although the Proposed Project site is located in a potentially liquefiable area, on-site geotechnical investigations have concluded that the potential for adverse effects from liquefaction is minimal, given the thickness and distribution of liquefiable soils on-site. As such, given compliance with the provisions required by City building and safety codes and by the Uniform Building Code (UBC), a significant impact related to liquefaction is not expected, as the Proposed Project would not cause or accelerate liquefaction hazards which would result in substantial damage to structures or infrastructures, or expose people to substantial risk of injury.

Lurching

The Bluffs are sufficiently remote from the Urban Development Component, and bluff restoration under the Habitat Creation/Restoration Component would only be at the surface such that lurching, if it ever did occur, would not result in substantial damage to structures or infrastructures, or expose people to substantial risk of injury; therefore, no significant impact is anticipated.

Slope Stability

The Urban Development Component would not have the potential to affect slope stability, or be affected by slope failure. However, the Habitat Creation/Restoration Component could have the potential to affect, or be affected by, unstable slopes. Therefore, the Habitat Creation/Restoration Component would result in a potentially significant impact, since the Proposed Project could cause or accelerate a geologic hazard which would result in substantial damage to structures or infrastructure, or expose people to substantial risk of injury, and slope failure could destroy, permanently cover, or materially and adversely modify a distinct and prominent geologic or topographic feature (i.e., the Riparian Corridor).

3.4.4 Equivalency Program Impacts

The preceding earth resources analysis addressed impacts associated with construction and operation of the Proposed Project relative to the following issues: (1) grading (excavation/ fill and erosion/sedimentation); (2) dewatering; (3) subsidence; (4) seismic hazards (groundshaking and rupture, tsunami and seiche, liquefaction, slope, and lurching); and (5) slope stability. The proposed Equivalency Program allows for specific limited exchanges in the types of land uses occurring within the Project's Urban Development Component. No changes are proposed under the Equivalency Program to the Project's Habitat Creation/Restoration Component.

The exchange of office uses for retail and/or assisted living units would be accomplished within the same building parameters, and would occur at relatively limited locations within the Project site. Furthermore, under the Equivalency Program, there would be no substantial variation in the Project's street configurations, building pad elevations, or the depth of excavation. Potential changes in land use under the Equivalency Program would therefore have no substantial effect on the proposed earth moving activities and their associated impacts because only the use is changing. Specifically, the grading, dewatering and slope stabilization required for Project development would be the same under the Equivalency Program, as well as the on-site exposure to seismic hazards. Very minor variations regarding foundation types or in the preparation of landscaping areas could occur, however such variation would be within the range of construction procedures anticipated to occur with the Proposed Project. In addition, development under the Equivalency Program would not cause or exacerbate any impacts that would occur under the Proposed Project.

All Project Design Features (as discussed in Subsection 3.3 above) and/or recommended mitigation measures (discussed in Subsection 4.0, Mitigation Measures, below) to minimize earth resources impacts under the Proposed Project would be implemented, as appropriate, under the Equivalency Program. Implementation of the Equivalency Program would therefore not cause or accelerate geologic hazards which would result in substantial damage to structures, or infrastructure; expose people to substantial risk of injury; constitute a geologic hazard to other properties by causing or accelerating instability from erosion; accelerate natural processes of wind and water erosion and sedimentation, resulting in sediment runoff or deposition which would not be contained or controlled on-site; or destroy, permanently cover or materially and adversely modify one or more distinct and prominent geologic or topographic features. Consequently, with implementation of applicable mitigation measures (discussed below), earth resources impacts attributable to the Equivalency Program, as is the case with the Proposed Project, would be less than significant.

3.4.5 Impacts of Off-Site Improvements

Proposed Project development could result in secondary impacts arising from implementation of the Project's mitigation measures, as well as the direct impacts described above. Mitigation measures within Section IV.K.(1), Traffic and Circulation, require physical improvements in transportation facilities at numerous locations including roadway widening at seven locations, as described in Subsection 5.8 of that Section. In addition, as discussed in Section IV.N.(1), Water Consumption, the Proposed Project would require the construction of a water regulator station in the vicinity of Jefferson Boulevard and Mesmer Avenue. These off-site improvements are all located in developed urban areas. All of the off-site improvements, with the exception of the water regulator station, would occur within, or adjacent to, existing roadways. The water regulator station includes a small amount of above-ground piping equipment, a common element of the urban environment. Implementation of the Project's mitigation measures does not involve the construction of any buildings.

Due to the fact that the off-site roadway improvements occur along existing transportation corridors, the impacted areas have been previously graded. The road widenings would not be substantial enough as to induce unstable earth conditions or change geologic substructures. Intersection improvements would generally involve very limited, if any, grading or excavation (e.g., for overhead signal footings). Since the Centinela Avenue corridor has been graded and constructed on properly engineered fill materials, and the road improvements (i.e., widening) would apply appropriate design and engineering standards to construction, the potential for soil instability associated with the corridor and intersection improvements is considered very low. There is a potential for wind or waterborne soil erosion, and its resulting sedimentation, to occur during construction. However, all grading will be accomplished in accordance with an Erosion Control Plan to be prepared for each improvement, which would be approved by the City, County or State agency having jurisdiction. Mitigation Measures are proposed in the water resources analysis (Section IV.C.(2), Water Quality) to control such effects.

As discussed above, the proposed intersection and roadway improvements would occur on existing public streets, which have been previously graded, and would entail very limited (if any) excavation for the placement of substructures and/or roadbed materials. Due to the limited excavation required to construct the proposed improvements (where applicable), the potential for dewatering, and associated subsidence, is considered negligible.

The proposed off-site improvements are located in the seismically active region of Southern California. Several active and potentially active faults have been mapped in the general vicinity of the off-site improvements; hence, there are potential impacts associated with seismic hazards. However, given the nature of the proposed improvements (i.e., signalization and widening of existing intersections and roadway corridors), residents and employees in the vicinity would not be exposed to any greater seismic risk than is currently experienced, and the improvements would not add residents or employees to the area that would be exposed to such risk. Some of the proposed improvements are located within an area that is potentially susceptible to tsunamis. However, given the nature of the proposed intersection and roadway improvements, tsunamis are not expected to substantially affect the improvements or expose nearby residents to increased risk. As mentioned above, the improvements would occur on previously graded street rights-of-way and adjacent areas, which were designed and built to meet proper engineering standards. As such, with the incorporation of properly engineered fill materials, the potential for liquefaction impacts is considered remote.

With regard to lurching and other slope stability impacts, all of the proposed roadway widenings would occur on flat terrain. They would involve minor/surficial excavation in previously paved areas and would not increase the potential for ground or slope failure. As such, there would be no potential for lurching or landslides to occur.

In summary, the proposed off-site mitigation improvements would not cause or accelerate geologic hazards which would result in substantial damage to structures or infrastructure, or expose people to substantial risk of injury; constitute a geologic hazard to other properties by causing or accelerating instability from erosion; accelerate natural processes of wind and water erosion and sedimentation, resulting in sediment runoff or deposition which would not be contained or controlled on-site; and would not destroy, permanently cover, or materially and adversely modify one or more distinct and prominent geologic or topographic features (including, but not limited to, hilltops, ridges, hill slopes, canyons, ravines, rock outcrops, water bodies, streambeds, and wetlands). As such impacts to earth resources from implementation of the proposed off-site improvements would be less than significant.

4.0 MITIGATION MEASURES

Mitigation Measures for the Proposed Project and the Equivalency Program

Slope Stability

- Prior to completion of the Riparian Corridor, the slope stability remedial measures shall be implemented as appropriate for the areas of potential instability below Cabora Road in accordance with the Group Delta Consultants (GDC) bluff stabilization final assessment report dated December 3, 2001 and approved by the City of Los Angeles Department of Public Works on February 19, 2002. Identification of areas having the potential for slope stability problems is shown in the GDC report and completion of the appropriate mitigation (slope stability remedial) measures shall be subject to approval of the Department of Public Works.

Completion of the slope repair shall be monitored by a qualified engineer subject to approval of the City of Los Angeles Department of Public Works.

In accordance with the recommendations of the GDC report, the following slope repair methods would be employed as appropriate to minimize the potential for slope failures in areas of potential instability. The applicable locations of each repair type is shown within the GDC report, and that same information is also shown on Figure 20 on page 236 of this EIR.

Type 1: Full Slope Height Fill – The affected portions of the slope would be cut back in benches, a minimum of one equipment width into dense native soil with a 2-foot deep key at the toe. The removed material would be replaced with material having a minimum cohesion of 200 pounds per square foot (psf) and effective angle of internal friction of 30°, with a slope grade of 1.5:1 (H:V).

Type 2: Partial Slope Height Fill – A portion of the slope height would be cut back into dense native soil and filled with material having a minimum cohesion of 200 psf and effective angle of internal friction of 30°, in 2-foot lifts of 8-inches or less in thickness. The slope grade would match the surrounding grade of 1.5:1 (H:V) or flatter.

- A soil erosion resistant matting shall be used in the Proposed Project site for the portion of the slope below Cabora Road to reduce the accumulation of soil debris.

- Permanent erosion control features (i.e., rip-rap, concrete steps, stones) shall be installed at all stormwater discharge points within the southern portion of the Proposed Project site in a manner satisfactory to the City of Los Angeles' Department of Building and Safety and/or Department of Public Works, as appropriate.

Other

- All dewatering shall be conducted in accordance with the requirements of dewatering permits obtained from the Regional Water Quality Control Board. Prior to initiating any construction dewatering activities that are not included within the scope of permit provisions, the Applicant/Contractor must update the plans and provisions related to the permit and must notify the Regional Water Quality Control Board of any such plan/provision modifications.

- Prior to the issuance of grading permits for initial site preparation, a pest control firm shall be retained to conduct and implement a rodent control program to prevent the migration of rodents or pest to neighboring properties. The rodent control program shall comply with all applicable local, state, and federal regulations. Evidence shall be provided to the advisory agency prior to the issuance of any permit that this provision has been satisfied.

5.0 UNAVOIDABLE ADVERSE IMPACTS

Implementation of the Proposed Project would not result in any significant impacts due to the implementation of mitigation measures and Project Design Features, as discussed previously. Specifically, the Urban Development Component would not cause or accelerate geologic hazards which would result in substantial damage to structures, or infrastructure, or expose people to substantial risk of injury. Although the Habitat Creation/Restoration Component has the potential for significant impacts relative to slope stability, with implementation of slope repair mitigation measures, the Habitat Creation/Restoration Component would not cause or accelerate geologic hazards which would result in substantial damage to structures, or infrastructure, or expose people to substantial risk of injury. Therefore, slope stability impacts as pertains to geologic hazards for the Proposed Project, Equivalency Program, and off-site improvements would be less than significant. With adherence to the provisions of the Playa Vista SWPPP and applicable BMPs, construction and operation of the Urban Development and Habitat Creation/Restoration Components, including the Project's Equivalency Program and off-site improvements, would not constitute a geologic hazard to other properties by causing or accelerating instability from erosion or accelerate the natural processes of wind and water erosion sedimentation, resulting in sediment runoff or deposition which would not be contained or controlled on-site. Erosion and sedimentation impacts would be less than significant. Additionally, the Project's Urban Development Component, Equivalency Program, and off-site improvements would not destroy, permanently cover, or materially and adversely modify any distinct and prominent geologic or topographic features. The Project's Habitat Creation/ Restoration Component, however, has the potential to affect, or be affected by, slope stability impacts, including slope failure. Such impacts could have the potential to destroy, permanently cover, or materially and adversely modify a distinct and prominent geologic or topographic feature (e.g., the Bluffs or off-site Riparian Corridor). Implementation of applicable mitigation measures relative to slope stability would minimize the potential for slope failure, and would thus reduce slope stability impacts associated with the Habitat Creation/Restoration Component to a level less than significant. In summary, with implementation of applicable mitigation measures, no unavoidable adverse impacts with respect to earth resources are anticipated to occur.

6.0 CUMULATIVE IMPACTS

For the most part, aside from the Project's off-site improvements, the earth resources impacts of the Proposed Project and the Project's Equivalency Program would be unique to the Proposed Project site, not leading to cumulative effects in conjunction with related projects. The only other development of note in close proximity to the Proposed Project would be the previously approved Playa Vista First Phase Project, which is adjacent to the east and west of the Proposed Project site. Because the Proposed Project site and the adjacent Playa Vista First Phase Project site are adjacent, the two projects' combined earth impacts may be evaluated relative to cumulative effects. The adjacent Playa Vista First Phase Project, currently under construction, is not anticipated to result in significant earth resources impacts, and BMPs and Project Design Features are being employed to minimize the potential for impacts from geologic hazards, erosion and sedimentation, and landform alteration. Such BMPs and design features would also be applied during implementation of the Proposed Project and the Project's Equivalency Program. As such, the Proposed Project and the adjacent Playa Vista First Phase Project, considered cumulatively, would not cause or accelerate geologic hazards which would result in substantial damage to structures or infrastructure, or expose people to substantial risk of injury; constitute a geologic hazard to other properties by causing or accelerating instability from erosion; accelerate natural processes of wind and water erosion and sedimentation, resulting in sediment runoff or deposition which would not be contained or controlled on-site; or destroy, permanently cover, or materially and adversely modify one or more distinct and prominent geologic or topographic features. Therefore, cumulative earth resources impacts of the Proposed Project, including the Equivalency Program, and the adjacent Playa Vista First Phase Project would be less than significant.

The Project's off-site improvements would occur at various locations within the Proposed Project vicinity. The off-site improvements would result in limited, temporary impacts to earth resources at the affected location(s) in which construction of the improvements is occurring. It is assumed that these improvements would be phased or constructed at a sufficient distance from one another such that the potential for cumulative earth resources effects would be avoided. Given the relatively limited ground disturbance and the overall nature of the off-site improvements, the cumulative impacts to earth resources from implementation of the Project's off-site improvements would be considered less than significant.

IV. ENVIRONMENTAL IMPACT ANALYSIS
B. AIR QUALITY

1.0 INTRODUCTION

This section addresses the potential impacts on air quality from air pollutants generated by the Proposed Project. The analysis evaluates air emissions attributable to the Project's construction and post-construction (e.g., operational) activities. Construction-related activities, which generate various pollutants include site preparation, travel by construction workers to and from the site, delivery and hauling of construction materials to and from the site, fuel combustion by on-site construction equipment, and the application of architectural coatings and other building materials that release pollutants. Types of activities addressed in the post-construction analysis include the consumption of electricity and gas for site activity and the operation of on-road vehicles. Miscellaneous area sources were also considered in the operations analysis, including among other sources, consumer/commercial solvent usage, landscaping equipment, architectural and automotive coatings, restaurant charbroilers, forklifts, and emergency generators.

The analysis addresses the impacts that would occur for the Project as Proposed, for the Project's Equivalency Program and for the Project's secondary impacts that would occur from the implementation of the Project's off-site mitigation measures.

2.0 SETTING

2.1 Regulatory Framework

A number of statutes, regulations, plans and policies have been adopted which address air quality concerns. The Project site and vicinity is subject to air quality regulations developed and implemented at the Federal, State and local levels. At the Federal level, the United States Environmental Protection Agency (USEPA) is responsible for implementation of the Federal Clean Air Act (CAA). Some portions of the CAA (e.g., certain mobile source requirements and other requirements) are implemented directly by USEPA. Other portions of the CAA (e.g., stationary source requirements) are implemented through delegation of authority to State and local agencies.

2.1.1 Federal Level

2.1.1.1 Federal Clean Air Act

The CAA was first enacted in 1955 and has been amended numerous times in subsequent years (1963, 1965, 1967, 1970, 1977 and 1990). The CAA establishes federal air quality standards, known as National Ambient Air Quality Standards (NAAQS) and specifies future dates for achieving compliance. The CAA also mandates that the state submit and implement the State Implementation Plan (SIP) for local areas not meeting these standards. These plans must include pollution control measures that demonstrate how the standards will be met. The City of Los Angeles is included in the South Coast Air Basin (Basin), which was designated a non-attainment area for certain pollutants that are regulated under the CAA. By a separate state statute, the SCAQMD was established as the local air pollution control agency for the Basin.

The 1990 Amendments to the CAA identify specific emission reduction goals for areas not meeting the NAAQS. These amendments require both a demonstration of reasonable further progress toward attainment and incorporation of additional sanctions for failure to attain or to meet interim milestones. The sections of the CAA which would most substantially affect the development of the Proposed Project include Title I (Nonattainment Provisions) and Title II (Mobile Source Provisions).

Title I provisions were established with the goal of attaining the NAAQS for the following criteria pollutants: (1) Ozone (O_3); (2) Nitrogen Dioxide (NO_2); (3) Sulfur Dioxide (SO_2); (4) Particulate Matter (PM_{10}); (5) Carbon Monoxide (CO); and (6) Lead (Pb). Table 9 on pages 272 and 273 shows the NAAQS currently in effect for criteria pollutants. The NAAQS were amended in July 1997 to include an additional standard for ozone and to adopt a NAAQS for $PM_{2.5}$. The CAA sets certain deadlines for meeting the NAAQS within the Basin including: (1) Ozone by the year 2010; (2) PM_{10} by the year 2006; and (3) CO by the year 2000.

The Basin fails to meet national standards for O_3, CO, and PM_{10} and therefore is considered a federal "non-attainment" area for these pollutants. Nonattainment designations are categorized into four levels of severity: (1) moderate, (2) serious, (3) severe and (4) extreme. Table 10 on page 274 lists the criteria pollutants and their relative attainment status.

Mobile source emissions are regulated in accordance with Title II provisions. These provisions require use of cleaner burning gasoline, and other cleaner burning fuels such as

Table 9

AMBIENT AIR QUALITY STANDARDS[a]

Pollutant	Averaging Time	California Standard[b]	Federal Primary Standard[b]	Pollutant Health and Atmospheric Effects	Major Pollutant Sources
Ozone (O_3)[c]	1 hour	0.09 ppm	0.12 ppm	High concentrations can directly affect lungs, causing irritation. Long-term exposure may cause damage to lung tissue.	Motor vehicles.
	8 hours	—	0.08 ppm		
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Classified as a chemical asphyxiant, CO interferes with the transfer of fresh oxygen to the blood and deprives sensitive tissues of oxygen.	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm		
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	—	0.05 ppm	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown.	Motor vehicles, petroleum refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.25 ppm			
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	—	0.03 ppm	Irritates upper respiratory tract; injurious to lung tissue. Can yellow the leaves of plants, destructive to marble, iron, and steel. Limits visibility and reduces sunlight.	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm			
	24 hours	0.04 ppm	0.14 ppm		
Particulate Matter (PM_{10})	Annual Geometric Mean	20 mg/m^3	—	May irritate eyes and respiratory tract. Absorbs sunlight, reducing amount of solar energy reaching the earth. Produces haze and limits visibility.	Dust and fume-producing industrial and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 Hours	50 mg/m^3	150 mg/m^3		
	Annual Arithmetic Mean	—	50 mg/m^3		
Particulate Matter ($PM_{2.5}$)[d]	Annual Geometric Mean	12 mg/m^3	15 mg/m^3	Increases respiratory disease, lung damage, cancer, premature death; reduced visibility; surface soiling.	Fuel combustion in motor vehicles, equipment, and industrial sources; residential and agricultural burning. Also formed from reaction of other pollutants (acid rain, NO_X, SO_X, organics).
	24 Hours	—	65 mg/m^3		

Table 9 (Continued)

AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standard [b]	Federal Primary Standard [b]	Pollutant Health and Atmospheric Effects	Major Pollutant Sources
Lead	Monthly	1.5 ug/m^3	—	Disturbs gastrointestinal system, and causes anemia, kidney disease, and neuromuscular and neurologic dysfunction (in severe cases).	Lead smelters, battery manufacturing & recycling facilities.
	Quarterly	—	1.5 ug/m^3		
Sulfates (SO_4)	24 hours	25 ug/m^3	—	Decrease in ventilatory functions; aggravation of asthmatic symptoms; aggravation of cardio-pulmonary disease; vegetation damage; degradation of visibility; property damage.	Coal or oil burning power plants and industries, refineries, diesel engines.

[a] *Ambient air quality standards are set at levels which provide a reasonable margin of safety and protect the health of the most sensitive individual in the population.*
[b] *ppm = parts per million and µg/m^3 = micrograms per cubic meter.*
[c] *Ozone is formed when NO_X and ROC react in the presence of sunlight. There are no air quality standards for ROC. However, ROC is recognized as a pollutant of concern as it is a precursor to the formation of ozone.*
[d] *A Federal air quality standard for $PM_{2.5}$ was adopted in 1997. Presently, no methodologies for determining impacts relating to $PM_{2.5}$ have been developed. In addition, no strategies or mitigation programs for this pollutant have been developed or adopted by federal, state, or regional agencies.*

Source: California Air Resources Board, Ambient Air Quality Standards*, 2003 and the USEPA, 2003.*

methanol and natural gas. Manufacturers of on-road and off-road engines are also required to reduce tailpipe emissions of hydrocarbons, and NO_X.[84]

In addition, other CAA requirements, including Title V, which requires facility-wide permits for "major stationary sources," may be applicable to the Project. Regulatory standards to meet the requirements of Title V have been adopted by the SCAQMD and are set forth in SCAQMD Regulation XXX.

[84] *NO_X is a collective term which includes all forms of nitrogen oxides (NO, NO_2, NO_3) which are emitted as by-products of the combustion process. However, since most of these chemicals eventually convert to NO_2 in the atmosphere, all NO_X emissions are conservatively reported as the criteria pollutant NO_2.*

Table 10

SOUTH COAST AIR BASIN ATTAINMENT STATUS

Pollutant	National Standards	California Standards
Ozone (O_3)	Extreme	Extreme
Carbon Monoxide (CO)	Serious	Serious
Sulfur Dioxide (SO_2)	Attainment [a]	Attainment [a]
Nitrogen Dioxide (NO_2)	Maintenance [b]	Maintenance [b]
PM_{10}	Serious	Serious
$PM_{2.5}$	Pending [c]	Pending [c]

[a] *An air basin is designated as being in attainment for a pollutant if the standard for that pollutant was not violated at any site in the air basin (e.g., South Coast Air Basin) during a three-year period.*
[b] *The Basin has recently been in attainment for NO_2 but must maintain NO_2 concentration below the Federal standard for the next 10 years.*
[c] *Attainment status with respect to the national and State $PM_{2.5}$ standard will not be determined until later in 2003.*

Source: PCR Services Corporation, 2003.

2.1.1.2 United States Environmental Protection Agency (USEPA)

The USEPA administers the CAA and other Federal air quality legislation. As a regulatory agency, USEPA's principal functions include the following: setting NAAQS; preparing guidance for and approval of SIPs to attain or maintain these standards; establishing federal emission limits for major sources of air emissions; conducting research and developing standard methods for measuring air emissions; inspecting and monitoring emission sources; enforcing Federal air quality laws, and promulgating new regulations, and providing financial and technical support for air quality research and development programs. The USEPA also administers Federal conformity rules and regulations.

2.1.2 State Level

2.1.2.1 California Clean Air Act (CCAA)

The CCAA, signed into law in September 1988, sets air quality standards in the State of California that are generally more stringent than the corresponding Federal requirements. The CCAA requires all areas of the State to achieve and maintain the California Ambient Air Quality Standards (CAAQS) by the earliest practicable date. California has also set standards for $PM_{2.5}$, sulfates, hydrogen sulfide, vinyl chloride and visibility-reducing particles. Table 9 on pages 272 and 273 also shows the CAAQS currently in effect for criteria pollutants.

Air pollution from commercial and industrial facilities is regulated by local air quality management districts. All air pollution control districts have been formally designated as attainment or nonattainment for each CAAQS. Table 10 on page 274 lists the criteria pollutants and their relative attainment status.

Serious or worse nonattainment areas are required to prepare air quality management plans to include specified emission reduction strategies in an effort to meet clean air goals. The requirements include:

- Application of Best Available Retrofit Control Technology to all existing sources.
- Development of control programs for area sources (e.g., architectural coatings and solvents), and indirect sources (e.g., motor vehicle use generated by residential and commercial development).
- A District permitting system designed to allow no net increase in emissions from any new or modified emission sources.
- Implementation of reasonably available transportation control measures, and assurance of a substantial reduction in the growth rate of vehicle trips and miles traveled.
- Use of low emission vehicles by fleet operations.
- Sufficient control strategies to achieve a 5 percent or more annual reduction in emissions (or 15 percent or more in a three-year period) for Reactive Organic Compounds (ROC), NO_X, CO, and PM_{10}. However, air basins may use an alternative emission reduction strategy which achieves a reduction of less than 5 percent per year under certain circumstances; and
- Demonstrating compliance with the California Air Resources Board's established reporting periods for compliance with air quality goals. A 7-year initial reporting period from January 1, 1988, to December 31, 1994, was established. Subsequent reporting periods occur every 3 years (i.e., 1997, 2000, etc.). The 1991 Air Quality Management Plan (AQMP) sought to achieve a 35 percent emissions reduction for the initial 3-year period, followed by a 15 percent reduction in emissions within each subsequent 3-year period.

2.1.2.2 State Regulatory Agencies – California Air Resources Board (CARB)

At the State level, the California Air Resources Board (CARB) is responsible for implementation of the CCAA. The CCAA sets forth requirements that apply to emission sources in the State in addition to the CAA. Some portions of the CCAA (e.g., mobile source and consumer product requirements) are implemented directly by CARB. Other portions (e.g., stationary source requirements) are implemented through delegation of authority to local and regional agencies.

The CARB is the State agency responsible for the coordination and administration of both state and federal air pollution control programs within California. The CARB undertakes research, sets CAAQS, provides technical assistance to local Air Quality Management Districts (AQMDs) and Air Pollution Control Districts (APCDs), compiles emission inventories, develops suggested control measures and provides oversight of local programs.

A key function of the CARB is to coordinate and guide regional and local air quality planning efforts required by the CCAA and to prepare and submit the State Implementation Plan (SIP) to the USEPA. The California SIP is comprised of plans developed at the regional or local level. Each of these plans is reviewed and approved by the USEPA prior to incorporation into the SIP. The CARB also establishes emission standards for motor vehicles. The CAA allows California to adopt more stringent vehicle emission standards than the rest of the nation due to the state's severe O_3 non-attainment status.

2.1.3 Regional Level

2.1.3.1 South Coast Air Quality Management District (SCAQMD)

The SCAQMD has jurisdiction over an area of approximately 10,743 square miles, consisting of the four-county Basin, which includes: Orange County and the non-desert portions of Los Angeles, Riverside and San Bernardino counties, and the Riverside County portions of the Salton Sea Air Basin (SSAB) and Mojave Desert Air Basin (MDAB). While air quality in this area has improved, with 2001 (the latest year for which comprehensive data are available) registering some of the lowest levels of air pollutant concentrations in decades, the Basin requires continued diligence to meet air quality standards.

The SCAQMD has adopted a series of Air Quality Management Plans (AQMP) to meet the CAAQS and NAAQS. The 1997 AQMP, the currently adopted plan, was amended in 1999 and was resubmitted to the USEPA, which approved the amended plan in April 2000. The Amendment provides additional short-term stationary source control measures that implement portions of the 1997 Ozone State Implementation Plan's (SIP) long-term stationary source control measures. In addition, the Amendment revised the adoption and implementation schedule for the remaining 1997 Ozone SIP short-term stationary source control measures that the SCAQMD is responsible to implement.

The currently adopted plan describes a comprehensive air pollution control program focused on attaining the CAAQS and NAAQS in the South Coast Air Basin and those portions of the MDAB that are under the jurisdiction of the SCAQMD. In relation to earlier plans, the currently adopted plan places greater emphasis on the most highly effective controls and regulations, rather than a breadth of controls on smaller sources such as land uses. Although it focuses more on particulate emissions that result from incomplete fuel combustion than previous plans, recognizing recent research on particulates and health effects, the 1997 AQMP still calls for the implementation of all feasible control measures and the advancement and use of technologies for which breakthroughs are on the horizon.

The SCAQMD is in the process of preparing a comprehensive AQMP update – the Proposed 2003 Air Quality Management Plan for the South Coast Air Basin (2003 AQMP). The 2003 AQMP seeks to demonstrate attainment with NAAQS and to make progress toward attaining the CAAQS. The 2003 AQMP will incorporate a revised emissions inventory, the latest air quality modeling techniques, and updated control measures remaining from the 1997/1999 SIP as well as new control measures.[85] New control measures may include further emission reductions from: (1) architectural coatings and miscellaneous industrial coatings and solvents; (2) petroleum operations; (3) RECLAIM; and (4) aggregate and cement plant manufacturing operations and other fugitive dust sources.

The SCAQMD also adopts rules to implement portions of the AQMP. Some of these rules are applicable to construction or operation of the Project. For example, Rule 403 requires the implementation of best available control technology to control fugitive dust. In addition, certain stationary sources of air pollution, such as boilers and heaters, may require permits from the SCAQMD pursuant to Rules 201, 202 and 203. Emission increases related to those sources may be subject to SCAQMD Regulation XIII or Regulation XX which require, respectively, that the best available control technology be utilized to reduce pollutants and that any increases of criteria air pollutants be offset by achieving equivalent emission reductions at the facility or elsewhere in the Basin. In addition, the Project may be subject to CAA Title V in which all equipment located at a Title V facility must be in compliance with all terms, requirements, and conditions specified in the Title V permit. Facilities in the Basin must obtain a Title V permit if they emit more than 10 tons/year of VOC or NO_X, 100 tons/year of SO_X, 50 tons/year of CO, 70 tons/year of PM_{10}, 10 tons/year of a single hazardous air pollutant (HAP), or 25 tons/year of a combination of HAPs. Any source requiring a permit would also be subject to SCAQMD Rule 1401. Finally, individual facilities at the Project may be subject to SCAQMD Rule 2202 which applies to certain employers of 100 employees or more at a worksite and is aimed at reducing mobile source emissions.

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[85] *South Coast Air Quality Management District, Preview of the Proposed 2003 Air Quality Management Plan for the South Coast Air Basin, January 2003.*

In addition to the AQMP and its rules and regulations, the SCAQMD has published a handbook (CEQA Air Quality Handbook, most recent version: November, 1993) intended to provide local governments with guidance for analyzing and mitigating project specific air quality impacts for both land use and permitting projects. This handbook provides standards, methodologies and procedures for conducting an air quality analysis in EIRs.

2.1.3.2 Regional Comprehensive Plan and Guide

The Southern California Association of Governments (SCAG) is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino and Imperial Counties and serves as a forum for regional issues relating to transportation, the economy, community development and the environment. SCAG serves as the federally designated metropolitan planning organization (MPO) for the southern California region and is the largest MPO in the United States. With respect to air quality planning, SCAG has prepared the Regional Comprehensive Plan and Guide (RCPG) for the SCAG region, which includes Growth Management, Air Quality and Regional Mobility chapters that form the basis for the land use and transportation control portions of the SCAQMD's AQMP and are utilized in the preparation of air quality forecasts included in the AQMP.

2.1.4 County Level – County Congestion Management Plan

The Congestion Management Plan (CMP) for the County of Los Angeles has been developed to meet the requirements of Section 65089 of the California Government Code. In enacting the CMP statute, the State legislature noted the increasing concern that urban congestion was impacting the economic vitality of the State and diminishing the quality of life in many communities. The CMP was created to further the following objectives:

- To link land use, transportation and air quality decisions.
- To develop a partnership among transportation decision makers to encourage appropriate transportation solutions that include all modes of travel.
- To propose transportation projects which are eligible for State gas tax funds.

See Section IV.K.(1), Traffic and Circulation, for additional discussion regarding the CMP.

2.1.5 Local Level

2.1.5.1 City of Los Angeles General Plan–Air Quality Element

California state law requires that each city adopt a long-term comprehensive general plan which must be an integrated, internally consistent and compatible statement of goals, objectives, policies and implementation programs. This document then becomes the basis for decision making regarding the city's long term physical development. The most recent revision of the Air Quality Element for the Los Angeles City General Plan was adopted in November 1992. The objectives of this revised Air Quality Element are to aid the region in attaining CAAQS and NAAQS, while continuing to allow economic growth and improvement in the quality of life for city residents. This Element also discusses how the city plans to implement local programs contained in the SCAQMD's AQMP.

2.1.6 Consistency With Adopted Plans and Policies

The SCAQMD has adopted criteria for assessing consistency with regional plans and the Air Quality Management Plan in its CEQA Air Quality Handbook.

2.1.6.1 SCAQMD Handbook Policy Analysis

In accordance with the procedures established in the SCAQMD CEQA Air Quality Handbook, the following criteria are required to be addressed in order to determine the Project's consistency with SCAQMD and SCAG policies:

1. Will the Project result in any of the following:

   – An increase in the frequency or severity of existing air quality violations; or

   – Cause or contribute to new air quality violations; or

   – Delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP.

SCAQMD methodologies require that an air quality analysis for projects such as the Proposed Project include forecasts of Project emissions in a regional context during construction, and in a regional as well as local context during Project occupancy.

2. Will the Project exceed the assumptions utilized in preparing the AQMP?

For determining consistency with SCAQMD and SCAG air quality policies, it must be recognized that air quality planning within the Basin focuses on the attainment of ambient air quality standards at the earliest feasible date. Projections for achieving air quality goals are based on assumptions regarding population, housing and growth trends. Thus, the SCAQMD's second criteria for determining project consistency focuses on whether or not the Proposed Project exceeds the assumptions utilized in preparing the forecasts presented in the AQMP.

Determining whether or not a Project exceeds the assumptions reflected in the AQMP involves the evaluation of three criteria: (1) consistency with population, housing and employment growth projections; (2) Proposed Project mitigation measures; and (3) appropriate incorporation of land use planning strategies.

2.1.6.2 City of Los Angeles Policies

The City of Los Angeles General Plan was prepared in response to California state law requiring that each city and county adopt a long-term comprehensive general plan. This plan must be integrated, internally consistent, and present goals, objectives, policies and implementation guidelines for decision makers to use. The City has included an Air Quality Element as part of the General Plan. The planning area for the City's Air Quality Element covers the entire City of Los Angeles, which encompasses an area of about 465 square miles.

The 1992 revision of the City's General Plan Air Quality Element serves to aid the greater Los Angeles region in attaining the state and federal ambient air quality standards at the earliest feasible date, while still maintaining economic growth and improving the quality of life. The Air Quality Element and the accompanying Clean Air Program acknowledge the inter-relationships between transportation and land use planning in meeting the City's mobility and clean air goals. With the City's adoption of the Air Quality Element and the accompanying Clean Air Program, the City is seeking to achieve consistency with regional Air Quality, Growth Management, Mobility, and Congestion Management Plans.

To achieve these goals, performance based standards have been adopted to provide flexibility in implementation of the policies and objectives of the City's Air Quality Element. The following General Plan Goals, Objectives and Policies are relevant to the Project:

Goal 2 – Less reliance on single occupant vehicles with fewer commute and non-work trips.

Objective 2.1 – It is the objective of the City of Los Angeles to reduce work trips as a step towards attaining trip reduction objectives necessary to achieve regional air quality goals.

Policy 2.1.1 – Utilize compressed work week schedules and flextime, telecommuting, carpooling, vanpooling, public transit, and improve walking/bicycling related facilities in an effort to reduce vehicle trips and/or vehicle miles traveled as an employer and encourage the private sector to do the same to reduce vehicle trips and traffic congestion.

Objective 2.2 – It is the objective of the City of Los Angeles to increase vehicle occupancy for non-work trips by creating disincentives for single passenger vehicles, and incentives for high occupancy vehicles.

Policy 2.2.1 – Discourage single-occupant vehicle use through a variety of measures such as market incentives, mode-shift incentives, trip reduction plans, and rideshare incentives.

Policy 2.2.2 – Encourage multi-occupant vehicle travel and discourage single occupant vehicle travel by instituting parking management practices.

Policy 2.2.3 – Minimize the use of single occupant vehicles associated with special events, or in areas and times of high levels of pedestrian activities.

Goal 4 – Minimize impacts of existing land use patterns and future land use development on air quality by addressing the relationship between land use, transportation and air quality.

Objective 4.1 – It is the objective of the City of Los Angeles to include regional attainment of ambient air quality standards as a primary consideration in land use planning.

Policy 4.1.1 – Coordinate with all appropriate regional agencies in the implementation of strategies for the integration of land use, transportation and air quality policies.

2.2 Existing Conditions

2.2.1 Regional Context

The Project site is located within the Basin, which is a subarea of the SCAQMD's jurisdiction. The Basin is bounded by the Pacific Ocean to 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. The distinctive climate of this area is determined primarily by its terrain and geographical location. Regional meteorology is largely dominated by a persistent, high-pressure area which commonly resides over the eastern Pacific Ocean. Seasonal variations in the strength and position of this pressure cell cause changes in the weather patterns of the area. Local climatic conditions are characterized by warm summers, mild winters, infrequent rainfall, moderate daytime on-shore breezes, and moderate humidity. This normally mild climatic condition is occasionally interrupted by periods of hot weather, winter storms, and Santa Ana (hot easterly flow) winds.

The Basin is an area of high air pollution potential, particularly from June through September. This condition is generally attributed to light winds and shallow vertical atmosphere mixing. This frequently reduces pollutant dispersion, thus causing elevated air pollution levels. Pollutant concentrations in the Basin vary with location, season and time of day. Ozone concentrations, for example, tend to be lower along the coast, higher in the near inland valleys and lower in the far inland areas of the Basin and adjacent desert.

Over the past 30 years, substantial progress has been made in reducing air pollution levels in Southern California. The area previously was in non-attainment for all NAAQS, except SO_2. The area is now defined as in attainment for NO_2, lead, and SO_2, with CO approaching attainment. While the CO level at the local monitoring station is currently below state and federal standards, the Basin as a whole is still experiencing exceedances for CO. PM_{10} and ozone levels, while reduced substantially from their peak levels, are still far from attainment.

The SCAQMD has published a Basin-wide air toxics study (MATES II, *Multiple Air Toxics Exposure Study*, March 2000). The MATES II study represents one of the most comprehensive air toxics studies ever conducted in an urban environment. The study was aimed at determining the cancer risk from toxic air emissions throughout the Basin by conducting a comprehensive monitoring program, an updated emissions inventory of toxic air contaminants, and a modeling effort to fully characterize health risks for those living in the Basin. The study concluded that the average carcinogenic risk in the Basin is approximately 1,400 in one million. Mobile sources (e.g., cars, trucks, trains, ships, aircraft, etc.) represent the greatest contributors. About 70 percent of all risk is attributed to diesel particulate emissions, about 20 percent to other toxics associated with mobile sources (including benzene, butadiene, and formaldehyde), and about 10 percent of all carcinogenic risk is attributed to stationary sources (which include industries and other certain businesses such as dry cleaners and chrome plating operations).

2.2.2 Local Area Conditions

2.2.2.1 Local Climate

The meteorological conditions of the Southern California Mediterranean type climate, as experienced at the Project site, are characterized by mild summers, mild winters, infrequent rainfall, moderate afternoon breezes, and generally fair weather. The average annual temperature ranges from the low- to mid-60 degrees Fahrenheit (F). Summer daytime temperatures often reach over 76 degrees F, and winter daytime temperatures often drop to 45 degrees F. Due to the proximity to the coast, temperatures are on average lower than further inland due to the moderating effect of the ocean. Average rainfall at Los Angeles International Airport, located within two miles of the Project, is approximately 12.5 inches per year.

Long-term diurnal wind patterns in the general vicinity of the Project site are dominated by higher-velocity on-shore daytime winds of 5 to 12 miles per hour from the south and southeast. Diurnal wind flows from the south and southeast are created by pressure differences between the relatively cold ocean and the unevenly heated land. Nocturnal wind patterns are characterized by weaker flowing winds of 3 to 5 miles per hour from the north and northeast.[86] Nocturnal wind flows from the north and northeast result when radiational cooling of the mountain slopes occurs and the denser cool air descends and follows the lowering terrain to the ocean. These daily onshore and offshore winds play an important role in dispersing air pollutants and moderating the temperatures in the area.

The climate within the area of the Project site is influenced by a marine layer which occurs frequently throughout the year, although the frequency and duration increases during the non-summer months, and is characterized by fog or low stratus clouds. These stratus clouds generally recede seaward during the morning and afternoon and move onshore during the late afternoon and evening. The project also experiences a high annual mean relative humidity of 71 percent as compared to some of the more inland areas which have mean relative humidities in the 60s.

2.2.2.2 Existing Pollutant Levels at Nearby Monitoring Stations

The SCAQMD maintains a network of air quality monitoring stations located throughout the South Coast Air Basin. Based on consultation with SCAQMD staff, the monitoring station most representative of existing air quality conditions in the area of Playa Vista is the West Los Angeles Monitoring Station, located at Wilshire Boulevard and Sawtelle Boulevard. Criteria pollutants, including CO and NO_2 are monitored at this station. Particulate matter and sulfur dioxide are not monitored at the West Los Angeles Monitoring Station. The nearest and most representative monitoring station for PM_{10} and SO_2 is the Hawthorne Monitoring Station. This station is located on West 120th Street in Hawthorne. The most recent data available from these monitoring stations encompassed the years 1996 to 2002. Since neither the West Los Angeles nor Hawthorne monitoring stations monitor $PM_{2.5}$, the most representative coastal monitoring station for $PM_{2.5}$ is the North Long Beach Station. This station is located at 3648 North Long Beach Boulevard. The most recent data available from this monitoring station encompassed the

[86] *A Climatological Air Quality Profile California South Coast Air Basin, SCAQMD 1980.*

years 1999 to 2002. The data, shown in Table 11 on pages 285 and 286, show the following pollutant trends:

Ozone – The maximum ozone concentration recorded during the 1996 to 2002 period was 0.14 ppm, which was recorded in 1996. During this period, the California standard of 0.09 ppm was exceeded between 1 to 13 times annually, with the lowest number of exceedances recorded in 2001 and 2002. The national standard of 0.12 ppm was exceeded 0 or 1 days during the seven-year period, with one exceedance recorded in 1996 and 1998.

Carbon Monoxide – The maximum recorded 1-hour concentration during the 1996 to 2002 period was 7.0 ppm, which was recorded in 1996, 1997 and 1998. During this time period, there were no exceedances of the California or national 1-hour carbon monoxide standards. The maximum recorded 8-hour carbon monoxide was 4.5 ppm, which was recorded in 1996 and 1998. There were no exceedances of the California or national 8-hour carbon monoxide standards.

Nitrogen Dioxide – The highest recorded concentration of nitrogen dioxide during the period 1996 and 2002 was 0.18 ppm, which was recorded in 1996. No violations of the California or national standards occurred during this time period.

Sulfur Dioxide – The highest recorded concentration of sulfur dioxide during the period 1996 to 2002 was 0.17 ppm, which was recorded in 2000. No violations of the California or national standards were recorded during this time period.

Particulate Matter (PM_{10}) – The highest recorded concentration during the period 1996 to 2002 was 121 micrograms per cubic meter of air ($\mu g/m^3$) of particulates, which was recorded in 2002. During this same time period, the California PM_{10} standard was exceeded between 6 to 13.8 percent of the time annually, with the highest number of exceedances in 2002 and the lowest number of exceedances recorded in 1997. PM_{10} is monitored every six days coincident to a national schedule; thus, PM_{10} exceedances are based on the number of days that sampling occurred.

Particulate Matter ($PM_{2.5}$) – The highest recorded concentration during the period 1999 to 2002 was 81.5 micrograms per cubic meter of air ($\mu g/m^3$) of particulates, which was recorded in 2000. During this time period, the national $PM_{2.5}$ standard for a 24-hour averaging time was exceeded between 0 and 4 times with the highest number of exceedances recorded in 2000. $PM_{2.5}$ is monitored every six days coincident to a national schedule; thus, $PM_{2.5}$ exceedances are based on the number of days that sampling occurred.

Table 11

POLLUTANT STANDARDS AND AMBIENT AIR QUALITY DATA FROM THE WEST LOS ANGELES, HAWTHORNE, AND NORTH LONG BEACH MONITORING STATIONS

Pollutant/Standard	1996	1997	1998	1999	2000	2001	2002
Ozone (O_3)							
O_3 (1-hour)							
Maximum Concentration (ppm)	0.14	0.11	0.13	0.12	0.10	0.10	0.12
Days > CAAQS (0.09 ppm)	13	6	7	4	2	1	1
Days > NAAQS (0.12 ppm)	1	0	1	0	0	0	0
O_3 (8-hour)							
Maximum Concentration (ppm)	n/a	0.09	0.08	0.08	0.08	0.08	0.08
Days > NAAQS (0.08 ppm)	n/a	2	0	0	0	0	0
Particulate Matter (PM_{10})							
PM_{10} (24-hour)							
Maximum Concentration ($\mu g/m^3$)	107 [a]	79 [a]	66 [a]	69 [a]	74 [a]	75 [a]	121[a]
Days > CAAQS (50 $\mu g/m^3$)	5	4	7	6	9	8	12
Days > NAAQS (150 $\mu g/m^3$)	0	0	0	0	0	0	0
PM_{10} (Annual Average)							
Annual Arithmetic Mean (50 $\mu g/m^3$)	32	35	32	35	36	37	37
Annual Geometric Mean (20 $\mu g/m^3$)	29	33	30	33	33	34	34
Particulate Matter ($PM_{2.5}$)							
$PM_{2.5}$ (24-hour)							
Maximum Concentration ($\mu g/m^3$)	n/a	n/a	n/a	66.9 [a]	81.5 [a]	72.9 [a]	62.7[a]
Days > NAAQS (65 $\mu g/m^3$)	n/a	n/a	n/a	1	4	1	0
$PM_{2.5}$ (Annual Average)							
Annual Geometric Mean (12 $\mu g/m^3$)	n/a	n/a	n/a	21.5	19.2	21.4	19.5
Carbon Monoxide (CO)							
CO (1-hour)							
Maximum Concentration (ppm)	7	7	7	6	6	4	n/a
Days > CAAQS (20 ppm)	0	0	0	0	0	0	n/a
Days > NAAQS (35 ppm)	0	0	0	0	0	0	n/a
CO (8-hour)							
Maximum Concentration (ppm)	4.5	4.4	4.5	3.8	4.3	3	2.7
Days > CAAQS (9.0 ppm)	0	0	0	0	0	0	0
Days > NAAQS (9 ppm)	0	0	0	0	0	0	0

Table 11 (Continued)

POLLUTANT STANDARDS AND AMBIENT AIR QUALITY DATA FROM THE WEST LOS ANGELES, HAWTHORNE, AND NORTH LONG BEACH MONITORING STATIONS

Pollutant/Standard	1996	1997	1998	1999	2000	2001	2002
Nitrogen Dioxide (NO_2)							
NO_2 (1-hour – State Standard)							
Maximum Concentration (ppm)	0.18	0.14	0.13	0.13	0.16	0.11	0.11
Days > CAAQS (0.25 ppm)	0	0	0	0	0	0	0
NO_2 (Annual Average – National Standard)) Annual Arithmetic Mean (0.05 ppm)	0.029	0.029	0.027	0.029	0.027	0.025	0.024
Sulfur Dioxide (SO_2)							
SO_2 (1-hour)							
Maximum Concentration (ppm)	0.06 [a]	0.10 [a]	0.03 [a]	0.09 [a]	0.17 [a]	0.09 [a]	n/a
Days > CAAQS (0.25 ppm)	0	0	0	0	0	0	n/a
SO_2 (24-hour)							
Maximum Concentration (ppm)	0.014	0.015	0.014	0.020	0.017	0.012	0.007
Days > CAAQS (0.04 ppm)	0	0	0	0	0	0	0
Days > NAAQS (0.14 ppm)	0	0	0	0	0	0	0
SO_2 (Annual Average)							
Annual Arithmetic Mean	0.003	0.001	0.004	0.004	0.002	0.001	0.001
Days > NAAQS (0.03 ppm)	0	0	0	0	0	0	0

Ambient data for airborne lead is not included in this table since the Basin is currently in compliance with state and national standards for lead.

ppm = parts per million; mg/m^3 = micrograms per cubic meter; n/a = not available

[a] *The West Los Angeles Ambient Air Quality Monitoring Station stopped monitoring for SO_2 in 1991. PM_{10} was never monitored. Data presented for PM_{10} is from the Hawthorne Monitoring Station. Data presented for $PM_{2.5}$ is from the North Long Beach Monitoring Station. Ambient data for fine particulate matter ($PM_{2.5}$) was not available prior to 1999.*

Source: South Coast Air Quality Management District, Air Quality Data 1996_2001 and California Air Resources Board, Air Quality Data 2002.

Lead – The Basin is currently in compliance with California and national standards for lead.

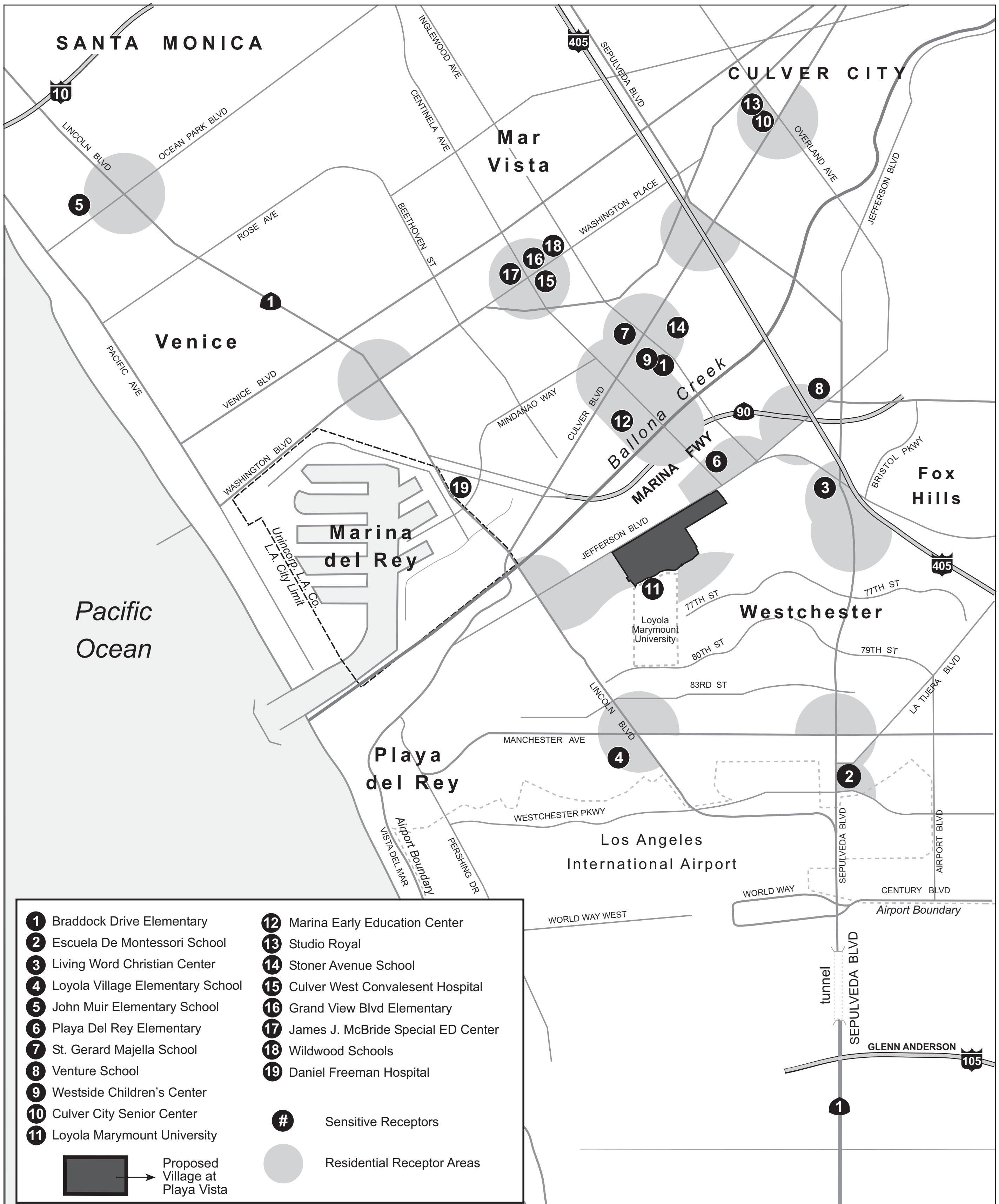
2.2.2.3 Existing Health Risk in the Surrounding Area

According to the SCAQMD's MATES-II study, the area of the Project site is within a cancer risk area of 600 to 800 in one million and is largely due to diesel particulates attributable to motor vehicle travel along Interstate 405, which is located less than one mile east of the Project site. In comparison, the average cancer risk in the Basin is 1,400 per million.

2.2.2.4 Sensitive Receptors

Some population groups, such as children, the elderly, and acutely ill and chronically ill persons, especially those with cardio-respiratory diseases, are considered more sensitive to air pollution than others. Sensitive land use receptors in the vicinity of the Project site and the Project's proposed off-site roadway improvements include residential uses, public and private school uses, rest homes, day care centers, and hospitals. Sensitive receptors located in proximity to the Project site and the Project's proposed off-site roadway improvements will be affected by air pollutants emitted by Project construction and operational activities. These receptor locations were included in the air dispersion modeling analysis to determine localized pollutant concentrations. In addition, intersections near these receptors with high Project traffic volumes and poor levels of service (i.e., greatest change in an intersection's volume-to-capacity due to Project generated traffic) were also evaluated to assess the potential for local carbon monoxide concentrations to exceed national or state thresholds. Sensitive receptors located in Santa Monica, Mar Vista, Culver City, Westchester, Fox Hills, and Playa del Rey could also potentially be affected by construction activities and motor vehicle emissions due to Project-related increases in regional traffic. Selected intersections near these receptors were evaluated for local CO impacts. The sensitive receptor locations within a quarter mile of the Project site and intersections analyzed for CO impacts are shown on Figure 23 on page 288. Public and private school uses, rest homes, day care centers, and hospitals within a quarter mile of the Project site and intersections analyzed for CO impacts are included in Table 12 on page 289.

The one hospital addressed in the analysis is Daniel Freeman Hospital. For residential uses, a grid of location points was analyzed throughout the residential receptor areas indicated on Figure 23 on page 288.



PCR

Figure 23
Approximate Locations of Potentially Sensitive Receptors

Source: Acentech, Inc. and PCR Services Corporation, July 2003

Table 12

POTENTIALLY SENSITIVE RECEPTORS WITHIN A QUARTER MILE OF THE PROJECT SITE, OFF-SITE ROADWAY IMPROVEMENTS AND INTERSECTIONS ANALYZED FOR CO IMPACTS

No.	Sensitive Receptor	Location
1	Braddock Drive School	4711 Inglewood Blvd, Culver City
2	Escuela de Montessori School	8820 Sepulveda Eastway, Los Angeles
3	Living World Christian School	6520 Arizona Avenue, Los Angeles
4	Loyola Village Elementary School	8821 Villanova Avenue, Los Angeles
5	John Muir Elementary School	2526 6th Street, Santa Monica
6	Playa Del Rey Elementary School	12221 Juniette Street, Culver City
7	St. Gerard Majella School	4451 Inglewood Blvd, Los Angeles
8	Venture School.	11477 Jefferson Blvd, Culver City
9	Westside Children's Center	4600 Lindblade Drive, Culver City
10	Culver City Senior Center	Culver Boulevard, Culver City
11	Loyola Marymount University	1 LMU Drive, Los Angeles
12	Marina Early Education Center	4908 Westlawn Ave. Los Angeles
13	Studio Royale	3975 Overland Avenue, Culver City
14	Stoner Avenue School	11735 Braddock Drive, Culver City
15	Culver West Convalescent Hospital	4035 Grand View Blvd., Los Angeles
16	Grand View Boulevard elementary School	3951 Grand View Blvd., Los Angeles
17	James J. McBride Special Educational center	3960 South Centinela Ave., Los Angeles
18	Wildwood Schools	12201 Washington Place, Los Angeles
19	Daniel Freeman Hospital	4650 Lincoln Blvd., Los Angeles

Source: PCR Services Corporation, 2003

3.0 IMPACT ANALYSIS

3.1 Methodology

The analytical methodologies estimate the amounts of pollutants that would be created by Project activities and are detailed in the Air Quality Appendix, Appendix E of the EIR. Those pollutant quantities are compared to pollutant threshold levels that are representative of significant impacts. Where significance thresholds are exceeded, mitigation measures are included to reduce impact levels to the extent feasible.

The analyses of both construction and operational activities include analyses of regional emissions. An analysis of the potential impacts on ambient particulate concentrations (PM_{10}), NO_2, CO, and air toxics from Project related construction activities was also conducted. For post-construction operations, the analysis addresses local area concentrations of a specific pollutant, carbon monoxide (CO), generated by mobile sources. The modeling techniques, factors and assumptions for each analysis are discussed in the Impact Analysis Section below. In addition to these analyses, a qualitative analysis of potential air toxics and odor impacts associated with the Proposed Project operations is provided. A qualitative analysis of odors is provided since the information and technology currently available does not allow a precise prediction of a community's reaction to an odor.

The analysis also includes a discussion of the Proposed Project's development in the context of applicable Air Quality Policies in the region. The discussion addresses the extent to which the proposed development program is compatible with planned development per policies of the SCAQMD, and the City of Los Angeles.

3.2 Significance Thresholds

Construction Emissions

The Draft Los Angeles CEQA Thresholds Guide (p.E.1-2) states that the determination of the significance of air quality impacts shall be made on a case-by-case basis, considering the following factors:

Combustion Emissions from Construction Equipment

- Type, number of pieces and usage for each type of construction equipment;
- Estimated fuel usage and type of fuel (diesel, natural gas) for each type of equipment; and
- Emission factors for each type of equipment.

Fugitive Dust

Grading, Excavation and Hauling:

- Amount of soil to be disturbed on-site or moved off-site;
- Emission factors for disturbed soil;
- Duration of grading, excavation and hauling activities;
- Type and number of pieces of equipment to be used; and
- Projected haul route.

Heavy-Duty Equipment Travel on Unpaved Roads:

- Length and type of road;
- Type, number of pieces, weight and usage of equipment; and
- Type of soil.

Other Mobile Source Emissions

- Number and average length of construction worker trips to project site, per day; and
- Duration of construction activities.

Based on these factors, the Proposed Project would have a significant impact from construction activities, if:

- Regional emissions form both direct and indirect sources would exceed any of the following: (1) 75 pounds a day for ROC, (2) 100 pounds per day for NO_X, (3) 550 pounds per day for CO, and (4) 150 pounds per day for PM_{10} or SO_X.[87]
- Project-related fugitive dust and construction equipment combustion emissions cause an incremental increase in localized PM_{10} concentrations of 10.4 $\mu g/m^3$.[88]
- The Project creates objectionable odors.

Operational Emissions

The Draft Los Angeles CEQA Thresholds Guide (p.E.2-5) states that a proposed project would normally have a significant impact on air quality from project operations if any of the following would occur:

- Operational emissions exceed 10 tons per year of volatile organic gases or any of the daily thresholds presented below:[89]

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[87] *South Coast Air Quality Management District, CEQA Air Quality Handbook, Chapter 6 (Determining the Air Quality Significance of a Project), 1993.*

Pollutant	Significance Threshold (lbs./day)
ROG	55
NO_X	55
CO	550
PM_{10}	150
SO_X	150

- Either of the following conditions would occur at an intersection or roadway within one-quarter mile of a sensitive receptor:
  - The proposed project causes or contributes to an exceedance of the California 1-hour or 8-hour CO standards of 20 or 9.0 parts per million (ppm), respectively; or
  - The incremental increase due to the project is equal to or greater than 1.0 ppm for the California 1-hour CO standard, or 0.45 ppm for the 8-hour CO standard.
- The project creates an objectionable odor at the nearest sensitive receptor.

Based on these factors, the Proposed Project would have a significant impact from operational activities, if:

- Operational emissions exceed 10 tons per year of volatile organic gases (VOC) or and of the daily thresholds presented below:[90]

Pollutant	Significance Threshold (lbs./day)
ROG	55
NO_X	55
CO	550
PM_{10}	150
SO_X	150

[88] *The current SCAQMD CEQA Air Quality Handbook does not include a concentration threshold for localized PM_{10}. However, SCAQMD currently recommends this threshold of significance for analyzing localized PM_{10} impacts. Source: Steve Smith, Ph.D., SCAQMD CEQA Coordinator.*

[89] *South Coast Air Quality Management District, CEQA Air Quality Handbook, Chapter 6 (Determining the Air Quality Significance of a Project), 1993.*

[90] *South Coast Air Quality Management District, CEQA Air Quality Handbook, Chapter 6 (Determining the Air Quality Significance of a Project), 1993.*

- The proposed project causes an exceedance of the California 1-hour or 8-hour CO standards of 20 or 9.0 parts per million (ppm), respectively, at an intersection or roadway within one-quarter mile of a sensitive receptor:

- Project-related stationary source combustion equipment emissions cause an incremental increase in localized PM_{10} concentrations of 2.5 $\mu g/m^3$.[91]

- The project creates objectionable odors.

In addition to the above thresholds, the Project would have a significant operational air quality impact if:

- The Project would not be compatible with SCAQMD and SCAG air quality polices if the Project:

  – causes an increase in the frequency or severity of existing air quality violations;

  – causes or contributes to new air quality violations;

  – delays timely attainment of air quality standards or the interim emission reductions specified in the AQMP; or

  – exceeds the assumptions utilized in the SCAQMD's AQMP.

- The project would not be compatible with City of Los Angeles air quality policies if it does not substantially comply with the air quality goals and policies set forth within the City's General Plan.

Toxic Air Contaminants

The Draft Los Angeles CEQA Thresholds Guide (p.E.3-3) states that the determination of the significance of toxic air contaminants shall be made on a case-by-case basis, considering the following factors:

- The regulatory framework for the toxic material(s) and process(es) involved;

[91] *The current SCAQMD CEQA Air Quality Handbook does not include a concentration threshold for localized PM_{10}. However, SCAQMD currently recommends this threshold of significance for analyzing localized PM_{10} impacts. Source: Steve Smith, Ph.D., SCAQMD CEQA Coordinator.*

- The proximity of the toxic air contaminants to sensitive receptors;
- The quantity, volume and toxicity of the contaminants expected to be emitted;
- The likelihood and potential level of exposure; and
- The degree to which project design will reduce the risk of exposure.

Based on these guidelines, the Proposed Project would have a significant impact from toxic air contaminants, if:

- On-site stationary sources emit carcinogenic or toxic air contaminants that individually or cumulatively exceed the maximum individual cancer risk of ten in one million or an acute or chronic hazard index of 1.0.[92]
- Hazardous materials associated with on-site stationary sources result in an accidental release of air toxic emissions or acutely hazardous materials posing a threat to public health and safety.
- The Project would be occupied primarily by sensitive individuals within a quarter mile of any existing facility that emits air toxic contaminants which could result in a health risk for pollutants identified in District Rule 1401.[93]

3.3 Project Design Features

A primary objective in the design of the Proposed Project is to create a development which minimizes the air pollutant emissions that are generated by the Project. To achieve this objective, the applicant focused on reducing the number of vehicle trips as well as vehicle miles traveled. This approach to minimizing pollutant emissions implements the policy direction provided by the Southern California Association of Governments for land development projects such as the Village at Playa Vista. The design program incorporated into the Proposed Project to minimize pollutant emissions consists of the following two components: (1) the choice and organization of land uses within the Village at Playa Vista, and (2) the promotion of alternative travel modes.

These features and their relationship to reductions in air quality impacts are discussed in the Air Quality Management Plan, which is included in the Air Quality Technical Appendix,

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[92] *SCAQMD Risk Assessment Procedures for Rules 1401 and 212, November 1998.*

[93] *SCAQMD, CEQA Air Quality Handbook, Chapter 6 (Determining the Air Quality Significance of a Project).*

Appendix E of the EIR. Principle features of the Project's design which contribute to reductions in air emissions include the following:

3.3.1 Land Use Plan

The proposed land use plan for the Village at Playa Vista promotes reductions in vehicle trips and consequent generation of pollutant emissions in the following six ways: (1) developing residential mixed-use neighborhoods; (2) scaling commercial uses to serve neighborhood and community needs; (3) siting office uses near residences and public transit; (4) providing basic services within office areas; (5) providing jobs/housing linkages; and (6) including a variety of civic uses such as community centers and public recreational facilities in proximity to residential and commercial uses.

(a) Mixed Use Development

The land use plan for the Village at Playa Vista was developed seeking to create a community which provides a wide range of opportunities to meet the needs of all those within the community by providing a balanced mix of residential, commercial, and community-serving land uses. The Village at Playa Vista is proposed to be developed as a series of mixed-use neighborhoods; i.e. neighborhoods containing residential, commercial, and community-serving uses. This approach to providing mixed-use neighborhoods minimizes on- and off-site vehicle use by providing a variety of daily needs within a short walk from any residence or business.

(b) Retail Uses Scaled to Serve the Community

The retail uses that are proposed are designed primarily to service Project residents and employees as well as those occupying the adjacent Playa Vista First Phase Project. By orienting the retail uses to Project and nearby patrons, and by making these uses accessible to pedestrians and the internal shuttle system (see description below), a reduction in vehicle trips and vehicle miles traveled would be realized.

(c) Location of Office Uses

The placement of office uses in the design of the Village at Playa Vista serves the objective of minimizing mobile source pollutant emissions. Office uses that would be developed within the Proposed Project would be located in close proximity to the access ramps of the San Diego (I-405) and Marina (SR-90) Freeways. Such concentration and placement are intended to reduce vehicle miles traveled within the Project site and within the region and subregion by reducing commute distances for non-resident workers. The provision of office space in close proximity to residential neighborhoods increases the probability that residents may work nearer to their home, thus reducing the vehicle miles traveled.

(d) Commercial Retail Uses Near Office Uses

Similar to the strategy to provide basic services within each residential neighborhood, the proposed office uses would be in proximity to commercial and retail space to encourage the provision of basic services such as banking, child care, food and postal services within a short walk from the work-site.

(e) Civic Facilities

A broad spectrum of civic facilities is proposed within the site and in close proximity of on-site residents and businesses. The proximity of these facilities to residential and commercial uses would also in turn, serve to reduce vehicular trips and miles traveled.

(f) Jobs/Housing Linkage

The proposed array of residential, retail, and office uses would, in itself, promote a reduction of mobile source emissions by providing a large supply of housing as well as employment opportunities within close proximity to one another, making it possible for an individual to both reside and work within the Project site or the adjacent Playa Vista First Phase Project (jobs/housing linkage). In addition, the Project would provide a substantial amount of housing in a jobs-rich subregion. (See Section IV.J, Population, Housing and Employment, for additional information regarding the jobs/housing issue.)

3.3.2 Promotion of Alternative Travel Modes

The design of the proposed Village at Playa Vista facilitates reductions in pollutant emissions via the arrangement of proposed land uses, as described above, as well as through the promotion of alternative modes of travel such as mass transit, bicycling, and walking.

(a) Transit System Improvements

The Proposed Project proposes a comprehensive transit program to contribute to both the reduction of vehicular trips within the Proposed Project site and surrounding area, and the system-wide improvement of transit travel corridors. The main feature of this Project attribute is an Internal Shuttle System serving the Project site and an Expanded Shuttle System which provides enhanced transit service for Project residents, visitors, employees, and the surrounding community, providing connections to key destinations such as Marina del Rey, Howard Hughes

Center, the adjacent Playa Vista First Phase Project, and the Fox Hills Mall. Connections to regional transit service shall be provided at Lincoln Boulevard/Jefferson Boulevard and Fox Hills Mall Transit Center. The Internal Shuttle System that would carry residents and workers within the Proposed Project site that would support opportunities for jobs/housing linkage, accessing community facilities (e.g., child care facilities, parks and services), as well as overall community interaction. The system is intended to provide a safe and reliable transportation alternative to the automobile for Project residents, employees and visitors and would be accessible via a short walk from any residential, office or other location.

Vehicles used within the Internal Shuttle System would be low emission vehicles, although the specific fuel/power source has not yet been determined. The Internal Shuttle System would provide stop points throughout the Project site. Information accessible via computers would be available to all Proposed Project residents and workers, as well as those associated with the adjacent Playa Vista First Phase Project, on the operation and location of the internal shuttle. In addition, the system would be operated as a fare-free service for Project residents and employees at all times and for visitors not residing or working on the Project site during peak hours (8:00 to 9:00 A.M. and 5:00 to 6:00 P.M.).

(b) Bicycle Use Promotion

Promotion of bicycle usage as a means of reducing pollutant emissions has also been incorporated into the Village at Playa Vista. The Project's proposed bikeway routes have been designed to link major activity centers within the Project site (e.g., Village Center retail uses and proposed residential uses) and as such, provide an alternative means of transportation to the automobile. The Project's proposed network of interconnected bicycle routes provides access throughout the Project site and connects to, and expands on, the bicycle network within the adjacent Playa Vista First Phase Project. The bicycle facilities are being designed to meet all applicable safety standards. In addition, bicycle racks would be provided in public areas (e.g., parks, community facilities, etc.) and in the Village retail area, and bicycle storage areas would be provided within the residential buildings.

(c) Pedestrian Facilities

Convenient and extensive pedestrian facilities and amenities (e.g., benches/seating, water fountains, trash bins with plastic bags to collect dog waste, etc.) would be provided to further encourage the use of this alternative travel mode. In addition to a well-defined sidewalk network along all residential local, collector and arterial streets within the Proposed Project site, pedestrian paths would be provided at appropriate locations to connect with crosswalks at intersections and other key destinations within the site. The pedestrian facilities are being designed to meet all applicable safety standards.

(d) Recreation and Open Space

To provide for the recreational and open space needs of future residents while promoting pedestrian activity, neighborhood parks are to be located within a short walk of every residence. Residential recreational facilities being considered which could also reduce vehicle trips are hard-surface play areas for children that are anticipated to be located within an easy walk from most residential areas. In addition, Project residents, employees and visitors can take advantage of the Playa Vista Freshwater Marsh system which can be reached via pedestrian walkways.

3.4 Impact Analysis

The Draft Los Angeles CEQA Thresholds Guide identifies factors and thresholds to be used for determining the significance of a project's impacts on air quality (see Subsection 3.2, above). Separate factors/thresholds are identified for construction emissions, operational emissions, toxic air contaminants and odors. With regard to construction emissions, the factors identify the types of emissions sources to be analyzed and for each emission source the characteristics and attributes upon which the quantification of construction emissions are to be forecasted. The quantification of the Project's construction emissions incorporates all of the identified emission sources and their respective characteristics and attributes that are identified in the Draft Los Angeles CEQA Thresholds Guide.

With regard to operational emissions, the Draft Los Angeles CEQA Guide identifies CO concentration thresholds based on total, as well as incremental changes in, CO concentrations. The incremental thresholds only apply when the Project is located within a portion of the South Coast Air Basin wherein ambient CO concentrations exceed ambient air quality standards. As ambient conditions in proximity of the Project site are well below ambient air quality standards, the portion of the significance threshold set forth in the Draft Los Angeles CEQA Guide that pertains to incremental increase is not applicable, and thus eliminated from further analysis. With regard to odors, the analysis incorporates a more stringent significance threshold than that set forth in the Draft Los Angeles CEQA Guide by having the threshold address objectionable odors at any location rather than just limiting the analysis to the nearest sensitive receptor.

With regard to toxic air contaminants, the five factors address elements upon which an analysis is based as opposed to expressing a specific significance threshold. All five of the identified factors have been incorporated into the analysis of the Project's potential emissions of toxic air contaminants.

3.4.1 Construction

Construction emissions for the Proposed Project are based on both current emission factor data and the magnitude of development for the Project. The total amount of construction, the duration of construction and the intensity of construction activity could have a substantial effect upon the amount of construction emissions, concentrations and the resulting impacts occurring at any one time. As such, the emission forecasts provided reflect a specific set of conservative assumptions based on the expected construction scenario wherein a relatively large amount of construction is occurring in a relatively intensive manner. In addition, all of the Project's proposed off-site roadway improvements were assumed to occur concurrently with on-site construction. Because of these conservative assumptions, actual emissions of individual construction projects would, in all probability, be less than those forecasted.

3.4.1.1 Construction Regional Impacts

Construction of the Proposed Project and the Project's proposed off-site roadway improvements would generate pollutant emissions from the following activities: (1) site preparation operations (grading and related activities); (2) travel by construction workers to and from the Project site; (3) delivery and hauling of construction materials and supplies to and from the Project site; (4) fuel combustion by on-site construction equipment; and (5) the application of architectural coatings and other building materials that release reactive organic compounds (ROC).

Construction emissions are calculated based on the following: the type and magnitude of development which would be accommodated under the Proposed Project, the time line for Project construction, the mix of construction equipment required to build the Project, and emission factors from the SCAQMD CEQA Air Quality Handbook and EPA's Compilation of Emission Factors (AP42). Site preparation was determined to produce the greatest regional construction emissions impact because this scenario represents the highest projected level of concurrent construction activity over the largest area and the highest projected levels of construction equipment use during the construction phase. This phase of construction was used to calculate a conservative estimate of construction emissions attributable to the Project. Estimates of regional construction emissions and an identification of the assumptions upon which this analysis is based are detailed in the Air Quality Technical Appendix, Appendix E of this EIR.

Daily construction-related regional emissions for the Proposed Project and the Project's proposed off-site roadway improvements are presented in Table 13 on page 300. Construction related daily regional emissions from both direct and indirect sources would exceed the significance thresholds for CO, NO_X, and ROC. Thus, emissions of these pollutants would result

Table 13

PROJECT RELATED DAILY CONSTRUCTION EMISSIONS [a]
(Associated with Site Preparation and Construction)

Maximum Emissions [b]	Emission Totals (lbs/day) CO	NO_X	PM_{10}	ROC [c]	SO_X
Project Site	**916**	**533**	**48**	**447**	**45**
Off-Site Roadway Improvements	514	458	34	65	<1
Total	1,430	991	82	512	45
AQMD Threshold	550	100	150	75	150
Difference	**880**	**891**	**(68)**	**437**	**(105)**
Significant?	**Yes**	**Yes**	**No**	**Yes**	**No**

[a] *The above numbers represent the maximum emissions for simultaneous site preparation and construction, and the Project's proposed off-site roadway improvements on a given day.*
[b] *Maximum Emissions include both on-site and off-site emissions sources and represent the highest daily emissions anticipated for each pollutant. Detailed emission calculations are provided in the Air Quality Technical Appendix, Appendix E of this EIR.*
[c] *ROC emissions include architectural coating and asphalt emissions.*

Source: PCR Services Corporation, 2003.

in significant short-term regional air quality impacts during the construction phase. Regional construction emissions from both direct and indirect sources would not exceed the daily significance thresholds for PM_{10} and SO_X. As discussed previously, construction emissions are based on a conservative construction scenario, where on-site construction and all of the offsite roadway improvements would occur concurrently. Because of these conservative assumptions, actual emissions, in all probability, would be less than those forecasted.

Fugitive dust is approximately 50 percent PM_{10}; therefore, fugitive dust emissions would be approximately twice as much as PM_{10} emissions. However, fugitive dust is not a criteria pollutant and no air quality standard for fugitive dust exists.

Construction of the Proposed Project would generate toxic air pollutant emissions primarily from diesel-powered construction equipment, and haul trucks as well as from architectural coatings and solvents. In addition, several former uses on the Proposed Project site were known to generate, transport, store, treat and/or dispose of hazardous waste as defined by Resource Conservation and Recovery Act (RCRA). The SCAQMD regulates emissions from soil remediation activities through SCAQMD Rule 1166. This Rule sets requirements to control the emissions from excavating, grading, handling, and treating contaminated soil. As a result, limited amounts of toxic air pollutant emissions may be released during the remediation of these potentially contaminated soils. Potential adverse impacts on human health attributable to the release of toxic air pollutants occur in proximity to the source of emissions, rather than in a regional context. As such, refer to the analysis presented in the following section for a discussion of potential localized impacts attributable to the release of toxic air pollutants.

3.4.1.2 Local Construction Impacts

During construction, the main source of air emissions occurs during the grading/site preparation phase where diesel powered construction equipment are involved with soil disturbance. During this phase of construction operations, not only are there combustion emissions from construction equipment, but it is during this phase that fugitive PM_{10} emissions are at their greatest magnitude. This condition (concurrent fugitive and equipment emissions) represents the period with the greatest potential for construction impacts with regard to PM_{10}. Emissions of criteria pollutants other than PM_{10}, during construction, while above the SCAQMD's regional significance thresholds, would not significantly impact the identified sensitive receptors. Therefore, the analysis of local air quality impacts from construction operations focuses on PM_{10} emissions and their impact on nearby sensitive receptors, 19 nearby schools, hospitals, rest homes, day-care centers, and a sampling of locations throughout the residential areas adjacent to the Project site. See Figure 23 on page 288.

A methodology for the assessment of local PM_{10} from construction activities is not prescribed in the SCAQMD CEQA Air Quality Handbook. Accordingly, the impacts of PM_{10} emissions from construction emissions were analyzed using CARB and EPA dispersion models approved by the SCAQMD. PM_{10} emissions were calculated based on the construction activity levels outlined above. It was determined that the highest emissions would occur during site preparation activities due to cut/fill operations. Emissions were then calculated for these activities. As listed in Table 13 on page 300, total maximum daily PM_{10} emissions from cut/fill operations on the Project site and concurrent construction of the Project's proposed off-site roadway improvements were projected to be lbs/day or lbs/hour based on a 10-hour working day. Detailed emission calculations are provided in the Air Quality Technical Appendix, Appendix E of this EIR.

The U.S. EPA 1998 Guideline on Air Quality Models (GAQM) specifies the use of the U.S. EPA Industrial Source Complex Short Term (ISCST) model for computing downwind pollutant concentrations from area sources such as construction activity. The emissions established above for the Project site and the six off-site roadway improvements that require earthwork activities were input into the ISCST model for analysis of the potential combined impacts of grading activity on the identified schools, hospitals, residences, rest homes and childcare facilities. See Figure 23 on page 288 for the locations of all identified sensitive receptors. All 19 sensitive receptors identified were analyzed in the ISCST pollutant dispersion model. As detailed in the Air Quality Technical Appendix, Appendix E of this EIR, the dispersion analysis addresses construction activity occurring throughout the entire Proposed Project area. Once the construction areas were established, the impacts on ambient PM_{10}

concentrations were evaluated at the identified sensitive receptors. The ISCST model was run using the SCAQMD mandated 1981 meteorological data from the West Los Angeles Monitoring Station and provided on the SCAQMD web site (www.aqmd.gov).

While the SCAQMD CEQA Air Quality Handbook does not provide any localized thresholds, the SCAQMD is proposing localized significance thresholds (LST) in their draft document titled "SCAQMD Localized Significance Threshold Methodology for CEQA Evaluations", June 19, 2003. As this Guidance has not been adopted, the following is provided for informational purposes only.

Results of the PM_{10} dispersion modeling indicate that Project-related fugitive dust and construction equipment combustion emissions would not cause an exceedance of the 10.4 $\mu g/m^3$ PM_{10} incremental increase threshold. As shown in Figure 23 on page 288, construction-related PM_{10} concentrations at the receptor with the highest potential for air quality impacts near the Project site, located at the multi-family residential area across from the Project site north of Jefferson Boulevard, would be below the 10.4 $\mu g/m^3$ PM_{10} incremental increase threshold. As Project-related fugitive dust and construction equipment combustion emissions would not cause an incremental increase in localized PM_{10} concentrations of 10.4 $\mu g/m^3$, a less-than-significant air quality impact would occur. The same conclusion applies to Playa Del Rey Elementary School, the school that would be exposed to the highest potential for pollutant concentrations of all the school sensitive receptors analyzed due to its location and proximity to the Project site. In addition, the highest potential for construction-related PM_{10} concentration impacts associated with the Project's proposed offsite roadway improvements occurs southeast of the Inglewood Boulevard and Culver Boulevard intersection (Intersection #77) would be below the 10.4 $\mu g/m^3$ threshold. This same conclusion applies to St. Gerard Majella School, which is located northwest of this intersection.

Based on the SCAQMD's guidance, in addition to a localized PM_{10} analysis, an evaluation of localized NO_2 and CO air quality concentrations was conducted. The analysis evaluated whether Project-related construction emissions would cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard based on the future conditions with the Project (i.e., adding the Project's incremental concentration to the maximum ambient concentrations of that pollutant over the last three years of monitoring data at the relevant monitoring station). A detailed discussion of the methodology used in this analysis is presented in the Air Quality Technical Appendix, Appendix E of the EIR. As shown in Table 14 on page 303, construction-related emissions of NO_2 and CO would not exceed the relevant ambient air quality standard and as a result, a less-than-significant impact would occur.

The greatest potential for toxic air contaminant (TAC) emissions would be related to diesel particulate emissions associated with heavy equipment operations during grading and

Table 14

LOCAL AIR QUALITY CONSTRUCTION IMPACTS

Pollutant	Maximum Increase in Ambient Concentrations: Project Site[a] Residential Receptor	Project Site[a] School Receptor	Off-Site Roadway Improvement[b] Residential Receptor	Off-Site Roadway Improvement[b] School Receptor
PM_{10} (24-Hour)				
Maximum Concentration Increase ($\mu g/m^3$)	5.6	2.5	10.2	7.9
Threshold ($\mu g/m^3$)	10.4	10.4	10.4	10.4
Over/(Under)	(4.8)	(7.9)	(0.2)	(2.5)
Significant Impact	No	No	No	No
NO_2 (1-hour)				
Maximum Concentration Increase ($\mu g/m^3$)	16	8	113	59
Threshold ($\mu g/m^3$)	169	169	169	169
Over/(Under)	(153)	(161)	(56)	(110)
Adverse Concentration	No	No	No	No
CO (1-Hour)				
Maximum Concentration Increase ($\mu g/m^3$)	396	222	1,225	643
Threshold ($\mu g/m^3$)	16,100	16,100	16,100	16,100
Over/(Under)	(15,704)	(15,878)	(14,875)	(15,457)
Adverse Concentration	No	No	No	No
CO (8-Hour)				
Maximum Concentration Increase ($\mu g/m^3$)	100	67	332	231
Threshold ($\mu g/m^3$)	5,405	5,405	5,405	5,405
Over/(Under)	(5,305)	(5,338)	(5,073)	(5,174)
Adverse Concentration	No	No	No	No

[a] *The maximum concentrations are located at multi-family residences across from the Project site north of Jefferson Boulevard and Play del Rey elementary School (see Figure 1 on page 20). The Air Quality Technical Appendix, Appendix E of this EIR provides detailed information regarding construction assumptions for PM_{10} calculations and the concentrations for all other receptors.*

[b] *The maximum concentrations are located at multi-family residences southeast of Intersection #77 (Inglewood Boulevard and Culver Boulevard) and St. Gerard Majella School located northwest of the intersection (see Figure 1 on page 20).*

Source: PCR Services Corporation, 2003.

excavation activities. According to the SCAQMD's methodology, health effects from carcinogenic air toxics are usually described in terms of individual cancer risk. "Individual Cancer Risk" is the likelihood that a person exposed to concentrations of TACs over a 70-year lifetime will contract cancer, based on the use of standard risk-assessment methodology. An assessment of diesel particulate emissions was conducted to assess this potential risk using the same assumptions used for the localized PM_{10} analysis discussed above. As such, this analysis includes all diesel exhaust emissions associated with on-site heavy equipment and haul trucks that would occur over the construction period. The results of this analysis, which are documented in the Air Quality Technical Appendix, Appendix E of the EIR, yields a maximum offsite individual cancer risk of 5.7 in a million. As the Project would not emit carcinogenic or toxic air contaminants that individually or cumulatively exceed the maximum individual cancer risk of ten in one million, Project-related toxic emission impacts would not be significant.

Furthermore, as discussed in Section IV.I, Safety/Risk of Upset, the Applicant proposes to incorporate numerous safety measures into the design and construction of the Proposed Project including, but not limited to, air monitoring during sub-surface work activities for detection of methane, hydrogen sulfide, and petroleum hydrocarbons. The analysis and mitigation measures set forth in Section IV.I ensure that the potential for any accidental releases of air toxic emissions or acutely hazardous materials would be less than significant from a safety as well as air quality perspective and thus, would not pose a threat to public health and safety.

Potential sources that may emit odors during construction activities include the use of architectural coatings and solvents and also from limited amounts of potentially contaminated soils on-site. As discussed above, SCAQMD Rule 1166 would limit the amount of volatile organic compound emissions from potentially contaminated soils. Also, SCAQMD Rule 1113 limits the amount of volatile organic compounds from architectural coatings and solvents. Via mandatory compliance with SCAQMD Rules, no construction activities or materials are proposed which would create objectionable odors. Therefore, no impact would occur and no mitigation measures would be required.

3.4.2 Operations

3.4.2.1 Regional Operations Impacts After Project Build-Out

Air pollutant emissions associated with occupancy and operation of the Proposed Project would be generated by the consumption of electricity and natural gas, by the operation of on-road vehicles and by miscellaneous area sources (among other things, landscaping equipment, consumer/commercial solvent usage, architectural and automotive coatings, restaurant charbroilers, and emergency generators). Emissions associated with energy production (electricity and natural gas) are classified by the SCAQMD as regional stationary source emissions. Electricity is considered an area source since it is produced at various locations within, as well as outside of, the Basin. Since it is not possible to isolate geographically where electricity production occurs, these emissions are considered to be regional in nature. Emissions of criteria pollutants associated with the production of energy were calculated using emission factors from the SCAQMD CEQA Air Quality Handbook.

Emissions modeled in the regional on-road air quality analysis were compiled using the URBEMIS 2002 emission inventory model. This computer model projects emission rates for motor vehicles based on a desired year of analysis, a projected vehicle fleet mix, projected vehicle speeds, and whether these emissions are projected to occur during the summer or the winter months and other factors. These emissions were calculated using the projected ambient temperature range. Assumptions used in preparing the model analysis were consistent with those recommended in the SCAQMD CEQA Air Quality Handbook. The URBEMIS 2002 output files are included in the Air Quality Technical Appendix, Appendix E of this EIR.

An analysis was also performed to determine the amount of pollutants emitted from landscaping maintenance operations. Calculations are summarized and detailed in the Air Quality Technical Appendix, Appendix E of this EIR. Emissions in pounds per day were calculated based on the total landscaped acreage and a predicted 2005 California statewide engine population and associated emissions.[94] Emissions for PM_{10}, NO_X, and total ROC are estimated to be less than 2.0 pounds per day. CO emissions are estimated to be 5.7 pounds per day. Based on these calculations, emissions from landscaping operations are found to be negligible in comparison to those from other sources.

Project-related operational emissions for on-road mobile sources, stationary and miscellaneous area sources are summarized in Table 15 on page 306 and detailed in the Air Quality Technical Appendix, Appendix E of the EIR.

As indicated in Table 15, regional emissions resulting from the Proposed Project would not exceed the SCAQMD significance threshold for SO_X. However, as indicated, regional emissions resulting from the Proposed Project would exceed the SCAQMD daily significance thresholds for CO, NO_X, PM_{10}, and ROC and, therefore, would result in a significant impact. In addition, since the Proposed Project would exceed the SCAQMD daily significance threshold for ROC it is anticipated that the Proposed Project would also exceed the annual significance threshold of 10 tons per year for VOC.[95] Incorporation of mitigation measures would reduce this impact to the extent feasible. However, this impact remains a significant and unavoidable adverse impact.

The SCAQMD's recommended approach for assessing air toxics is to evaluate conditions on a localized rather than regional basis. This approach is recommended by the SCAQMD as it has been concluded that if a project would not result in a localized air toxics impacts, then regional air toxics impacts would be similarly less than significant. As the analysis of localized

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[94] *The 2005 California statewide engine population is the latest predicted year, and was therefore used as a conservative estimate of potential emissions for Project-buildout (2010) since any future regulations would further reduce potential emissions.*

[95] *ROC is a subset of VOC and only includes organic compounds which can take part in chemical reactions in the atmosphere to form ozone. For purposes of this analysis ROC and VOC are conservatively assumed to be equal.*

Table 15

PROPOSED PROJECT-RELATED OPERATIONAL WEEKDAY EMISSIONS
(Pounds per Day)

Emission Source	CO	NO_X	PM_{10}	ROC	SO_X
On Road Mobile Sources	1,783	214	236	169	1
Stationary and other Miscellaneous Sources [a]	739	148	130	413	26
Total (Proposed Project)	**2,522**	**362**	**366**	**582**	**27**
SCAQMD Significance Threshold	550	55	150	55	150
Over (Under)	1,972	307	216	527	(123)
Significant?	Yes	Yes	Yes	Yes	No

[a] *Emissions from sources include electricity and natural gas consumption provided in the SCAQMD CEQA Air Quality Handbook. Miscellaneous sources include among other things, consumer/commercial solvent usage (e.g., detergents, cleaning compounds, glues, polishes, floor finishes, cosmetics, perfume, antiperspirants, rubbing alcohol, room fresheners, car wax, paint and lawn care products), landscaping equipment, architectural and automotive coatings, restaurant charbroilers, forklifts, and emergency generators.*

Sources: PCR Services Corporation, 2003.

air toxics impacts presented below concludes a less-than-significant impact, it is concluded that the Proposed Project would also result in a less-than-significant regional air toxics impact.

According to the SCAQMD CEQA Air Quality Handbook, land uses and industrial operations that are associated with odor complaints include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies and fiberglass molding. The Proposed Project land uses do not include any of these uses or industrial operations that are identified by the SCAQMD as being associated with odor complaints. However, on-site trash receptacles used by the new residential, office and community serving land uses could create adverse odors. As trash receptacles would be located and maintained in a manner that promotes odor control, no adverse odor impacts are anticipated from these types of land uses. However, there is a potential that on-site retail and restaurant uses have the potential to create odors. With regard to retail uses, it has not yet been determined what retail uses will occupy the Project site, however it is anticipated that any products and/or retail operations that have the potential to emit odors (e.g., trash enclosures) would be packaged in sealed containers and/or handled in a manner that would not emit any objectionable odors.

With regard to restaurant uses, most restaurants generally do not produce adverse odors, as this would not be conducive to patronage. Notwithstanding, fast food restaurants do have the potential for the generation of odors from the operation of char-broilers and deep fat fryers. While there is a potential for odors to occur, compliance with industry standard odor control practices, SCAQMD Rule 402 (Nuisance), and SCAQMD Best Available Control Technology Guidelines would limit potential objectionable odor impacts to a less-than-significant level.

3.4.2.2 Regional Concurrent Construction and Operation Impacts

The potential exists that the later stages of Project construction could occur concurrently with the occupancy of the earlier stages of development. Therefore, emissions associated with concurrent construction and operation activities were calculated. It was determined that concurrent emissions would be their greatest in the latter stages of Project construction, wherein the Proposed Project would nearly be built-out, but some construction activities would still be occurring as well as the Project's proposed off-site roadway improvements.[96] As summarized in Table 16 on page 308, concurrent construction and operational emissions would exceed SCAQMD daily thresholds for CO, NO_X, PM_{10}, and ROC, but would not exceed the SCAQMD daily threshold for SO_X. Thus, a significant regional air quality impact would occur.

3.4.2.3 Local Impacts

Project traffic, during the operational phase of the Project, would have the potential to create local area impacts. An analysis at selected intersections was performed to determine the potential for the presence or the creation of CO hot spots attributable to the Proposed Project. The analysis considered traffic associated with buildout of the Proposed Project, as this represents the highest level of Project-related traffic volumes. Local area CO concentrations were projected using the CALINE-4 traffic pollutant dispersion model. The analysis of CO impacts followed the protocol recommended by the California Department of Transportation and published in the document titled Transportation Project-Level Carbon Monoxide Protocol, December 1997. It is also consistent with procedures identified through the SCAQMD's CO modeling protocol, with all four corners of each intersection analyzed to determine whether Project development would result in a CO concentration that exceeds federal or state CO standards. As stated in the Protocol, receptor locations for the one-hour analysis were located 3 meters from each intersection corner and receptor locations for the eight-hour analysis were located 7 meters from each intersection corner.

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[96] *The maximum concurrent construction and operational emissions was determined based on the maximum construction daily emissions calculated on a monthly basis and the amount of Project development occupancy. It was determined that this scenario would occur during the latter stages of the Project development assuming the occupancy of approximately 2,440 residential dwelling units, 175,000 square feet of office space, 150,000 square feet of retail, and 40,000 square feet of community serving space and the construction (i.e., building erection) of the Project's last 160 residential dwelling units and off-site roadway improvements.*

Table 16

CONCURRENT OPERATION AND CONSTRUCTION EMISSIONS [a]
(Pounds per day)

Emission Source	CO	NO_X	PM_{10}	ROC	SO_X
Operation Emissions [b]	2,604	369	357	567	27
On-Site Construction Emissions	108	69	3	275	10
Off-Site Roadway Improvements	539	409	29	65	<1
Total	3,251	847	389	907	27
SCAQMD Construction Significance Threshold	550	100	150	75	150
Over (Under)	2,701	747	239	832	(123)
Significant?	Yes	Yes	Yes	Yes	No
SCAQMD Operation Significance Threshold	550	55	150	55	150
Over (Under)	2,701	692	239	852	(123)
Significant?	Yes	Yes	Yes	Yes	No

[a] *Maximum concurrent construction and operational emissions occur in 2009. Project development assumes occupancy of approximately 2,440 residential dwelling units, 175,000 square feet of office space, 150,000 square feet of retail, and 40,000 square feet of community serving space and the construction of the Project's last 160 residential dwelling units and the Project's proposed off-site roadway improvements*

[b] *Operational emissions for year 2009 are actually more than those generated at Project buildout in 2010 since the 160 residential units are not offset emissions associated with the change in emission factors from 2009 to 2010.*

Source: PCR Services Corporation, 2003.

The following intersections as shown in Figure 24 on page 309 were selected based on their Level of Service (LOS), the Project's traffic contribution to the intersection, the proximity of Project traffic to sensitive receptors, and intersection traffic volumes.

1) Centinela Avenue and Jefferson Boulevard
2) La Tijera Boulevard and Centinela Avenue
3) Sepulveda Boulevard and Centinela Avenue
4) Culver Boulevard and Jefferson Boulevard
5) Sepulveda Boulevard and Howard Hughes Parkway
6) I-405 Southbound Ramps and Jefferson Boulevard
7) Lincoln Boulevard and Jefferson Boulevard
8) Lincoln Boulevard and Manchester Avenue
9) Lincoln Boulevard and Bluff Creek Drive
10) Lincoln Boulevard and Washington Boulevard
11) Sepulveda Boulevard and Manchester Avenue
12) Inglewood Boulevard and Culver Boulevard

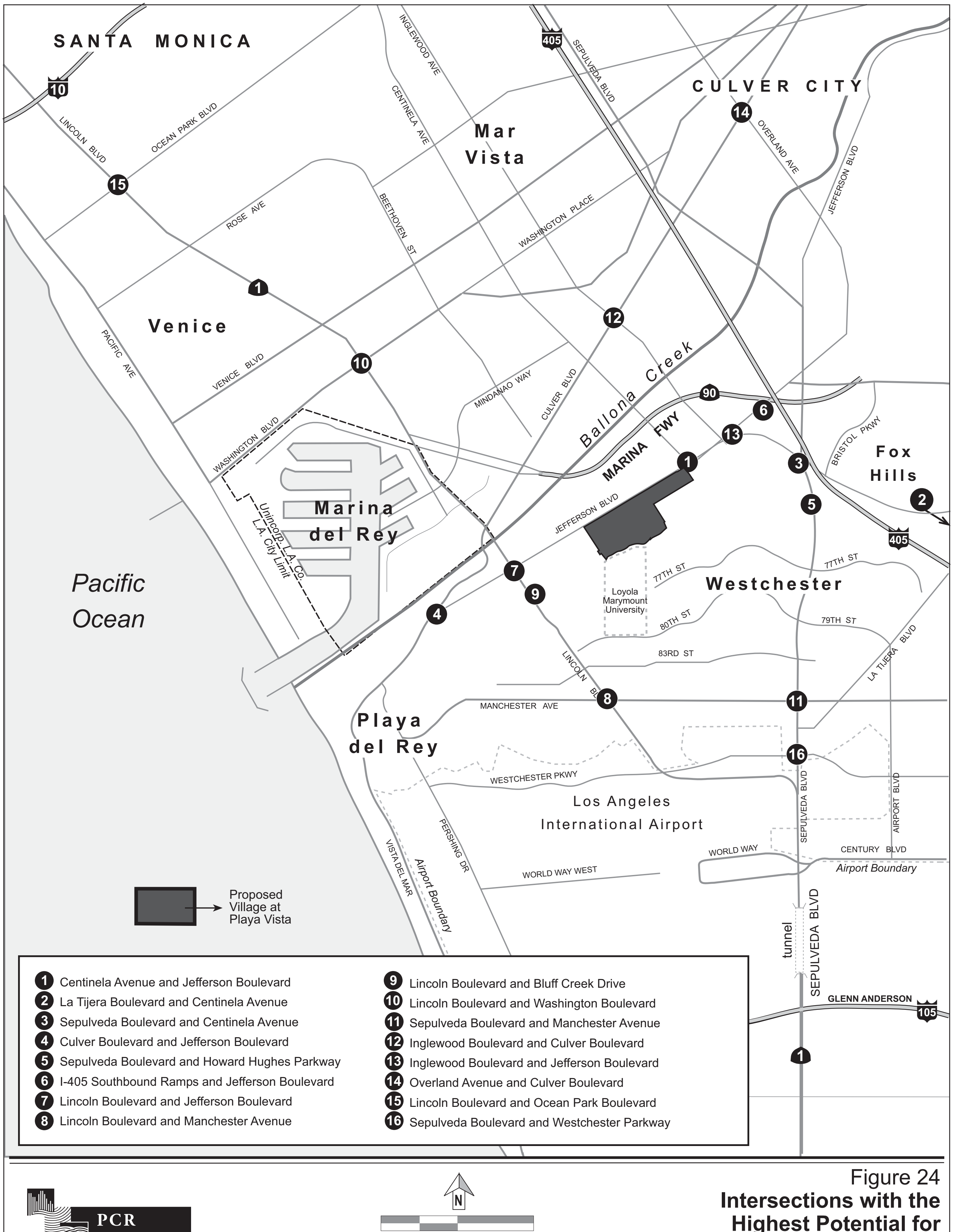

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Figure 24
Intersections with the Highest Potential for CO Hotspot Formation

Source: Acentech, Inc. and PCR Services Corporation, 2003

13) Inglewood Boulevard/Centinela Avenue and Jefferson Boulevard
14) Overland Avenue and Culver Boulevard
15) Lincoln Boulevard and Ocean Park Boulevard
16) Sepulveda Boulevard and Westchester Parkway

In addition to these intersections, Playa del Rey Elementary School was examined as a sensitive receptor. CO levels near the school are represented by the intersections of Inglewood Boulevard and Jefferson Boulevard and Centinela Avenue and Jefferson Boulevard.

The CALINE-4 model generates the results of CO concentrations averaged over a one-hour time period under conservative atmospheric conditions for the area which include low wind speeds and low atmospheric circulation. Eight-hour concentrations were calculated by converting one-hour concentrations to eight-hour equivalents, using the conversion protocol recommended by the SCAQMD.

Future CO concentrations are determined by adding the predicted increase in CO concentrations to a future forecasted ambient concentration. 2010 CO ambient concentrations were obtained from the SCAQMD Air Quality Analysis Guidance Handbook.[97]

The first step in the evaluation of local area impacts was to evaluate baseline traffic conditions in 2010 without implementation of the Proposed Project. Baseline conditions were identified for the weekday A.M. and P.M. peak hour. Impacts were analyzed for Proposed Project's impacts prior to traffic mitigation and after traffic mitigation. The contribution of the Proposed Project traffic to CO concentrations at the study intersections was calculated and added to the 2010 ambient concentrations to determine whether 2010 CO concentrations would exceed state and federal CO standards.

Two sets of local-scale CO analyses were conducted. In the first analysis, emissions from traffic attributable to the full development of the Proposed Project, prior to traffic mitigation, were evaluated against a baseline condition that did not involve emissions from traffic generated from the Project. The second analysis evaluates the impacts after the implementation of the Project's traffic mitigation measures. The second analysis incorporates the traffic mitigation measures developed in the Project's study, which is summarized in Section IV.K.(1), Traffic of this EIR.

[97] *http://www.aqmd.gov/ceqa/hdbk.html. (CO Concentrations for Hotspot Analysis – West Los Angeles Monitoring Station.)*

The Proposed Project's CO concentrations without mitigation measures for A.M. and P.M. peak 1- and 8-hour CO levels are presented in Table 17 on page 312 and Table 18 on page 313, respectively. The analysis for 1- and 8-hour CO levels with the Project traffic mitigation measures are shown in Table 19 on page 314 and Table 20 on page 315, respectively. The maximum 1- and 8-hour predicted concentrations, as shown in Table 17 through Table 20, are not anticipated to result in any exceedances of the state one-hour CO standards at any of the study intersections under the traffic pre-mitigation or post-mitigation scenarios. Similarly, eight-hour concentrations at the analyzed intersections would remain below the state standards. In addition, the Project concentration increment has been evaluated in order to compare Project conditions to predicted 2010 ambient concentrations. The post-mitigation scenario has CO concentration levels lower than 2010 Baseline conditions at the following locations: Culver Boulevard and Jefferson Boulevard (1- and 8-hour A.M. concentrations), and Sepulveda Boulevard and Westchester Parkway (1- and 8-hour P.M. concentrations). These lower levels of CO are as a result of the beneficial effects of the Project's proposed traffic mitigation measures (e.g., signalization improvements, change in routing, improved level of service, etc.). The post-mitigation scenario has CO concentrations higher than the future pre-mitigation Project scenario at the following locations: Interstate 405 Southbound Ramp and Jefferson Boulevard (1-hour A.M. concentrations) and Lincoln Boulevard and Bluff Creek Drive (1- and 8-hour P.M. concentrations). These two intersections would experience a marginal increase in CO concentrations (no greater than 0.1 parts per million) due to the rerouting of traffic caused by the implementation of the Project's traffic mitigation measures. The majority of CO concentrations remained the same between the pre- and post-mitigation scenarios although concentrations varied minimally at a few intersections.

Since significant impacts would not occur at the intersections with the highest traffic volumes that are located adjacent to sensitive receptors, no significant impacts are anticipated to occur at any other locations in the study area as the conditions yielding CO hotspots would not be worse than those occurring at the analyzed intersections. Consequently, the sensitive receptors that are included in this analysis would not be significantly affected by CO emissions generated by the net increase in traffic which would occur under the Proposed Project. As the proposed Project does not cause or localize air quality impacts related to mobile sources, emissions would therefore be less than significant for the Proposed Project.

Potential localized PM_{10} impacts from Project-related stationary source operational emissions are anticipated to be minimal, since the Proposed Project does not include any industrial, manufacturing or similar types of facilities (e.g., power plants, landfills, concrete batch plants, and warehouse/distribution facilities) wherein large stationary combustion equipment would be located. Potential stationary combustion equipment that may occur within the Project site would include emergency generators and equipment used to off-load deliveries in support of the Project's office, commercial, and retail land uses (e.g., forklift). All on-site stationary sources that have the potential to generate substantial air quality emissions would be

Table 17

PROJECT BUILDOUT (YEAR 2010)
LOCAL AREA CARBON MONOXIDE 1-HOUR DISPERSION ANALYSIS BEFORE PROJECT MITIGATION [a]

Intersection	Peak Period [b]	Maximum 1-Hour 2010 Base Concentration [c]	Project Increment [d]	Maximum 1-Hour 2010 w/Project Concentration [e]
Centinela Ave. and Jefferson Blvd.	A.M.	6.5	0.2	6.7
	P.M.	6.2	0.7	6.9
La Tijera Blvd. and Centinela Blvd.	A.M.	7.4	0.6	8.0
	P.M.	6.5	0.1	6.6
Sepulveda Blvd. and Centinela Blvd.	A.M.	10.1	0.4	10.5
	P.M.	11.0	0.9	11.9
Culver Blvd. and Jefferson Blvd.	A.M.	8.3	0.1	8.4
	P.M.	7.6	0.2	7.8
Sepulveda Blvd. and Howard Hughes Pkwy.	A.M.	9.9	0.3	10.2
	P.M.	9.5	0.4	9.9
I-405 SB Ramps and Jefferson Blvd.	A.M.	7.2	0.1	7.3
	P.M.	7.4	0.2	7.6
Lincoln Blvd. and Jefferson Blvd.	A.M.	7.7	0.1	7.8
	P.M.	8.7	1.6	10.3
Lincoln Blvd. and Manchester Ave.	A.M.	9.0	0.2	9.2
	P.M.	8.5	0.3	8.8
Lincoln Blvd. and Bluff Creek Dr.	A.M.	8.5	0.5	9.0
	P.M.	9.6	0.6	10.2
Lincoln Blvd. and Washington Blvd.	A.M.	10.4	0.2	10.6
	P.M.	10.3	0.9	11.2
Sepulveda Blvd. and Manchester Ave.	A.M.	8.2	0.2	8.4
	P.M.	9.4	0.3	9.7
Inglewood Blvd. and Culver Blvd.	A.M.	6.2	0.0	6.2
	P.M.	6.9	0.1	7.0
Inglewood Blvd./Centinela Ave. and Jefferson Blvd.	A.M.	6.3	0.1	6.5
	P.M.	6.1	0.2	6.3
Overland Ave. and Culver Blvd.	A.M.	6.5	0.2	6.7
	P.M.	6.3	0.2	6.5
Lincoln Blvd. and Ocean Park Blvd.	A.M.	7.1	0.0	7.1
	P.M.	7.6	0.1	7.7
Sepulveda Blvd. and Westchester Pkwy.	A.M.	7.8	0.0	7.8
	P.M.	8.3	0.2	8.5

NOTE: All concentrations are in parts per million (ppm).
[a] *The State standard for 1-hour CO concentrations is 20 ppm and the Federal standard is 35 ppm.*
[b] *Peak hour traffic volumes based on the Traffic Analysis prepared for the project by Kaku Associates, April 2003.*
[c] *SCAQMD 2010 ambient background concentration (4.4 ppm) + traffic CO contribution (related projects + ambient traffic growth).*
[d] *Increments are the maximum 1-hour concentrations for 2010 w/Project - maximum 1-hour concentrations for 2010 Base.*
[e] *SCAQMD 2010 ambient background concentration (4.4 ppm) + traffic CO contribution (related projects + ambient traffic growth + project traffic).*
Source: PCR Services Corporation, 2003.

Table 18

PROJECT BUILDOUT (YEAR 2010)
LOCAL AREA CARBON MONOXIDE 8-HOUR DISPERSION ANALYSIS BEFORE PROJECT MITIGATION [a]

Intersection	Peak Period [b]	Maximum 8-Hour 2010 Base Concentration [c]	Project Increment [d]	Maximum 8-Hour 2010 w/Project Concentration [e]
Centinela Ave. and Jefferson Blvd.	A.M.	4.1	0.2	4.3
	P.M.	3.9	0.4	4.3
La Tijera Blvd. and Centinela Blvd.	A.M.	4.4	0.3	4.7
	P.M.	4.1	0.0	4.1
Sepulveda Blvd. and Centinela Blvd.	A.M.	5.9	0.2	6.1
	P.M.	6.8	0.6	7.4
Culver Blvd. and Jefferson Blvd.	A.M.	4.8	0.1	4.9
	P.M.	4.6	0.2	4.8
Sepulveda Blvd. and Howard Hughes Pkwy.	A.M.	6.2	0.2	6.4
	P.M.	6.0	0.2	6.2
I-405 SB Ramps and Jefferson Blvd.	A.M.	4.1	0.1	4.2
	P.M.	4.2	0.1	4.3
Lincoln Blvd. and Jefferson Blvd.	A.M.	4.8	0.1	4.9
	P.M.	5.4	0.8	6.2
Lincoln Blvd. and Manchester Ave.	A.M.	5.5	0.1	5.6
	P.M.	5.0	0.1	5.1
Lincoln Blvd. and Bluff Creek Dr.	A.M.	5.3	0.2	5.5
	P.M.	5.7	0.4	6.1
Lincoln Blvd. and Washington Blvd.	A.M.	5.9	0.1	6.0
	P.M.	6.0	0.4	6.4
Sepulveda Blvd. and Manchester Ave.	A.M.	4.8	0.1	4.9
	P.M.	5.7	0.2	5.9
Inglewood Blvd. and Culver Blvd.	A.M.	3.7	0.1	3.8
	P.M.	4.1	0.0	4.1
Inglewood Blvd./Centinela Ave. and Jefferson Blvd.	A.M.	3.9	0.1	4.0
	P.M.	3.9	0.0	3.9
Overland Ave. and Culver Blvd.	A.M.	4.1	0.0	4.1
	P.M.	3.9	0.1	4.0
Lincoln Blvd. and Ocean Park Blvd.	A.M.	4.2	0.0	4.2
	P.M.	4.5	0.1	4.6
Sepulveda Blvd. and Westchester Pkwy.	A.M.	4.7	0.0	4.7
	P.M.	5.0	0.1	5.1

NOTE: All concentrations are in parts per million (ppm).

[a] *The State standard for 8-hour CO concentrations is 9.1 ppm and the Federal standard is 9.5 ppm.*
[b] *Peak hour traffic volumes based on the Traffic Analysis prepared for the project by Kaku Associates, April 2003.*
[c] *SCAQMD 2010 ambient background concentration (2.8 ppm) + traffic CO contribution (related projects + ambient traffic growth).*
[d] *Increments are the maximum 8-hour concentrations for 2010 w/Project - maximum 8-hour concentrations for 2010 Base.*
[e] *SCAQMD 2010 ambient background concentration (2.8 ppm) + traffic CO contribution (related projects + ambient traffic growth + project traffic).*

Source: PCR Services Corporation, 2003.

Table 19

PROJECT BUILDOUT WITH MITIGATION (YEAR 2010)
LOCAL AREA CARBON MONOXIDE 1-HOUR DISPERSION ANALYSIS [a]

Intersection	Peak Period [b]	Maximum 1-Hour 2010 Base Concentration [c]	Project Increment [d]	Maximum 1-Hour 2010 w/Project and Mitigation Concentration [e]
Centinela Ave. and Jefferson Blvd.	A.M.	6.5	0.2	6.7
	P.M.	6.2	0.6	6.8
La Tijera Blvd. and Centinela Blvd.	A.M.	7.4	-1.0	6.4
	P.M.	6.5	0.1	6.6
Sepulveda Blvd. and Centinela Blvd.	A.M.	10.1	0.2	10.3
	P.M.	11.0	0.1	11.1
Culver Blvd. and Jefferson Blvd.	A.M.	8.3	-0.5	7.8
	P.M.	7.6	0.0	7.6
Sepulveda Blvd. and Howard Hughes Pkwy.	A.M.	9.9	0.0	9.9
	P.M.	9.5	0.2	9.7
I-405 SB Ramps and Jefferson Blvd.	A.M.	7.2	0.2	7.4
	P.M.	7.4	0.2	7.6
Lincoln Blvd. and Jefferson Blvd.	A.M.	7.7	0.0	7.8
	P.M.	8.7	1.0	9.7
Lincoln Blvd. and Manchester Ave.	A.M.	9.0	0.2	9.2
	P.M.	8.5	0.3	8.8
Lincoln Blvd. and Bluff Creek Dr.	A.M.	8.5	0.5	9.0
	P.M.	9.6	0.7	10.3
Lincoln Blvd. and Washington Blvd.	A.M.	10.4	0.2	10.6
	P.M.	10.3	0.9	11.2
Sepulveda Blvd. and Manchester Ave.	A.M.	8.2	0.1	8.3
	P.M.	9.4	0.3	9.7
Inglewood Blvd. and Culver Blvd.	A.M.	6.2	-0.1	6.1
	P.M.	6.9	-0.4	6.5
Inglewood Blvd./Centinela Ave. and Jefferson Blvd.	A.M.	6.3	0.1	6.5
	P.M.	6.1	0.1	6.2
Overland Ave. and Culver Blvd.	A.M.	6.5	0.2	6.7
	P.M.	6.3	0.2	6.5
Lincoln Blvd. and Ocean Park Blvd.	A.M.	7.1	0.0	7.1
	P.M.	7.6	0.1	7.7
Sepulveda Blvd. and Westchester Pkwy.	A.M.	7.8	0.0	7.8
	P.M.	8.3	-0.2	8.1

NOTE: All concentrations are in parts per million (ppm).

[a] *The State standard for 1-hour CO concentrations is 20 ppm and the Federal standard is 35 ppm.*

[b] *Peak hour traffic volumes based on the Traffic Analysis prepared for the project by Kaku Associates, April 2003.*

[c] *SCAQMD 2010 ambient background concentration (4.4 ppm) + traffic CO contribution (related projects + ambient traffic growth).*

[d] *Increments are the maximum 1-hour concentrations for 2010 w/Project and Mitigation - maximum 1-hour concentrations for 2010 Base.*

[e] *SCAQMD 2010 ambient background concentration (4.4 ppm) + traffic CO contribution (related projects +ambient traffic growth + mitigated project traffic).*

Source: PCR Services Corporation, 2003.

Table 20

PROJECT BUILDOUT WITH MITIGATION(YEAR 2010)
LOCAL AREA CARBON MONOXIDE 8-HOUR DISPERSION ANALYSIS [a]

Intersection	Peak Period [b]	Maximum 8-Hour 2010 Base Concentration [c]	Project Increment [d]	Maximum 8-Hour 2010 w/Project and Mitigation Concentration [e]
Centinela Ave. and Jefferson Blvd.	A.M.	4.1	0.1	4.2
	P.M.	3.9	0.3	4.2
La Tijera Blvd. and Centinela Blvd.	A.M.	4.4	-0.3	4.1
	P.M.	4.1	0.3	4.4
Sepulveda Blvd. and Centinela Blvd.	A.M.	5.9	0.1	6.0
	P.M.	6.8	0.0	6.8
Culver Blvd. and Jefferson Blvd.	A.M.	4.8	-0.2	4.6
	P.M.	4.6	0.0	4.6
Sepulveda Blvd. and Howard Hughes Pkwy.	A.M.	6.2	0.0	6.2
	P.M.	6.0	0.0	6.0
I-405 SB Ramps and Jefferson Blvd.	A.M.	4.1	0.1	4.2
	P.M.	4.2	0.1	4.3
Lincoln Blvd. and Jefferson Blvd.	A.M.	4.8	0.0	4.8
	P.M.	5.4	0.4	5.8
Lincoln Blvd. and Manchester Ave.	A.M.	5.5	0.1	5.6
	P.M.	5.0	0.1	5.1
Lincoln Blvd. and Bluff Creek Dr.	A.M.	5.3	0.2	5.5
	P.M.	5.7	0.5	6.2
Lincoln Blvd. and Washington Blvd.	A.M.	5.9	0.1	6.0
	P.M.	6.0	0.4	6.4
Sepulveda Blvd. and Manchester Ave.	A.M.	4.8	0.0	4.8
	P.M.	5.7	0.2	5.9
Inglewood Blvd. and Culver Blvd.	A.M.	3.7	0.1	3.8
	P.M.	4.1	0.0	4.1
Inglewood Blvd./Centinela Ave. and Jefferson Blvd.	A.M.	3.9	0.0	3.9
	P.M.	3.9	0.0	3.9
Overland Ave. and Culver Blvd.	A.M.	4.1	0.0	4.1
	P.M.	3.9	0.1	4.0
Lincoln Blvd. and Ocean Park Blvd.	A.M.	4.2	0.0	4.2
	P.M.	4.5	0.1	4.6
Sepulveda Blvd. and Westchester Pkwy.	A.M.	4.7	0.0	4.7
	P.M.	5.0	-0.1	4.9

NOTE: All concentrations are in parts per million (ppm).

[a] *The State standard for 8-hour CO concentrations is 9.1 ppm and the Federal standard is 9.5 ppm.*

[b] *Peak hour traffic volumes based on the Traffic Analysis prepared for the project by Kaku Associates, April 2003.*

[c] *SCAQMD 2010 ambient background concentration (2.8 ppm) + traffic CO contribution.*

[d] *Increments are the maximum 8-hour concentrations 2010 w/Project and Mitigation - maximum 8-hour concentrations 2010 Base (related projects + ambient traffic growth).*

[e] *SCAQMD 2010 ambient background concentration (2.8 ppm) + traffic CO contribution (related projects +ambient traffic growth + mitigated project traffic).*

Source: PCR Services Corporation, 2003.

subject to SCAQMD Regulation XIII (New Source Review) and as such, would be equipped with best available control technology (BACT). With regard to the off-loading of commercial deliveries, idling trucks and forklift emissions would be a minor source of PM_{10} emissions as it is anticipated that only a few deliveries would be made to a retail or commercial operation on a daily basis as opposed to a potentially significant source such as a warehouse/distribution facility where hundreds of deliveries would occur on a daily basis.

While no stationary sources of the type described above are anticipated to locate within the Project site, any new stationary sources would be required to comply with SCAQMD Rule XIII and through air quality modeling demonstrate compliance with the incremental PM_{10} significance threshold of 2.5 $\mu g/m^3$.[98] Therefore, Project-related stationary source combustion equipment emissions would not cause an incremental increase in localized PM_{10} concentrations of 2.5 $\mu g/m^3$ and would result in a less-than-significant impact.

According to the SCAQMD CEQA Handbook, land uses associated with toxic emissions include industrial, manufacturing, and commercial land uses such as gas stations and dry cleaning processing facilities (i.e., use of Perchloroethylene on-site). The Proposed Project specifically prohibits such potential toxic emitting land uses from being developed on the Project site. While no stationary sources of the type that could emit significant amounts of air toxics are anticipated to be located within the Project site, any new stationary sources would be required to comply with SCAQMD Rule XIV (New Source Review of Air Toxics) and through air dispersion modeling, if necessary, demonstrate that the source would not exceed the maximum individual cancer risk of ten in one million. Potential sources of air toxic emissions associated with Project development include, but may not be limited to, diesel particulates from loading docks, delivery trucks, and buses as well as small amounts of toxics from consumer household products (e.g., detergents, cleaning compounds, glues, polishes, floor finishes, cosmetics, perfume, antiperspirants, rubbing alcohol, room fresheners, car wax, paint and lawn care products). These sources are typical within the urban environment and would contribute small amounts of toxic air pollutants to the Project vicinity, and would be well below any levels that would result in a significant impact on human health. Also, potential localized air toxic impacts from Project-related mobile source emissions would be minimal since the Proposed Project does not include any facilities (e.g., warehouse distribution and truck terminals) that would substantially change the number of heavy-duty trucks on the surrounding roadway network resulting in an increase of diesel particulate emissions. A quantitative analysis of potential toxic air contaminants is technically infeasible since potential sources can not be specifically identified on the Project site. In addition, as discussed above any facility that warrants such an analysis will be required to comply with SCAQMD Rule XIV (New Source Review of Air Toxics).

[98] *SCAQMD Rule XIII also provides allowable changes in concentration for CO and NO_s for new stationary sources.*

Therefore, given the amount of diesel particulate, consumer household products, the minimal mobile source air toxics generated by the Project, and that none of the allowed land uses associated with Project development have the potential to emit high levels of potentially toxic air contaminants, operation of the Project is not anticipated to emit carcinogenic or toxic air contaminants that individually or cumulatively exceed the maximum individual cancer risk of ten in one million. As such, a less-than-significant impact on human health would occur.

An analysis of potential accidental releases of air toxic emissions or acutely hazardous materials posing a threat to public health and safety was also conducted. As discussed above, the Project would have limited amounts of hazardous materials on site and those that do occur would be primarily related to consumer products. These sources would be well below levels that could result in a significant impact on public health and safety. Potential impacts regarding natural gas storage, transmissions facilities, and soil gas (i.e., methane, hydrogen sulfide, and BTEX) are analyzed in Section IV.I, Safety/Risk of Upset. As discussed in Section IV.I, Safety/Risk of Upset, a health risk assessment (HRA) was conducted related to the presence of potentially toxic compounds (e.g., benzene, toluene, ethylbenzene, xylenes, and hydrogen sulfide) in the soil gas at the Project site using procedures established by the California EPA's, Department of Toxic Substances Control and Office of Environmental Health Hazard Assessment. Based on very conservative assumptions to assure the maximum protection of public health, cancer risk at the Proposed Project site and vicinity was estimated in the HRA at one in ten million, well below the threshold of significance. Non-cancer hazards were also assessed in the HRA utilizing the highest concentration of each of the pollutants of concern. The non-cancer hazard index for the maximum constituent concentrations at the site is estimated at 0.05, well below the threshold of significance (i.e., 1.0). In addition, numerous safety measures have been incorporated into the design and operation of the Proposed Project that limit the potential for an accidental release of air toxic emissions or acutely hazards materials posing a threat to public health and safety to a less-than-significant level (refer to Section IV.I, Safety/Risk of Upset, for additional information). As an example, a methane safety program is included as a Project Design Feature that would provide a comprehensive program to require appropriate safety measures in the design, construction, and long-term operation of the Proposed Project. Specifically, potentially affected buildings would include a gravel blanket, with pipes to ventilate methane gas from underneath the building, an impermeable methane membrane underneath the building, and methane detection alarm systems within the building.

In addition to the analysis of potential on-site sources of air toxics, an analysis was also conducted to determine whether the Proposed Project would result in the siting of sensitive receptors within a quarter mile of existing off-site sources of toxic air contaminants that would result in a significant health impact. The Project has been analyzed using screening procedures identified in Chapter 5 of the SCAQMD <u>CEQA Air Quality Handbook</u>. Based on this screening analysis, which included an EPA, ARB, and SCAQMD database search as well as a field reconnaissance of the Project vicinity, no sources of toxic air contaminants were identified that would result in levels of air toxics that would emit carcinogenic or toxic air contaminants that could result in a significant health risk. As such, Project development would result in a less-than-significant impact on human health.[99] Also, as discussed in Section 2.0, Setting, the Project vicinity is within a cancer risk area of 600 to 800 in one million, which is approximately 43 to 57 percent lower than the Basin's average carcinogenic risk of 1,400 in one million.

According to the SCAQMD CEQA Air Quality Handbook, land uses and industrial operations that are associated with odor complaints include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies and fiberglass molding. The Proposed Project's land uses do not include any of these types of uses or industrial operations that are identified by the SCAQMD as being associated with odor complaints. However, on-site trash receptacles used by the new residential, office and community serving land uses could create adverse odors. As trash receptacles would be located and maintained in a manner that promotes odor control, no adverse odor impacts are anticipated from these types of land uses. However, there is a potential that on-site retail and restaurant uses could create odors. With regard to retail uses, it has not yet been determined what types of retail uses would occupy the Project site, however it is anticipated that any products and/or retail operations that have the potential to emit odors (e.g., trash enclosures) would be packaged in sealed containers and/or handled in a manner that would not emit any objectionable odors.

With regard to restaurant uses, most restaurants generally do not produce adverse odors, as this would not be conducive to patronage. Notwithstanding, fast food restaurants do have the potential for the generation of odors from the operation of char-broilers and deep fat fryers. While there is a potential for odors to occur, compliance with industry standard odor control practices, SCAQMD Rule 402 (Nuisance), and SCAQMD Best Available Control Technology Guidelines would limit potential objectionable odor impacts to a less-than-significant level.

3.4.3 Consistency With Adopted Plans and Policies

The SCAQMD has adopted criteria for assessing consistency with regional plans and the Air Quality Management Plan in its CEQA Air Quality Handbook. This section of the analysis examines the consistency of the Proposed Project with SCAG's RCPG, the SCAQMD's AQMP, and the City of Los Angeles General Plan Air Quality policies.

[99] *EPA's Environmental Mapper of potential Superfund Sites, Hazardous Waste, Toxic Releases, and Air Emissions (http://www.epa.gov/enviro/html/em/index.html) and ARB's Facility Search for Emissions Inventory of Air Toxics (http://www.arb.ca.gov/app/emsinv/facinfo/facinfo.php).*

3.4.3.1 SCAQMD Handbook Policy Analysis

The current direction provided by SCAQMD staff is that a project that is consistent with the local General Plan is also considered consistent with applicable air quality related regional plans (e.g., AQMP).[100] This direction reflects the process whereby the growth forecast upon which the AQMP is based reflects input received from local jurisdictions based on their respective adopted General Plans. While the Proposed Project is not consistent with the land use designations provided in the City's General and Specific Plans, the underlying issue is not one of consistency among land use designations, but rather the amount of potential emissions associated with the designated land use. In response, an analysis has been conducted to compare emissions related to the Proposed Project and development allowed under the Area D Specific Plan, which is consistent with the designations set forth in the City of Los Angeles' General Plan for the Project site. A comparison of operational emissions that would be generated by the Proposed Project and the land uses set forth in the Area D Specific Plan is presented in Table 21 on page 320.

As shown in Table 21, the Proposed Project would emit approximately 1,460 pounds per day less of CO; 275 pounds per day less of NO_X; 191 pounds per day less of PM_{10}; 219 pounds per day less of ROC; and 20 pounds per day less of SO_X. As such, the Proposed Project would emit approximately 37 percent less CO; 43 percent less NO_X; 34 percent less PM_{10}; 27 percent less ROC; and 43 percent less SO_X than land uses consistent with the existing Area D Specific Plan would. As a result, operational emissions attributable to the Proposed Project would be less than that which would be generated by the land uses permitted by the Area D Specific Plan for all criteria pollutants. Therefore, while the Proposed Project is not consistent with its General and Specific Plan designations, the Proposed Project would generate relatively lower emission levels. As the amount of emissions generated at a development site is more relevant in terms of determining AQMP consistency than its land use designations, the Proposed Project is concluded to be compatible with the SCAQMD's AQMP and other air quality related regional plans.

The SCAQMD CEQA Air Quality Handbook also sets forth specific criteria for determining a project's consistency with SCAQMD and SCAG policies. An analysis pursuant to these criteria is provided below.

In accordance with the procedures established in the SCAQMD CEQA Air Quality Handbook, the following criteria are required to be addressed in order to determine the Project's consistency with SCAQMD and SCAG policies:

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[100] *Steve Smith, Ph.D., SCAQMD CEQA Section Program Supervisor, Comments Regarding the Draft EIR for the Central Long Beach Redevelopment Project Readoption, November, 2000.*

Table 21

COMPARISON OF OPERATIONAL EMISSIONS FOR PROPOSED PROJECT VS. EXISTING AREA D SPECIFIC PLAN (Pounds per Day)

Emission Source	CO	NO_X	PM_{10}	ROC	SO_X
Proposed Project					
On Road Mobile Sources [a]	1,783	214	236	169	1
Stationary and other Miscellaneous Sources [b]	739	148	130	413	26
Total (Proposed Project)	**2,522**	**362**	**366**	**582**	**27**
Existing Area D Specific Plan					
On Road Mobile Sources [a]	2,525	382	361	233	2
Stationary and other Miscellaneous Sources [b]	1,457	255	196	568	45
Total (Existing Area D Specific Plan)	**3,982**	**637**	**557**	**801**	**47**
Proposed Project less Existing Area D Specific Plan	(1,460)	(275)	(191)	(219)	(20)
Percent Change as a Result of Proposed Project	(37%)	(43%)	(34%)	(27%)	(43%)

[a] *Trips based on the "dispersed demand" mixture of land uses, as presented in the Transportation/ Circulation Section.*

[b] *Emissions from sources include electricity and natural gas consumption provided in the SCAQMD CEQA Air Quality Handbook. Miscellaneous sources include among other things, consumer/commercial solvent usage (e.g., detergents, cleaning compounds, glues, polishes, floor finishes, cosmetics, perfume, antiperspirants, rubbing alcohol, room fresheners, car wax, paint and lawn care products), landscaping equipment, architectural and automotive coatings, restaurant charbroilers, forklifts, and emergency generators.*

Sources: PCR Services Corporation, 2003.

1. Will the Project result in any of the following:

- An increase in the frequency or severity of existing air quality violations; or
- Cause or contribute to new air quality violations; or
- Delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP.

2. Will the Project exceed the assumptions utilized in preparing the AQMP?

With respect to the first criterion, SCAQMD methodologies require that an air quality analysis for projects such as the Proposed Project include forecasts of Project emissions in a regional context during construction, and in a regional as well as local context during Project occupancy. These forecasts are provided earlier in this section. Since all the consistency criteria identified under the first criterion pertain to pollutant concentrations, rather than to total regional emissions, the analysis of the Project's impact on localized pollutant concentrations is used as the basis for evaluating Project consistency. As discussed in the preceding sections, localized concentrations for CO and PM_{10} have been projected for the Project.

PM_{10} is the pollutant of concern during construction activities and, therefore, PM_{10} emissions were analyzed to determine whether the Project would cause or affect a violation of an air quality standard. Results of the PM_{10} dispersion modeling indicate that development of the Proposed Project would not cause an exceedance of the 10.4 $\mu g/m^3$ PM_{10} incremental increase threshold.

As previously indicated, carbon monoxide has been identified as the preferred pollutant for assessing local area air quality impacts from post-construction motor vehicle operations. Based on methodologies set forth by the SCAQMD, one measure of local area air quality impacts which can indicate whether the Project would cause or affect a violation of an air quality standard would be based on the estimated CO concentrations at selected receptor locations located in close proximity to the Project site. As indicated above, carbon monoxide emissions were analyzed using the CALINE-4 model. No violations of the state and federal carbon monoxide standards are projected to occur. As the Project would result in less-than-significant impacts with regard to CO and PM_{10} concentrations, the Project is compatible with the first criterion.

With respect to the second criterion for determining consistency with SCAQMD and SCAG air quality policies, it must be recognized that air quality planning within the Basin focuses on the attainment of ambient air quality standards at the earliest feasible date. Projections for achieving air quality goals are based on assumptions regarding population, housing and growth trends. Thus, the SCAQMD's second criterion for determining Project consistency focuses on whether or not the Proposed Project exceeds the assumptions utilized in preparing the forecasts presented in the AQMP.

Determining whether or not a Project exceeds the assumptions reflected in the AQMP involves the evaluation of three criteria: (1) consistency with the population, housing and employment growth projections; (2) Proposed Project mitigation measures; and (3) appropriate incorporation of AQMP land use planning strategies. The following discussion provides a detailed analysis of each of these three criteria.

- Is the Project consistent with the population, housing and employment growth projections upon which AQMP forecasted emission levels are based?

A Project is consistent with the AQMP if it is consistent with the population, housing and employment assumptions which were used in the development of the AQMP. The 1997 AQMP, the most recent AQMP prepared by the SCAQMD, incorporates SCAG's 1994 Regional Comprehensive Plan (RCP) data projections of regional population and employment growth.

The Proposed Project includes residential units and would result in increased permanent population growth. The Proposed Project is expected to add 2,600 new housing units, which represent 2.0 percent of the 127,010 new housing units projected in SCAG's RTP for the subregion in which the Project is located (i.e., City of Los Angeles Subregion). Thus, it can be concluded that the Proposed Project would be consistent with the population growth projections upon which the AQMP attainment strategies are based.

SCAG locates the Project site within the City of Los Angeles Subregion. The RTP projects that employment in this subregion will grow by about 119,552 jobs between 2002 and 2010. The Proposed Project is projected to result in a net increase of approximately 1,180 jobs on the Project site, or approximately 1.0 percent of the total job growth projected for the subregion. Such levels of employment growth are consistent with employment forecasts for the subregion as adopted by SCAG. Because the SCAQMD has incorporated these same projections into the AQMP, it can be concluded that the Proposed Project would be consistent with the projections in the AQMP.

- Does the Project implement all feasible air quality mitigation measures?

Implementation of all feasible mitigation measures is proposed by the Applicant to reduce air quality impacts to the extent possible. The Proposed Project would incorporate a wide array of key air pollution control measures identified by the SCAQMD, as described in Subsection 4.0, below.

- To what extent is Project development consistent with the land use policies set forth in the AQMP?

The Proposed Project would serve to implement a number of land use policies of the City of Los Angeles and SCAG. The Project's compatibility with these policies are analyzed in Sections IV.G, Land Use, and IV.J, Population, Housing and Employment, of this Draft EIR. Based on the analyses presented therein, the Project would be compatible with the land use policies of the City of Los Angeles and SCAG. As described in greater detail therein as well as in the Air Quality Management Plan for the Village at Playa Vista (see Appendix E), the Project promotes reductions in vehicle trips and the consequent generation of pollutant emissions in the following ways: (a) utilizing predominantly residential mixed-use neighborhoods; (b) scaling commercial uses to serve neighborhood and community needs; (c) siting office areas near residences and public transit; (d) providing basic services within office areas; (e) providing for civic facilities on site; (f) establishing jobs/housing linkages; (g) the establishment of an internal shuttle system; (h) bicycle paths and facilities; (i) an extensive pedestrian walkway system; (j) on-site recreation and open space amenities; (k) the use of ultralow or zero emission fleet vehicles; and (l) a public information program (e.g., community newsletter). Furthermore, the concentration of employment and the provision of dedicated transportation facilities on the Proposed Project site would provide improved opportunities for the use of public transit and other alternative transportation modes, thereby further fulfilling the objective of reducing vehicle miles traveled and vehicular air emissions. The Proposed Project would also be served by MTA buses and, more distantly, Express Bus services connecting to the regional Metro Rail system. These attributes of the Project are also compatible with the City of Los Angeles Land Use/Transportation Policy, which encourages development patterns that can capitalize on this intensive transit infrastructure.

The Proposed Project includes enhancements to the pedestrian environment which will promote alternative modes of access. The mix of complimentary land uses (i.e., residential, retail, restaurant and office) will allow residents and patrons to combine two or more trips to a single location. Further, because increased transit usage could be facilitated, trips would be minimized. This pattern would also be compatible with regional and City growth management policies. Consequently, the Proposed Project would be compatible with AQMP land use policies and, therefore, with the second criterion as well. As the Project is compatible with the SCAQMD's AQMP consistency criteria and SCAG's air quality policies, a less-than-significant impact would occur.

3.4.3.2 City of Los Angeles Policies

The City of Los Angeles General Plan was prepared in response to California state law requiring that each city and county adopt a long-term comprehensive general plan. This plan must be integrated, internally consistent, and present goals, objectives, policies and implementation guidelines for decision makers to use. The City has included an Air Quality Element as part of the General Plan. The planning area for the City's Air Quality Element covers the entire City of Los Angeles, which encompasses an area of about 465 square miles.

The 1992 revision of the City's General Plan Air Quality Element serves to aid the greater Los Angeles region in attaining the state and federal ambient air quality standards at the earliest feasible date, while still maintaining economic growth and improving the quality of life. The City's Air Quality Element and the accompanying Clean Air Program acknowledges the inter-relationships between transportation and land use planning in meeting the City's mobility and clean air goals. With the City's adoption of the Air Quality Element and the accompanying Clean Air Program, the City is seeking to achieve consistency with regional Air Quality, Growth Management, Mobility and Congestion Management Plans.

To achieve these goals, performance based standards have been adopted to provide flexibility in implementation of the policies and objectives of the City's Air Quality Element. The following City Air Quality Element Goals, Objectives and Policies are relevant to the Proposed Project:

Goal 2 – Less reliance on single occupant vehicles with fewer commute and non-work trips.

Objective 2.1 – It is the objective of the City of Los Angeles to reduce work trips as a step towards attaining trip reduction objectives necessary to achieve regional air quality goals.

Policies 2.1.1 – Utilize compressed work week schedules and flextime, telecommuting, carpooling, vanpooling, public transit, and improve walking/bicycling related facilities in an effort to reduce vehicle trips and/or vehicle miles traveled as an employer and encourage the private sector to do the same to reduce vehicle trips and traffic congestion.

As previously discussed, the Proposed Project has incorporated a wide array of features into its land use plan specifically targeted towards the reduction of vehicle trips and vehicle miles traveled including, but not limited to, (a) utilizing predominantly residential mixed-use neighborhoods; (b) scaling commercial uses to serve neighborhood and community needs; (c) siting office areas near residences and public transit; (d) providing basic services within office areas; (e) providing for civic facilities on site; and (f) establishing jobs/housing linkages. In addition, a number of measures to assist in reducing vehicle trips would be incorporated into the Proposed Project. Connections to MTA buses link this area with other employment and residential areas throughout the region. The nearby transit services also provide extensive opportunities for employees to commute to the Project site via modes of transportation other than the automobile. In addition, the mix of employment generating and retail uses within the Project would encourage walking/bicycling between uses on-site, as well as the convenient combination of trips. The Proposed Project would therefore be compatible with this City policy. These attributes of the Project are described in greater detail in the Air Quality Management Plan for the Village at Playa Vista (see Appendix E).

Objective 2.2 – It is the objective of the City of Los Angeles to increase vehicle occupancy for non-work trips by creating disincentives for single passenger vehicles, and incentives for high occupancy vehicles.

Policy 2.2.1 – Discourage single-occupant vehicle use through a variety of measures such as market incentives, mode-shift incentives, trip reduction plans, and rideshare incentives.

Policy 2.2.2 – Encourage multi-occupant vehicle travel and discourage single occupant vehicle travel by instituting parking management practices.

Policy 2.2.3 – Minimize the use of single occupant vehicles associated with special events, or in areas and times of high levels of pedestrian activities.

Additional mitigation measures are provided to stimulate increased ridesharing and other alternate transportation modes.

Goal 4 – Minimize impacts of existing land use patterns and future land use development on air quality by addressing the relationship between land use, transportation and air quality.

Objective 4.1 – It is the objective of the City of Los Angeles to include regional attainment of ambient air quality standards as a primary consideration in land use planning.

Policy 4.1.1 – Coordinate with all appropriate regional agencies in the implementation of strategies for the integration of land use, transportation and air quality policies.

As described above as part of the analysis relative to Goal 2 and described further in the Air Quality Management Plan for the Village at Playa Vista (see Appendix E), the Proposed Project has incorporated a wide array of features into its land use plan specifically targeted towards the reduction of vehicle trips and vehicle miles traveled. In addition, development of the Project at the proposed site offers the opportunity to utilize existing infrastructure to support growth in the Project area. It is well served by bus transit and has the opportunity to encourage pedestrian activities in this area. As discussed above, the Proposed Project would serve to implement a number of City, SCAG, and SCAQMD policies related to regional land use planning. Therefore, it is considered compatible with the policy to coordinate with all appropriate regional agencies.

The City of Los Angeles's General Plan also addresses air quality issues in other General Plan Elements in addition to those set forth, as described above, in the Air Quality Element. Specifically, the Framework Element includes the following policy related to air quality and potential adverse health affects:

Policy 4.1.9 – Whenever possible, assure adequate health-based buffer zones between new residential and emitting industries.

As discussed in Subsection 3.0 above, an evaluation was conducted to determine whether the Proposed Project would result in the siting of sensitive receptors within 0.25 mile of existing off-site sources of toxic air contaminants that would result in a significant impact. Based on the screening procedures identified in Chapter 5 of the SCAQMD CEQA Air Quality Handbook, no facilities were identified that would result in levels of air toxics that would emit carcinogenic or toxic air contaminants that individually or cumulatively exceed the maximum individual cancer risk of ten in one million. In addition, the analysis of on-site conditions also concluded that operation of the Project is not anticipated to emit carcinogenic or toxic air contaminants that individually or cumulatively exceed the maximum individual cancer risk of ten in one million. As such, an adequate health-based buffer zone between the Project's new residential uses and facilities that emit toxic air contaminants.

The Transportation Element of the City of Los Angeles General Plan also includes policies, as identified below, that pertain to the issue of air quality:

Policy 17 a. – Actively support the study of effective market incentives to achieve regional levels of trip reduction mandated by State and Federal Clean Air Acts; support regional implementation of feasible and effective incentives.

Policy 38 – Continue to cooperate with regional agencies, such as the South Coast Air Quality Management District, to develop regional transportation-related emission reduction measures. Many of the most effective measures to reduce vehicle trips require regional implementation. Consider the following potential strategies in this effort:

- *Market incentives (including vehicle miles traveled charges);*
- *Voluntary rideshare measures;*
- *Parking pricing/parking cash-out;*
- *Local shuttle services to activity centers and special events;*
- *Enhanced service and improved safety and comfort of transit;*
- *Preferential parking;*
- *Bicycle paths and lanes and bicycle storage facilities construction; and*
- *Advanced transportation system technology, such as telecommunication, interactive government services via the internet, and telecommute work centers.*

The above policies are consistent with those identified by SCAG in their RCPG and/or within the City of Los Angeles General Plan Air Quality Element. As such, refer to

Section IV.J, Population, Housing and Employment, for an analysis of the Project's compatibility with SCAG's RCPG policies and the above analysis regarding the Project's compatibility with the City of Los Angeles' General Plan Air Quality Element. Based on the discussions provided therein, the Project is concluded to be compatible with the air quality related policies set forth within the City of Los Angeles' General Plan Transportation Element.

Based upon this evaluation of the Proposed Project, the Proposed Project would be compatible with City of Los Angeles air quality policies as it is compatible with the air quality goals and policies set forth within the City's General Plan.

Overall, no significant impacts would occur as a result of Project development with respect to compatibility with applicable air quality policies.

3.4.4 Summary

This air quality analysis evaluates air emissions attributable to the Project's construction and post-construction (e.g., operational) activities for criteria air pollutants, air toxics, and odors. In addition, the Project's compatibility with applicable air quality policies as set forth in the City of Los Angeles General Plan and regional plans prepared by SCAG and the SCAQMD is also assessed.

Construction related daily regional emissions from both direct and indirect sources exceed the significance thresholds for CO, NO_X, and ROC. Thus, emissions of these pollutants would result in a significant regional air quality impact during the Project's construction phase. Regional construction emissions from both direct and indirect sources would not exceed the daily significance thresholds for PM_{10} and SO_X. Localized PM_{10} emissions were also analyzed to determine if development of the Proposed Project would cause an exceedance of the 10.4 $\mu g/m^3$ PM_{10} incremental increase threshold. The maximum construction-related PM_{10} impacts near the Project site occurred at the multi-family residential area across from the Project site north of Jefferson Boulevard with a concentration of 5.6 $\mu g/m^3$. As the Project would not cause an incremental increase in localized PM_{10} concentrations of 10.4 $\mu g/m^3$, a less-than-significant air quality impact would occur during the Project's construction phase. In addition, the highest potential for construction-related PM_{10} concentration impacts associated with the Project's proposed offsite roadway improvements occurs southeast of the Inglewood Boulevard and Culver Boulevard intersection (Intersection #77) would be below the 10.4 $\mu g/m^3$ threshold. This same conclusion applies to St. Gerard Majella School, which is located northwest of this intersection. In addition, construction-related emissions of NO_2 and CO would not exceed the relevant ambient air quality standards and as a result, a less-than-significant impact would occur.

Construction of the Proposed Project would generate toxic air pollutant emissions primarily from diesel-powered construction equipment, haul trucks, architectural coatings and solvents and limited amounts during the remediation of potentially contaminated on-site soils. The analysis of localized air toxics impacts resulted in a maximum offsite individual cancer risk of 5.7 in a million. As the Project would not emit carcinogenic or toxic air contaminants that individually or cumulatively exceed the maximum individual cancer risk of ten in one million, air toxic emissions during construction would be less than significant.

No construction activities are proposed which would create objectionable odors and, therefore, no significant impacts would occur.

Air pollutant emissions associated with occupancy and operation of the Proposed Project would be generated by the consumption of electricity and natural gas, by the operation of on-road vehicles and by miscellaneous area sources (among other things, landscaping equipment, consumer/commercial solvent usage, architectural and automotive coatings, restaurant charbroilers, and emergency generators). In its operational phase, the Project would result in a net increase in weekday emissions of 2,522 pounds per day of CO, 362 pounds per day of NO_X, 366 pounds per day of PM_{10}, 582 pounds per day of ROC and 27 pounds per day of SO_X. These levels exceed SCAQMD significance thresholds for CO, NO_X, PM_{10}, and ROC. While these emissions are those that would occur during the Project's operational phase, the Project's maximum emissions occur during the latter stages of Project construction when Project operational emissions also occur concurrently with construction emissions. During this period, a maximum increase in weekday emissions of 3,215 pounds per day of CO, 847 pounds per day of NO_X, 389 pounds per day of PM_{10}, 907 pounds per day of ROC and 27 pounds per day of SO_X would occur.

Project traffic during the operational phase of the Project would have the potential to create local area impacts. An analysis at selected intersections was performed to determine the potential for the presence or the creation of CO hot spots attributable to the Proposed Project. As a result of this analysis, it was determined that the Project does not cause an exceedance of the California 1-hour or 8-hour CO standards of 20 or 9.0 ppm, respectively and no significant impacts to local CO concentrations would occur.

Potential sources of air toxic emissions associated with Project development include, but may not be limited to, diesel particulates from loading docks, delivery trucks, and buses as well as small amounts of toxics from consumer household products. These sources are typical within the urban environment and would contribute small amounts of toxic air pollutants to the Project vicinity, and would be well below any levels that would result in a significant impact on human health. Also, potential localized air toxic impacts from Project-related mobile source emissions would be minimal since the Proposed Project does not include any facilities (e.g., warehouse distribution and truck terminals) that would substantially change the number of heavy-duty trucks on the surrounding roadway network resulting in an increase of diesel particulate emissions. As such, a less-than-significant impact on human health would occur.

No operational activities are proposed which would create objectionable odors and, therefore, no significant impacts would occur.

Development of the Proposed Project would be compatible with the air quality policies set forth in the SCAQMD's AQMP, SCAG's RCPG and the City of Los Angeles General Plan.

3.4.5 Equivalency Program

The preceding air quality analysis addressed regional and local emissions as well as emissions of toxic air contaminants and odors during construction as well as operations (i.e., after construction is completed). In addition, analyses of concurrent emissions during the last phase of construction and operations as well as consistency with adopted plans and policies were provided. The proposed Equivalency Program allows for specific limited exchanges in the types of land uses occurring within the Project's Urban Development Component. No changes are proposed under the Equivalency Program to the Project's Habitat Creation/Restoration Component.

The exchange of office uses for retail and/or assisted living units would be accomplished within the same building parameters, and would occur at relatively limited locations within the Project site. Furthermore, under the Equivalency Program, there would be no substantial variation in the Project's street configurations, building pad elevations, or the depth of excavation. Potential changes in land use under the Equivalency Program would therefore have no substantial effect because only the use is changing. As a result, the amount and types of construction equipment operating at the Project site under peak construction activity levels would be the same for the Equivalency Program compared to the Proposed Project, although there may be minor differences in the overall duration of construction activities due to the limited changes in the amount of development that could occur. Furthermore, the site characterization and associated remediation required for Project development would be the same under the Equivalency Program. As such, the impacts of the Equivalency Program relative to peak regional and local emissions as well as emissions of toxic air contaminants or odors during construction would be the same as those forecasted for the Proposed Project. Therefore, the Equivalency Program, as is the case with the Proposed Project, would result in significant impacts with regard to regional construction emissions, and less-than-significant impacts with regard to local emissions, emissions of toxic air contaminants and odors during construction. In addition, development under the Equivalency Program would not cause or exacerbate any construction air quality impacts that would occur under the Proposed Project.

Regional and local air quality impacts during operations under the Equivalency Program would be comparable to those of the Proposed Project as the trip generation and trip distribution characteristics of the Equivalency Program and the Proposed Project would also be comparable. Potential sources of toxic air contaminants and odors under the Equivalency Program would be the same as those associated with the Proposed Project and, thus, impacts would be the same. Concurrent construction and operations emissions under the Equivalency Program would also be comparable to the Proposed Project as the levels of construction activity and traffic would also be comparable. In addition, the Equivalency Program would be consistent with adopted plans and policies, as is the case with the Proposed Project, because the attributes upon which the consistency determination is made are not materially affected by the Equivalency Program. Specifically, while there would potentially be some exchange of office uses for retail and/or assisted living uses, the Equivalency Program does not fundamentally alter the Project's land use mix and the same Project Design Features and Mitigation Measures as those established for the Proposed Project are applicable to the Equivalency Program. Therefore, the Equivalency Program, as is the case with the Proposed Project, would result in significant impacts with regard to regional operational emissions. Less than significant impacts are anticipated with regard to local emissions, emissions of toxic air contaminants and odors during operations as well as concurrent construction and operations emissions and consistency with adopted plans and policies. In addition, development under the Equivalency Program would not cause or exacerbate any operational air quality impacts that would occur under the Proposed Project.

All Project Design Features (as discussed in Subsection 3.3 above) and/or recommended mitigation measures (discussed in Subsection 4.0, Mitigation Measures, below) to minimize air quality impacts under the Proposed Project would be implemented, as appropriate, under the Equivalency Program. Consequently, air quality impacts attributable to the Equivalency Program would be comparable to the Proposed Project. Specifically, regional construction and operations impacts would be significant and all other air quality impacts would be less than significant under the Proposed Project as well as the Equivalency Program.

3.4.6 Off-Site Mitigation Measures

Proposed Project development could result in secondary impacts arising from implementation of the Project's mitigation measures, as well as the direct impacts described above. Mitigation measures within Section IV.K.(1), Traffic and Circulation, require physical improvements in transportation facilities at numerous locations including roadway widening at seven locations, as described in Subsection 5.8 of that Section. In addition, as discussed in Section IV.N.(1), Water Consumption, the Proposed Project would require the construction of a water regulator station in the vicinity of Jefferson Boulevard and Mesmer Avenue.

Construction of the off-site improvements would result in air quality impacts resulting from the demolition of existing pavement and curbs, the laying of road bed and pavement, clearing and grubbing of vegetated areas, and the construction of new curbs and sidewalks. Emission generating activities also include delivery and hauling of construction materials to the site, hauling of demolition debris, fuel combustion by on-site construction equipment, and emissions from construction workers' vehicles. Equipment used for demolition and construction would include haul trucks, graders, scrapers, wheeled dozers, rollers, and other typical road construction equipment. Demolition debris, consisting of asphalt, concrete and organic matter, would be hauled to the nearest landfill. Some very short-term odors may be associated with the operation of diesel construction equipment and the laying of asphalt. Construction impacts would be temporary in nature and would most likely occur incrementally. All construction activity would conform to applicable codes and standards.

The analysis of construction impacts for the Proposed Project, above, includes the off-site improvements as components of the Proposed Project. The analysis assumes, that all of the roadway widenings would be implemented simultaneously and at the same time that peak construction activity is occurring on the Proposed Project site. This assumption and the other analysis assumptions are conservative to indicate the highest level of emissions that might occur, and actual impacts are likely to be less than those indicated. Construction activities would be carried out under accepted practices for the control of air emissions, and mitigation measures are recommended which would reduce impacts to the greatest extent feasible.

Therefore, the significant Project impacts from construction with regard to CO, NO_X, and ROC emissions that are described above are inclusive of impacts from the construction of the off-site improvements. Construction of the individual improvements, themselves, would not have significant impacts on CO or ROC. However, individual improvements may result in significant NO_X impacts from construction activity. Mitigation measures have been identified to reduce construction emissions generated by the proposed off-site improvements to the extent feasible.

The proposed off-site infrastructure improvements would reduce the traffic and water utility impacts of the Proposed Project. They would not add new population to the area, nor add new buildings to the area. The enhanced traffic flows arising out of the roadway improvements would contribute to reductions in the amount of pollutants from traffic (i.e., higher travel speeds and reduced congestion results in lower emissions). Therefore, the long-term operation impacts of the off-site improvements would be beneficial, and would not cause additional impacts to those of the Proposed Project.

4.0 MITIGATION MEASURES

Mitigation Measures for the Proposed Project and the Equivalency Program

The mitigation program for the Proposed Project is set forth in the Air Quality Management Plan for Playa Vista (Playa Vista AQMP or Plan). The Playa Vista AQMP serves the same purpose for the Proposed Project as the SCAQMD's AQMP serves the entire Basin. The Playa Vista AQMP sets forth a comprehensive and strategic program of air emission control strategies, as documented in the mitigation measures set forth below. Emission control strategies of the Playa Vista AQMP address construction and post-construction operational emissions in a two-tier approach. Tier 1 measures include known and currently implemented emissions reduction strategies. It also includes additional mitigation measures, which allow for the identification and implementation of applicable emission reduction strategies which may emerge in the future and for updating the Playa Vista AQMP (refer to the Tier II mitigation measures outlined below). The Playa Vista AQMP is included as Appendix E of the EIR.

a. Playa Vista Air Quality Management Plan

- Prior to the issuance of any grading or building permits, the Playa Vista AQMP shall be prepared satisfactory to the Planning Department. The Playa Vista AQMP shall identify specific emission reduction/mitigation measures addressing the air quality impacts associated with construction and operations of the Proposed Project, such as construction mitigation measures addressing emissions from heavy-duty construction equipment, fugitive dust, construction deliveries, construction worker travel and the application of architectural coatings; as well as operational mitigation measures addressing emissions from utility consumption, building maintenance, and service and support facilities. The Plan shall implement proactively the strategies called for in the regional Air Quality Management Plan as prepared by the SCAQMD through:

  – Implementation of emission control strategies based on currently available and cost-effective technology, and

  – Providing the means by which future technological advances can be incorporated in the development of the Playa Vista Project.

b. Monitoring the Playa Vista AQMP

- Prior to the issuance of any grading/building permit, an Air Quality Monitor, satisfactory to the Director of Planning shall be retained by the Applicant to document compliance with the Playa Vista AQMP. During the Project's construction phase and operational phase, until the Project's buildout, the Monitor shall review all activities occurring on the Project site on a periodic basis and maintain current records on compliance with the Playa Vista AQMP. The Monitor shall submit monthly reports during Project construction, and annual reports during Project operations, until the Project's buildout, documenting compliance with all air emission control measures contained in the Playa Vista AQMP. The records and reports shall be maintained as public documents. The Monitor's identification, qualifications, address and phone number shall be listed in all construction and construction-related contracts and shall be placed in the pertinent files of the Planning Department.

c. Remedial Action

- The Applicant shall require in all construction and construction-related contracts, provisions requiring compliance with all applicable environmental conditions included in all relevant entitlement approval actions of the City.

- Upon identification of any instance of non-compliance with the Playa Vista AQMP, the Monitor shall within 48 hours notify the Applicant and the designated representative of the Planning Department, or other appropriate City enforcement and monitoring agency. All of the Applicant's applicable contracts shall require corrective actions within 48 hours to attain compliance. Once notified of a condition of non-compliance, the Applicant shall promptly act to attempt to attain compliance. In the event that a contractor, subcontractor or operator fails to correct the noticed noncompliance, the Applicant, its representative or prime contractor shall retain the contractual right to effect prompt corrective action. Should remedial action not occur, the Director of Planning, or other City enforcement and monitoring agencies, are empowered to issue cease and desist orders.

d. Emission Control Strategies

(1) Tier 1 Mitigation Measures

(a) Construction Emissions

Emission control measures are specified for the following five sources of construction emissions: (1) combustion exhaust of heavy-duty construction equipment, delivery of construction supplies and the off-site hauling of debris; (2) fugitive dust; (3) construction workers traveling to and from the Project site; and (4) application of building materials and architectural coatings.

(i) Construction Equipment/Operation

- Control Technologies: Apply NO_X control technologies, such as fuel injection timing retard for diesel engines and air-to-air after cooling, as feasible.
- Low Emission Equipment and Technologies: Use low emission fuels and technology, such as LNG, CNG, and advanced low emission diesel technology or at a minimum, low sulfur fuel, as feasible.
- Configure construction parking to minimize traffic interference.
- Develop a construction traffic management plan that includes, but is not limited to:
  - Providing temporary traffic control during all phases of construction activities to improve traffic flow on public roadways (e.g., flag person).
  - Scheduling of construction activities that affect traffic flow on public roadways to off-peak hours to the extent feasible.
  - Rerouting construction trucks off congested streets.
  - Consolidating truck deliveries.
  - Providing dedicated turn lanes for movement of construction trucks and equipment on- and off-site.
- Prohibit truck idling in excess of two minutes, whenever practical.
- Where possible use electricity from power lines rather than temporary generators.
- Construction Practices: Use only well maintained equipment, utilize proper planning to reduce rework and multiple handling of earth materials, select equipment that is properly sized to minimize trips/use, consolidate deliveries, and maximize off-site construction (i.e. prefabricating and prepainting).
- Record Keeping: Log fuel use, hours of operation and periodic maintenance of all construction equipment to ensure proper maintenance.
- Use ULEV, ZEV, or other low emission support vehicles and equipment, including fleet vehicles if any, to the extent cost effective and feasible.

(ii) Fugitive Dust

- For disturbed dirt areas which remain inactive over an extended period of time, soil stabilization measures shall be undertaken such as application of moisture retaining binders which pull moisture out of the air to form a cohesive soil binder.

- Replace ground cover in disturbed areas as quickly as possible.

- During dry weather, enclose, cover, water twice daily or apply non-toxic soil binders according to manufacturers' specifications, to exposed piles (i.e., gravel, sand, dirt) with 5 percent or greater silt content.

- Water active grading/construction sites at least twice daily, or as needed during wet weather.

- Suspend all excavating and grading operations when wind speeds (as instantaneous gusts) exceed 25 mph.

- All trucks hauling dirt, sand, soil, or other loose materials off-site shall be covered or shall maintain at least two feet of freeboard (i.e., minimum vertical distance between top of the load and the top of the trailer) in accordance with the requirements of CVC Section 23114.

- Sweep streets at the end of the day if visible soil material is carried onto adjacent public paved roads. Water sweepers shall use reclaimed water, where available.

- Apply water up to three times daily or as necessary, to all unpaved parking or staging areas or unpaved road surfaces, during dry weather.

- Limit traffic speeds on all unpaved roads to 25 mph or less.

- Pave or apply chemical stabilization at sufficient concentration and frequency to maintain a stabilized surface starting from the point of intersection with the public paved surface, and extending for a centerline distance of at least 100 feet and a width of at least 20 feet.

- Other Dust Controls: Any intensive dust generating activity, such as abrasive blasting, drilling, and grinding must be controlled to the greatest extent feasible. Such control would necessarily be specific to the activity, but could include the use of screens or enclosures, water sprays or collection devices.

- Comply with the requirements of AQMD Rule 403 to the extent not provided above.

(iii) Construction Worker Travel

- All contractors shall be required to participate in a common carpool registry which provides a list of construction workers willing to carpool during all periods of contract performance. This registry shall be maintained by the Applicant and reviewed by the Monitor.

(iv) Building Materials and Architectural Coatings

- Building materials, architectural coatings and cleaning solvents used must comply with all applicable SCAQMD rules and regulations.

(b) Post-Construction Operations Emissions

Tier I emission control measures are specified for three sources of post-construction emissions: (1) service and support facilities; (2) natural gas consumption and electricity production; and (3) building materials, architectural coatings, and cleaning solvents.

(i) Service and Support Facilities (point sources)

- All point source facilities shall obtain all required permits from the SCAQMD. The issuance of these permits by the SCAQMD will require the operators of these facilities to implement Best Available Control Technology and other required measures that reduce emissions of criteria air pollutants.

(ii) Natural Gas Consumption and Electricity Production

Adherence to the following energy consumption measures shall be made an element of the Playa Vista AQMP if deemed acceptable to the Department of Building and Safety.

- All residential buildings shall be equipped with Energy-Star rated appliances, to the extent feasible.

- All residential and non-residential buildings shall exceed the California Title 24 Energy Efficiency standards for water heating, space heating and cooling, to the extent feasible.

- Energy efficient lighting fixtures, which exceed the California Title 24 Energy Efficiency standards to the extent feasible, shall be installed to satisfy interior lighting requirements within all buildings. Automatic devices to turn off lights when they are not needed shall also be used to regulate lighting for interior office common spaces, such as conference rooms and bathrooms.

- All fixtures used for lighting of exterior common areas shall be regulated by automatic devices to turn off lights when they are not needed. Exterior lighting fixtures as might be specified by the Department of Water and Power as energy efficient shall be used to the extent such lighting is available and architecturally acceptable.

- All residential and commercial buildings shall be equipped with electric vehicle charging stations to the extent required by the California ARB at the time of construction of the given building.

- Shade producing trees shall be planted at the Proposed Project site to the extent feasible to provide localized as well as overall community cooling.

- All buildings shall employ passive heating and cooling design strategies to the extent feasible.

- All buildings shall be designed to accommodate renewable energy sources, to the extent feasible.

(iii) Building Materials and Architectural Coatings

- Building materials, architectural coatings and cleaning solvents shall comply with all applicable SCAQMD rules and regulations.

(iv) Public Information Program

The Applicant or successor shall circulate or cause to be circulated a semi-annual or more frequent newsletter to all on-site residents, businesses and employees to provide information on carpool incentives, internal shuttle system routes and schedules, on-site housing and job opportunities for on-site employees and residents, and mandatory or voluntary new technologies for air pollution reduction in businesses and homes.

(2) Tier II Mitigation Measures

The following Tier II mitigation measures apply to both Project construction and operations, until Project buildout.

The Applicant or its successors shall, on a yearly basis until Project buildout, identify emerging technologies which may yield emission reductions. Such consideration shall include analysis of the feasibility of new emission reduction measures recommended in updates of the SCAQMD CEQA Air Quality Handbook.

The Applicant or its successors shall assess the feasibility of implementing such measures based on the following:

- The ability of the measure to reduce air pollutant emissions which result from Project construction operations.
- The new measure or product is equivalent in cost to the standard strategies, measures or products.
- The availability of the new measure or product prior to the time required for implementation.
- The reasonable reliability and reasonably equivalent durability of the new measure or product to standard measures and products.
- The absence of significant adverse impacts to other areas of the environment (e.g. noise, water, aesthetics).
- The consistency of the new measure with the Project's design concepts and objectives.

The Air Quality Monitor shall determine the feasibility of all new recommended measures, technologies or products identified by the Applicant.

Recommendations which are determined to be feasible and appropriate, pursuant to the standards set forth above, shall be incorporated by the Applicant into all future contracts for construction and development at the Proposed Project.

The Monitor shall also be responsible for providing the Director of Planning with documentation regarding compliance with this provision.

All associated reports and documentation (including feasibility assessment of new emission reduction measures, the Air Quality Monitor's feasibility determination and the Applicant's compliance with the feasible new emission reduction measures and technologies) shall be included in an annual monitoring report to the enforcement and monitoring agencies and kept open for public inspection. Said reports, documentations and monitor's identification, qualifications, address and telephone number shall be placed in the pertinent files of the City Planning Department.

Implementation of new mitigation measures or products would not affect contracts and commitments entered into prior to the date the new mitigation measures/products and strategies meet the above standards. However, contractors shall be informed/advised of the available new emission reduction measures and technologies.

Additional Mitigation Measures for the Off-Site Improvements

- For each of the road widenings, the Air Quality Monitor shall monitor construction activity and insure implementation of the mitigation measures listed below. The monitor shall check construction procedures. In addition, the Applicant shall identify and the monitor shall assess the feasibility and recommend implementation of new technological advancements that will help minimize emissions.

- The following procedures to control air emissions shall be applied wherever applicable:

Construction Equipment/Operation

- Control Technologies: Apply NO_X control technologies, such as fuel injection timing retard for diesel engines and air-to-air after cooling, as feasible.

- Low Emission Equipment and Technologies: Use low emission fuels and technologies, such as LNG, CNG, and advanced low emission diesel technology or at a minimum low sulfur fuel, as feasible.

- Prohibit truck idling in excess of two minutes, whenever practical.

- Where possible use electricity from power lines rather than temporary generators.

- Construction Practices: Use only well maintained equipment, utilize proper planning to reduce rework and multiple handling of earth materials, select equipment that is properly sized to minimize trips/use, consolidate deliveries, and maximize off-site construction (i.e. prefabricating and prepainting).

Fugitive Dust

- Replace ground cover in disturbed areas as quickly as possible.

- Suspend all excavating and grading operations when wind speeds (as instantaneous gusts) exceed 25 mph.

- All trucks hauling dirt, sand, soil, or other loose materials off-site shall be covered or shall maintain at least two feet of freeboard (i.e., minimum vertical distance between top of the load and the top of the trailer) in accordance with the requirements of CVC Section 23114.

- Sweep streets at the end of the day if visible soil material is carried onto adjacent public paved roads. Water sweepers shall use reclaimed water, where available.

- Apply water up to three times daily or as necessary, to all unpaved parking or staging areas or unpaved road surfaces, during dry weather.

- Other Dust Controls: Any intensive dust generating activity, such as abrasive blasting, drilling, and grinding must be controlled to the greatest extent feasible. Such control would necessarily be specific to the activity, but could include the use of screens or enclosures, water sprays or collection devices.

Building Materials and Architectural Coatings

- Building materials, architectural coatings and cleaning solvents used must comply with all applicable South Coast Air Quality Management District (SCAQMD) rules and regulations.

5.0 UNAVOIDABLE ADVERSE IMPACTS

After implementation of all feasible mitigation measures as described above, Project construction, inclusive of the Equivalency Program and the proposed off-site improvements, would generate CO, NO_X, and ROC emissions that exceed SCAQMD regional significance thresholds for construction activities. Therefore, regional emissions from both on- and off-site (e.g., delivery trucks) construction sources would have a significant and unavoidable adverse impact on regional air quality. As the Project, inclusive of the Equivalency Program and the Project's proposed off-site improvements, does not cause an incremental increase in localized PM_{10} concentrations of 10.4 $\mu g/m^3$, localized impacts to sensitive receptors during construction would be less than significant.

Construction of the Proposed Project, inclusive of the Equivalency Program and the Project's proposed off-site improvements, would generate toxic air pollutant emissions primarily from diesel-powered construction equipment, haul trucks and architectural coatings and solvents and limited amounts during the remediation of potentially contaminated soils. The analysis of localized air toxics impacts resulted in a maximum offsite individual cancer risk of 5.7 in a million. As the Project, inclusive of the Equivalency Program and the Project's proposed off-site improvements, would not emit carcinogenic or toxic air contaminants that individually or cumulatively exceed the maximum individual cancer risk of ten in one million, air toxic emissions from construction activities would be less than significant.

No construction activities or materials are proposed which would create objectionable odors and, therefore, no significant impacts would occur.

In the operational phase, the Project, inclusive of the Equivalency Program, would result in a net increase in weekday emissions of 2,522 pounds per day of CO, 362 pounds per day of NO_X, 366 pounds per day of PM_{10}, 582 pounds per day of ROC and 28 pounds per day of SO_X.[101] While these emissions are those that would occur during the Project's operational phase, the Project's maximum emissions occur during the latter stages of Project construction when Project operational emissions also occur concurrently with construction emissions. During this period, inclusive of the Equivalency Program, a maximum increase in weekday emissions of 3,251 pounds per day of CO, 847 pounds per day of NO_X, 389 pounds per day of PM_{10}, 907 pounds per day of ROC, and 27 pounds per day of SO_X would occur. These levels exceed SCAQMD significance thresholds for CO, NO_X, PM_{10}, and ROC. Mitigation measures identified above would reduce the potential air quality impacts of the Project, inclusive of the Equivalency Program, to the degree technically feasible, but emissions would remain above SCAQMD significance thresholds. Therefore, operation of the Project, inclusive of the Equivalency Program, would have a significant and unavoidable adverse impact on regional air quality. As the Project, inclusive of the Equivalency Program, does not cause an exceedance of the California 1-hour or 8-hour CO standards of 20 or 9.0 ppm, respectively, no significant impacts to local CO concentrations would occur.

Operational emissions of air toxics would include diesel particulates from delivery trucks and buses; small amounts of toxics from consumer household products; and minimal mobile source air toxics. As such, operation of the Project, inclusive of the Equivalency Program, is not anticipated to emit carcinogenic or toxic air contaminants that individually or cumulatively exceed the maximum individual cancer risk of ten in one million. As such, a less-than-significant impact on human health would occur. In addition, and as outlined in Section IV.I, Safety/Risk of Upset, numerous safety measures have been incorporated into the design and operation of the Proposed Project, inclusive of the Equivalency Program, that limit the potential for an accidental release of air toxic emissions or acutely hazards materials posing a threat to public health and safety to a less-than-significant level. Furthermore, on-site sensitive receptors would not be developed within a quarter mile of existing off-site sources of toxic air contaminants.

[101] *During Project operations, the proposed off-site improvements would have not generated emissions and therefore, would not add to the impacts described herein.*

The Project's proposed residential, office and community serving land uses, inclusive of the Equivalency Program, would not create adverse odors. However, there is a potential that on-site retail and restaurant uses have the potential to create odors. While there is a potential for odors to occur, compliance with industry standard odor control practices, SCAQMD Rule 402 (Nuisance), and SCAQMD Best Available Control Technology Guidelines would limit potential objectionable odor impacts to a less-than-significant level.

Development of the Proposed Project, inclusive of the Equivalency Program and the proposed off-site improvements, would be compatible with the air quality policies set forth in the SCAQMD's AQMP, SCAG's RCPG and the City of Los Angeles General Plan.

6.0 CUMULATIVE IMPACTS

Buildout of year 2010 related projects within a similar time frame as the Proposed Project would increase short-term emissions for concurrent activities during any day of the Project's construction period. Since the worst-case construction day for the Proposed Project, inclusive of the Equivalency Program and the proposed off-site improvements, was identified to be significant, any additional construction activities occurring during this time and in the vicinity of the Proposed Project site would be adding an additional air pollutant emission burden to these significant levels. Quantification of construction emissions from cumulative projects is speculative given the uncertainty over the timing and phasing of construction activities for each of these projects and the extent to which such activity would coincide with the worst day of the Proposed Project's construction process. However, because the emission levels associated with the Proposed Project already are projected to have a significant impact, a significant and unavoidable cumulative impact with respect to construction emissions would occur.

Operational emissions associated with buildout of the Proposed Project, inclusive of the Equivalency Program, would occur along with emissions from other development projects in the vicinity.[102]

The SCAQMD has set forth both a methodological framework as well as significance thresholds for the assessment of a project's cumulative air quality impacts. The SCAQMD's methodology differs from the cumulative impacts methodology employed elsewhere in this Draft EIR, in which foreseeable future development within a given service boundary or geographical area is predicted and associated impacts measured. The SCAQMD's approach for assessing cumulative impacts is based on the fact that the SCAQMD's AQMP forecasts attainment of

[102] *During Project operations, the proposed off-site improvements would have not generated emissions and therefore, would not add to the impacts described herein.*

ambient air quality standards in accordance with the requirements of the Federal and State Clean Air Acts, taking into account SCAG's forecasted future regional growth. Therefore, if all cumulative projects are individually consistent with the growth assumptions upon which the SCAQMD's AQMP is based, then future development would not impede the attainment of ambient air quality standards and a significant cumulative air quality impact would not occur. Cumulative air quality impacts for the Project, inclusive of the Equivalency Program, consistent with the SCAQMD's prescribed methodology, were evaluated in the context of Los Angeles County as a whole for the Project's buildout year of 2010.

Based on the SCAQMD's methodology (presented in Chapter 9 of the CEQA Air Quality Handbook), a project would have a significant cumulative air quality impact if the ratio of the project's population or employment daily vehicle miles traveled to daily countywide vehicle miles traveled exceeds the ratio of daily project population or employment to daily countywide population or employment. An assessment of the Project's population and employment cumulative impacts, inclusive of the Equivalency Program, are presented in Table 22 on page 344. As shown, the Project-related rate of growth in vehicle miles traveled, inclusive of the Equivalency Program, is not greater than the Project-related rate of growth in population. However, the opposite occurs with regard to the Project's employment. Therefore, the Project, inclusive of the Equivalency Program, would have a significant cumulative impact on air quality. In addition, implementation of the Project would also result in an increase in emissions which would contribute to region-wide emissions on a cumulative basis and as such, the Project's cumulative air quality impacts are also concluded to be significant. In such cases, the SCAQMD recommends that all projects, to the extent possible, employ feasible mitigation measures which has been done with regard to the Proposed Project, inclusive of the Equivalency Program.

Table 22

PROJECT CUMULATIVE AIR QUALITY IMPACTS

Daily Vehicle Miles Traveled for Project Population [a]	104,986
Daily Vehicle Miles Traveled Countywide [b]	212,424,000
Daily Vehicle Miles Traveled Ratio	**.00049**
Project Population [a]	5,720
Countywide Population [c]	10,785,000
Population Ratio	**0.00053**
Significance Test – Daily Vehicle Miles Traveled Ratio Greater Than Population Ratio	**No** [d]
Daily Vehicle Miles Traveled for Project Employment [a]	54,702
Daily Vehicle Miles Traveled Countywide [b]	204,424,000
Daily Vehicle Miles Traveled Ratio	**.00026**
Project Employment [a]	1,180
Countywide Employment [c]	4,890,000
Employment Ratio	**0.00024**
Significance Test – Daily Vehicle Miles Traveled Ratio Greater Than Employment Ratio	**Yes** [d]

[a] *Increase of vehicle miles traveled as a result of the Project, Traffic Analysis, Section IV.K. Data obtained from URBEMIS 2002.*

[b] *Data obtained from EMFAC 2002.*

[c] *Data obtained from SCAG's Regional Transportation Plan, Socioeconomic Projections, April 1998*

[d] *Under the Equivalency Program, the site population could increase by up to 240 residents, with a corresponding minimum decrease in employment of six jobs. This scenario would result in the greatest impact of the analyzed equivalency scenarios as the Project's population impact is maximized and the change in employment levels is minimized. Under this equivalency scenario, the Project would have a population of 5,960 residents and an employment level of 1,174 jobs. These population and employment levels yield population and employment ratios of 0.00055 and 0.00024. Based on these ratios, as is the case with the Proposed Project, the daily vehicle miles traveled ratio would be less than the population ratio, whereas the daily vehicle miles traveled ratio would be greater than the employment ratio. As a result, the Equivalency Program, as is the case with the Proposed Project, would have a significant cumulative impact.*

Source: PCR Services Corporation, March 2003.

IV. ENVIRONMENTAL IMPACT ANALYSIS
C. WATER RESOURCES
(1) HYDROLOGY

1.0 INTRODUCTION

This section addresses the potential impacts of the Proposed Project with regard to surface water and groundwater hydrology. The surface water hydrology analysis identifies surface water runoff and drainage characteristics, as well as drainage and flood control improvements. The groundwater hydrology analysis identifies subsurface stratigraphy, groundwater depth and direction of flow. The analysis addresses the impacts that would occur for the Project as Proposed, for the Project's Equivalency Program, and for the Project's secondary impacts that would occur from the implementation of the Project's off-site mitigation measures.

This section summarizes information derived from the *Water Resources Technical Report for the Village at Playa Vista Project*, Volumes I-III, finalized in August 2003 by Camp Dresser & McKee, Inc.; Psomas; and GeoSyntec Consultants. The subject technical report is included as Appendix F-1 to this EIR.

2.0 ENVIRONMENTAL SETTING

2.1 Regulatory Framework

2.1.1 Surface Water Hydrology

2.1.1.1 Federal Level

National Flood Insurance Act

The National Flood Insurance Act established the National Flood Insurance Program, which is based on the minimal requirements for flood plain management and is designed to minimize flood damage within Special Flood Hazard Areas. According to the Flood Insurance Rate Map (FIRM) from the Federal Emergency Management Agency (FEMA), the Project site falls into two different flood zones. The bluff portion of the Habitat Creation/Restoration Component is classified as Zone C – areas of minimal flooding, not requiring flood insurance. The remaining portions of the Proposed Project (Urban Development Component and the

Riparian Corridor portion of the Habitat Creation/Restoration Component) are in Zone B – areas between the limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with an average depth of less than one foot; or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. No areas of the Proposed Project site are located within Zone A (100-year flood zone) as determined by FEMA. The FIRM flood zones for the Proposed Project are shown on Figure 25 on page 347.

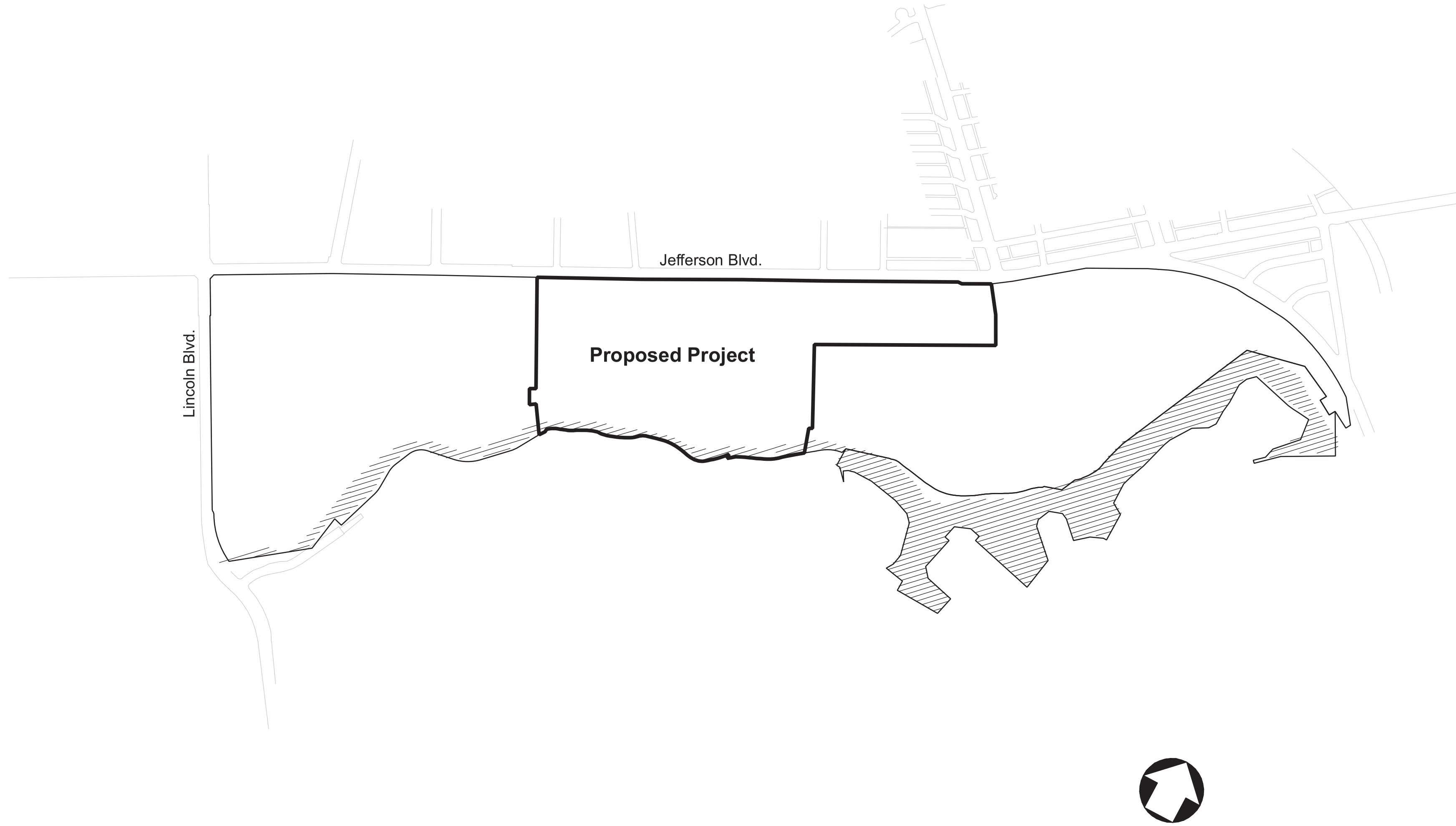
2.1.1.2 Local Level

Drainage and flood control structures and improvements in the City of Los Angeles are subject to review and approval by the City of Los Angeles, Bureau of Engineering. The City utilizes a 50-year design storm for flood control design purposes, which is a predicted storm event estimated using the City's methodology and assumptions, which are considered to be conservative.

The County of Los Angeles and the City of Los Angeles are co-permittees under the municipal stormwater National Pollution Discharge Elimination System (NPDES) permit for Los Angeles County. As part of the NPDES program, the Standard Urban Stormwater Mitigation Plan (SUSMP) was developed to address stormwater pollution from new construction and redevelopment projects. Although most of the BMPs identified in the SUSMP are focused on water quality issues such as the infiltration or treatment of stormwater runoff and reduction of the post-project discharge of pollutants from stormwater conveyance systems (addressed in Section IV.C.(2), Water Quality), one structural BMP requires that a project control peak flow discharge to provide stream channel and over bank flood protection. The Proposed Project is required to incorporate appropriate SUSMP requirements into project plans as part of the development plan approval process for building and grading permits.

2.1.2 Groundwater Hydrology

California water law governs pumping of percolating groundwater in California. Landowners overlying a groundwater basin can pump their share of groundwater utilizing their overlying rights so long as these rights have not been legally severed from the land and the groundwater pumping is limited to the landowners' correlative share, which represents the portion of the water they can pump without adversely impacting other overlying right holders. Usage of groundwater can also be controlled through a judicial adjudication, wherein water rights are partitioned out to the full potential of the basin. The Proposed Project lies within the Santa Monica Hydrologic Basin, which has not yet been adjudicated. There is no basin-wide groundwater management program within the Santa Monica Basin.



FLOOD ZONE B: Areas between the limits of 100-year and 500-year flood

FLOOD ZONE C: Areas of minimal flooding not requiring flood insurance.

SOURCE: PSOMAS

CDM

Figure 25

Flood Insurance Rate Map
Flood Zones

2.2 Existing Conditions

The drainage system that would serve the Project site was designed to serve both the adjacent Playa Vista First Phase Project and the Proposed Project; therefore, to accurately describe the drainage setting for the Proposed Project, it is important to present the conditions of the hydrologic study area prior to the development of the adjacent Playa Vista First Phase Project ("pre-First Project").

2.2.1 Surface Water Hydrology

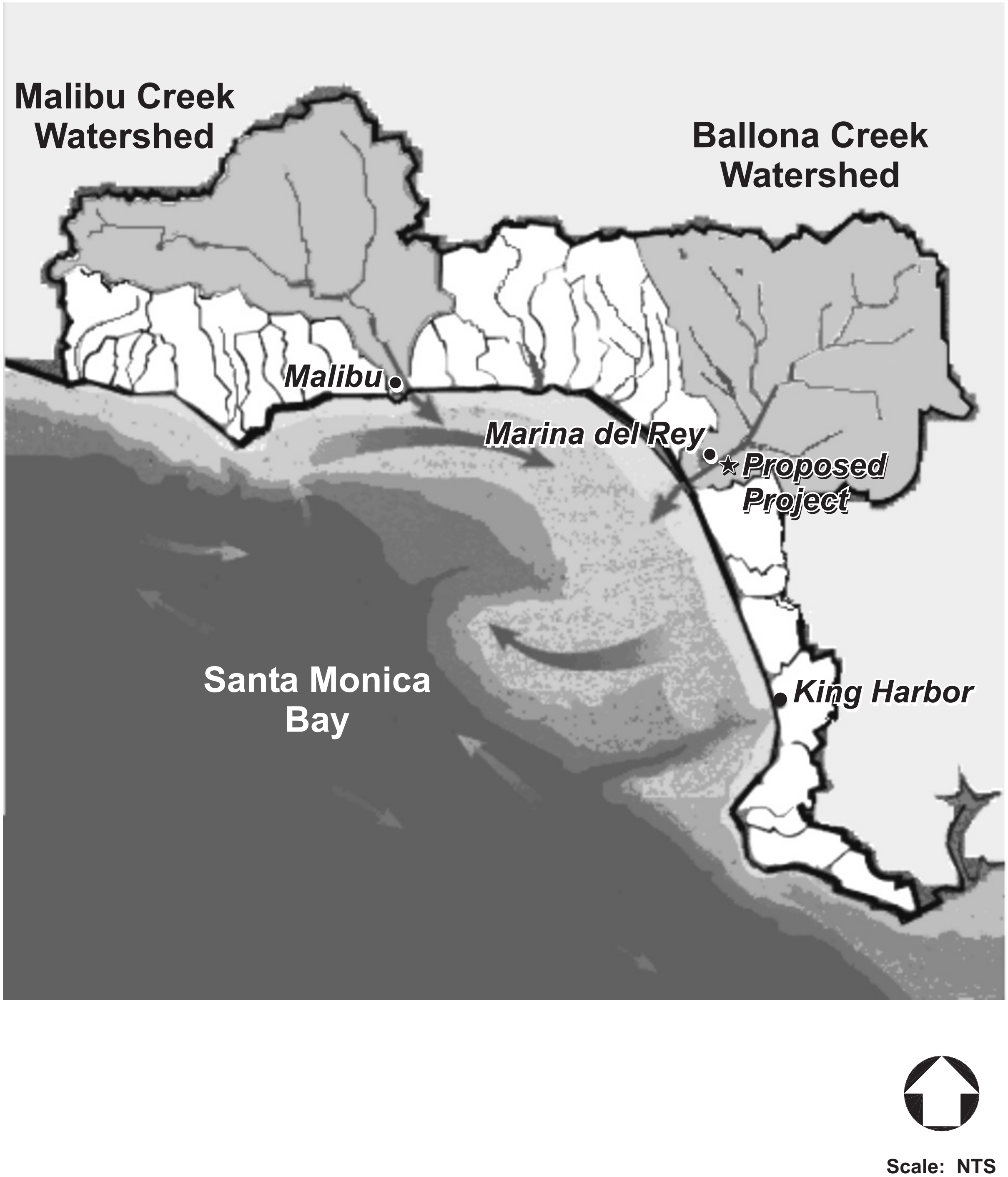
The existing surface water hydrology characteristics associated with the Proposed Project consist of, and are influenced by, a variety of watershed areas, drainage systems, and land uses. The most notable features related to the Proposed Project include: Santa Monica Bay, which receives much of the surface runoff from metropolitan Los Angeles; the Ballona Creek Watershed, including the Ballona Channel, into which the adjacent Playa Vista First Phase Project and the Proposed Project drain; and the local watersheds and drainage facilities. Figure 26 on page 349 depicts the regional relationship between Santa Monica Bay, the Ballona Creek Watershed, and the Proposed Project. The following sections describe the relevant characteristics of each.

2.2.1.1 Santa Monica Bay

Santa Monica Bay is an open embayment with a designated surface area of approximately 266 square miles. It is bordered by Point Dume to the northwest, the Palos Verdes Peninsula to the south, and the deep Santa Monica Basin offshore. Uses of Santa Monica Bay include recreational, commercial, and industrial uses. Activities include boating, swimming, fishing, power generation and runoff, and stormwater, wastewater and waste discharge. Relative to the Proposed Project, Santa Monica Bay lies approximately 2 miles west. The Proposed Project site has no direct connection to Santa Monica Bay, although all of its surface runoff drains eventually into Santa Monica Bay via the Ballona Channel.

2.2.1.2 Ballona Creek Watershed

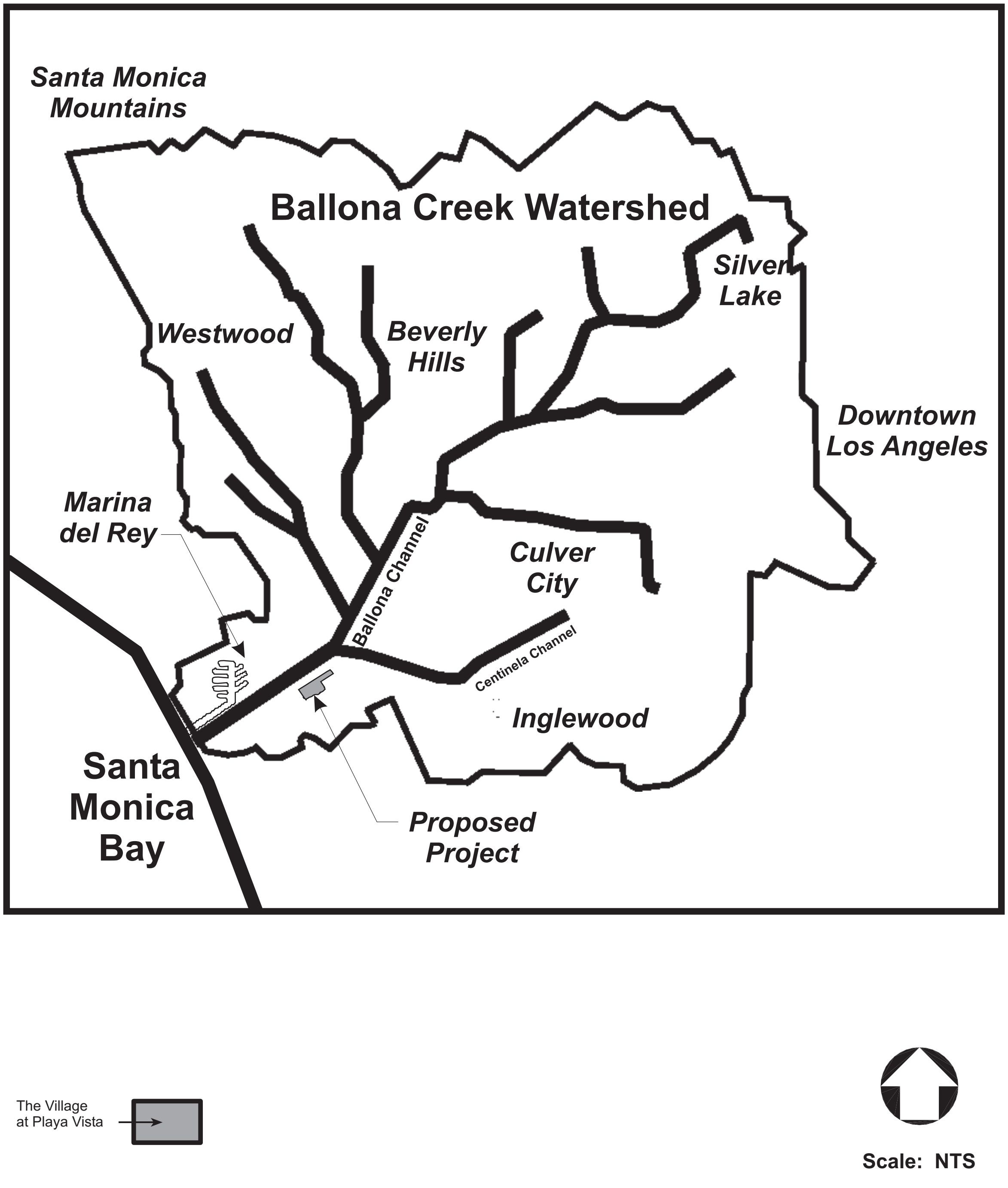
The Ballona Channel is the major drainage channel in the vicinity of the Proposed Project site, and the majority of the runoff from the Proposed Project eventually reaches the Ballona Channel. The overall Ballona Creek Watershed, as shown in Figure 27 on page 350, drains approximately 78,000 acres. The adjacent Playa Vista First Phase Project and the Proposed Project comprise 0.5 percent of this watershed. The watershed includes portions of the Santa Monica Mountains to the north, an area west of Beverly Hills and the higher elevations of Culver City, an area extending easterly to within approximately two blocks of the Los Angeles



SOURCE: PSOMAS

Figure 26
Regional Hydrological Setting

CDM



SOURCE: PSOMAS

Figure 27
Ballona Creek Watershed

CDM

Coliseum, and the Ballona Escarpment (Westchester and Playa del Rey Bluffs) to the south. Approximately 76 percent of the Ballona Creek Watershed consists of highly urbanized land.[103] None of the watercourses within the watershed flow perennially from natural sources.[104] Other than urban runoff and industrial discharges, runoff into the Ballona Channel occurs only during and immediately following precipitation events.

Based on ocean tide elevations, the downstream portion of the Ballona Channel is tidally influenced to a point approximately 3,000 feet east of Lincoln Boulevard (near the confluence with Centinela Channel). However, the saltwater portion of the Ballona Channel has been determined to be approximately downstream of the channel's intersection with Culver Boulevard. The portion of the Ballona Channel between these two points is referred to as the saltwater wedge.[105]

2.2.1.3 Adjacent Playa Vista First Phase Project and the Proposed Project

2.2.1.3.1 Local Watersheds and Drainage Areas

The total tributary area of the adjacent Playa Vista First Phase Project and the Proposed Project, which includes the upstream areas that drain to the Property, encompasses approximately 1,056 acres. Figure 28 on page 352 shows the tributary watersheds and drainage areas associated with the adjacent Playa Vista First Phase Project and the Proposed Project sites. Off-site stormwater that flows onto the adjacent Playa Vista First Phase Project and the Proposed Project sites originates from storm drains, highways, natural drainage ways, and overland flow. The off-site tributary area north of the adjacent Playa Vista First Phase Project and the Proposed Project sites is highly urbanized with relatively little pervious surface area. The off-site tributary area south of the adjacent Playa Vista First Phase Project and the Proposed Project sites includes a portion of the Ballona Escarpment (Westchester Bluffs), Loyola Marymount University, and commercial uses along Lincoln Boulevard. Due to the existing urban nature of lands to the north, and the permanent open space (bluffs) and institutional use to the south (Loyola

[103] *Los Angeles County Department of Public Works, Watershed Management. April 4, 2003 [Online] http://ladpw.org/wmd/watershed/bc/index.cfm.*

[104] *U.S. Army Corps of Engineers – Los Angeles District, "Hydrology for Feasibility Report, Ballona Channel and Sawtelle-Westwood Channel, California – Los Angeles Drainage Area," February 1979.*

[105] *The tidal prism is the intersection of freshwater and saltwater near where the Ballona Channel empties into Santa Monica Bay. It is created in the channel by the daily tidal fluctuations in the Bay as the saltwater from the Bay advances and retreats in the Channel. The water column of the tidal prism is a mixture primarily of Santa Monica Bay and, to limited extent, Marina del Rey saltwater, with freshwater from upstream flows in the Ballona Channel. Typically, the denser saltwater intruding from the Bay will become overlain by less dense freshwater flowing down Ballona Channel with some mixing and diffusion. This phenomenon is also referred to as a saltwater wedge. (Camp Dresser & McKee Inc. Ballona Creek Salinity Monitoring and Water Quality Sampling Results. August 14, 1996.)*

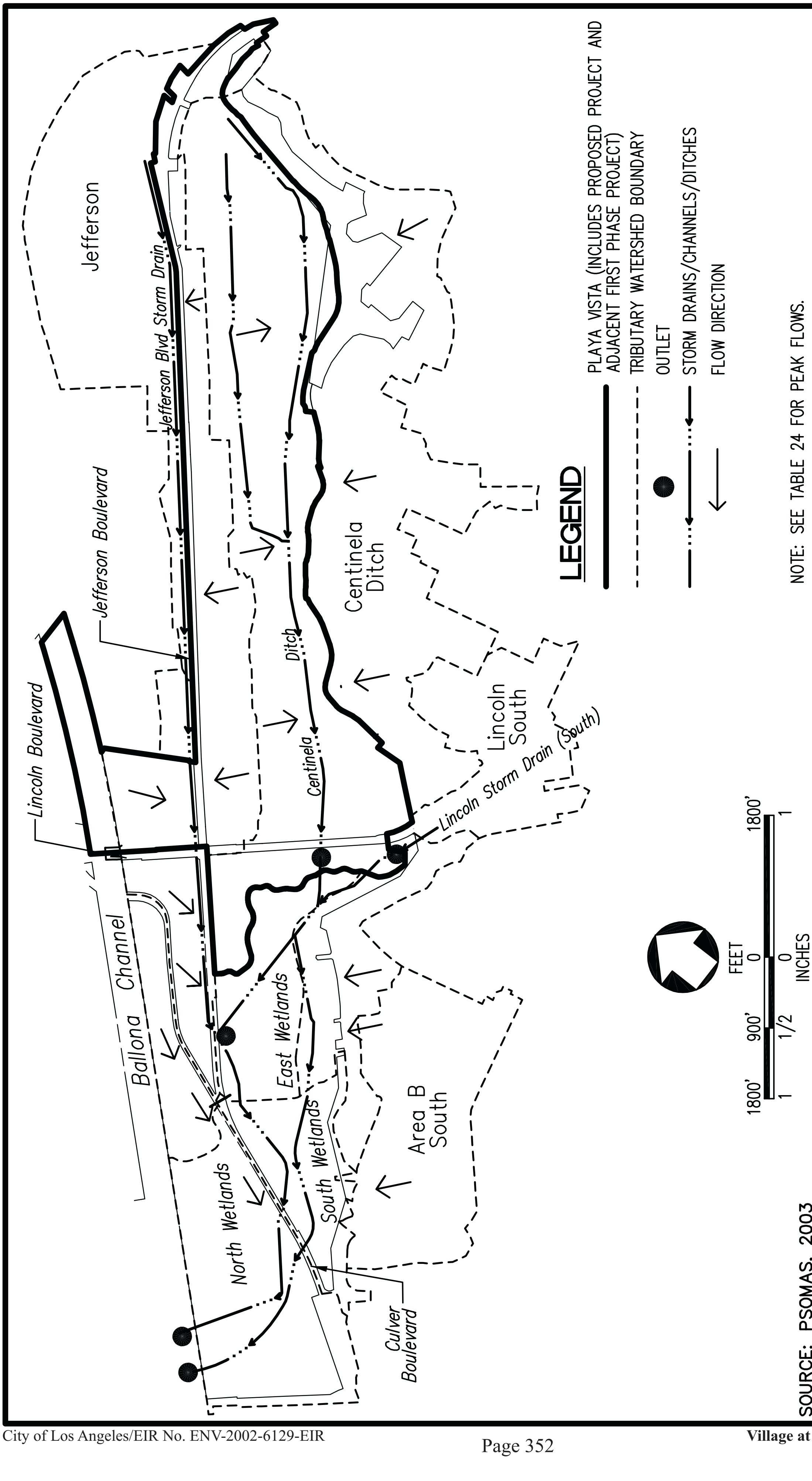


Figure 28
Pre-First Phase Drainage System and Hydrology

Marymount University), no notable changes in hydrology are expected to occur for baseline conditions in those areas upstream/upgradient of the adjacent Playa Vista First Phase Project and the Proposed Project. Within the adjacent Playa Vista First Phase Project and the Proposed Project sites, the existing undeveloped areas provide substantial surface detention for runoff generated by most storms. However, during exceptionally wet weather, such as multiple-day storms, the soil becomes saturated, surface depressions are filled, and a relatively high volume of runoff occurs (see additional discussion below regarding drainage facilities), causing wide areas of temporary ponding.

The drainage area studied is located south of the Ballona Channel and encompasses approximately 1,555 acres. Of this, approximately 614 acres are upstream of the adjacent Playa Vista First Phase Project (not including the Freshwater Marsh) and Proposed Project sites; approximately 442 acres are associated with the adjacent Playa Vista First Phase Project and Proposed Project sites; and, approximately 499 acres (including the Freshwater Marsh) are downstream of the adjacent Playa Vista First Phase Project and the Proposed Project sites. The general drainage pattern in areas south of Ballona Channel is south-to-north and east-to-west. The majority of runoff is discharged to Ballona Channel through the Freshwater Marsh outlet constructed as part of the adjacent Playa Vista First Phase Project and to the Ballona Wetlands (during storm events larger than a 1-year storm only) and existing flap-gated culverts within the wetlands, located approximately 1.25 miles west of the Proposed Project.

The drainage system that serves the Project site was designed to serve both the adjacent Playa Vista First Phase Project and the Proposed Project, as well as adjacent upstream areas; therefore, to accurately describe the drainage setting for the Proposed Project, it is important to present the conditions of the hydrologic study area prior to the development of the adjacent Playa Vista First Phase Project ("pre-First Phase Project). Figure 28 on page 352 illustrates the pre-First Phase hydrology in terms of tributary areas and related storm drains. The following describes the drainage facilities related to the pre-First Phase Project hydrology of the site.

2.2.1.3.2 Drainage Facilities

Ballona Channel

In the vicinity of the adjacent Playa Vista First Phase Project and the Proposed Project, the Ballona Channel is trapezoidal, with bottom widths varying from 80 to 200 feet and depths varying from 19 to 23 feet from the top of the levee. The side slopes are lined with concrete, paving stones, and riprap (i.e., rocks with boulders); the channel bottom is unpaved. The maximum flood capacity (with no freeboard[106]) of Ballona Channel in the vicinity of the adjacent Playa Vista First Phase Project and the Proposed Project is estimated to be about 72,000 cubic

[106] *Freeboard is the distance between the waterline and the upper edge of a structure.*

feet per second (cfs).[107] The Ballona Channel falls within the jurisdictions of the County of Los Angeles and U.S. Army Corps of Engineers (USACE). The County utilizes a hypothetical 50-year storm for flood control design purposes. This design storm is substantially larger than the USACE design storms. As a comparison, for the Ballona Creek Watershed, the USACE 100-year flood has a peak flow of 56,000 cubic feet per second (cfs) and the USACE Standard Project Flood has a peak flow of 68,000 cfs. Both the USACE 100-year flood and the Standard Project Flood are less than the County's 50-year design flood of 69,800 cfs. Additionally, the County and USACE standards are less than the maximum capacity (with no freeboard) of the Channel.

The design storm data for Ballona Channel has been compared against actual stream gauge data taken at the nearest stream gauge with historical data, F38C-R, located on Ballona Channel just above Sawtelle Boulevard (upstream of the Centinela Channel). Based upon the stream gauge data from the 1940s to 1990s, 10 floods above 18,000 cfs (equivalent to approximately 24,000 cfs at the site) have occurred. The largest storm on record during this period of 32,500 cfs (estimated 40,000 cfs at the site) occurred on November 21, 1967. The largest recent storm occurred on March 10, 1995 – a peak flow of 24,000 cfs was measured (estimated 30,000 cfs at the site). Maximum stage was 5.3 feet above mean sea level (AMSL) at the site, and remained above 5 feet AMSL for an hour. By comparison, the design storm (a hypothetical 50-year storm assumed for the sizing and design of flood control facilities, as described above) stays above 5 feet AMSL for 4 hours. Accounting for peak and duration, the storm gauge data is well within the parameters of the design storm.

Due to the highly urbanized nature of the Ballona Creek Watershed, and debris control structures in undeveloped upstream areas, bedload (coarse natural materials including gravel and rocks) in the Ballona Channel is negligible. During large storms, manmade debris is often present in the runoff, collecting at bridge piers. Under pre-First Phase conditions, runoff from the site collected in low-lying areas adjacent to the Ballona Channel, where sediment in the runoff settles.

Pre-First Phase Drainage Facilities

Table 23 on page 355 compares the pre-First Phase drainage system capacities with the 50-year storm event runoff. The major drainage facilities under pre-First Phase conditions are described below.

Centinela Ditch – During pre-First Phase conditions, Centinela Ditch ran east-to-west along Teale Street (subsequently realigned and renamed Bluff Creek Drive). The upstream end

[107] *U.S. Army Corps of Engineers – Los Angeles District, "Hydrology for Feasibility Report, Ballona Channel and Sawtelle-Westwood Channel, California – Los Angeles Drainage Area," February 1979.*

Table 23

PRE-FIRST PHASE DRAINAGE SYSTEM CAPACITY

Drainage System	Pre-First Phase Capacity (cfs)	Total Tributary Area (acre)	50-Year Storm Event Runoff (cfs)
Centinela Ditch	210	570	629
Jefferson Storm Drain	380 [a]	395 [b]	457
Lincoln Storm Drain South	210	91	209
Playa Vista Tributary Total	N/A	1056	1,295
Ballona Wetlands Tributary Total	N/A	499	914
Total		1,555	2,209

cfs = cubic feet per second
N/A = Not Applicable

[a] *This is the estimated capacity of Jefferson Storm Drain at the pre-First Phase outlet to the Ballona Wetlands. Runoff flows indicated in this table and in Table 24 on page 375 refer to flows through Jefferson Storm Drain at the outlet.*
[b] *Acreage is totaled at the former outlet west of the Freshwater Marsh and includes the area between Culver and Jefferson Boulevards, west of Lincoln Boulevard.*

Source: Psomas.

of the ditch was near the east end of the former Howard Hughes Plant Site (Plant Site). It was an unlined, earthen, trapezoidal open channel from near the west end of the Plant Site to Lincoln Boulevard, and a variable-sized closed-conduit storm drain through the most of Plant Site. The ditch collected stormwater from existing developments on the Westchester Bluffs through several major and minor storm drain systems. It also drained the south portion of the adjacent Playa Vista First Phase Project and the Proposed Project sites and discharged into the East Wetland portion of the Ballona Wetlands (see Figure 28 on page 352).

Jefferson Boulevard Storm Drain – During pre-First Phase conditions, the Jefferson Boulevard Storm Drain ran along the centerline of Jefferson Boulevard from Randall Street to the East Wetland portion of the Ballona Wetlands. The upstream end of the drain was at the intersection of Centinela Avenue and Major Street. The storm drain was a variable-sized reinforced concrete box that was 8.5 feet wide by 5.75 feet high at Randall Street and 12 feet wide by 7.25 feet high at the outlet. During pre-First Phase conditions, the capacity of the Jefferson Boulevard storm drain at the pre-First Phase outlet to the Ballona Wetlands was estimated at 380 cfs. It is estimated that 50-year storm events would generate 457 cfs in the drain, which is greater than the capacity of the drain. Historically, this drain has been observed to flood in the vicinity of the intersection of Jefferson Boulevard and Centinela Avenue.

During pre-First Phase conditions, the Jefferson Boulevard Storm Drain collected stormwater from off-site developments north of Jefferson Boulevard, portions of the adjacent

Playa Vista First Phase Project and the Proposed Project immediately adjacent to Jefferson Boulevard, and the area between Culver and Jefferson Boulevards, west of Lincoln Boulevard.

Lincoln Drain South – Under pre-First Phase conditions, the outlet of the Lincoln Drain South discharged into the area where the Freshwater Marsh has been constructed on the west side of Lincoln Boulevard near Teale Street. The drain carried off-site flows from developments south of the adjacent Playa Vista First Phase Project and the Proposed Project and to the east and west of Lincoln Boulevard.

Ballona Wetlands – Under pre-First Phase conditions, runoff originating from within the wetland and upland areas located south of Ballona Channel and west of Lincoln Boulevard, portions of the Playa del Rey Bluffs, and the Playa del Rey area, was conveyed to the degraded Ballona Wetlands system. Once runoff reached the Ballona Wetlands, the runoff flowed to two channels that discharged into the Ballona Channel through flap-gate systems.

Within the Ballona Wetlands, limited-capacity (i.e., relatively shallow and/or narrow) channels carried low-flows through the three areas of the Ballona Wetlands. The three areas included the East Wetland, the South Wetland, and the North Wetland (see Figure 28 on page 352). During pre-First Phase conditions, the East Wetlands was primarily a freshwater system with ponding due to low points, while the North and South Wetlands were saltwater wetlands with well-defined channels. Low-flows passed through the areas of the Ballona Wetlands in an east-to-west direction through the East Wetland to the flap-gated outlets to Ballona Channel in the North Wetland. The capacity of existing culverts under a bermed Southern California Gas Company (SCGC) access road, which is the boundary between the East and South Wetlands, and under Culver Boulevard, which is the boundary between the South and North Wetlands, was limited. As such, under pre-First Phase conditions, the wetland areas acted like detention/filtration basins and the linear drainage pattern associated with the existing channels became undefined during flood events.

In addition, during the 50-year storm event, development along the west end of Culver Boulevard and the SCGC facilities at the toe of the Playa del Rey Bluffs were susceptible to flooding. Culver Boulevard was below the flood level of Ballona Channel. During high water stages in Ballona Channel, all stormwater runoff from the subject study area flowed into the Ballona Wetlands. Under the 50-year storm, portions of Culver Boulevard and possibly areas in adjacent Playa del Rey would be flooded because of their low elevation and insufficient stormwater detention capacity in the Ballona Wetlands. Similarly, Lincoln Boulevard at the Centinela Ditch was subject to flooding during major storm events when there was insufficient stormwater detention capacity in the Centinela Ditch culvert and area east of Lincoln Boulevard.

Existing Drainage Facilities

Since the adjacent Playa Vista First Phase Project has not been completed, the existing conditions represent an intermediate phase. Implementation of the adjacent Playa Vista First Phase Project, which includes completion of the Freshwater Marsh and the first phase of the Riparian Corridor, is altering the baseline conditions for land uses to the east and west of the Proposed Project site and the related drainage system. This subsection provides a comparison of the existing drainage facilities and pre-First Phase conditions. Portions of the adjacent Playa Vista First Phase Project remaining to be constructed are also described.

Centinela Ditch – All of the Centinela Ditch within the adjacent Playa Vista First Phase Project has been removed as a result of site preparation and construction activities in compliance with construction plans and permits approved by the USACE, California Department of Fish and Game (CDFG) and City of Los Angeles. These permits include USACE Permit No. 90-426-EV, CDFG 1603 Streambed Alteration Agreement No. 5-693-93, and applicable grading/stockpiling permits within the adjacent Playa Vista First Phase Project area. In addition, within the Proposed Project site, most of the ditch has been removed as part of the Erosion Control Plan approved by the City of Los Angeles, Department of Public Works, for the adjacent Playa Vista First Phase project. As under pre-First Phase conditions, the remainder of the ditch collects stormwater from existing developments on the Westchester Bluffs through several major and minor storm drain systems. Under existing conditions, it also drains the south portion of the site and discharges through a temporary detention basin (discussed below) into the Central Storm Drain (approved and constructed as part of the adjacent Playa Vista First Phase Project) under Lincoln Boulevard and into the Freshwater Marsh.

As part of the adjacent Playa Vista First Phase Project's Stormwater Pollution Prevention Plan (SWPPP) and Erosion Control Plan, the City of Los Angeles Department of Public Works has approved the excavation and maintenance of these temporary detention basins have been created in the Proposed Project site (located south of Runway Road and generally west of Building 45). Temporary detention basins provide temporary storm drainage and control sediments for the adjacent Playa Vista First Phase areas currently under construction, west of the Proposed Project site, that will ultimately drain into the Riparian Corridor, as well as portions of the eastern portion of the adjacent Playa Vista First Phase Project site, which will ultimately drain to the Central Storm Drain or the Riparian Corridor. It is expected that the temporary drainage facilities will remain on the Proposed Project site pursuant to the SWPPP as may be modified from time to time. At completion of the adjacent Playa Vista First Phase Project, the eastern and western portion of the Riparian Corridor will have been constructed to replace the Centinela Ditch.

Central Storm Drain (approved as a part of the adjacent Playa Vista First Phase Project) – The entire tributary area of the Central Storm Drain is within the boundaries of the adjacent Playa Vista First Phase Project and the Proposed Project. The upstream terminus of the drain is at the intersection of Artisans Way and Waterfront Drive in the eastern portion of the adjacent Playa Vista First Phase Project site. It drains east to west, extending along Waterfront Drive, Millennium Street, Runway Road, Pacific Promenade, and Playa Vista Drive and discharges into the Freshwater Marsh. The circular pipe ranges in diameter from 42 inches to 96 inches, with equivalent hydraulic capacity rectangular boxes used in some sections to provide utility clearances as necessary. The Central Storm Drain is in operation in the western portion of the adjacent Playa Vista First Phase Project area and is largely completed within the eastern portion of the adjacent Playa Vista First Phase Project site. The remaining (central) portion of the Central Storm Drain (under Runway Road), as approved as part of the adjacent Playa Vista First Phase Project, will be constructed as necessary for stormwater management.

Jefferson Boulevard Storm Drain – As part of the adjacent Playa Vista First Phase Project, the Jefferson Boulevard Storm Drain west of Lincoln Boulevard was abandoned and a new section was built to divert the Jefferson Boulevard Storm Drain runoff into the Freshwater Marsh (instead of the Ballona Wetlands). The northeast corner of the Lincoln and Jefferson Boulevard intersection constructed with the adjacent Playa Vista First Phase Project also drains into the Jefferson Boulevard Storm Drain. These changes will not result in any increased flows (i.e., additional backup of water) in the Jefferson Boulevard Storm Drain. It is estimated that 50-year storm events with the adjacent Playa Vista First Phase Project and the Proposed Project would generate 404 cfs in the drain, which is less than the estimated 457 cfs generated under a 50-year storm event with the pre-First Phase Project. With these modifications, all runoff from new development within the adjacent Playa Vista First Phase Project and the Proposed Project will be routed through the Freshwater Marsh. All approved modifications to the Jefferson Boulevard Storm Drain have been completed.

Lincoln Drain South – The Lincoln Drain South is the same under existing conditions as it was under pre-First Phase conditions, except a concrete swale[108] drains the flow northerly along Lincoln Boulevard and outlets into the Freshwater Marsh. Once the western portion of the Riparian Corridor has been completed, as approved for the adjacent Playa Vista First Phase Project, the Lincoln Drain South will be rerouted to drain into the Freshwater Marsh via the Riparian Corridor culvert under Lincoln Boulevard, thus completing the approved modifications.

Freshwater Marsh (approved as part of the adjacent Playa Vista First Phase Project) – Prior to construction of the Freshwater Marsh, 100 percent of untreated runoff flows from the 1,555-acre tributary watershed drained directly into the Ballona Wetlands and then into the Ballona Channel. The Freshwater Marsh is one of two major components of the overall Freshwater Wetlands System that was designed and subsequently permitted by the relevant governing agencies as a comprehensive system to enable the adjacent Playa Vista First Phase

[108] *A concrete swale is a shallow trough-like depression that carries water.*

Project and the Proposed Project, at buildout, to: (1) control the amount of freshwater flowing to the Ballona Wetlands and Ballona Channel; (2) substantially reduce the amount of surface water pollutant loads to the Ballona Wetlands; and (3) achieve a no net increase in pollutant loads to the Ballona Channel and Santa Monica Bay (see Section IV.C.(2), Water Quality, for a discussion of the last two points). The Freshwater Marsh has been designed to receive stormwater and dry weather runoff from the Jefferson Boulevard Storm Drain, the Central Storm Drain, the Riparian Corridor, and the Lincoln Drain South. These drainage systems outlet into the Freshwater Marsh at pre-treatment catchment areas (i.e., primary management areas).

The Freshwater Marsh serves as a means to divert freshwater flows from existing and new development away from the existing Ballona Wetlands salt marsh. During most runoff events, the Freshwater Marsh will discharge into Ballona Channel directly through flap-gated culverts; however, an overflow spillway is provided into the Ballona Wetlands to divert major storm flows (over 1-year storm levels). The Freshwater Marsh is divided from the Ballona Wetlands by a berm. The slopes of the berm vary from 10:1 to 5:1 horizontal-to-vertical in order to promote the establishment of wetland vegetation and provide biological protection against erosion of the berm. A design feature of the Freshwater Marsh allows flexibility to release freshwater to the Ballona Wetlands through a gated valve should it be necessary in conjunction with the design or maintenance of the salt marsh. Under normal conditions, storm flows greater than a 1-year storm will flow over the overflow spillway into the existing Ballona Wetlands. The storm overflow drains through the East, South, and North Wetland portions of the Ballona Wetlands and outlets into Ballona Channel. Only the southern portion of the Freshwater Marsh (approximately 8 acres) currently remains to be constructed. Completion of the Freshwater Marsh, as approved for the adjacent Playa Vista First Phase Project, is expected in 2004.

Area Northwest of Lincoln/Jefferson Intersection – The area between Culver and Jefferson Boulevards, west of Lincoln Boulevard, which use to drain into the Jefferson Boulevard Storm Drain, now drains directly into the Freshwater Marsh outlet when the flapgates at Ballona Channel are open. The flapgates remain open as long as the Freshwater Marsh is hydraulically higher than the Ballona Channel. When the flapgates close (normally this would occur during major storm events) temporary ponding in the area would occur until the flapgates reopen. All modifications to this area have been completed.

Ballona Wetlands – The Ballona Wetlands are very similar under existing conditions compared to pre-First Phase conditions except that the Freshwater Marsh regulates upstream flows entering the wetlands. The capacities of existing culverts under a bermed SCGC access road, which is the boundary between the East and South Wetlands, and under Culver Boulevard, which is the boundary between the South and North Wetlands, are limited. As a result, the wetlands act like detention/filtration basins and the linear drainage pattern associated with the existing channels becomes undefined during flood events. The East Wetlands are primarily a freshwater system, subject to long-term ponding due to low points within the wetland areas. The

North and South Wetlands are saltwater wetlands, with well-defined channels. A USACE Section 1135 Project was recently constructed to modify the existing flap-gated culverts between Ballona Channel and the North Wetlands to allow increased tidal exchange within the existing tidal channels of the Ballona Wetlands. Tidal flow is maintained within the existing tidal channels, and the Section 1135 Project does not substantially affect the flood hydrology.[109]

2.2.2 Groundwater Hydrology

2.2.2.1 Regional Groundwater System

The Proposed Project is located on the Ballona Gap, a subunit at the southern edge of the Santa Monica hydrologic basin of the Coastal Plain of Los Angeles (see Figure 29 on page 361). The Ballona Gap is a younger alluvial plain that was initially formed by headward erosion from the ocean, capturing drainage from the Sawtelle Plain and the Hollywood Piedmont Slope.[110]

Resultant deposits within the Ballona Gap form the Ballona Aquifer and include coarse sand, gravel, and cobbles. The Ballona Aquifer varies in thickness from less than 10 feet at the coast to 40 feet near Beverly Hills, and generally occurs at the Proposed Project site at a depth of approximately 50 feet below native grade.[111] Relative to the adjacent Playa Vista First Phase Project and the Proposed Project, the San Pedro Formation underlies the alluvial deposits. The Silverado Aquifer occurs as a member of the San Pedro Formation. Figure 30 on page 362 presents a general cross-section through the aquifer system under the adjacent Playa Vista First Phase Project and the Proposed Project, which roughly follows the alignment of the Ballona Channel, indicating the approximate elevations and relationships of the Bellflower, Ballona and Silverado Aquifers.

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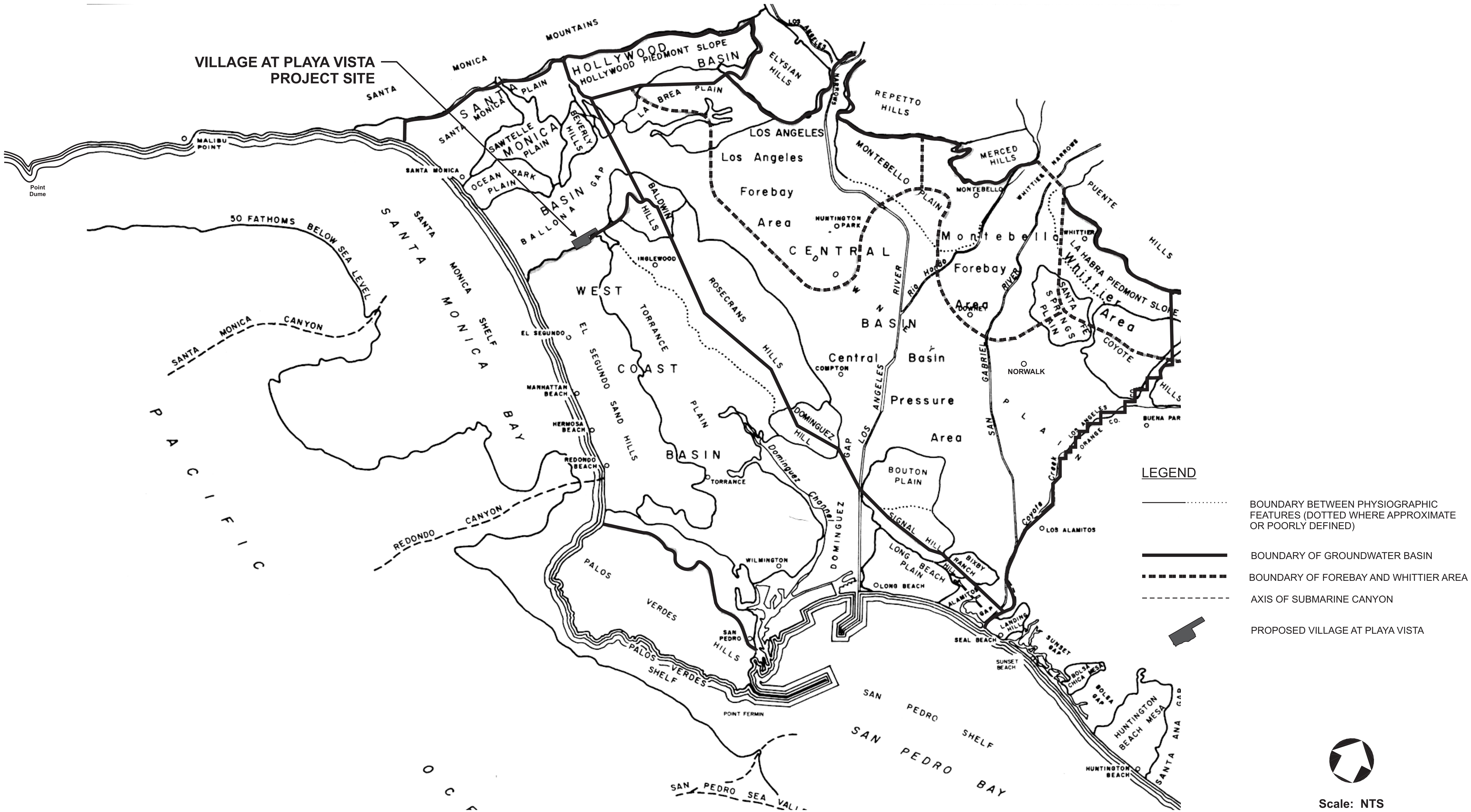
[109] *The USACE recently completed construction of a project within the northerly area of the Ballona Wetlands known as "The Ballona Wetlands Section 1135 Ecosystem Restoration Project" (Section 1135 Project). The Section 1135 Project included the retrofitting of two of three existing 60-inch corrugated metal pipe culverts located on the south levee of the Ballona Creek Flood Control Channel (Ballona Channel). The culvert retrofit consisted of the attachment of two self-regulating tide-gates (mechanical devices that automatically open and close based on tidal water levels) to the existing culverts at the eastern drainage channel from the Ballona Wetlands (North Wetlands). The water surface elevation in the tidal channels will range from 0.8 feet AMSL to 1.2 feet AMSL. During flood conditions, the tidal gates will close, preventing storm flows from entering the Ballona Wetlands from Ballona Channel.*

[110] *California Department of Water Resources, Planned Utilization of the Groundwater Basins of the Coastal Plain of Los Angeles County, Bulletin 104, 1961, page 35.*

[111] *California Department of Water Resources, Planned Utilization of the Groundwater Basins of the Coastal Plain of Los Angeles County, Bulletin 104, 1961, page 52.*



SOURCE: CALIFORNIA DEPARTMENT OF WATER RESOURCES, GROUNDWATER GEOLOGY OF THE COASTAL PLAIN OF LOS ANGELES COUNTY, PHYSIOGRAPIC FEATURES AND GROUNDWATER BASINS.

CDM

Figure 29
Regional Groundwater Hydrologic Basins

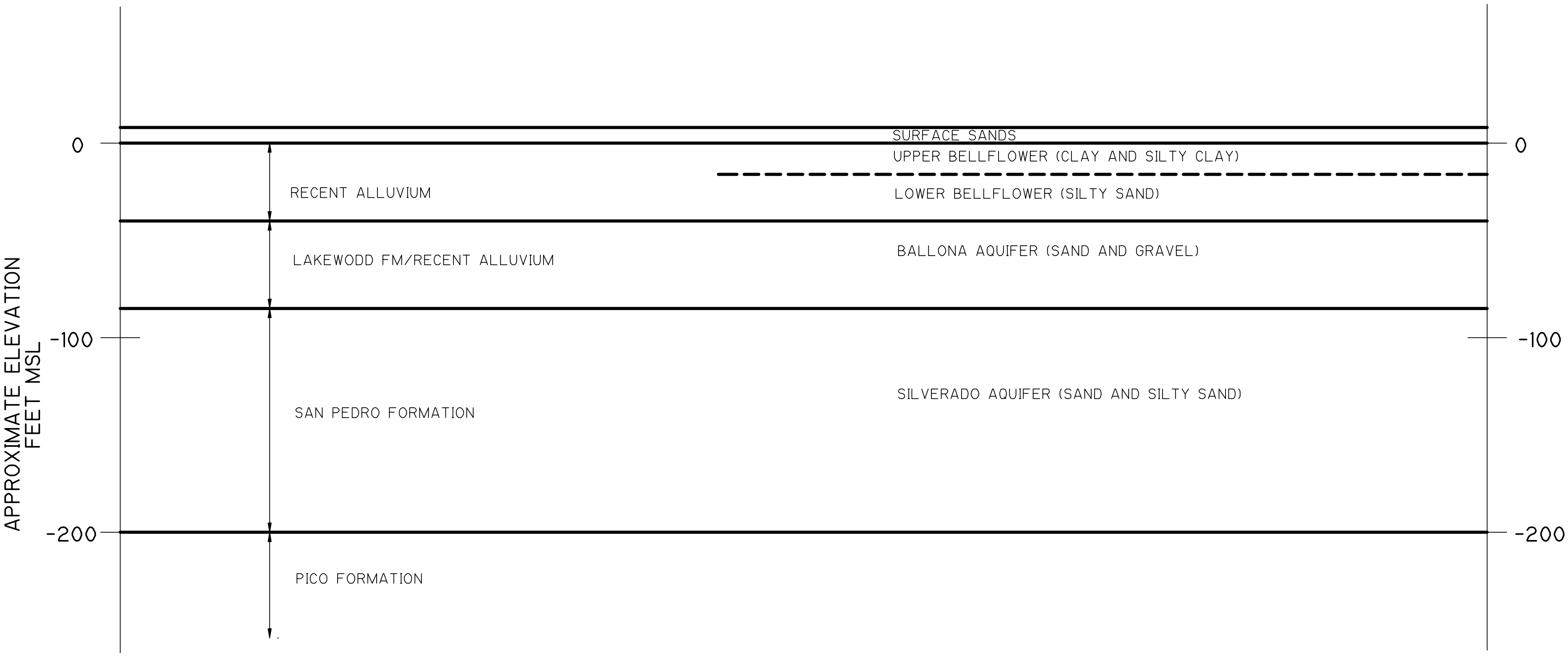


Figure 30
Generalized Aquifer Cross-Section

CDM

The Silverado Aquifer extends throughout most of the Coastal Plain of Los Angeles County and into Orange County.[112] The thickness of the Silverado Aquifer varies throughout the Coastal Plain and reaches a maximum thickness of approximately 500 feet near Lakewood. The maximum depth of the aquifer is approximately 1,200 feet below sea level at a location about three miles southeast of Norwalk.[113] Beneath and near the adjacent Playa Vista First Phase Project and the Proposed Project, the Silverado Aquifer occurs within the San Pedro formation, which is composed of sand, gravel, and a small amount of clay.[114] The Silverado Aquifer is estimated to range in depth from about 100 to 200 feet beneath the adjacent Playa Vista First Phase Project and the Proposed Project sites. Several distinct sand/gravel zones exist in the Silverado, which are separated by finer-grained units. The uppermost coarse-grained unit appears to be in contact with the Ballona Aquifer.[115] Regional water level contours suggest that groundwater in the Silverado Aquifer flows in an east to northeast direction.[116] An artificial recharge area, the West Coast Basin Barrier Project (WCBBP), is located about 5.5 miles south of the site. The WCBBP is an injection project to prevent seawater intrusion in the area. Groundwater flows out radially from this area for a few miles, but the general trend is away from this recharge area in an east to northeast flow.[117] Both the WCBBP and groundwater extraction in the Inglewood/Hawthorne area influence the regional groundwater flow direction.

2.2.2.2 Local Groundwater System

Hydrogeology/Stratigraphy

Recent (Holocene) deposits underlying the adjacent Playa Vista First Phase Project and the Proposed Project sites extend to depths ranging from approximately 40 to 120 feet. The Bellflower Aquitard, which consists of clay, silty and sandy clay, clayey silt, and fine sand, is found at depths near the surface to about 35 feet below the surface at the site.[118] The Basal unit (or lowermost unit) of the recent sediments consists of medium to coarse sand and gravel, which ranges from approximately 10 to 40 feet thick, and is known as the Ballona Aquifer. Between

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[112] *California Department of Water Resources, Planned Utilization of the Groundwater Basins of the Coastal Plain of Los Angeles County, Bulletin 104, 1961, page 73.*

[113] *California Department of Water Resources, Planned Utilization of the Groundwater Basins of the Coastal Plain of Los Angeles County, Bulletin 104, 1961, page 75.*

[114] *Converse Consultants, Comprehensive Geotechnical Report, May 29, 1981, page 10.*

[115] *Hargis and Associates, "Summary of Hydrogeologic Conditions, Summa Corporation Facility, Culver City," December 8, 1986, pages 3 and 7.*

[116] *County of Los Angeles Department of Public Works, Coastal Plain Deep Aquifer Groundwater Contour Map for Fall, 1994.*

[117] *County of Los Angeles Department of Public Works, Coastal Plain Deep Aquifer Groundwater Contour Map for Fall, 1994.*

[118] *McLaren Environmental Engineering, Site Investigation and Evaluation of Remedial Measures, Howard Hughes Property Plant Site, May 8, 1987, pages II-5 and Figure II-2.*

the Bellflower Aquitard and Ballona Aquifer are transitional deposits (See Figure 31 on page 365). Regionally, the Ballona Aquifer occurs at a depth of 35 to 50 feet and readily transmits water.[119] Locally, these recent sediments appear to terminate at the south end of the adjacent Playa Vista First Phase Project and the Proposed Project sites, at an erosional nonconformity along the Ballona Escarpment.

The lower sand and silty sand sediments of the Bellflower Aquitard are in direct contact with the underlying Ballona Aquifer sands and gravel. Although these two units are indicated to be distinctly different hydrogeologic units in some areas, beneath some areas of the adjacent Playa Vista First Phase and Proposed Project, the lower, more permeable portion of the Bellflower Aquitard and the Ballona Aquifer together compose a single hydraulically connected hydrogeologic unit, which is referred to as the Merged Bellflower/Ballona Aquifer, or simply the Bellflower/Ballona Aquifer.[120, 121] The extent of hydraulic connection between the Bellflower and Ballona units is uncertain.[122] Groundwater flow within the shallow groundwater units is generally to the north.[123]

Groundwater levels are relatively shallow beneath the site. While there is an overall trend of lower water levels on the eastern end of the Proposed Project site, reflecting the regional inland gradients in the main Aquifer units, local differences in shallow water levels and gradients are observed within different areas of the site. Such differences can result from several factors such as: varying stratigraphy (e.g., discontinuous levels of varying permeability); localized topographic differences; variable sources of shallow recharge including surface flow and subsurface recharge from the bluffs to the south; seepage from the ocean and possibly Ballona Channel, which is tidally influenced; uneven surface recharge from runoff infiltration due to varying soil conditions; and seasonal variations in precipitation. Groundwater flow beneath the site within the deep aquifer system (Silverado) is generally to the northeast.[124]

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[119] *Hargis and Associates, "Summary of Hydrogeologic Conditions, Summa Corporation Facility, Culver City," December 8, 1986, page 6.*

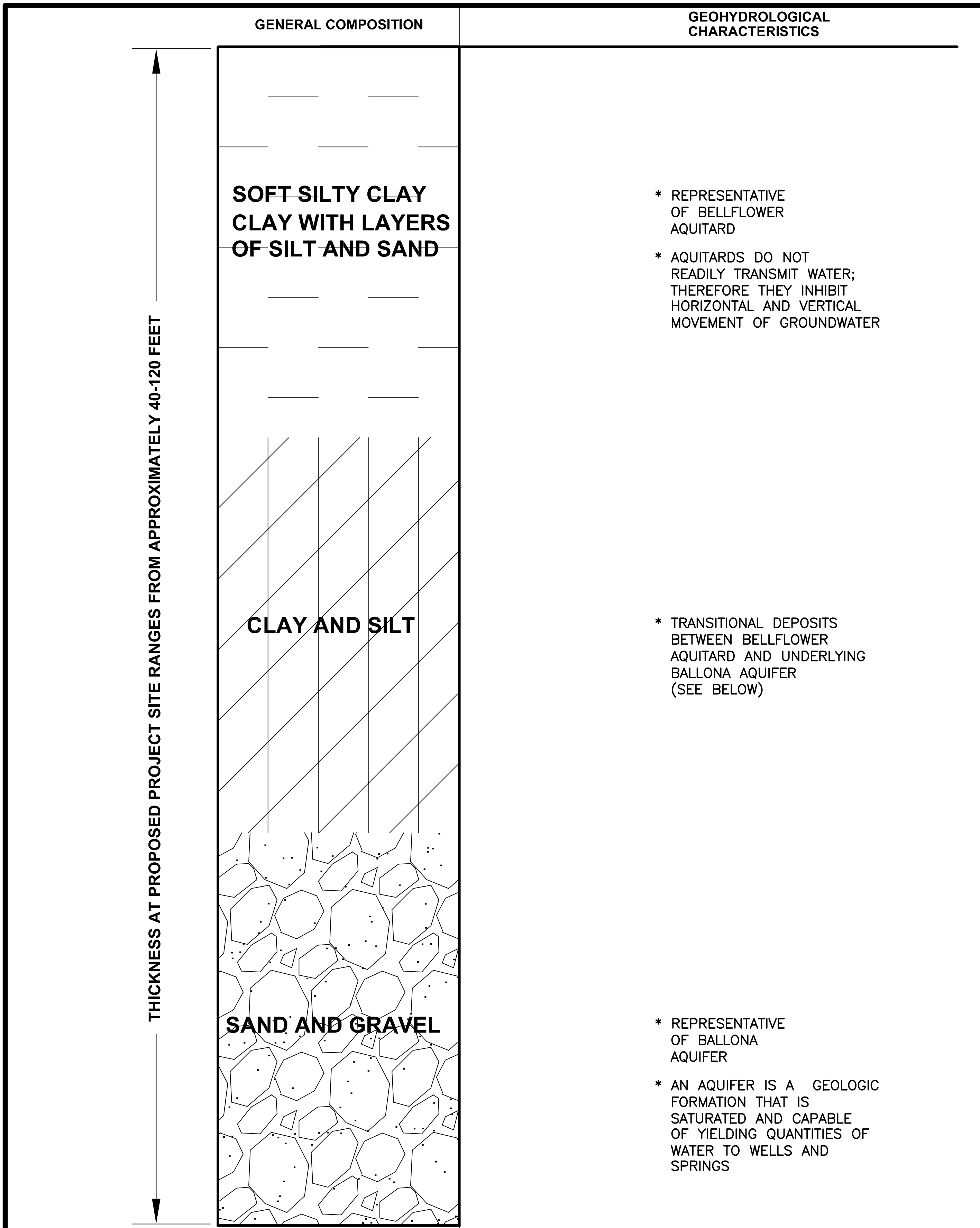
[120] *California Department of Water Resources, Planned Utilization of the Groundwater Basins of the Coastal Plain of Los Angeles County, Bulletin 104, 1961, pages 47, 48, 51, and 52.*

[121] *Hargis and Associates, "Summary of Hydrogeologic Conditions, Summar Corporation Facility, Culver City," December 8, 1986, page 6.*

[122] *Mr. Steve McArdle, Project Geologist, Law/Crandall, Inc., Telephone Communication, March 7, 1996.*

[123] *Camp Dresser & McKee, Inc., "Third Quarter 2002 Groundwater Monitoring and Progress Report," October 15, 2002. (Appendix D-3 of this EIR.)*

[124] *Camp Dresser & McKee, Inc., "Third Quarter 2002 Groundwater Monitoring and Progress Report," October 15, 2002.*



NOT TO SCALE

Figure 31

General Stratigraphic Column of Alluvium Typical of the Proposed Project Site

Site-Wide Groundwater Flow

The direction of groundwater flow varies throughout the adjacent Playa Vista First Phase Project and the Proposed Project sites, but under the Proposed Project the groundwater flow is generally to the north or northeast, away from the ocean. Throughout the site, several factors control groundwater elevation and gradient. Seasonal variations in climatic conditions, daily tidal fluctuations, and subsurface stratigraphy all influence local groundwater conditions.[125]

Based on the groundwater elevations, a substantial amount of recharge is being introduced to the aquifer located south of the adjacent Playa Vista First Phase Project and the Proposed Project sites. The recharge flows into the adjacent Playa Vista First Phase Project and the Proposed Project sites from the Ballona Escarpment through the alluvial soils located at the base of the Westchester Bluffs. Alluvial fans (which consist of alluvial soils/deposits) are generally areas of groundwater recharge due to the porous, sandy subsurface layers of the fan.[126]

Groundwater Extraction

The Silverado Aquifer is used for beneficial uses off-site, including municipal and domestic drinking water supply, industrial process and service supply, and agricultural supply. Currently, there is no groundwater extraction in the vicinity of the Proposed Project site for beneficial uses.[127] However, groundwater extraction for remedial purposes previously occurred at the groundwater treatment facility (GWTF) located in the eastern portion of the adjacent Playa Vista First Phase Project site. This system included two groundwater extraction wells in the Proposed Project and several other extraction wells in the adjacent Playa Vista First Phase Project site. In June 2000, operation of the groundwater extraction system was suspended with Regional Water Quality Control Board (RWQCB) approval due to grading and construction of the adjacent Playa Vista First Phase Project and the groundwater treatment facility was temporarily decommissioned. Since September 2000, a new and more efficient groundwater treatment system, designed to treat a wider range of contaminants, was installed for remediation-related activities and construction dewatering in conjunction with the adjacent Playa Vista First Phase Project construction. This facility is located on the north side of Building 2 within the adjacent Playa Vista First Phase Project, east of the Proposed Project site, and operates under NPDES Permit #CAG914001. Currently, one other temporary portable groundwater treatment facility serves the adjacent Playa Vista First Phase Project and the Proposed Project. The facility

[125] *Law/Crandall, Inc., Report of Groundwater Monitoring, Playa Vista Project, March 14, 1996, page 4.*

[126] *American Geological Institute, Dictionary of Geologic Terms, Third Edition, 1984.*

[127] *The nearest public water supply well is located at Venice Polytechnic High School, approximately 2 miles northwest of the Proposed Project. The subject well was capped in 1960 and is not active. The next closest public supply wells are located approximately 3.5 miles northwest of the Proposed Project in the City of Santa Monica. The nearest irrigation well is located approximately 2 miles southeast of the Proposed Project at the Hillside Memorial Park Cemetery.*

is currently located within the western portion of the adjacent Playa Vista First Phase Project site, east of Lincoln Boulevard and south of Jefferson Boulevard, near Runway Road. This facility is presently in operation for treatment of construction dewatering effluent and operates under NPDES Permit #CAG994002. As construction of the adjacent Playa Vista First Phase Project progresses, additional treatment facilities will be added as deemed necessary, and with the approval of the RWQCB for specific construction dewatering and remediation efforts. A permanent groundwater treatment program for the adjacent Playa Vista First Phase Project and the Proposed Project will be implemented, as necessary, in accordance with RWQCB requirements and Cleanup and Abatement Order No. 98-125. As an alternative to treatment on-site and discharge of construction dewatering under an existing NPDES permit, an Industrial Waste Discharge Permit (W-502105) has been obtained from the City of Los Angeles, Bureau of Sanitation, which allows construction dewatering to be discharged to the sanitary sewer. The existing extraction wells will be abandoned or relocated in accordance with RWQCB requirements. For a discussion of this remediation program, refer to Section IV.I, Safety/Risk of Upset, Subsection 2.2.3.

Dewatering activities associated with the development of the adjacent Playa Vista First Phase Project (including dewatering of excavations, code-required foundation dewatering, etc.) have the potential to cause minor changes in groundwater flow direction and depth. These changes, should they occur, are expected to be localized and are not expected to adversely affect regional groundwater.

3.0 IMPACT ANALYSIS

3.1 Methodology

3.1.1 Surface Water Hydrology

The City of Los Angeles Standard Peak Rate Method is the conservative prediction methodology used for the computation of stormwater runoff from the Proposed Project site and from areas that are tributary to the site.

For the purpose of this EIR, the impacts analysis considers as a whole the pre-First Phase condition against the Proposed Project condition. The analysis also indicates the incremental changes between the adjacent Playa Vista First Phase Project conditions and Proposed Project conditions. As a part of the stormwater system designed and approved as part of the adjacent Playa Vista First Phase Project, the Freshwater Wetlands System was designed to convey and detain the flow from both the adjacent Playa Vista First Phase Project and the Proposed Project without adversely impacting existing facilities upstream and downstream. Hence, for the overall

Proposed Project impacts analysis, the Freshwater Wetlands System is utilized as a Project Design Feature for the adjacent Playa Vista First Phase Project and the Proposed Project.

Calculations for sizing the storm drains were performed as required by the City of Los Angeles, Bureau of Engineering. The peak 50-year runoff rate was used to approximate higher frequency events (i.e., 1-, 2-, 5-, 10-, 20-, and 25-year events) for comparison. The SWMM-XP (Storm Water Management Model) computer program, originally developed by the EPA, was used to model flood and tidal flow in the Ballona Channel and Ballona Wetlands, as well as storm flow in the Freshwater Marsh.

3.1.2 Groundwater Hydrology

Short-term (construction) impacts could result from subsurface dewatering activities. Because the amount of dewatering required would be based on conditions encountered during construction and would not be determined until actual construction, these potential impacts are qualitatively assessed.

Long-term (operational) groundwater hydrology impacts resulting from changes in groundwater recharge due to development were estimated by evaluating changes in recharge based on the proposed land use changes, hydrology, and infiltration capacity of the underlying soil; and comparing the change in recharge to existing groundwater conditions.

Other potential sources of long-term impacts to groundwater hydrology include permanent groundwater dewatering and continuing remediation dewatering systems. Such impacts were evaluated based on anticipated site/structure design concepts and anticipated remediation activities.

The potential for the Proposed Project to result in the movement or expansion of existing contaminated groundwater is analyzed in Section IV.I, Safety/Risk of Upset.

3.2 Significance Thresholds

3.2.1 Surface Water Hydrology

The Draft Los Angeles CEQA Thresholds Guide (p. D.1-3) states that a project would normally have a significant impact on surface water hydrology if it would:

- Cause flooding during the projected 50-year developed storm event, which would have the potential to harm people or damage property or sensitive biological resources;

- Substantially reduce or increase the amount of surface water in a waterbody; or

- Result in a permanent, adverse change to the movement of surface water sufficient to produce a substantial change in the current or direction of water flow.

These thresholds are applicable to the Proposed Project and as such are used to determine if the Project would have significant surface water hydrology impacts.

3.2.2 Groundwater Hydrology

The Draft Los Angeles CEQA Thresholds Guide (p. D.3-4) states that a project would normally have a significant impact on groundwater level if it would:

- Change potable water level sufficiently to:
  - Reduce the ability of the water utility to use the groundwater basin for public water supplies, conjunctive use purposes, storage of imported water, summer/winter peaking, or respond to emergencies and drought;
  - Reduce yields of adjacent wells or wellfields (public or private); or
  - Adversely change the rate or direction of flow of groundwater; or

- Result in demonstrable and sustained reductions of groundwater recharge capacity.

These thresholds are applicable to the Proposed Project and as such are used to determine if the Project would have significant groundwater hydrology impacts.

3.3 Project Design Features

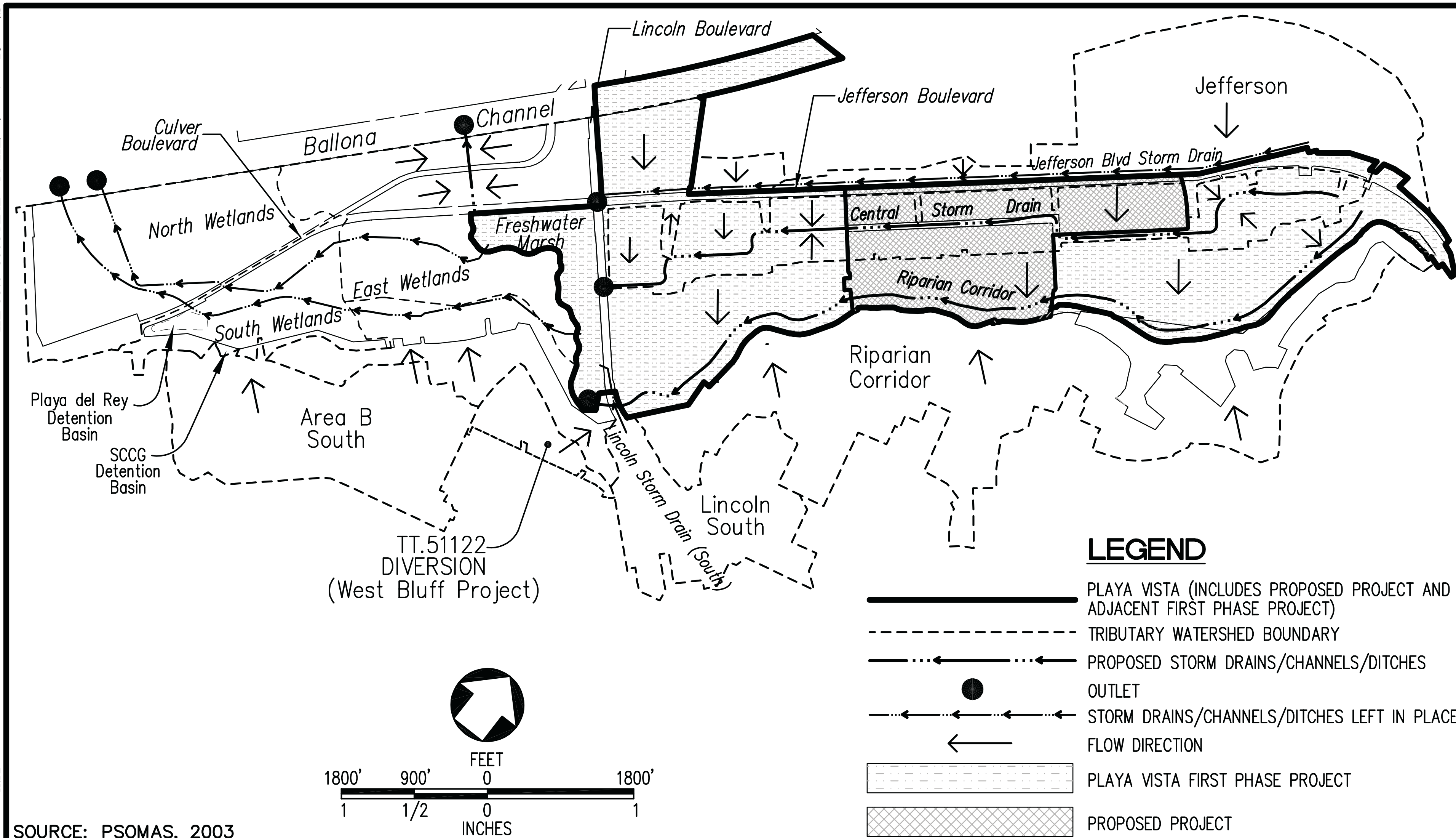
3.3.1 Surface Water Hydrology

Development of the adjacent Playa Vista First Phase Project and the Proposed Project includes numerous improvements to the existing storm drain system and other design features (i.e., Freshwater Wetlands System) intended to address potential hydrology impacts. The Freshwater Wetlands System (the majority of which was approved and permitted in conjunction with the adjacent Playa Vista First Phase Project) is a Project Design Feature that was intended as a comprehensive system to manage the stormwater flows and water quality requirements for both the adjacent Playa Vista First Phase Project and the Proposed Project. Some of the existing off-site drainage facilities, such as the Lincoln Drain South and connecting systems, have been designed to standards that are larger than the 50-year storm. To assure new improvements do not adversely impact existing facilities, the proposed drainage facilities improvements have been designed to handle the expected future on- and off-site stormwater flows and avoid adverse impacts to existing facilities. The following describes the most notable improvements that occur as Project Design Features. An overview of the proposed hydrology for the adjacent Playa Vista First Phase Project and the Proposed Project is shown on Figure 32 on page 371.

The hydraulic capacity of the Jefferson Boulevard Storm Drain is not considered to meet the City of Los Angeles' current design standards. The proposed grading, including that which has already been completed as part of the adjacent Playa Vista First Phase Project, has been designed to minimize on-site drainage to the adjacent vegetated slope areas of Jefferson Boulevard, thereby reducing stormwater runoff towards the limited-capacity Jefferson Boulevard Storm Drain. Additional storm drain capacity would be provided on-site. In addition to the existing Jefferson Boulevard Storm Drain, two new major stormwater management facilities (both approved as part of the adjacent Playa Vista First Phase Project) – the Riparian Corridor and the Central Storm Drain – would provide drainage for the adjacent Playa Vista First Phase Project and the Proposed Project. A portion of the Riparian Corridor within the Proposed Project would be constructed as a part of the Proposed Project. All three major storm drains would discharge into the Freshwater Marsh located at the easterly boundary of the Ballona Wetlands. The following describes more specifically the drainage system improvements that would serve as Project Design Features for the Proposed Project:

Lincoln Drain South (approved as a part of the adjacent Playa Vista First Phase) – As a part of the adjacent Playa Vista First Phase Project, the outlet of the existing Lincoln Drain South will be relocated to the Freshwater Marsh. The drain will intercept off-site flow from the existing developments south of the adjacent Playa Vista First Phase Project and the Proposed Project, and to the east and west of Lincoln Boulevard.

Freshwater Marsh (approved as part of the adjacent Playa Vista First Phase) –The stormwater system associated with the previously approved Playa Vista First Phase Project was designed, sized, permitted, and constructed to serve both the adjacent Playa Vista First Phase Project and the Proposed Project. A key component of the stormwater system is the Freshwater Marsh located southwest of the intersection of Lincoln and Jefferson Boulevards. As such, it is included as a Project Design Feature related to the Proposed Project. The Freshwater Marsh has been designed to receive stormwater runoff from the Jefferson Boulevard Storm Drain, the Central Storm Drain, the Lincoln Drain South, and Riparian Corridor. These drains outlet into the Freshwater Marsh at primary management areas. Normally the Freshwater Marsh discharges into Ballona Channel through flap-gated culverts; however, an overflow spillway is



CDM

Figure 32
Drainage System and Associated Hydrology with Adjacent Playa Vista First Phase Project and Proposed Project

provided into the Ballona Wetlands to divert portions of storm flows greater than the 1-year storm. Maximum water level during a 50-year return-frequency storm in the Freshwater Marsh is limited to about 8 feet AMSL in order to eliminate adverse backwater effects in the existing Jefferson Boulevard Storm Drain. The Freshwater Marsh is divided from the Ballona Wetlands by a berm. The slopes of the berm vary from 10:1 to 5:1 horizontal-to-vertical in order to promote the establishment of wetland vegetation and provide biological protection against erosion of the berm. The Freshwater Marsh is designed to contain and convey to the Ballona Channel all storms up to approximately a one-year storm[128] and has the flexibility to release freshwater to the Ballona Wetlands through a gated valve should it be necessary in conjunction with any future salt marsh restoration. This aspect of the Freshwater Marsh serves as a means to divert uncontrolled freshwater flows away from the adjacent salt marsh area, preventing the continued degradation of the salt marsh habitat that resulted from the uncontrolled freshwater inflows, and enabling future restoration of the salt marsh area.

Riparian Corridor (east and west portions approved as a part of the adjacent Playa Vista First Phase Project – central portion proposed as part of the Proposed Project) – The approximately 25-acre Riparian Corridor, including the 18.3 acres approved as part of the adjacent Playa Vista First Phase Project, will drain east to west and collect water from the south part of the adjacent Playa Vista First Phase Project and the Proposed Project sites and from existing developments on the Westchester Bluffs east of Lincoln Boulevard. In essence, the Riparian Corridor will be a relocated and greatly enhanced replacement of the Centinela Ditch. It is planned to be a wide, open channel in a naturalized setting between the toe of the Westchester Bluffs and proposed Bluff Creek Drive. The design of the typical section of the channel is trapezoidal, with 3:1 horizontal-to-vertical side slopes up to the 50-year design water level, and 2:1 slopes above. The bottom width varies from approximately 5 to 90 feet, while maximum water depth varies from approximately 3 to 7 feet. Cattails or other suitable vegetation will be established in the bottom of the channel and willow shrub will be planted on the side slopes. The eastern and western portions of the Riparian Corridor were approved, and will be constructed, as part of the adjacent Playa Vista First Phase Project.

Although the Riparian Corridor will be vegetated as described above, the Corridor has been designed to provide sufficient hydraulic capacity to accommodate the runoff from the adjacent Playa Vista First Phase Project and Proposed Project. A program will be implemented in order to maintain the required hydraulic capacity of the channel (e.g., limit large trees from establishing within the channel and removing vegetation selectively).

Central Storm Drain (approved as a part of the adjacent Playa Vista First Phase Project) – The entire tributary area of the Central Storm Drain is within the boundaries of the adjacent Playa Vista First Phase Project and the Proposed Project development. The upstream

[128] *The one-year storm is estimated to be 723 cfs and the 50 year storm is approximately 1,690 cfs.*

terminus of the drain will be at the intersection of Artisans Way and Waterfront Drive in the eastern portion of the adjacent Playa Vista First Phase Project. The Central Storm Drain will drain east to west, extending along Waterfront Drive, Millennium Street, Runway Road, Pacific Promenade, and Playa Vista Drive and will discharge into the Freshwater Marsh. The planned circular pipe conduit will range in diameter from 42 inches to 96 inches, with equivalent hydraulic capacity rectangular boxes used in some sections to provide utility clearances as necessary. Portions of the Central Storm Drain are currently being constructed as part of the adjacent Playa Vista First Phase Project.

Jefferson Boulevard Storm Drain – The Jefferson Boulevard Storm Drain is an existing system as it was modified as part of the adjacent Playa Vista First Phase Project and will not be modified east of Lincoln Boulevard under the Proposed Project.

Area Northwest of Lincoln/Jefferson Intersection – The area located between Culver and Jefferson Boulevards, west of Lincoln Boulevard, that previously drained into the Jefferson Boulevard Storm Drain was modified as part of the Playa Vista First Phase Project to drain into the Freshwater Marsh outlet through flap-gated culverts, thereby relieving the existing Jefferson Boulevard Storm Drain. During periods of high flow within Ballona Channel, the flap gates at Ballona Channel will close, causing flow to pond within the Freshwater Marsh and its outlet. Separate flap gates within the Freshwater Marsh outlet prevent flow from the Freshwater Marsh from discharging in the adjacent wetlands area. For short periods, runoff will pond in the area located between Culver and Jefferson Boulevards, west of Lincoln Boulevard, as with pre-First Phase and existing conditions.

3.3.2 Groundwater Hydrology

There are no Project Design Features related to groundwater hydrology, although the irrigation of landscaped areas and introduction or expansion of water surface area within the site through the implementation of the Freshwater Wetlands System will help offset reductions in groundwater recharge due to increased impervious area (see impacts discussion below).

3.4 Project Impacts

3.4.1 Surface Water Hydrology

Both the Urban Development and Habitat Creation/Restoration Components of the Proposed Project include activities that would affect surface water hydrology. As such the following discussion pertains to the potential impacts of each component. Though each component is addressed separately, both were considered when designing the drainage facilities for the adjacent Playa Vista First Phase Project and Proposed Project. Implementation of the

Habitat Creation/Restoration Component would involve the construction of a major flood control facility, the Riparian Corridor, which was designed to serve the Proposed Project by conveying increases in peak runoff rates or volumes caused by the Urban Development Component.

3.4.1.1 Urban Development Component

3.4.1.1.1 Potential for Flooding

Development within the Urban Development area would increase the amount of impervious surface area on-site, consequently increasing total peak runoff rates and volumes. The following subsections describe the potential of the Urban Development Component of the Proposed Project to cause flooding during a projected 50-year storm event, which would have the potential to harm people or damage property. The impacts on sensitive biological resources are discussed in Section IV.D, Biotic Resources, in this EIR.

Drainage facilities constructed as part of the adjacent Playa Vista First Phase Project have been sized for the full buildout of the adjacent Playa Vista First Phase Project and the Proposed Project. Since the drainage facilities have been designed based upon the installation of paved and impervious surfaces, portions of the site which are pervious during construction of the Urban Development Component would not increase stormwater runoff flows above the ultimate design flows. The construction of new drainage structures would be required in a manner and sequence, which would preclude flooding. During construction of the Proposed Project, a Stormwater Pollution Prevention Plan and Erosion Control Plan would be implemented to provide for temporary Stormwater management. These plans would prevent construction from adversely affecting the amount of surface water in a waterbody. Therefore, construction activities for the Urban Development Component would not cause flooding during a projected 50-year developed storm event, which would have the potential to harm people or damage property.

Table 24 on page 375 provides a comparison of 1-, 2-, 5-, 10-, 25-, and 50-year stormwater runoff volumes for pre-First Phase conditions, Playa Vista First Phase conditions, and future conditions with completion of the Proposed Project (i.e., with buildout of the adjacent Playa Vista First Phase Project and the Proposed Project). As shown in the table, the future runoff to existing drainage systems, such as the Centinela Ditch, which is replaced by the Riparian Corridor and Central Storm Drain, would be reduced from that of pre-First Phase Project conditions. Such reductions to existing drainage systems are enabled through the rerouting of existing flows and the addition of new drainage systems (i.e., Central Storm Drain) as part of the adjacent Playa Vista First Phase Project and the Proposed Project. Table 25 on page 376 provides a comparison of the 50-year storm peak runoff rates for pre-First Phase, with Playa Vista First Phase Project conditions and with Playa Vista First Phase Project and Proposed Project. With the completion of storm drains and facilities designed and built to accommodate

Table 24

STORMWATER FLOWS TO THE FRESHWATER MARSH AND BALLONA WETLANDS

	Amount of Total Runoff Flow (in acre-feet)					
	50-Year Storm	**25-Year Storm**	**10-Year Storm**	**5-Year Storm**	**2-Year Storm**	**1-Year Storm**
Pre-First Phase[a]						
Jefferson Storm Drain[b,c]	399	358	304	263	195	171
Centinela Ditch at Boundary of Proposed Project[d]	461	414	351	304	225	197
Centinela Ditch at Lincoln Boulevard	550	494	419	362	268	235
Lincoln Drain South[b]	90	81	69	59	44	39
Total of Above Drains/Ditch Flowing to Ballona Wetlands	1039	933	792	685	507	445
Total Other Tributary to Ballona Wetlands [e,f]	636	571	485	419	310	272
Total to Ballona Channel	1,675	1,504	1,276	1,104	817	717
With Playa Vista First Phase Project						
Jefferson Storm Drain[b]	293	263	223	193	143	125
Central Storm Drain[g]	201	180	153	132	98	86
Riparian Corridor at Boundary of Proposed Project[d,g]	464	417	354	306	226	199
Riparian Corridor at Lincoln Boulevard[g]	546	490	416	360	266	234
Lincoln Drain South[b]	90	81	69	59	44	39
Freshwater Marsh Direct Flow[g]	41	37	31	27	20	18
Total Tributary Flowing into Freshwater Marsh to Ballona Channel[h]	1,171	1,051	892	771	571	502
	(139)	(104)	(61)	(32)	(5)	(0)
Total Tributary to Ballona Wetlands [e,i]	618	555	471	407	302	265
Total to Ballona Channel	1,789	1,606	1,363	1,178	873	767
With Playa Vista First Phase Project and Proposed Project						
Jefferson Storm Drain[b]	293	263	223	193	143	125
Central Storm Drain[g]	221	198	168	146	108	95
Riparian Corridor at West Boundary of Proposed Project[d,g]	417	374	318	275	203	178
Riparian Corridor at Lincoln Boulevard[g]	531	477	405	350	259	227
Lincoln Drain South[b]	90	81	69	59	44	39
Freshwater Marsh Direct Flow[g]	41	37	31	27	20	18
Total Tributary Flowing into Freshwater Marsh to Ballona Channel[h]	1,176	1,056	896	775	574	504
	(149)	(122)	(77)	(48)	(11)	(0)
Total Tributary to Ballona Wetlands [e,i]	618	555	471	407	302	265
Total to Ballona Channel	1,794	1,611	1,367	1,182	876	769

[a] *Pre-First Phase conditions represent runoff characteristics prior to construction of the stormwater system that is designed to serve both the First and the Proposed Projects.*

[b] *Existing storm drain to remain.*

[c] *Outlet is located in the area near the intersection of Culver and Jefferson Boulevards, west of Lincoln Boulevard. The area located between Culver and Jefferson Boulevards, west of Lincoln Boulevard, drains into the Jefferson Storm Drain.*

[d] *Drain not included in tributary total because runoff flow indicates flow at an intermediate point. These flows are cumulative with the flows at the Centinela Ditch/Riparian Corridor at Lincoln Boulevard.*

[e] *Not including Freshwater Marsh flows over weir to Ballona Wetlands.*

[f] *Includes the Freshwater Marsh area.*

[g] *Storm drain facility to be improved, modified, or constructed as part of the adjacent Playa Vista First Phase Project and the Proposed Project.*

[h] *Portion of the peak runoff from the all storm events over 1-year in the Freshwater Marsh flows over weir to Ballona Wetlands then out to Ballona Channel are shown in parenthesis. These numbers represent the "Overflow from the Freshwater Marsh to Ballona Wetlands" portion of the calculations in Table 26 on page 378.*

[i] *This includes the area located between Culver and Jefferson Boulevards, west of Lincoln Boulevard, which drains directly to the Freshwater Marsh outlet to Ballona Channel.*

Source: Psomas.

Table 25

50-YEAR PEAK RUNOFF

Drainage System	Design Capacity (cfs)[a]			50-Year Storm Event Peak Runoff (cfs)		
	Pre-First Phase*	With Play Vista First Phase Project	With Playa Vista First Phase and Proposed Project	Pre-First Phase*	With Playa Vista First Phase Project	With Playa Vista First Phase Project and Proposed Project
Jefferson Storm Drain[b,c]	380	380	380	457	403.6	403.6
Centinela Ditch	210	N/A	N/A	629	—	—
Centinela Ditch at Lincoln Boulevard	210	N/A	N/A	528	—	—
Lincoln Storm Drain South[b]	210	210	210	209	209	209
Central Storm Drain[d]	N/A	328	328	—	237	312
Riparian Corridor at West Boundary of Proposed Project[d]	N/A	625	625	—	625	608
Riparian Corridor at Lincoln Boulevard[d]	N/A	625	625	—	549	549
Freshwater Marsh[d]	N/A[e]	N/A[e]	N/A[e]	—	103.7	103.7
Overflow from Freshwater Marsh to Ballona Wetlands[f]				—	1,036	1,066
Ballona Wetlands[g]				914	916.9	916.9
Total Peak Runoff to the Ballona Wetlands				**2,209**	**1,953**	**1,983**

cfs = cubic feet per second
N/A = Not Applicable

* *Pre-First Phase conditions represent runoff characteristics prior to construction of the stormwater system that is designed to serve both the adjacent Playa Vista First Phase and the Proposed Project development projects.*

[a] *The design capacity is based on the total peak runoff generated by the adjacent Playa Vista First Phase Project or with the Playa Vista First Phase and Proposed Project, whichever is greater. Should additional capacity by necessary, during final design and engineering, the design capacity of the drainage system, as determined and approved by the City, may vary from that shown in this table.*

[b] *Existing storm drain to remain*

[c] *During pre-First Phase, the outlet to the Jefferson Storm Drain is located near the intersection of Culver and Jefferson Boulevards, but will drain at Lincoln/Jefferson Boulevards into the Freshwater Marsh (as part of the adjacent Playa Vista First Phase Project). The area located between Culver and Jefferson Boulevards, west of Lincoln Boulevard, drains into Jefferson Storm Drain during pre-First Phase.*

[d] *New storm drains or facilities that were designed and built to accommodate runoff from the adjacent Playa Vista First Phase Project and Proposed Project.*

[e] *The Freshwater Marsh is an open waterbody that has a volume capacity, not a design capacity.*

[f] *Portion of the peak runoff that flows from the Freshwater Marsh over weir to the Ballona Wetlands.*

[g] *Portion of the peak runoff from the 50-year storm event in the Freshwater Marsh overflows over weir to Ballona Wetlands then out to Ballona Channel (not included in this number, but separately under footnote "d").*

Source: Psomas.

the adjacent Playa Vista First Phase Project and Proposed Project, the existing local storm drains would not be significantly impacted by changes in surface runoff flows due to implementation of the Urban Development Component because the Proposed Project would not cause flooding of the existing local storm drains during the projected 50-year developed storm event, which would have the potential to harm people or damage property. Therefore, no adverse impacts to the existing storm drain systems (e.g., Jefferson Storm Drain) would occur because the existing drainage system controls would be maintained or improved to be at or better than pre-First Phase conditions. For example, because the Freshwater Marsh will be maintained below 8 feet AMSL, it will also serve as detention. Downstream hydraulic controls (outlet water surface elevations) would be maintained at or below existing levels. Peak runoff to the systems would be maintained at or below existing levels by detention or reduction of the area tributary to the drain.

As described in Subsection 2.1.1.1 above, no development portion of the Proposed Project is within the FEMA 100-Year Floodplain. The proposed drainage system for the Urban Development Component has been designed to convey increases in total peak runoff rates and volumes caused by the Proposed Project and provide an appropriate level of on-site flood protection, detention, and drainage. The major flood control facilities that would serve the Urban Development Component include the Freshwater Wetlands System (Freshwater Marsh and Riparian Corridor), Central Storm Drain, and local drainage systems. As such, the Urban Development Component partially depends on the Riparian Corridor constructed as part of the Habitat Creation/Restoration Component to provide adequate drainage. Therefore, construction of the proposed drainage system would be phased to adequately receive any increase in peak runoff rates or volumes that could adversely affect any existing or planned development. During final design and engineering, the proposed drainage system for the Proposed Project will be sized to provide adequate flow capacity, as determined by the City. The proposed drainage system would be designed and sized such that the Project-generated runoff would not exceed the maximum capacity of the existing system. With the construction and operation of the proposed drainage systems, the Urban Development Component would not cause flooding on-site during the projected 50-year developed storm event, which would have the potential to harm people or damage property, and therefore no, significant impacts are expected to occur relative to flooding of new or existing development.

The Urban Development Component would also not cause flooding during the projected 50-year developed storm event to the off-site existing tributary area. As discussed above, the proposed drainage system for the Urban Development Component has been designed to convey increases in total peak runoff rates and volumes caused by the Proposed Project. As also generally seen in Table 24, Table 25, Table 26 on pages 375, 376, and 378, respectively, the Proposed Project would add a minimal amount of total peak runoff and volumes above that of the adjacent Playa Vista First Phase Project. Although during major storm events there is some overflow from the Freshwater Marsh into the Ballona Wetlands, the total runoff actually reaching the Ballona Wetlands decreases from the pre-First Phase condition as shown in Table 26 on page 378. For a discussion on the potential impacts due to this decrease in runoff to the Ballona Wetlands, see Section IV.D, Biotic Resources.

Table 26

TOTAL PEAK 50-YEAR RUNOFF RATES AND VOLUMES OF TOTAL FLOWS TO THE BALLONA WETLANDS

Phase	Peak 50-year Peak Runoff Rates to the Ballona Wetlands (cfs) [a]	Peak 50-Year Peak Runoff Volumes to the Ballona Wetlands (acre-feet) [b]
Pre-First Phase	2,209	1,675
With Playa Vista First Phase	1,953	757
With Playa Vista First Phase and Proposed Project	1,983	767

cfs = cubic feet per second

[a] *Ballona Wetlands + Overflow from Freshwater Marsh to Ballona Wetlands (see Table 25 on page 376).*

[b] *Total Tributary to Ballona Wetlands + Overflow from Freshwater Marsh to Ballona Wetlands (see Table 24 on page 375, footnote "h").*

Source: Psomas.

One SUSMP structural BMP requirement requires that a project "control peak flow discharge to provide stream channel and over bank flood protection, based on flow design criteria selected by the local agency." The City of Los Angeles' storm drain design criteria require any storm drain in a natural drainage course to be designed to control the 50-year storm event. This structural BMP requirement refers to the Proposed Project's potential to flood or cause erosion to the Riparian Corridor or the Ballona Channel. As part of the adjacent Playa Vista First Phase Project, the Riparian Corridor is a new channel designed to convey the 50-year storm event and the 50-year flow rate is predicted to remain at 549 cfs after completion of the Proposed Project (see Table 25 on page 376). Therefore, the Riparian Corridor would meet the SUSMP requirement of no increase in peak stormwater discharge rate after development. Runoff from the Proposed Project is detained in the Freshwater Marsh prior to draining to the Ballona Channel or being diverted to the wetlands during peak storm events, thus providing flood protection to the Ballona Channel. The Ballona Channel invert is below mean sea level and the channel banks are approximately 16 feet AMSL at the lowest level at Playa del Rey and 20 feet AMSL at the Freshwater Marsh outlet. The maximum water surface elevation in the Freshwater Marsh is 8 AMSL. Therefore, flow from the Proposed Project does not cause the Ballona Channel to overtop its banks. In addition, the Ballona Channel is an improved and lined channel; therefore, erosion is not a major concern. In fact, the hydraulic cross-section of Ballona Channel is dependent upon the high storm flows removing the sediment and silt that settle above the channel invert due to interaction with Santa Monica Bay. All other SUSMP requirements primarily refer to water quality issues and are discussed in Section IV.C.(2), Water Quality.

Although the development of the Urban Development Component would result in an increase in peak runoff rates and volumes on-site, no observable increase in peak flood flows in Ballona Channel during the projected 50-year developed storm event would occur due to detention facilities and rerouting of flows within the adjacent Playa Vista First Phase Project and the Proposed Project. The Freshwater Wetlands System (Freshwater Marsh and Riparian Corridor) would serve as the primary detention facility for the adjacent Playa Vista First Phase Project and the Proposed Project. During storms greater than a 1-year design storm event, the eastern portion of the Ballona Wetlands would serve as an overflow area for the Freshwater Marsh. As part of the adjacent Playa Vista First Phase Project, flap-gated culverts at the Freshwater Marsh outlet would prevent flows from the Ballona Channel from backflowing into the Freshwater Wetlands System. Increased runoff from the Proposed Project during peak storm events would be discharged to the Freshwater Wetlands System and would not be discharged to the Ballona Channel until such time as the water elevation within the Ballona Channel drops to a level where on-site runoff can be discharged with no adverse impact to channel flows. Portions of the runoff from peak storm events greater than 1-year would flow over the overflow spillway into the existing Ballona Wetlands. However, the Proposed Project would not significantly change the amount of peak stormwater runoff flowing into the Ballona Wetlands. The proposed stormwater management facilities (e.g., flap-gates, on-site detention or other City approved methods of flood control) are expected to keep the adjacent Playa Vista First Phase Project and the Proposed Project peak flows at pre-First Phase levels. Because the Proposed Project peak flows would be retained within the Freshwater Wetlands System and Ballona Wetlands, peak flood flows in the Ballona Channel during the 50-year design storm event would not be increased; hence, the Urban Development Component would not cause flooding off-site during the projected 50-year developed storm event, which would have the potential to harm people or damage property, and a less-than-significant impact would occur.

In addition to the proposed stormwater management facilities, during pre-First Phase, most of the adjacent Playa Vista First Phase Project and the Urban Development Component areas were at elevations lower than the maximum predicted flood flow heights in the Ballona Channel. Upon completion of the adjacent Playa Vista First Phase Project and the Urban Development Component, the building pads within the proposed development areas would all be at elevations higher than the maximum surface water elevation in the Ballona Channel. Therefore, during the projected 50-year developed storm event, there would not be any increased risk of flooding to harm people or damage property.

Lincoln Boulevard adjacent to the Proposed Project site has historically been subject to flooding under storms smaller than the City's 50-year design storm. Construction of the Freshwater Marsh as part of the adjacent Playa Vista First Phase Project has reduced flooding at Lincoln Boulevard. Also, as part of Caltrans' Lincoln Boulevard widening project, the proposed raising of Lincoln Boulevard (from Jefferson Boulevard south to the toe of the bluffs) to 11 to 14 feet AMSL (current elevation of this section of Lincoln Boulevard is about 6 to 11 feet

AMSL) would eliminate such localized flooding. In addition, the maximum water surface elevation in the Freshwater Marsh would be 8 feet AMSL. All other existing streets would be maintained at current levels of protection by maintaining existing peak runoff rates at current levels. New streets would be protected per current City requirements by new storm drain systems. Therefore, the projected 50-year developed storm event would not increase risk of flooding to harm people or damage property, and no significant impacts are expected.

3.4.1.1.2 Potential to Reduce or Increase the Amount of Surface Water in a Waterbody

The Urban Development Component of the Proposed Project has the potential to affect the amount of surface water in waterbodies adjacent to the Project site. The waterbodies of concern are the Ballona Channel, Ballona Wetlands, Freshwater Marsh, and Riparian Corridor.

During construction of the Urban Development Component, a Stormwater Pollution Prevention Plan and Erosion Control Plan would be implemented to provide temporary stormwater management for areas under construction to prevent the stormwater from adversely affecting waterbodies adjacent to the Project site. These stormwater management measures would be kept in place until the on-site stormwater drainage facilities designed to accommodate these flows were constructed. Therefore, the construction of the Urban Development Component would not substantially reduce or increase the amount of surface water in a waterbody and a less-than-significant impact would occur.

Although the development of the Urban Development Component would result in increased amounts of impervious surface consequently increasing the volume and velocity of stormwater runoff, it would not significantly change the amount of peak storm surface runoff flowing into the existing Ballona Channel. As indicated in Table 27 on page 381, the increase in amount of runoff flowing to the Ballona Channel due to development of the Proposed Project (compared to with Playa Vista First Phase Project conditions) is estimated to be approximately 0.3 percent. This increase is not considered to be significant. Increased runoff from the Proposed Project would be detained in the Riparian Corridor and Freshwater Marsh, which were designed to accommodate these flows, prior to discharging to the Ballona Channel. Therefore, the Urban Development Component would not substantially reduce or increase the amount of surface water in the Ballona Channel and a less-than-significant impact would occur.

Development of the Urban Development Component would result in increased amounts of impervious surface consequently increasing the volume and velocity of stormwater runoff.

Table 27

TOTAL STORMWATER RUNOFF AND PERCENTAGE OF TOTAL FLOWS TO THE BALLONA CHANNEL

	Amount of Total Runoff to Ballona Channel (in acre-feet)					
	50-Year Storm	**25-Year Storm**	**10-Year Storm**	**5-Year Storm**	**2-Year Storm**	**1-Year Storm**
Pre-First Phase Project						
Flow to Ballona Channel	1,675	1,504	1,276	1,104	817	717
With Playa Vista First Phase Project						
Flow to Ballona Channel	1,789	1,606	1,363	1,178	873	767
With Playa Vista First Phase Project and Proposed Project						
Flow to Ballona Channel	1,794	1,611	1,367	1,182	876	769
Percent of Total Flow to Ballona Channel Due to Project Buildout Compared to Pre-First Phase	7.1%	7.1%	7.1%	7.1%	7.2%	7.3%
Percent of Total Flow to Ballona Channel Due to Proposed Project (Compared to Playa Vista First Phase Project)	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%

Source: Psomas.

However, it would not significantly change the amount of peak storm surface runoff flowing into the existing Ballona Wetlands. During the majority of storm events (i.e., storms of magnitude less than the 1-year design storm, which constitute approximately 92 percent of the estimated average annual flows), runoff from the adjacent Playa Vista First Phase Project, the Proposed Project, and other tributary drainage would flow through the Freshwater Marsh prior to discharge into the Ballona Channel. The Freshwater Marsh, which was designed to accommodate the total Playa Vista First Phase Project and the Proposed Project, thereby reduces the amount of freshwater flowing to the Ballona Wetlands (Table 28 on page 382). For a discussion on the potential impacts related to freshwater inflows to the Ballona Wetlands, see Section IV.D, Biotic Resources.

The only runoff tributary to the Ballona Wetlands would be generated from precipitation falling directly on the wetlands and adjacent bluff areas and any overflow from the Freshwater Marsh over the Marsh's eastern berm and weir gate during storms of magnitude greater than a 1-year storm, which constitutes approximately 8 percent of the estimated average annual flows. The Freshwater Marsh was designed with an adjustable weir and low-flow diversion sluice and culvert that can be adjusted to allow more or less low-flow into the Ballona Wetlands if/as desired. See the Section IV.D, Biotic Resources, for a discussion of impacts on biological resources as they relate to the adjustable weir overflow. The increased runoff due to development of the Proposed Project would represent a very minor portion of the total flows into

Table 28

TOTAL STORMWATER RUNOFF AND PERCENTAGE OF TOTAL FLOWS TO THE FRESHWATER MARSH AND BALLONA WETLANDS

	50-Year Storm	25-Year Storm	10-Year Storm	5-Year Storm	2-Year Storm	1-Year Storm
	Amount of Total Runoff to Freshwater Marsh (in acre-feet) [a]					
With Playa Vista First Phase Project						
Flow to Freshwater Marsh	1,171	1,051	892	771	571	502
With Playa Vista First Phase Project and Proposed Project						
Flow to Freshwater Marsh	1,176	1,056	896	775	574	504
Percent of Total Flow to Freshwater Marsh Due to Proposed Project	0.4%	0.5%	0.5%	0.5%	0.4%	0.4%
	Amount of Total Runoff to Ballona Wetlands (in acre-feet)					
Pre-First Phase Project						
Flow from Drains	1,039	933	792	685	507	445
Flow from Other Sources[b]	636	571	485	419	310	272
With Playa Vista First Phase Project						
Flow from Freshwater Marsh over Weir	139	104	61	32	5	0
Flow from Other Sources[b]	618	555	471	407	302	265
With Playa Vista First Phase Project and Proposed Project						
Flow from Freshwater Marsh over Weir	149	122	77	48	11	0
Flow from Other Sources[b]	618	555	471	407	302	265
Percent of Total Flow to Ballona Wetlands Due to Project Buildout Compared to Pre-First Phase	-54%	-55%	-57%	-59%	-62%	-63%
Percent of Total Flow to Ballona Wetlands Due to Proposed Project (Compared to Playa Vista First Phase Project)	1.3%	2.7%	3.0%	3.6%	2.0%	0.0%

[a] *Freshwater Marsh did not exist during pre-First Phase conditions.*

[b] *Flows in this table summarize flows to the Ballona Wetlands which are not the same as flows from other sources indicated in Table 24 because modeled peak flows over the weir do not necessarily occur at the same time as the peak flows to the Freshwater Marsh and the Ballona Wetlands. Variances may be caused by storm intensities and time of concentrations in the SWMM model.*

Source: Psomas.

the existing Ballona Wetlands. Table 28 provides a breakdown of stormwater flows to the Ballona Wetlands calculated for various size storm events.

As indicated in Table 28, the increase in amount of runoff flowing to the Ballona Wetlands due to development of the Proposed Project compared to with Playa Vista First Phase is estimated to range from 0 percent to 3.6 percent, depending on the size of the storm event.

Due to the low magnitude of this increase and considering that the amount of runoff flowing to the Ballona Wetlands due to development of the adjacent Playa Vista First Phase and Proposed Project decreases when compared to pre-First Phase conditions by 54 percent to 63 percent, the 0 percent to 3.6 percent increase is not considered to be significant. Also, the additional amount of runoff to the Ballona Wetlands would only be a short-term temporary condition that dissipates as the stormwater within the Ballona Wetlands drains to the Ballona Channel. Therefore, the Urban Development Component would not substantially reduce or increase the amount of surface water in either the Ballona Wetlands or the Freshwater Marsh and a less-than-significant impact would occur.

Beyond not having a significant hydrological impact on the existing Ballona Wetlands, implementation of the Proposed Project would not preclude, limit, or otherwise prejudice the range of potential options for any future restoration of the Ballona Wetlands. The relationship of the adjacent Playa Vista First Phase Project and the Proposed Project to the Ballona Wetlands is controlled primarily through the operation of the Freshwater Marsh. The operational flexibility designed into the Freshwater Marsh through the adjustable weir and low-flow diversion sluice and culvert can adapt to a wide range of restoration options. The role of the Freshwater Marsh to divert flows from the Ballona Wetlands can be minimized, if desired, by keeping the adjustable weir at a lower spillover height.

As discussed above, the increased amounts of impervious surface due to the Urban Development Component would increase the volume and velocity of stormwater runoff into the Riparian Corridor. However, the Riparian Corridor, partially constructed as part of the adjacent Playa Vista First Phase Project, was designed to accommodate this increase in flows. Table 29 on page 384 provides a breakdown of stormwater flows to the Riparian Corridor for various size storm events at two locations. The amount of runoff flowing to the Riparian Corridor at the two locations due to development of the Proposed Project would decrease by 2.6 percent to 10.6 percent compared to Playa Vista First Phase conditions and by 3.3 percent to 9.8 percent when Project buildout is compared to pre-First Phase conditions, depending on the location and size of the storm event. The decrease would be caused by the grading of the Proposed Project area that would direct surface water runoff from the Riparian Corridor to the Central Storm Drain. The Riparian Corridor, with completion of the adjacent Playa Vista First Phase, is currently in its interim condition; and it was planned in its initial design that a portion of the runoff would be directed to the Central Storm Drain once the construction of the Riparian Corridor was completed as part of the Proposed Project. As such, this decrease is not considered to be significant. Therefore, the Urban Development Component would not substantially reduce or increase the amount of surface water in the Riparian Corridor and a less-than-significant impact would occur.

Table 29

TOTAL STORMWATER RUNOFF AND PERCENTAGE OF TOTAL FLOWS TO THE RIPARIAN CORRIDOR

	Amount of Total Runoff to Riparian Corridor (in acre-feet)					
	50-Year Storm	**25-Year Storm**	**10-Year Storm**	**5-Year Storm**	**2-Year Storm**	**1-Year Storm**
Pre-First Phase Project						
Flow to Centinela Ditch at Boundary of Proposed Project	461	414	351	304	225	197
Flow to Centinela Ditch at Lincoln Boulevard	550	494	419	362	268	235
With Playa Vista First Phase Project						
Flow to Riparian Corridor at Boundary of Proposed Project	464	417	354	306	226	199
Flow to Riparian Corridor at Lincoln Boulevard	546	490	416	360	266	234
With Playa Vista First Phase Project and Proposed Project						
Flow to Riparian Corridor at Boundary of Proposed Project	417	374	318	275	203	178
Flow to Riparian Corridor at Lincoln Boulevard	531	477	405	350	259	227
Percent of Total Flow to Riparian Corridor at Boundary of Proposed Project Due to Project Buildout Compared to Pre-First Phase Project	-9.5%	-9.7%	-9.4%	-9.5%	-9.8%	-9.6%
Percent of Total Flow to Riparian Corridor at Lincoln Boulevard Due to Project Buildout Compared to Pre-First Phase Project	-3.5%	-3.4%	-3.3%	-3.3%	-3.4%	-3.4%
Percent of Total Flow to Riparian Corridor at Boundary of Proposed Project Due to Proposed Project (Compared to Playa Vista First Phase Project)	-10.1%	-10.3%	-10.2%	-10.1%	-10.2%	-10.6%
Percent of Total Flow to Riparian Corridor at Lincoln Boulevard Due to Proposed Project (Compared to Playa Vista First Phase Project)	-2.8%	-2.7%	-2.6%	-2.8%	-2.6%	-3.0%

Source: Psomas.

3.4.1.1.3 Potential For Adverse Change to the Movement of Surface Water

During construction of the Urban Development Component, a Stormwater Pollution Prevention Plan and Erosion Control Plan would be implemented to provide temporary stormwater management for areas under construction to prevent the stormwater from adversely affecting waterbodies adjacent to the Project site. These stormwater management measures would be kept in place until the permanent on-site stormwater drainage facilities designed to accommodate these flows were constructed. Therefore, the construction of the Urban Development Component would not result in permanent adverse change to the movement of surface water sufficient to produce a substantial change in the current or direction of water flow and a less-than-significant impact would occur.

As described in the Project Design Features, the Urban Development Component of the Proposed Project would result in regrading of the Project site, which would, by design, modify the surface runoff patterns and redirect flows from the Jefferson Storm Drain into the Central Storm Drain (constructed under the adjacent Playa Vista First Phase Project) and the Riparian Corridor. This redirection of stormwater runoff away from the Jefferson Storm Drain is considered beneficial since the hydraulic capacity of the Jefferson Storm Drain does not meet City of Los Angeles design standards (i.e., the change to the movement of surface water would, by intent, enable surface flows to be directed to a new storm drain that is designed to current City standards). The Urban Development Component would not result in a permanent, adverse change to the movement of surface water sufficient to produce a substantial change in the current or direction of water flow and a less-than-significant impact would occur.

3.4.1.2 Habitat Creation/Restoration Component

3.4.1.2.1 Potential for Flooding

Development of the Project's Habitat Creation/Restoration Component would not create additional impervious surface area on-site; therefore, it would not increase peak runoff rates or volumes during its construction or operation. Therefore, the construction and operation of the Habitat Creation/Restoration Component would not cause flooding (which would have the potential to harm people or damage property) during the projected 50-year developed storm event and a less-than-significant impact would occur.

Implementation of the Habitat Creation/Restoration Component would involve the construction of a major stormwater management facility, the Riparian Corridor, which (with the Central Drain) would serve as a replacement of the Centinela Ditch. The Riparian Corridor has been designed to serve the Proposed Project by conveying increases in peak runoff rates or volumes caused by the construction of the Urban Development Component and provide an appropriate level of on-site flood protection, detention, and drainage. Construction of the Riparian Corridor would be timed to adequately receive any increase in peak runoff rates or volumes that could adversely affect any existing or planned development. As shown in Table 24 on page 375, the future runoff to the Centinela Ditch replaced by the Riparian Corridor and Central Storm Drain would be reduced from that of pre-First Phase and with Playa Vista First Phase Project conditions. Such reductions to existing drainage systems are enabled through the rerouting of existing flows and the addition of new drainage systems (i.e., Central Storm Drain) as part of the adjacent Playa Vista First Phase Project and the Proposed Project. During final engineering design, calculations will be provided to substantiate that no flooding would occur under the City's 50-year design storm.

As discussed in Subsection 3.3.1, the Freshwater Marsh would serve as the primary detention facility for the adjacent Playa Vista First Phase Project and the Proposed Project. Runoff from the Habitat Creation/Restoration Component during peak storm events would be discharged to the Freshwater Marsh and Ballona Wetlands[129], where it would remain until such time as the water elevation within the Ballona Channel drops to a level where on-site runoff can be discharged with no adverse impact to channel flows. Therefore, the construction and operation of the Habitat Creation/Restoration Component would not cause flooding (which would have the potential to harm people or damage property) during the projected 50-year developed storm event and a less-than-significant impact would occur.

3.4.1.2.2 Potential to Reduce or Increase the Amount of Surface Water in a Waterbody

The construction and operation of the Project's Habitat Creation/Restoration Component would not create additional impervious surface area on-site; therefore, it would not increase peak runoff rates or total volumes of flow. However, the Habitat Creation/Restoration Component would receive stormwater runoff from the Urban Development Component, which would increase stormwater runoff compared to what was formerly received by the Centinela Ditch in this location. Potential impacts of the Urban Development Component are discussed in Subsection 3.1.4.1.2. Because the Habitat Creation/Restoration Component was designed to receive and convey this increased stormwater flow, this increase is not considered to be significant. Therefore, the construction and operation of the Habitat Creation/Restoration Component would not significantly reduce or increase the amount of surface water in the Ballona Channel, Ballona Wetlands, Freshwater Marsh, and Riparian Corridor and a less-than-significant impact would occur.

3.4.1.2.3 Potential for Adverse Change to the Movement of Surface Water

The construction and operation of the Habitat Creation/Restoration Component of the Proposed Project would not, in general, change the direction of surface water flow. Although the Habitat Creation/Restoration Component would receive increased stormwater runoff from the Urban Development Component, the Habitat Creation/Restoration Component was designed to receive and convey this increased stormwater flow, and this increase is not considered to be adverse. Therefore, the construction and operation of the Habitat Creation/Restoration Component would not result in a permanent, adverse change to the movement of surface water

[129] *Only during storms greater than a 1-year design storm.*

sufficient to produce a substantial change in the current or direction of water flow and a less-than-significant impact would occur.

3.4.1.3 Summary of Potential Surface Water Hydrology Impacts

No development portion of the Proposed Project site (i.e., the Urban Development Component) is within the FEMA 100-Year Floodplain. The proposed drainage system for the Proposed Project (inclusive of the Urban Development drainage system, and the Riparian Corridor as part of the Habitat Creation/Restoration Component) has been designed to convey increases in total peak runoff rates and volumes and provide an appropriate level of on-site flood protection, detention and drainage. Therefore, the Project would not cause flooding of the existing local storm drains during the projected 50-year developed storm event, which would have the potential to harm people or damage property.

During construction of the Proposed Project, a Stormwater Pollution Prevention Plan and Erosion Control Plan would be implemented to provide for temporary stormwater management. These plans would prevent construction from adversely affecting the amount of surface water in a waterbody. Additionally, these stormwater management measures would be temporary; hence, the construction of the Proposed Project would not result in a permanent adverse change to the movement of surface water.

Although the development of the Urban Development area would result in increased amounts of impervious surface that consequently would increase stormwater runoff flowing into adjacent waterbodies, the increase is not significant because the runoff would be detained in the Freshwater Wetlands System (the Riparian Corridor, a portion of which would be constructed as part of the Habitat Creation/Restoration Component and the Freshwater Marsh), which would be designed specifically for stormwater management. Therefore, the Proposed Project (inclusive of both Components) would not significantly reduce or increase the amount of surface water in a waterbody.

As a Project Design Feature, the Proposed Project would result in grading of the Project area, which would, by design, modify the surface runoff patterns during Proposed Project construction and operation. Stormwater runoff during Proposed Project operation would also be redirected from the Jefferson Storm Drain into the Central Storm Drain and Riparian Corridor (a portion of which would be constructed as part of the Habitat Creation/Restoration Component). This redirection of runoff from the Jefferson Storm Drain is considered beneficial since it would result in a decrease of runoff in the Jefferson Storm Drain, which does not meet City design standards for hydraulic capacity. Because the Proposed Project would result in a beneficial impact on the constrained Jefferson Storm Drain, and would not adversely impact any other stormwater drainage facilities, operation of the Proposed Project would not result in a permanent adverse change in the movement of surface water.

3.4.2 Groundwater Hydrology

Construction and operation of the Project's Habitat Creation/Restoration Component would complete the Riparian Corridor portion of the Freshwater Wetlands System. Since existing pervious surfaces would remain as pervious surfaces after the habitat creation/restoration and no groundwater wells would be installed as part of the Habitat Creation/Restoration Component, groundwater recharge and thus potable water levels from groundwater sources would not be affected. As such, the Proposed Project's impacts result primarily from the implementation of the Urban Development Component, as discussed below.

3.4.2.1 Urban Development Component

3.4.2.1.1 Potential for Change in Potable Water Level

Groundwater in the area of the Project's Urban Development Component is not currently pumped for beneficial uses (i.e., drinking water, industrial or agricultural supply). The nearest public water supply well located at Venice Polytechnic High School, approximately 2 miles northwest of the Proposed Project site, was capped in 1960 and is not active. The next closest public supply wells are located approximately 3.5 miles northwest of the Proposed Project in the City of Santa Monica. The nearest irrigation well is located approximately 2 miles southeast of the Proposed Project at the Hillside Memorial Park Cemetery.

Due to the distance to these wells, and the fact that drinking water, industrial or agricultural supply wells would not be constructed as part of the Urban Development Component, construction of the Urban Development Component is not expected to change potable water levels that reduce yields of adjacent wells or wellfields (public or private). Construction and operation of the Urban Development Component also is not expected to change potable water levels that reduce the ability of the water utility to use the groundwater basin for public water supplies, conjunctive use purposes, storage of imported water, summer/winter peaking, or respond to emergencies and drought.

However, the Urban Development Component does include plans for construction of temporary and permanent dewatering wells. Temporary dewatering is likely to be required in certain areas of the Urban Development Component requiring remediation (in connection to the RWQCB's Cleanup and Abatement Order No. 98-125) and subsurface excavation (which is dependent upon the actual construction techniques). This may cause short-term localized changes in the flow direction of shallow groundwater towards the areas of dewatering. Due to the short-term duration of the dewatering and the fact that no wells being used for beneficial purposes would be affected, no significant short-term impacts to groundwater hydrology due to remediation and/or construction-related dewatering for the Proposed Project is indicated. Additional potential impacts to groundwater due to remediation are discussed further in Section IV.C.(2), Water Quality, and Section IV.I, Safety/Risk of Upset.

Permanent dewatering systems may be required for the methane safety system and dewatering of two-level subterranean (underground) parking garages in the Urban Development Component. (It would not be necessary for one-level subterranean garages.) This dewatering system would be a "contingent" system and would operate only if/as groundwater elevations occur at the level of the dewatering pipes. In case groundwater is present or in the future rises to an elevation above the elevation of the groundwater pipes, the water is conveyed to a sump where it is removed by automatic pumps. The dewatering system does not include dewatering by pumping from deep wells or any specific well points.[130] Adverse impacts are not anticipated relative to the rate or change in the direction or movement of shallow groundwater because the maximum flow of the dewatering pipes is very low and their radius of influence on groundwater is limited. Therefore, the dewatering system is not anticipated to draw water across any substantial distance; hence, impacts are considered negligible from a local and regional basin perspective. Since no wells being used for beneficial purposes would be affected, no significant impacts to groundwater hydrology due to permanent dewatering related to the underground parking lots is indicated. Construction of the Urban Development Component is not expected to change potable water levels that adversely change the rate or direction of flow of groundwater.

3.4.2.1.2 Potential to Reduce Groundwater Recharge Capacity

Implementation of the Project's Urban Development Component would include the addition of impervious surfaces throughout much of the site. During construction grading, the existing pervious surfaces would still be pervious and would not reduce groundwater recharge. However, as construction progresses and during operation of the Urban Development Component, the conversion of existing pervious surfaces to impervious surfaces poses the potential to reduce groundwater recharge. The operation of the Urban Development Component also includes, however, the introduction of additional landscape irrigation, which could minimally increase groundwater recharge.

Percolation of precipitation occurs when rain falls on pervious surfaces. Depending upon the conditions, some rain will run off, and some will infiltrate the soil. The pollutant loading model (discussed in Section IV.C.(2), Water Quality) evaluates the runoff using varying runoff coefficients for the pervious and impervious surfaces. Overall, the model estimates that

[130] *Group Delta Consultants, "Evaluation of Subsidence Due to Lowering of Groundwater in Village at Playa Vista, Playa Vista Development, Los Angeles, California," April 15, 2003.*

30 percent of the average annual rainfall infiltrates the soil while the remaining 70 percent becomes runoff with the full development (buildout) of the adjacent Playa Vista First Phase Project and Proposed Project. Of the 30 percent of average annual rainfall that infiltrates into the soil, some will be either taken up in evapotranspiration or result in deep percolation and recharge of the groundwater. The fraction that percolates is highly dependent upon soil types and conditions, vegetative cover and other factors. It is assumed that 30 percent of the water that infiltrates (equivalent to 9 percent of the average annual rainfall) would result in deep percolation across the site. Table 30 on page 391 provides an estimate of the reduction in recharge resulting from reduced percolation of rainfall as a result of development. As shown in Table 30 on page 391, there could be a reduction in groundwater recharge of approximately 12 acre-ft/year due to the incremental amount of development of the Proposed Project. The Urban Development Component (i.e., impervious area) is set back away from the base of the Ballona Escarpment (Westchester Bluffs). This would allow for runoff flowing directly off the Escarpment to continue to recharge the underlying aquifer.

The Proposed Project would include landscaped area and open space, which would be irrigated, thereby offsetting the reduction in recharge area. While the majority of the applied water would be used to satisfy evapotranspiration, a fraction would typically percolate. The irrigation demand for the Urban Development Component is estimated to be approximately 61 acre-ft/year as described in Section IV.N.(1), Water Consumption. Assuming that 30 percent of the applied water results in deep percolation, the estimated increase in groundwater recharge from applied water would be approximately 18 acre-ft per year (as described in detail in Section IV.I.(1), Water Consumption).

The combination of reduced discharge from impervious surfaces and increased recharge from irrigation return flow results in a net increase of approximately 6 acre-ft/year. This increase is considered positive, but negligible from a regional basin perspective, and is not expected to result in any measurable increase in local groundwater levels.

Thus, from a hydrologic perspective, the small loss in groundwater recharge resulting from the increase in impervious surfaces as a result of development would be more than offset by potential increase in recharge from returns from irrigation application. The construction and operation of the Urban Development Component would not result in demonstrable and sustained reductions of groundwater recharge capacity. A less-than-significant hydrologic impact to groundwater recharge would occur.

Table 30

ESTIMATED GROUNDWATER RECHARGE FROM PRECIPITATION [a]

	Pre-First Phase Project [a]	With Playa Vista First Phase Project [a]	With Playa Vista First Phase Project and Proposed Project [a]
Total Runoff (ft^3/yr) [b]	6,928,209	11,265,504	13,042,729
Total Runoff (ac-ft/yr)	159	259	299
Total Rainfall (ac-ft/yr) [c]	429	429	429
Total Infiltration (ac-ft/yr) [d]	270	171	130
Groundwater Recharge [e]	135	51	39
Loss in Recharge (ac-ft/yr) [f]			12

Average Annual Rainfall Depth: *11.66 in/yr*
Total Rainfall Volume per Year: *429 ac-ft/yr*
Total Project Area: *442 ac (The acreage's used for the recharge calculations do not include the acreage of the Ballona Channel.)*

[a] *Values include adjacent Playa Vista First Phase Project and Proposed Project areas. Off-site runoff is not included.*
[b] *From runoff estimates in pollutant loading model Volume III, Appendix F of the Water Resources Technical Report (Appendix F-1 of this EIR).*
[c] *Based on average rainfall depth of 11.66 in/yr, and total project area of 442 acres.*
[d] *(Total rainfall) - (Total runoff)*
[e] *Assumes 50 percent infiltration becomes deep percolation prior to development (i.e., pre-First Phase) and 30 percent of infiltration becomes deep percolation after development (i.e., with Playa Vista First Phase and with Playa Vista First Phase and Proposed Project).*
[f] *(Pre-First Phase recharge) - (Playa Vista First Phase and Proposed Project recharge)*

Source: Camp Dresser & McKee Inc.

3.4.2.2 Summary of Potential Groundwater Hydrology Impacts

Because construction and operation of the Project's Habitat Creation/Restoration Component is expected to allow that portion of the Project site to remain as pervious surfaces, it is not expected to change potable water level sufficiently or result in demonstrable and sustained reductions of groundwater recharge capacity. As such, a less-than-significant impact would occur. Construction of the Project's Urban Development Component includes construction of temporary and permanent dewatering systems. Furthermore, groundwater in the area of the Proposed Project site is not pumped for potable water. Although dewatering may cause local changes in the flow direction of shallow groundwater, this change in flow would be localized and, therefore, considered negligible from a regional basin perspective. Therefore, the Proposed Project is not anticipated to change potable water level to sufficiently reduce the ability of the water utility to use groundwater for public water supplies, conjunctive uses purposes, storage of imported water, summer/winter peaking, or to respond to emergencies and drought, reduce yield of adjacent wells/well fields, or adversely change the rate or direction of flow of groundwater. Accordingly, a less-than-significant impact would occur. Implementation of the Project's Urban

Development Component would include the addition of impervious surfaces. The conversion of surfaces from pervious to impervious due to development of the Proposed Project has the potential to reduce groundwater recharge by approximately 12 acre-ft/year. The introduction of additional landscape irrigation is estimated to produce approximately 18 acre-ft/year of groundwater recharge. Therefore, the net increase of approximately 6 acre-ft/year of increased recharge due the Proposed Project is considered positive, but negligible from a regional basin perspective; hence, the Project would not result in a demonstrable and sustained reduction of groundwater recharge capacity, and no significant impact would occur.

3.4.3 Equivalency Program Impacts

The preceding hydrology analysis addressed impacts associated with construction and operation of the Proposed Project relative to the surface water and groundwater hydrology. The proposed Equivalency Program allows for specific limited exchanges in the types of land uses occurring within the Project's Urban Development Component. No changes are proposed under the Equivalency Program to the Project's Habitat Creation/Restoration Component.

The exchange of office uses for retail and/or assisted living units would be accomplished within the same building parameters, and would occur at relatively limited locations within the Project site. Furthermore, under the Equivalency Program, there would be no substantial variation in the Project's street configurations, building pad elevations, or the depth of excavation. Potential changes in land use under the Equivalency Program would therefore have no substantial effect on the proposed drainage system or groundwater use and their associated impacts because only the use is changing. Specifically, surface water and groundwater hydrology requirements, as well as the on-site exposure to hydrologic hazards, for Project development would be the same under the Equivalency Program. Very minor variations regarding foundation types or in the preparation of landscaping areas could occur, however such variation would be within the range of construction procedures anticipated to occur with the Proposed Project. In addition, development under the Equivalency Program would not exacerbate any impacts that would occur under the Proposed Project.

All Project Design Features (as discussed in Subsection 3.3 above) and/or recommended mitigation measures (discussed in Subsection 4.0, Mitigation Measures, below) to minimize hydrology impacts under the Proposed Project would be implemented, as appropriate, under the Equivalency Program. Implementation of the Equivalency Program would therefore not cause flooding during the projected 50-year developed storm event, which would have the potential to harm people or damage property or sensitive biological resources; substantially reduce or increase the amount of surface water in a waterbody; result in a permanent, adverse change to the movement of surface water sufficient to produce a substantial change in the current or direction of water flow; change potable water level sufficiently to: 1) reduce the ability of the water utility to use the groundwater basin for public water supplies, conjunctive use purposes, storage of imported water, summer/winter peaking, or respond to emergencies and drought, 2) reduce yields of adjacent groundwater wells or wellfields (public or private), or 3) adversely change the rate or direction of flow of groundwater; or result in demonstrable and sustained reductions of groundwater recharge capacity. Consequently, with implementation of applicable mitigation measures (discussed below), hydrology impacts attributable to the Equivalency Program, as is the case with the Proposed Project, would be less than significant.

3.4.4 Impacts of Off-Site Improvements

Proposed Project development could result in secondary impacts arising from implementation of the Project's mitigation measures, as well as the direct impacts described above. Mitigation measures within Section IV.K.(1), Traffic and Circulation, require physical improvements in transportation facilities at numerous locations including roadway widening at seven locations, as described in Subsection 5.8 of that Section. In addition, as discussed in Section IV.N.(1), Water Consumption, the Proposed Project would require the construction of a water regulator station in the vicinity of Jefferson Boulevard and Mesmer Avenue. These off-site improvements are all located in developed urban areas. All of the off-site improvements, with the exception of the water regulator station, would occur within, or adjacent to, existing roadways. The water regulator station includes a small amount of above-ground piping equipment, a common element of the urban environment. Implementation of the Project's mitigation measures does not involve the construction of any buildings.

The excavation required for the off-site improvements may encounter groundwater and may require temporary dewatering during construction, although it is not anticipated given that improvements would occur at grade or slightly below existing grade. However, any dewatering which becomes necessary for construction excavation would be done in accordance with a General Dewatering Permit. The requirements of the General Dewatering Permit include monitoring and reporting of the quantity and quality of dewatering discharge. With the implementation of proposed mitigation, which includes procedures to control runoff, erosion and sedimentation (Best Management Practices), impacts would be less than significant. Additionally, such encounters are not expected to alter the direction or rate of flow of ground waters. Impacts would be less than significant, and no mitigation measures would be required.

The roadway widenings would maintain all of the existing ground elevations and general drainage patterns. However, the proposed improvements, including intersection and Centinela corridor widenings, would slightly increase the amount of impervious surfaces in some areas. This potentially could alter the course of flow and/or increase the volume of surface runoff, but would not substantially alter absorption rates, drainage patterns, or water runoff, and would not be sufficient enough to substantially change the amount of runoff such that there would be an increase in flooding.

According to the City of Los Angeles General Plan Safety Element, none of the proposed improvements are located within a 100-year flood zone. Furthermore, the proposed intersection and corridor improvements would occur on existing roadways, which have adequately sized storm drain infrastructure. The minor addition of impervious surface associated with the proposed corridor and intersection widenings would not be substantial enough to cause flood flows to be impeded or redirected, and any new gutters or other storm drain infrastructure associated with the proposed improvements would be designed and constructed to accommodate projected flood flows. As such, with construction of adequate drainage facilities associated with the proposed improvements, which are designed to accommodate a 100-year storm event, on- and off-site flooding would be avoided.

The off-site improvements would not result in an increase in daytime or permanent population. The improvements are limited to roadway widenings, and as such do not involve the construction of new buildings. Therefore, they would not expose people or structures to water-related hazards. Also, due to the fact that the off-site traffic mitigation program involves improvements to existing transportation corridors, existing utility lines would require only minor relocation for some improvements (i.e., footings, catch basins for roadway and/or intersection widening).

In summary, the off-site improvements would not result in significant surface and groundwater hydrology impacts, because construction and operation of the improvements would not cause flooding during the projected 50-year developed storm event, which would have the potential to harm people or damage property or sensitive biological resources; substantially reduce or increase the amount of surface water in a waterbody; result in a permanent, adverse change to the movement of surface water sufficient to produce a substantial change in the current or direction of water flow; change potable water level sufficiently to: (1) reduce the ability of the water utility to use the groundwater basin for public water supplies, conjunctive use purposes, storage of imported water, summer/winter peaking, or respond to emergencies and drought; (2) reduce yields of adjacent wells or well fields (public or private); or (3) adversely change the rate or direction of flow of groundwater; or result in demonstrable and sustained reductions of groundwater recharge capacity.

4.0 MITIGATION MEASURES

Mitigation Measures for the Proposed Project and the Equivalency Program

- Prior to issuance of any building permit, the Applicant shall be required to complete or otherwise guarantee completion of the Freshwater Marsh, Riparian Corridor and other structural/treatment control BMPs (e.g., Best Management Practice catchbasins, etc.), satisfactory to the City's Department of Public Works and/or other responsible agencies (e.g., U.S. Army Corps of Engineers in conformance with Permit No. 90-426-EV).

- Prior to recordation of the tentative tract map, a covenant and agreement shall be prepared and recorded satisfactory to the Department of Public Works, Bureau of Sanitation, Stormwater Management Division and the City Attorney, as appropriate, which shall include the following:

  – Properties within the Proposed Project shall be encumbered with an obligation to perpetually fund the operation and maintenance of the appropriate structural/treatment control BMPs, such as the Freshwater Marsh and Riparian Corridor and Best Management Practices catchbasins, satisfactory to the Department of Public Works. Properties dedicated to a public entity or owned by the property owners' association (i.e., parks, community-serving parcels, etc.) shall not be subject to this funding obligation.

  – The Proposed Project shall implement and perform the requirements set forth in the Operations, Maintenance and Monitoring Manual for the Freshwater Wetland System, in accordance with all permit requirements to monitor and evaluate the hydrologic and water quality performance of the Freshwater Marsh and Riparian Corridor. Information obtained from the monitoring program shall be translated into corrective action and system modifications if necessary, in accordance with the U.S. Army Corps of Engineers (USACE) requirements and satisfactory to the City of Los Angeles Department of Public Works.

  – A monitoring report shall be prepared as required by applicable permits[131] which addresses water sampling locations, frequency of sampling, pollutants of concern to be tested, testing methods, corrective measures if necessary, etc. for the Freshwater Marsh and Riparian Corridor. The report shall be submitted to the USACE, Regional Water Quality Control Board, and the City of Los Angeles Department of Public Works, Bureau of Sanitation.

  – Maintenance records for the structural/treatment control BMPs shall be maintained and submitted to the City of Los Angeles Department of Public Works, Bureau of Sanitation.

- Prior to issuance of any building permit, the Applicant shall encumber the parcel for which the permit is sought with a covenant to fund the Playa Vista Community Service Organization or other funding mechanism, satisfactory to the Advisory Agency and the City Engineer, for the purpose of funding the operation and

[131] *Applicable permits include USACE Permit No. 90-426-EV and corresponding Section 401 certification, California Department of Fish and Game 1603 Streambed Alteration Agreement No. 5-639-93, and Coastal Development Permit No. 5-91-463.*

maintenance of the Freshwater Marsh and Riparian Corridor and other structural/treatment control BMPs. The covenant shall obligate future owners within the parcel to fund the Community Service Organization or other funding mechanism, and shall contain provisions detailing the timing and mechanism for such funding, satisfactory to the Department of Public Works. Properties dedicated to a public entity or owned by the property owners' association (i.e., parks community-serving parcels, etc.) shall not be subject to this funding obligation.

- Prior to issuance of any building permit, the Applicant or the Playa Vista Community Service Organization shall establish and enter into an agreement with the Ballona Wetlands Conservancy or other responsible entity, which shall address the responsibility for funding, coordination, and oversight of all operations and maintenance procedures for the Freshwater Marsh and Riparian Corridor. Maintenance shall be conducted, and maintenance reports submitted periodically and after each storm event to prevent trash, debris, and sediments from clogging the system, in accordance with the U.S. Army Corps of Engineers (USACE) requirements and satisfactory to the City of Los Angeles Department of Public Works.

5.0 UNAVOIDABLE ADVERSE IMPACTS

Impacts to surface water hydrology would be less than significant, as the Proposed Project, inclusive of the Project's Equivalency Program and off-site improvements, is not anticipated to cause flooding during the projected 50-year developed storm event, which would have the potential to harm people or damage property; substantially reduce or increase the amount of surface water in a waterbody; or result in a permanent, adverse change to the movement of surface water sufficient to produce a substantial change in the current or direction of water flow.

Impacts to groundwater hydrology would be less than significant, as the Proposed Project, Equivalency Program, and off-site improvements are not anticipated to change potable water levels sufficiently to reduce the ability of the water utility to use the groundwater basin for public water supplies, conjunctive use purposes, storage of imported water, summer/winter peaking, or respond to emergencies and drought; reduce yields of adjacent wells or well fields (public or private); or adversely change the rate or direction of flow of groundwater; or result in demonstrable and sustained reductions of groundwater recharge capacity.

6.0 CUMULATIVE IMPACTS

The majority of the off-site areas tributary to the adjacent Playa Vista First Phase Project and the Proposed Project consist of highly urbanized development. As a result, substantial additional changes in off-site hydrologic factors affecting runoff rates (i.e., increases in impervious surface area, changes in drainage routes, etc.) are unlikely to occur. Changes in topography and developed acreage should be minimal within the entire developed watershed. While land uses may change, the total impervious area, and therefore runoff rates, should remain relatively constant. For instance, the West Bluff project (Tentative Tract 51122), [132] a 38-acre residential development located south of the Freshwater Marsh (see Figure 28 on page 352) has been approved since the adjacent Playa Vista First Phase Project was approved. The hydrology for Tentative Tract 51122 includes the diversion of 27 acres of area currently draining south to Manchester Boulevard and eventually to the Freshwater Marsh. Based upon the hydrology prepared by Robert Bein, William Frost and Associates, the total 50-year peak runoff generated by the 38 acres of residential tributary area (on-site and off-site to Tract 51122) is 124 cfs with a total storm volume of 49 acre-feet, and the total 50-year peak flow rate generated by the 27 acres of diverted area is 88 cfs with a total storm volume of 35 acre-feet.[133] Per City of Los Angeles requirements, the analysis of future conditions with the addition of Proposed Project assumes that all off-site areas within the local watershed have been built out to the current zoning designations. It is not anticipated that the cumulative flows with the Tentative Tract 51122 diversion would affect the Freshwater Marsh's ability to contain the 1-year storm event. The adjustable weir that manages the overflow into the salt marsh (Ballona Wetlands) could be raised, if necessary, to contain the desired storm flows. This was envisioned at the time of design of the Freshwater Marsh and is the reason why the adjustable weir was included in the design of the Marsh. Cumulative flows during storm events greater than the 1-year storm would incrementally add to the Stormwater overflow going into the Ballona Wetlands. However, the increase is not considered significant since it represents such a small amount of the total Stormwater flowing into the wetland area (less than 1 percent associated with the diversion, between 1.3 percent and 3.6 percent for the Proposed Project, depending on the size of the storm) and the total storm flow compared to conditions before the Marsh was built is reduced by over 50 percent for all storm events. Therefore, the potential for cumulative impacts, including Tentative Tract 51122, has already been accounted for in the Project Design Features for the Proposed Project, including the Project's Equivalency Program. As such, cumulative impacts to surface water hydrology from implementation of the Proposed Project, related projects, and other background growth would be less than significant, as the Proposed Project and related growth is not anticipated to cause flooding during the projected 50-year developed storm event, which would have the potential to harm people or damage property; substantially reduce or increase the

[132] *West Bluffs Project (Tract 51122), City of Los Angeles EIR No 91-0675, State Clearinghouse No. 92041046.*

[133] *The storm volume was estimated by Psomas based upon the prorated drainage area, time of concentration, and peak runoff rate in the Robert Bein, William Frost and Associates report.*

amount of surface water in a waterbody; or result in a permanent, adverse change to the movement of surface water sufficient to produce a substantial change in the current or direction of water flow.

The Project's off-site improvements would require the widening and resignalization of several intersections and other roadway improvements and construction of a water regulator station. Implementation of such improvements would result in temporary surface water quality impacts during construction activities. Long-term impacts would be very limited. Approximately 0.9 acres of impervious surface would be added with an expected increase in average annual runoff volume of approximately 0.5 acre-feet per year. This would represent an increase of approximately 0.2% of the average annual runoff from the adjacent Playa Vista First Phase Project and Proposed Project combined, and would not significantly impact any storm drainage facility.

Cumulative groundwater hydrology impacts could result from the overall utilization of respective groundwater basins located in proximity to the Proposed Project and related project sites. To the extent that it is possible that public supply wells are located within or near the related project sites, and the related projects could extract water from local basins, such cumulative utilization of groundwater in the region could adversely affect local and regional groundwater hydrology. However, the extent to which the related projects would extract or otherwise directly utilize groundwater is not possible to assess. However, the potential for impacts to groundwater hydrology from the related projects in conjunction with the Proposed Project, inclusive of the Project's Equivalency Program and off-site improvements, is not anticipated to be adverse inasmuch as the related projects would be expected to utilize water supplies from the respective public water suppliers (e.g., LADWP), including possible use of groundwater as a supply source. Such groundwater consumption would be regulated by the respective public water supply agencies, for which groundwater utilization is limited by entitlements to maintain the integrity and productivity of groundwater basins.

The Project's off-site improvements would convert approximately 0.9 acres of pervious surface to impervious. As with surface water hydrology, the potential for the construction and operation of off-site improvements to impact groundwater is minimal because the loss of 0.9 acres of pervious surface would not sufficiently reduce the ability of the water utilities to use the groundwater basin: or adversely change the rate or direction of flow of groundwater, or result in demonstrable and sustained reductions of groundwater recharge capacity.

Consequently, no significant cumulative impacts to groundwater hydrology are expected, as the Proposed Project, related growth and off-site improvements are not anticipated to change potable water level sufficiently to reduce the ability of the water utility to use the groundwater basin for public water supplies, conjunctive use purposes, storage of imported water, summer/winter peaking, or respond to emergencies and drought; reduce yields of adjacent wells or wellfields (public or private); or adversely change the rate or direction of flow of groundwater; or result in demonstrable and sustained reductions of groundwater recharge capacity. As such, no significant cumulative impacts are anticipated.

IV. ENVIRONMENTAL IMPACT ANALYSIS
C. WATER RESOURCES
(2) WATER QUALITY

1.0 INTRODUCTION

This section addresses the potential impacts of the Proposed Project with regard to surface water and groundwater quality during both construction and long-term operation phases of the Project. The surface water quality analysis identifies the main waterbodies that directly or indirectly receive surface water runoff from the Proposed Project site: which include Santa Monica Bay, Ballona Channel, Ballona Wetlands, and the Freshwater Wetlands System. Also addressed are the nature and location of existing potential sources of surface water pollution in or near the Proposed Project. The groundwater quality analysis identifies the potential impacts to groundwater due to contamination from past aerospace and manufacturing uses within the Proposed Project site. The analysis addresses the impacts that would occur for the Project as Proposed, for the Project's Equivalency Program, and for the Project's secondary impacts that would occur from the implementation of the Project's off-site mitigation measures.

This section summarizes information derived from the *Water Resources Technical Report for the Village at Playa Vista Project, Volumes I-III*, August 2003 by Camp Dresser & McKee, Inc. (CDM); Psomas; and GeoSyntec Consultants. The subject technical report is included as Appendices F-1 to the Draft EIR.

2.0 ENVIRONMENTAL SETTING

2.1 Regulatory Framework

2.1.1 Surface Water Quality

The Proposed Project is subject to regulation of surface water quality by the United States Environmental Protection Agency (EPA), the California State Water Resources Control Board (SWRCB), the California Regional Water Quality Control Board – Los Angeles Region (RWQCB), and the County and City of Los Angeles. These regulations include both requirements for direct and indirect permits that regulate surface water discharges as well as other water quality program requirements and plans.

2.1.1.1 Federal Regulations

Clean Water Act

The EPA regulates water quality under the Clean Water Act (CWA). CWA requires that the discharge of pollutants to waters of the United States from any point source be effectively prohibited, unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. The City and County of Los Angeles are currently regulated under the Phase I municipal stormwater NPDES program, under a permit issued and implemented through the RWQCB (MS4 Permit). The Proposed Project is subject to certain requirements of the Los Angeles County municipal stormwater NPDES program, that governs discharges from the municipal separate storm sewer system (MS4) in the Los Angeles region. This MS4 Permit requires controls to reduce discharge of pollutants pursuant to Receiving Water Limitations, the “maximum extent practicable” standard, and such other provisions as the issuing agency (RWQCB) deems appropriate. The requirements applicable to the Proposed Project arising from the MS4 Permit are discussed in Subsection 2.1.1.3.

In California, the SWRCB has issued a general NPDES permit for stormwater discharges associated with construction activities (General Construction Permit), with the permit implemented through the RWQCB. Because the Proposed Project disturbs an area of more than one acre, it requires a NPDES permit for construction activities. The requirements for this General Construction Permit are discussed below in Subsection 2.1.1.2.

Section 303(d) of the CWA requires identification and listing of water-quality limited or “impaired” waterbodies where water quality standards and/or receiving water beneficial uses are not met. Once a waterbody is listed as “impaired,” total maximum daily loads (TMDLs) must be established for the pollutants or flows causing the impairment (33 U.S.C. §1313(d)(c)). Both the SWRCB and the EPA have approved a Trash TMDL for the Ballona Creek Watershed, where the Proposed Project is located. Ballona Creek is listed as being impaired for other pollutants (see Subsection 2.1.1.2), but TMDLs have not yet been established for these pollutants.

It is anticipated that implementation of, and compliance with, the Trash TMDL requirements will be administered through the MS4 Permit programs, as well as individual NPDES permits and general industrial stormwater permits (including construction site permits administered by the RWQCB). The TMDL is discussed in more detail in Subsection 2.1.1.2, State Level – California Identified Impaired Waterbodies.

Nutrient Guidelines

The EPA has established nutrient water quality guidelines for various waterbodies based on ambient water quality conditions within defined ecoregions. The Proposed Project is located within Ecoregion 6 of Aggregate Ecoregion III, which is most prominently distinguished by its Mediterranean climate and associated vegetation. The guidelines are not enforceable laws or regulations; they are federal guidelines for establishing state water quality criteria for nutrients. These criteria will be referenced later in this document to assess potential impacts of nutrients on receiving waters.

Federal Antidegradation Policy

The Federal Antidegradation Policy (40 CFR §131.12) requires states to develop statewide antidegradation policies and identify methods for implementing them. Pursuant to the CFR, state antidegradation policies and implementation methods shall, at a minimum, protect and maintain: (1) existing in-stream water uses; (2) existing water quality where the quality of the waters exceeds levels necessary to support existing beneficial uses, unless the State finds that allowing lower water quality is necessary to accommodate economic and social development in the area; and (3) water quality in waters considered an outstanding national resource.

2.1.1.2 State Level

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (herein referred to as the California Water Code, CWC) established the principal California program for water quality control. The CWC authorizes the SWRCB to implement the provisions of the federal CWA. Under the CWC, the State of California is divided into nine regional boards that, under the guidance and review of the SWRCB, implement and enforce provisions of the CWC and the CWA. The Proposed Project is located in Region 4 (Los Angeles), hereafter referred to as the RWQCB.

Section 13050 of the CWC defines what is considered pollution, contamination, or nuisance. Briefly defined, pollution means an alteration of the water quality such that it unreasonably affects the water's beneficial uses; contamination means an impairment of the water quality to the degree that it creates a hazard to the public health; and nuisance means anything that is injurious to health, is offensive to the senses, or is an obstruction to property use, and which affects a considerable number of people.

Basin Plan

The RWQCB maintains a Water Quality Control Plan, called a "Basin Plan," that specifies beneficial uses, water quality objectives and various water quality control policies and practices for the Los Angeles region. The Basin Plan designates specific beneficial uses, such as water recreation and habitat for the Ballona Creek Estuary[134] and Ballona Wetlands, into which the Proposed Project and the adjacent Playa Vista First Phase Project drain.

In addition to identifying beneficial uses for waterbodies, the Basin Plan includes numerical (quantitative) and narrative (qualitative) water quality objectives applicable to inland surface waters and enclosed bays and estuaries (including wetlands) in the Los Angeles Region, such as the Ballona Creek Estuary and Ballona Wetlands (see Volume 1, Section 3 of the Water Resources Technical Report, Appendix F-1, for a listing of the constituents and parameters). Also included in the plan are narrative objectives that specifically apply to wetlands, such as the Ballona Wetlands, and limit modifications to hydrology and habitat in order to minimize impacts to wetlands flora and fauna.

California Ocean Plan

The Basin Plan also incorporates SWRCB statewide Water Quality Control Plans such as the California Ocean Plan (COP), which is implemented by the SWRCB and the RWQCB. The COP establishes water quality objectives for California's ocean waters and provides a basis for regulation of wastes discharged to coastal waters by point and non-point source discharges. The COP describes beneficial uses and water quality objectives for the open ocean waters – not forebays and estuaries such as those found adjacent to and directly downstream of the adjacent Playa Vista First Phase Project and the Proposed Project. Although the COP does not apply to the receiving waters immediately downstream of the adjacent Playa Vista First Phase Project and the Proposed Project, the COP's numerical objectives have been used for comparative purposes to assess some of the potential impacts of water quality constituents without regulatory limits.

California Toxic Rule

The EPA has established water quality criteria for certain toxic substances via the California Toxic Rule (CTR). The CTR establishes acute and chronic surface water quality standards for waterbodies such as inland surface waters and enclosed bays and estuaries that are designated by the RWQCB as having beneficial uses protective of aquatic life or human health. Surface water runoff from the Proposed Project site discharges to waters to which the CTR applies, including Santa Monica Bay, Ballona Channel, and the Ballona Wetlands. The CTR are used herein to evaluate potential impacts to these waters and for comparative purposes to assess water quality in the Freshwater Wetlands System.

[134] *Unless stated differently, references to the "Ballona Channel" shall mean the Ballona Creek Estuary portion of the channel which receives flows directly from the Freshwater Marsh.*

NPDES Statewide General Construction Stormwater Permit

The SWRCB issues the statewide NPDES general permit for stormwater discharges associated with construction activities (General Construction Permit). This permit requires monitoring for sediment and non-visible pollutants under specified circumstances. A development project, such as the Proposed Project, that disturbs an area greater than one acre requires a Notice of Intent to discharge under the General Construction Permit. The General Construction Permit includes measures to eliminate or reduce pollutant discharges through a Stormwater Pollution Prevention Plan (SWPPP), which describes the implementation and maintenance of best management practices (BMPs) to control stormwater and other runoff during and after construction. The General Construction Permit contains receiving water limitations, which state that stormwater discharges shall not cause or contribute to a violation of any applicable water quality standard. It is anticipated that the Proposed Project will be covered under the statewide NPDES General Construction Permit.

California Identified Impaired Waterbodies

Under Section 303(d) of the CWA, the State of California identifies Ballona Creek, Ballona Creek Estuary, the Ballona Wetlands, and the Santa Monica Bay as water-quality limited. Water-quality limited or "impaired" waterbodies are those waterbodies that are not, or are not expected to be, in compliance with applicable water quality standards despite the implementation of technology-based effluent limits. They are identified through water quality assessments conducted by the RWQCB. The "Ballona Creek Estuary" extends from the mouth of Ballona Creek to Centinela Avenue. The "Ballona Creek to Ballona Creek Estuary" reach extends from Rodeo Road at Jefferson Boulevard to Centinela Avenue. The outlets that drain from the Freshwater Marsh and the Ballona Wetlands into the Ballona Channel are located within the Ballona Creek Estuary; therefore, their discharges do not affect the upstream portions of the Ballona Channel. In February 2003, SWRCB approved the expansion of the listing to include 315 acres.[135] This listing has been submitted to the EPA for review and approval. In order to provide a conservative analysis of the water quality of the runoff from the Proposed Project site for the purposes of this EIR, it has been assumed that the runoff from the Proposed Project would flow through the Freshwater Wetlands System to the area of the Ballona Wetlands that is the focus of the 303(d) listing. This approach is conservative because the Freshwater Marsh is designed to discharge to the Ballona Wetlands only during storms greater than a one-year design storm. Santa Monica Bay and the Ballona Creek to Ballona Creek Estuary reach would not receive any runoff directly from the Proposed Project. As such, the EIR analysis focuses primarily on the Ballona Creek Estuary and Ballona Wetlands as 303(d)-listed waterbodies that may receive runoff from the Proposed Project.

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[135] *State Water Resources Control Board, Res. 2003-0009, Approval of the 2002 Federal Clean Water Act Section 303(d) List of Water Quality Limited Segments. [Online] http://www.swrcb.ca.gov/tmdl/docs.*

Table 31 on page 406 provides the current list, as of February 2003, of parameters identified by the State as causing impairments of beneficial uses for Ballona Creek Estuary, Ballona Wetlands, and Santa Monica Bay. As a result of the 2002 Section 305(b) water quality assessment, the 303(d) list has been revised. The 2002 303(d) list was approved by the SWRCB on February 4, 2003, and was submitted to the EPA for approval on February 28, 2003.[136] EPA's proposed revisions of the February 4 list were provided to the SWRCB by letter from EPA dated June 5, 2003.[137] None of these proposed revisions related to the subject waterbodies.[138]

Under Section 303(d), TMDLs for impaired waterbodies must be established for the pollutants causing the impairment (33 U.S.C. §1313(d)(c)). To date, the SWRCB and the EPA have approved the Trash TMDL for the Ballona Creek Watershed, in which the Proposed Project is located.[139] A "pollution budget" or pollutant load allocation must be established for point and non-point sources that contribute to the water quality impairment. Once a pollution budget has been set, which for the Ballona Creek Watershed is zero trash discharged by the twelfth year following implementation of approval of the TMDL, load allocations for point sources are implemented through NPDES permits for individual dischargers. It is anticipated that implementation of, and compliance with, the TMDL requirements will be administered through the County's and City's MS4 Permit program.

Eventually all of the 303(d)-listed waterbodies and pollutants will have TMDLs established. The Santa Monica Bay beaches have draft Dry-weather and Wet-weather TMDLs for indicator bacteria that are currently being reviewed by the SWRCB.[140] A coliform TMDL for

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136 *State Water Resources Control Board, 2003. Letter to Catherine Kuhlman of the USEPA Region 9 Water Division: Transmittal of the 2002 Clean Water Act Section 303(d) List of Water Quality Limited Segments. February 28, 2003 [Online] http://www.swrcb.ca.gov/tmdl/docs/ usepa2002list_trasmittal.pdf*

137 *State Water Resources Control Board, 2003. Consideration of a Resolution to Approve the 2002 Federal Clean Water Act Section 303(d) list of Water Quality Limited Segments, February 4, 2003.*

138 *EPA, 2003. Federal Register 68 FR 33693, Clean Water Act Section 303(d): Availability of List Decision, June 5, 2003.*

139 *The Trash TMDL for the Ballona Creek Watershed is currently under legal challenge by both the City and County of Los Angeles. Two lawsuits were filed in the Los Angeles County Superior Court in 2002, one on behalf of the City of Los Angeles, Bureau of Sanitation (Case No. BC 270452 – filed March 21, 2002), and one on behalf of the County of Los Angeles and the Los Angeles County Flood Control District (Case No. BC 279597 – filed August 13, 2002). Both lawsuits have been transferred out of Los Angeles County Superior Court. The City of Los Angeles, Bureau of Sanitation lawsuit has been transferred to Ventura County Superior Court and the County of Los Angeles and the Los Angeles County Flood Control District lawsuit is now in San Diego County Superior Court.*

140 *Los Angeles Regional Water Quality Control Board, 2002. Amendment to the Water Quality Control Plan (Basin Plan) for the Los Angeles Region to Incorporate Implementation Provisions for the Region's Bacteria Objectives and to Incorporate a Wet-Weather Total Maximum Daily Load for Bacteria at Santa Monica Bay Beaches. Resolution No. 2002-022, December 12, 2002. [Online] http://www.swrcb.ca.gov/rwqcb4/html/ meetings/tmdl/tmdl_ws_santa monica.html*

Table 31

LISTED WATER QUALITY PARAMETERS FOR BALLONA CREEK ESTUARY, BALLONA WETLAND, AND SANTA MONICA BAY

Parameter	Ballona Creek Estuary	Ballona Wetland	Santa Monica Bay [a]
Arochlor (PCB product trade name)	✓ [b]		
Arsenic, tissue		✓ [b]	
Cadmium, sediment			✓ [b]
Chlordane, tissue (pesticide)	✓		
Chlordane, sediment (pesticide)	✓		✓
Copper, sediment			✓ [b]
DDT, tissue (pesticide)			✓
DDT, sediment (pesticide)	✓		✓
Debris			✓
Exotic Vegetation		✓	
Fish Consumption Advisory			✓
Habitat Alterations		✓	
High Coliform Count	✓		
Hydromodification		✓	
Lead, tissue			✓ [b]
Lead, sediment	✓		✓ [b]
Mercury, sediment			✓ [b]
Nickel, sediment			✓ [b]
PAHs, sediment (polycyclic aromatic hydrocarbons)	✓		✓
PCBs, sediment and tissue (polychlorinated biphenyls)	✓		✓
Reduced Tidal Flushing		✓	
Sediment Toxicity	✓		✓
Shellfish Harvesting Advisory	✓		
Silver, tissue			✓ [b]
Trash		✓	
Zinc, sediment	✓		✓ [b]

[a] *Listing for Santa Monica Bay offshore and near shore.*
[b] *Proposed to be delisted in the 2002 303(d).*

Source: Parameters included in 1998 and Proposed 2002 California 303(d) List. The 2002 list has been submitted to EPA for review and approval.

the Ballona Creek Estuary, which may also apply to dry-weather flows, is planned for completion during the 2003/2004 fiscal year. By 2005, all of the 303(d)-listed parameters for the Ballona Creek Estuary should have TMDLs established. By 2010, all Ballona Wetlands TMDLs should be completed.[141]

[141] *Los Angeles Regional Water Quality Control Board, 2002. Table 7A. Summary Schedule for TMDL Development. [Online] http://www.swrcb.ca.gov/rwqcb4/docs/table7_wmi_appdx.pdf.*

California Non-Point Source Pollution Control Program

SWRCB and the California Coastal Commission (CCC) developed California's Non-Point Source Pollution Control Program, which contains management measures for categories of land use/development. The categories potentially relevant to the Proposed Project are: Urban Areas, Hydromodification, and Wetlands/Riparian Areas/Vegetated Treatment Systems.[142]

Under the Non-Point Source Program Strategy and Implementation Plan 1998-2013 (NPS Plan), a 3-tier system of BMPs is used as a means of implementing non-point source water quality management measures and strategies. Relevant to the Proposed Project, the NPS Plan contains two Management Measures to address non-point source pollution, 6B (Restoration of Wetlands/Riparian Areas) and 6C (Vegetated Treatment Systems), which place an emphasis on the use of natural treatment systems, including marshes and wetlands.

State's Antidegradation Policy

In accordance with the Federal Antidegradation Policy discussed in Subsection 2.1.1.1 on page 401, the SWRCB adopted Resolution No. 68-16, Statement of Policy with Respect to Maintaining High Quality Waters in California (more commonly referred to as the State's Antidegradation Policy), which restricts the degradation of surface waters of the State and protects waterbodies where the existing water quality is higher than necessary for the protection of present and anticipated designated beneficial uses. The State Antidegradation Policy is implemented by the RWQCB.

2.1.1.3 Local Level

Los Angeles County Municipal Stormwater NPDES Program

The County of Los Angeles and the City of Los Angeles are co-permittees under the municipal stormwater NPDES permit for Los Angeles County (MS4 Permit described above under Subsection 2.1.1.1). The Proposed Project is within the region covered by the MS4 Permit (NPDES Permit No. CAS004001, issued by the RWQCB on December 13, 2001).[143] Under the MS4 Permit, the County and City are required to implement development planning guidance and control measures that control and mitigate the stormwater quality and quantity impacts to receiving waters as a result of new development and redevelopment. They also are required to

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[142] *California Coastal Commission. http://ceres.ca.gov/coastalcomm/nps/npsndx.html*

[143] *NPDES Permit No. CAS004001 is currently under litigation (Los Angeles County Development Corporation Economic v California State Water Resources, Case No. BS080792.). However, the permit remains in effect and has not been stayed or in any way rendered ineffective by the current legal action.*

implement other municipal source detection and elimination programs as well as maintenance measures.

The MS4 Permit contains provisions for implementation and enforcement of the Stormwater Quality Management Program (SQMP). The objective of the SQMP is to reduce pollutants in urban stormwater discharges to the "maximum extent practicable," in order to attain water quality objectives and protect the beneficial uses of receiving waters in Los Angeles County. Special provisions are provided in the MS4 Permit to facilitate implementation of the SQMP. In addition, the MS4 Permit requires the permittees to implement a Standard Urban Stormwater Mitigation Plan (SUSMP) that designates best management practices (BMPs) that must be used in specified categories of development projects.[144]

One of the most important requirements within the SUSMP is the specific design sizing criteria for stormwater treatment/management for new development and redevelopment projects. The SUSMP requires developers to mitigate (infiltrate or treat) the stormwater runoff (volume or flow rate) generated from 0.75 inches of rainfall over 24 hours (determined to represent the 85th percentile of storms in Los Angeles County). The SUSMP also requires that all stormwater treatment/management facilities be designed to "control the peak flow discharge to provide stream channel and over bank flood protection" based on the requirements of the City of Los Angeles' storm drain design criteria. These criteria require that any storm drain in a natural drainage course be designed to control the 50-year storm event.[145] In addition to the sizing requirements, the SUSMP includes eight general requirements as follows:

1. maintain pre-development peak stormwater runoff discharge rates where increases will result in increased potential for downstream erosion,

2. conserve natural areas,

3. minimize stormwater pollutants of concern,

4. protect slopes and channels,

5. provide storm drain system stenciling and signage,

6. properly design outdoor material storage areas,

7. properly design trash storage areas, and

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[144] *Los Angeles County, 2000. Standard Urban Stormwater Mitigation Plan for Los Angeles County and Cities in Los Angeles County. Approved by Regional Board Executive Officer, March 8, 2000.*

[145] *City of Los Angeles, Department of Public Works, Bureau of Engineering, 1986. Storm Drain Design Manual Part G. [Online] http://eng.lacity.org/techdocs/stormdr/Index.htm*

8. provide proof of ongoing BMP maintenance.

Also, the SUSMP includes general design specifications for individual priority project categories, such as 100,000-square-foot commercial developments, restaurants, and parking lots. For example, commercial developments must have properly designed loading and unloading dock areas, repair and maintenance bays, and vehicle equipment wash areas. Restaurants need to have properly designed equipment and accessory wash areas. Parking lots have to be properly designed to limit oil contamination and have regular maintenance of parking lot stormwater treatment systems (e.g., storm drain filters and biofilters).

Project Design Features are compared to sizing requirements in the paragraphs below, followed by brief discussions of the Proposed Project with respect to selected general SUSMP requirements. All other general SUSMP requirements are addressed in the waterbody-specific impacts subsections. A detailed discussion of how all of the SUSMP requirements would be met by the Proposed Project is provided in Volume I, Section 3 of the Water Resources Technical Report (Appendix F-1).

2.1.1.4 Freshwater Wetlands System Performance Criteria

The initial proposal for the Freshwater Wetlands System emerged from the Applicant's predecessor's efforts in the late 1980s and early 1990s to bring about the settlement of a litigation challenging the California Coastal Commission's 1984 certification of a Coastal Land Use Plan for the coastal zone portions of Playa Vista (the "Settlement Agreement").[146] The Settlement Agreement required the creation of the Freshwater Wetlands System. In order to construct the Freshwater Wetlands System, the landowners of the adjacent Playa Vista First Phase Project and the Proposed Project were obligated to obtain a permit under Section 404 of the CWA (404 Permit)[147] in order to dredge and fill certain waters within the project site considered jurisdictional by the U.S. Army Corps of Engineers (USACE). In order to obtain the 404 Permit, the USACE required certifications be obtained from the SWRCB (with input from the RWQCB) regarding compliance with Section 401 of the CWA (401 Certification),[148] and the California Coastal Commission (CCC) regarding compliance with the Coastal Zone Management Act's requirements for managing non-point source pollution and the California Coastal Act's

[146] *Friends of Ballona Wetlands v. the California Coastal Commission, Los Angeles County Superior Court, Case No. C525 826.*

[147] *U.S. Army Corps of Engineers (USACE), Clean Water Act Section 404 Permit No. 90-326-EV, March 14, 1996.*

[148] *State Water Resources Control Board (SWRCB), Conditional Water Quality Certification Under Clean Water Act Section 401 (July 3, 1995) (incorporating Memorandum from Regional Water Quality Control Board (RWQCB) to SWRCB (June 15, 1995) and Memorandum from RWQCB to SWRCB, November 30, 1993.*

water quality policies (CCC Certification).[149] The 401 Certification and CCC Certification were obtained, and a 404 Permit was issued governing both the adjacent Playa Vista First Phase Project and the Proposed Project. Also, the landowner obtained a Coastal Development Permit (CDP) for the construction of the Freshwater Marsh [150] from the CCC that, among its requirements, contained provisions related to water quality monitoring of the Freshwater Wetlands System to assure the water quality within the system would be maintained at levels suitable for the proposed habitat uses. As a requirement of the 404 Permit, the landowner prepared and submitted to the USACE the Habitat Mitigation and Monitoring Plan (HMMP)[151] that described and elaborates on requirements in the 404 Permit relevant primarily to habitat goals and water-related issues necessary to establishing and maintaining the habitat.

The 404 Permit recognizes the Freshwater Wetlands System as having multiple purposes and states that those purposes are: (1) to improve the quality of urban runoff entering the Ballona Wetlands and Santa Monica Bay, reducing existing water quality impacts to the area and aiding in the national program for improvement of water quality from urban runoff; (2) provide ecologically-sound flood control facilities for the Playa Vista First Phase Project, the Proposed Project, and surrounding roads and communities; and (3) provide wildlife habitat enhancement in an area where severe habitat degradation had occurred.[152] The 404 Permit, the 401 Certification, the CCC Certification, the CDP, and the HMMP established performance criteria that are designed to take into account the specific conditions of the adjacent Playa Vista First Phase Project and the Proposed Project and allow the Freshwater Wetlands System to function in its water quality, flood control, and habitat enhancement capacities (Performance Criteria).[153] These Performance Criteria are conditions and requirements of the 404 Permit, the 401 Certification, and the CCC Certification and, as such, are "regulatory standards" as that term is used in the Draft Los Angeles CEQA Thresholds Guide.

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[149] *California Coastal Commission, Consistency Certification for wetland fill activities as described in the application for Corps of Engineers Permit pursuant to Section 404 of the Clean Water Act, Application No. 90-426-EV, Ballona Wetlands, Los Angeles County, CC-66-91, October 25, 1991.*

[150] *California Coastal Commission, Coastal Development Permit for Maguire Thomas Partners – Playa Vista, Permit No. 5-91-463, August 7, 1992.*

[151] *Playa Capital Co., Habitat Mitigation and Monitoring Plan, November 1995.*

[152] *Los Angeles District Corps of Engineers, Environmental Assessment 404(b)(1) Evaluation Public Interest Review, Permit Application Number: 90-426-EV, at 5-6, July 1, 1992 (prepared in conjunction with the 404 Permit).*

[153] *As an example of the performance criteria: (1) regarding habitat, the 404 Permit requires establishment within the Freshwater Marsh, of 9.7 acres of open water, 7.2 acres of marsh habitat, 5.5 acres of willow woodlands, and 3.7 acres of mixed riparian habitat; (2) regarding flood control, the 404 Permit states that at buildout, the Freshwater Wetlands System will contain a 1-year frequency storm event (based on city of L.A. Peak Rate Hydrology Method); and (3) regarding water quality, the 401 Certification requires the Storm Water Pollution Prevention Plan prepared during construction of the project include procedures to reduce gully and rill erosion.*

2.1.2 Groundwater Quality

The Proposed Project is subject to groundwater quality regulations at the federal, state, and local level by the EPA, California EPA (CalEPA), and RWQCB. Furthermore, the RWQCB, acting as the lead regulatory agency for the state, may solicit input from other state and local agencies as appropriate.

2.1.2.1 Federal Level

Under the Safe Drinking Water Act, the EPA sets drinking water standards referred to as the National Primary Drinking Water Regulations, 40 CFR Part 141, and the National Secondary Drinking Water Regulations, 40 CFR Part 143. These regulations set maximum contamination levels (MCLs)[154] for substances in drinking water and apply to groundwater if the groundwater is a source of potable water or otherwise subject to the MUN-designated use.[155] Groundwater in the area of the adjacent Playa Vista First Phase Project and the Proposed Project is not currently pumped for beneficial uses (i.e., drinking water, industrial or agricultural supply).[156] A comparison of groundwater concentrations to MCL standards is provided in Section IV.I, Safety/Risk of Upset.

2.1.2.2 State Level

RWQCB was appointed lead agency by CalEPA to regulate activities and factors that affect or may affect groundwater quality at the Proposed Project site. As discussed in Subsection 2.1.1.2, the Basin Plan specifies beneficial uses for the Santa Monica Basin, where the Proposed Project is located. A determination of whether the subject groundwater concentrations exceed any applicable regulatory standards or otherwise require remediation actions will be made by the RWQCB in conjunction with the ongoing implementation of the Cleanup and Abatement Order (CAO) No. 98-125, as discussed in detail in Section IV.I, Safety/Risk of Upset.

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[154] *Maximum Contamination Levels (MCLs) are referenced as a basis for comparisons. However cleanup levels for on-site contamination would be determined by the RWQCB in accordance with the requirements of the Cleanup and Abatement Order No. 98-125.*

[155] *"MUN" is defined in the Basin Plan as "Municipal and Domestic Supply (MUN) uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply." Los Angeles Basin Plan, page 2-1.*

[156] *The closest public supply wells are located approximately 3.5 miles northwest of the Proposed Project in the City of Santa Monica. The nearest irrigation well is located approximately 2 miles southeast of the Proposed Project at the Hillside Memorial Park Cemetery. There is an abandoned public water supply well located at Venice Polytechnic High School, approximately 2 miles northwest of the Proposed Project that was capped in 1960.*

In addition, Title 22, Division 4, Chapter 15 of the California Code of Regulations establishes primary and secondary drinking water standards for public water systems based on national standards. Groundwater in the area of the Proposed Project is not currently used for drinking water. See Section IV.I, Safety/Risk of Upset for further discussion.

2.1.2.3 Local Level

The RWQCB enforces the General Construction Permit to control pollutant discharges through a SWPPP. While the BMPs included in the SWPPP primarily are aimed at minimizing the discharge of pollutants to receiving surface waters, the BMPs also would serve to minimize any short-term impacts on groundwater quality from construction activities.

2.2 Existing Conditions

The following subsections describe the existing water quality characteristics of waterbodies most relevant to the Proposed Project. The descriptions include comparisons of available water quality sampling data to certain water quality criteria and objectives, as described above in Subsection 2.1. Such comparisons have been provided to indicate the types of pollutants of concern in the receiving waterbodies.

2.2.1 Surface Water Quality

This subsection discusses the surface water quality in the vicinity of the Proposed Project site, including the existing conditions of the Santa Monica Bay, the Ballona Channel, the Ballona Wetlands, and the Freshwater Wetlands System. The Freshwater Wetlands System, which is currently under construction pursuant to the adjacent Playa Vista First Phase Project approvals, provides water quality enhancement for the off-site areas and the built-out areas of the adjacent Playa Vista First Phase Project and the Proposed Project. Continuous point source loadings are also discussed.

2.2.1.1 Santa Monica Bay

Santa Monica Bay generally receives surface water drainage from storm drains, overland flow, treated process waters from industrial sites, industrial and commercial discharges of non-process wastewater,[157] and discharges from power plant and wastewater treatment plant outfalls,

[157] *Santa Monica Bay Restoration Commission. http://www.santamonicabay.org/site/problems/layout/water.jsp.*

all of which contribute to pollutant loading in the Bay. Pollutants are transported into the Bay through flushing of adjacent marina and estuary areas by daily tidal fluctuations. The Bay receives urban runoff indirectly from the adjacent Playa Vista First Phase Project and the Proposed Project sites via the Freshwater Marsh, which flows directly to the Ballona Channel. In addition, some runoff from larger storms (i.e., larger than a 1-year design storm) would overflow from the Freshwater Marsh (by design) and flows through the Ballona Wetlands prior to discharge to the Ballona Channel. A recent study conducted in 2001 by the Santa Monica Bay Restoration Project, University of California Los Angeles (UCLA), and Southern California Water Resources Program also noted that aerial deposition to the Bay was a potential source of mass loading for zinc, copper, and lead.[158]

Based on the SWRCB's 1994 Water Body Fact Sheet and the RWQCB, the waters of Santa Monica Bay have been assigned a Class C (impaired) rating. A Class C rating for Santa Monica Bay means that the water in the Bay is suitable for fish and aquatic habitat as well as secondary contact recreation (water related activity, such as boating, marine life study, beachcombing, sunbathing, and fishing). The Santa Monica Bay's biological community has been identified as being imbalanced, severely stressed, or known to contain toxic substances in concentrations that are hazardous to human health.[159] The contaminants of greatest concern in the Bay are chlorinated and polyaromatic hydrocarbons, organometalloids, viral pathogens, and trace metals (copper and zinc). Certain of these contaminants tend to bioaccumulate and/or are not degraded by natural biological processes; therefore, they can present risks to biota and human health at elevated concentrations. The Bay is generally considered to be nutrient poor.

The water and sediment in Santa Monica Bay has been monitored extensively by state and federal resource management agencies (such as RWQCB and SWRCB), by local agencies, by citizen volunteer monitoring groups sponsored by local environmental organizations (such as Heal the Bay and Santa Monica BayKeeper), as well as by consulting firms as part of environmental studies of adjacent water resources. Summaries of the sampling data from some of these environmental studies are provided in Volume I, Section 3 of the Water Resources Technical Report (see Appendix F-1).

In 1993, the Santa Monica Bay Restoration Project published an assessment of the storm drain sources of contaminants to Santa Monica Bay by UCLA Department of Civil and Environmental Engineering and Woodward-Clyde Consultants.[160] The study and following

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[158] *Stolzenback, Keith D., et al. Measuring and Modeling of Atmospheric Deposition on Santa Monica Bay and the Santa Monica Bay Watershed, September 2001.*

[159] *State Water Resources Control Board, Water Body Fact Sheet, May 18, 1994.*

[160] *Stenstrom and Strecker, UCLA Department of Civil and Environmental Engineering, and Woodward-Clyde Consultants, Assessment of the Storm Drain Sources of Contamination to Santa Monica Bay, 1993.*

update,[161] summarized in four volumes, concluded that significant pollution enters the Bay from urban runoff originating from existing residential, industrial, and commercial land use areas surrounding Santa Monica Bay.

Coliform bacteria (a human pathogen indicator) water quality objectives have exceeded state standards in Santa Monica Bay under existing conditions.[162] The State of California uses this type of data to assess water quality impairment and develop subsequent regulatory efforts (listing of water quality-limited waterbodies, i.e., 303(d) listings), as well as to investigate known sources. The exceedance of these water quality objectives indicates an increased risk that human pathogens are present, but does not confirm the presence of specific human pathogens. There are many sources of coliform bacteria.

Using qualitative and/or quantitative assessment techniques as appropriate, existing water quality of the Santa Monica Bay, which does not receive direct runoff from the Proposed Project, was assessed in terms of the potential for the Proposed Project to exacerbate existing potential water quality problems, and in terms of the Project Design Features included to control potential sources.

As mentioned in Subsection 2.1, the RWQCB has prepared a Dry-Weather Total Maximum Daily Load for Bacteria at Santa Monica Bay Beaches, which is currently being reviewed by EPA and SWRCB.[163] A source analysis of the elevated densities of bacterial indicators showed that at many of the Santa Monica Bay beaches dry-weather urban runoff conveyed by storm drains and creeks (which includes Ballona Creek and Estuary) are the cause of water quality impairment in terms of the water contact recreation (REC-1) beneficial use.

A compound of concern in sediments in the area is tributyltin (TBT). TBT has been introduced into the Bay from antifouling agents applied to boats. Although its use has been banned for several years, TBT levels in Santa Monica Bay have not decreased. No TBT will be generated by the Proposed Project.

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[161] *Wong, K.M., E.W. Strecker, and M.K. Stenstrom, "GIS to Estimate Stormwater Pollutant Mass Loadings," ASCE Journal of Environmental Engineering, Vol.123, No. 8, pp. 737-745, August 1997.*

[162] *Santa Monica Bay Restoration Commission. http://www.santamonicabay.org/site/problems/layout/water.jsp.*

[163] *California Regional Water Quality Control Board, Los Angeles Region, Draft Total Maximum Daily Load to Reduce Bacterial Indicator Densities during Dry Weather at Santa Monica Bay Beaches, 2002. This TMDL was considered effective as of July 15, 2003, when the RWQCB filed its Notice of Decision with the California Resources Agency.*

2.2.1.2 Ballona Channel

The Ballona Channel is located just north of the adjacent Playa Vista First Phase Project and the Proposed Project, and discharges directly into Santa Monica Bay. The Channel serves as the major outlet for a 122-square mile (78,000-acre) watershed upstream of the Ballona Wetlands, which includes the highly urbanized West Central Los Angeles Metropolitan Area, and a portion of the Santa Monica Mountains. The Ballona Channel receives urban runoff from the adjacent Playa Vista First Phase Project and the Proposed Project sites via the Freshwater Marsh and Ballona Wetlands.

The Los Angeles County Department of Public Works (LACDPW) regularly has sampled Ballona Channel upstream of the adjacent Playa Vista First Phase Project and the Proposed Project during both dry-weather and storm flow conditions. In addition to the LACDPW sampling, Ballona Channel also was sampled at discrete periods by Aquatic Bioassay and Consulting Laboratories, Inc. (ABCL); Camp Dresser and McKee Inc. (CDM); Chambers Group; and URS Greiner Woodward Clyde (URSGWC). Due to the saltwater wedge[164] and the varying conditions in the Channel, the evaluation of existing data can be divided into the freshwater and saltwater portions of the Channel. Because the drainage from the adjacent Playa Vista First Phase Project and the Proposed Project discharges downstream of the Channel's intersection with Culver Boulevard, well within the saltwater portion of the Channel which, for the purposes of this document, is within the Ballona Creek Estuary; therefore, only the saltwater portion of the Channel is discussed. This portion of the Channel between the Channel's intersection with Culver Boulevard and a point approximately 3,000 feet east of Lincoln Boulevard (near the confluence with Centinela Creek, the extent to which the Channel is tidally influenced) is known as the saltwater wedge.

Table 32 on page 416 and Table 33 on page 418 summarize selected constituents in the saltwater portions of the Ballona Channel. This selected list of constituents includes water quality constituents in the Ballona Channel that exceeded CTR criteria, constituents that are to be evaluated in the pollutant-loading model described in Subsection 3.1, and constituents listed in

[164] *The saltwater wedge, also referred to as the tidal prism, is the intersection of freshwater and saltwater near where the Ballona Channel empties into Santa Monica Bay. It is created in the channel by the daily tidal fluctuations in the Bay as the saltwater from the Bay advances and retreats in the Channel. The water column of the tidal prism is a mixture primarily of Santa Monica Bay and, to limited extent, Marina del Rey saltwater, with freshwater from upstream flows in the Ballona Channel. Typically, the denser saltwater intruding from the Bay will become overlain by less dense freshwater flowing down Ballona Channel with some mixing and diffusion. (Camp Dresser & McKee Inc. Ballona Creek Salinity Monitoring and Water Quality Sampling Results. August 14, 1996.)*

Table 32

SELECTED* WATER QUALITY CONSTITUENTS IN BALLONA CHANNEL DURING DRY-WEATHER

Constituent	Units	Chronic CTR Criteria [a,b]	Total Number of Samples	Number of Samples Exceeding Criteria	Observed Concentrations Minimum	Observed Concentrations Maximum	Observed Concentrations Mean
Oil and Grease	mg/L	—	15	—	ND	57	8
Total Coliform	MPN/100ml	—	13	—	ND	16,000	3,567
Fecal Coliform	MPN/100ml	—	13	—	ND	1,300	216
Hardness	mg/L	—	6	—	2,600	6,300	4,253
TKN	mg/L	—	10	—	ND	1.8	0.7
Ammonia	mg/L	—	6	—	ND	0.53	0.16
Dissolved Oxygen	mg/L	—	22	—	27	110	59
Total Phosphorus	mg/L	—	16	—	ND	0.53	0.16
Total Suspended Solids	mg/L	—	6	—	27	110	59
Salinity	ppt	—	24	—	21.09	33.5	30
Dissolved Arsenic	μg/L	36	4	0	ND	2	1
Total Arsenic	μg/L	—	14	—	ND	ND	ND
Dissolved Cadmium	μg/L	9.3	4	0	ND	ND	ND
Total Cadmium	μg/L	—	14	—	ND	1.7	0.1
Dissolved Copper	μg/L	3.1	10	5	ND	120	32
Total Copper	μg/L	—	8	4	ND	120	19
Dissolved Lead	μg/L	8.1	10	0	ND	ND	ND
Total Lead	μg/L	—	8	—	ND	55	16
Dissolved Mercury	μg/L	—	10	—	ND	ND	ND
Total Mercury	μg/L	—	8	—	ND	0.35	0.05
Dissolved Nickel	μg/L	8.2	10	0	ND	ND	ND
Total Nickel	μg/L	—	8	—	ND	ND	ND
Dissolved Selenium	μg/L	71	4	2	ND	440	208
Total Selenium	μg/L	—	8	—	ND	460	102
Dissolved Silver	μg/L	—	4	—	ND	1.7	0.4
Total Silver	μg/L	—	8	—	ND	ND	ND
Dissolved Zinc	μg/L	81	10	4	ND	210	97
Total Zinc	μg/L	—	8	—	ND	170	46
PAHs	μg/L	—	2	—	ND	ND	ND
Naphthalene	μg/L	—	6	—	ND	3.1	1
PCB-1016	μg/L	0.03	8	0	ND	ND	ND
PCB-1221	μg/L	0.03	8	0	ND	ND	ND
PCB-1232	μg/L	0.03	8	0	ND	ND	ND
PCB-1242	μg/L	0.03	8	0	ND	ND	ND
PCB-1248	μg/L	0.03	8	0	ND	ND	ND
PCB-1260	μg/L	0.03	8	0	ND	ND	ND
PCB-1254	μg/L	0.03	9	0	ND	ND	ND
Aldrin [b]	μg/L	0.00014	8	0	ND	ND	ND
Chlordane	μg/L	0.004	8	0	ND	ND	ND
Dieldrin [b]	μg/L	0.0019	8	0	ND	ND	ND
Endrin [b]	μg/L	0.0023	8	0	ND	ND	ND
Toxaphene	μg/L	0.0002	8	0	ND	ND	ND
Heptachlor	μg/L	0.0036	8	0	ND	ND	ND
Heptachlor Epoxide [b]	μg/L	0.0036	8	0	ND	ND	ND

Table 32 (Continued)

SELECTED* WATER QUALITY CONSTITUENTS IN BALLONA CHANNEL DURING DRY-WEATHER

Constituent	Units	Chronic CTR Criteria [a,b]	Total Number of Samples	Number of Samples Exceeding Criteria	Observed Concentrations		
					Minimum	Maximum	Mean
O,P'-DDT	µg/L	—	6	—	ND	ND	ND
P,P'-DDT	µg/L	0.001	8	0	ND	ND	ND

— = No Criteria *CTR = California Toxics Rule* *NA = Not Analyzed*

ND = Not Detected *mg/l = micrograms per liter* *mg/L = milligrams per liter*

ppt = parts per thousand

MPN/100 ml = Most Probable Number per 100 milliliters

* *"Selected" water quality constituents represent those water quality constituents most relevant to the analysis and discussion presented in this section. The data for all constituents sampled is contained in Volume I, Section 3, Water Resources Technical Report (Appendix F-1).*

[a] *For waters in which salinity is equal to or greater than 10 ppt and 95 percent or more of the time, the applicable criteria are the saltwater criteria.*

[b] *CTR criteria are for the protection of human health due to the consumption of aquatic organisms living in waters with carcinogenic compounds.*

Final CTR Criteria = May 18, 2000. Federal Register Volume 65, No. 97, 40 CFR Part 131, Water Quality Standards, Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California.

Aquatic Bioassay Consulting Laboratory, September 15, 1997. The Marine Environment of Marina del Rey Harbor, July 1996-June 1997.

Camp Dresser & McKee Inc., August 14, 1996. Ballona Creek Water and Sediment Quality Sediment Quality Report, 1995/1996, Wet Weather Season, Playa Vista, California.

Camp Dresser & McKee Inc., October 1998. Playa Vista Area A and Area B Wetlands Surface Water and Sediment Monitoring Report.

Chambers Group, Inc., March 1993. Comparison of the Re-establishment of Tidal Flow in the Ballona Wetlands Through the Ballona Channel or Through the Marina del Rey Entrance Channel.

Woodward-Clyde Consultants, November 1990. Final Technical Appendix to the Master EIR. Table 5-7.

Source: Camp Dresser & McKee Inc.

Table 33

SELECTED* WATER QUALITY CONSTITUENTS IN BALLONA CHANNEL DURING WET-WEATHER

Constituent	Units	Acute CTR Criteria [a]	Total Number of Samples	Number of Samples Exceeding Criteria	Observed Concentrations		
					Minimum	Maximum	Mean
Oil and Grease	mg/L	—	13	—	ND	16	5.4
Total Coliform	MPN/100ml	—	1	—	ND	ND	ND
Fecal Coliform	MPN/100ml	—	1	—	ND	ND	ND
Hardness	mg/L	—	6	—	54	1800	487
Salinity	ppt	—	2	—	26.5	33.5	30
Total Suspended Solids	mg/L	—	2	—	89	120	105
Total Phosphorus	mg/L	—	13	—	0.18	2.9	1.0
TKN	mg/L	—	8	—	0.18	6.4	2.3
Total Arsenic	μg/L	—	7	—	ND	ND	ND
Dissolved Arsenic	μg/L	69	5	0	ND	ND	ND
Total Cadmium	μg/L	—	7	—	ND	ND	ND
Dissolved Cadmium	μg/L	42	5	0	ND	ND	ND
Total Copper	μg/L	—	7	—	ND	30	10
Dissolved Copper	μg/L	4.8	5	4	ND	13	10
Total Lead	μg/L	—	7	—	ND	ND	ND
Dissolved Lead	μg/L	210	5	0	ND	ND	ND
Total Mercury	μg/L	—	7	—	ND	ND	ND
Dissolved Mercury	μg/L	—	5	—	ND	ND	ND
Total Nickel	μg/L	—	7	—	ND	13	1.9
Dissolved Nickel	μg/L	74	5	0	ND	ND	ND
Total Selenium	μg/L	—	7	—	ND	ND	ND
Total Silver	μg/L	—	7	—	ND	ND	ND
Total Zinc	μg/L	—	8	—	0.015	123	49
Dissolved Zinc	μg/L	90	5	4	ND	13	10
Naphthalene [b]	μg/L	—	6	—	ND	ND	ND
Aldrin	μg/L	1.3	5	0	ND	ND	ND
Chlordane	μg/L	0.09	5	0	ND	ND	ND
Dieldrin	μg/L	0.71	5	0	ND	ND	ND
Endrin	μg/L	0.037	5	0	ND	ND	ND
Toxaphene	μg/L	0.21	5	0	ND	ND	ND
Heptachlor	μg/L	0.053	5	0	ND	ND	ND
Heptachlor Epoxide	μg/L	0.053	5	0	ND	ND	ND
O,P'-DDT	μg/L	—	5	—	ND	ND	ND
P,P'-DDT	μg/L	0.13	5	0	ND	ND	ND
PCB-1016 [c]	μg/L	0.03	5	0	ND	ND	ND
PCB-1221 [c]	μg/L	0.03	5	0	ND	ND	ND
PCB-1232 [c]	μg/L	0.03	5	0	ND	ND	ND
PCB-1242 [c]	μg/L	0.03	5	0	ND	ND	ND
PCB-1248 [c]	μg/L	0.03	5	0	ND	ND	ND

Table 33 (Continued)

SELECTED WATER QUALITY CONSTITUENTS IN BALLONA CHANNEL DURING WET-WEATHER

Constituent	Units	Acute CTR Criteria [a]	Total Number of Samples	Number of Samples Exceeding Criteria	Observed Concentrations		
					Minimum	Maximum	Mean
PCB-1254 [c]	µg/L	0.03	5	0	ND	ND	ND
PCB-1260 [c]	mg/L	0.03	5	0	ND	ND	ND

— = No Criteria *CTR = California Toxics Rule* *NA = Not Analyzed*
ND = Not Detected *mg/l = micrograms per liter* *mg/l = milligrams per liter*
ppt = parts per thousand
MPN/100 ml = Most Probable Number per 100 milliliters

* *"Selected" water quality constituents represent thos water quality constituents most relevant to the analysis and discussion presented in this section. The data for all constituents sampled is contained in Volume I, Section 3, Water Resources Technical Report (Appendix F-1).*

[a] *For waters in which salinity is equal to or greater than 10 ppt and 95 percent or more of the time, the applicable criteria are the saltwater criteria.*

[b] *CTR criteria are for the protection of human health due to the consumption of aquatic organisms living in waters with carcinogenic compounds.*

[c] *CTR criteria are the chronic saltwater criteria for the protection of aquatic life. The CTR does not designate specific saltwater acute criteria for these constituents.*

Final CTR Criteria = May 18, 2000. Federal Register Volume 65, No. 97, 40 CFR Part 131, Water Quality Standards, Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California.
Aquatic Bioassay Consulting Laboratory, September 15, 1997. The Marine Environment of Marina del Rey Harbor, July 1996-June 1997.
Camp Dresser & McKee Inc., August 14, 1996. Ballona Creek Water and Sediment Quality Sediment Quality Report, 1995/1996, Wet Weather Season, Playa Vista, California.
Camp Dresser & McKee Inc., October 1998. Playa Vista Area A and Area B Wetlands Surface Water and Sediment Monitoring Report.
Chambers Group, Inc., March 1993. Comparison of the Re-establishment of Tidal Flow in the Ballona Wetlands Through the Ballona Channel or Through the Marina Del Rey Entrance Channel.
Woodward-Clyde Consultants, November 1990. Final Technical Appendix to the Master EIR. Table 5-7.

Source: Camp Dresser & McKee Inc.

the 303(d) program for the waterbodies of concern, as described in Subsection 3.1.1.4. All tables of existing data provided in Subsection 2.2 contain similarly selected constituents to help focus the discussion to those constituents of concern for each waterbody. Complete lists of the chemical constituents analyzed for the Ballona Channel are provided in Volume I, Section 3, of the Water Resources Technical Report (Appendix F-1).

Constituent levels in the saltwater portion of the Channel were comparable to concentrations in Santa Monica Bay and typical open-ocean concentrations for Southern California. Salinity measurements during both dry-weather and wet-weather indicate mean concentrations of 30 parts per thousand, and according to the CTR, saltwater criteria should be used for waters in which salinity is equal to or greater than 10 parts per thousand. Therefore, saltwater criteria were used to compare both wet and dry-weather measurements in the Ballona Channel.

During dry-weather sampling, the overall average dissolved oxygen and oil and grease concentrations were within the typical ocean range. Ammonia and phosphorus in the saltwater portion of the Channel were above the typical open-ocean ranges for these compounds. Pesticides and PCBs were not detected above laboratory detection limits. Dissolved copper, dissolved selenium, and dissolved zinc were detected above the chronic CTR water quality criteria during the dry-weather sampling period. Chronic CTR criteria were used for dry-weather flows because dry-weather frequently occurs for greater than 4 days, the averaging period to which the chronic CTR apply.

During wet-weather, dissolved copper and dissolved zinc were detected at levels exceeding acute CTR criteria. The acute CTR criteria were used for comparison to wet-weather due to the infrequent nature of storm events in southern California and the fact that most storm events last for less than 4 days, which is the averaging period for which chronic CTR criteria apply.

Sediment in the saltwater portion of the Ballona Channel was sampled by URSGWC in 1990,[165] Chambers/Soule in 1992,[166] ABCL in 1996/1997,[167] and CDM in 1996-1998. Constituents that exceeded guidance values (benchmarks, but not standards) are summarized in

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[165] *Woodward-Clyde Consultants," Water Quality Impacts of the Proposed Playa Vista Development," November 1990.*

[166] *Chambers Group, Inc., Comparison of the Re-Establishment of Tidal Flow in the Ballona Wetlands Through the Ballona Channel or Through the Marina del Rey Entrance Channel. March 1993.*

[167] *Aquatic Bioassay and Consulting Laboratories, Inc. (ABCL), The Marine Environment of Marina del Rey Harbor July 1996-June 1997, September 15, 1997.*

Table 34 on page 422.[168] The term "benchmark" is used as an all-inclusive phrase to represent the applicable regulatory water quality standards and objectives, as well as from non-regulatory water quality objectives and guidelines. Suggested sediment criteria or benchmarks do not exist for nutrients and oil and grease. Oil and grease analytical results indicate highly variable levels of these constituents ranging from non-detect to 27,800 ppm. Total xylenes, lead, manganese, nickel, chlordane, p,p'-DDT, and p,p'-DDD were detected above probable effects level (PEL) guidance values. PEL is a non-regulatory guidance value, a benchmark for descriptive purposes, that represents the concentration of a compound above which adverse effects in organisms are frequently expected as observed during toxicity effects studies. These values are from reference tables compiled by the Coastal Protection & Restoration Division of the National Oceanic and Atmospheric Administration (NOAA).[169, 170] In the absence of California-established guidance criteria for sediments, these guidance values have been utilized as benchmarks for comparative purposes.

2.2.1.3 Ballona Wetlands

The Ballona Wetlands (the "Wetlands") receive urban runoff infrequently from the adjacent Playa Vista First Phase Project and the Proposed Project sites via the Freshwater Marsh. Freshwater reaches the Ballona Wetlands directly through precipitation and indirectly from discharges associated with land uses surrounding the Wetlands, including developments on the Westchester and Playa del Rey Bluffs and the Southern California Gas Company (SCGC) facility; runoff from Playa del Rey in the vicinity of Culver Boulevard, and from Culver Boulevard as it traverses the Wetlands; occasional overflows from the Pershing Drive Storm Drain; and infrequent overflows from the Freshwater Marsh during storm events greater than a 1-year design storm event. A design feature of the Freshwater Marsh also allows the flexibility to release additional freshwater to the Ballona Wetlands through a gated valve should it be necessary in conjunction with any future restoration of the salt marsh.

Dry-weather freshwater runoff into the Ballona Wetlands originates from off-site areas and results from such activities as excess and misapplied landscape irrigation onto pavement; car washing; street, driveway, and sidewalk cleaning; and emerging shallow groundwaters (e.g.,

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[168] *Camp Dresser & McKee Inc., Ballona Creek Salinity Monitoring and Water Quality Sampling Results, August 14, 1996, and Playa Vista Area A and Area B Wetlands Surface Water and Sediment Monitoring Report – Draft, October 27, 1998.*

[169] *Buchman, M. F., NOAA Screening Quick Reference Tables, NOAA HAZMAT Report 99-1, Seattle, WA, Coastal Protection and Restoration Division, National Oceanic and Atmospheric Administration, 1999, 12 pages.*

[170] *These reference tables are commonly referred to as the Screening Quick Reference Tables (SQuiRTs). The SQuiRTs include multiple screening values for sediment to reflect the range of possible adverse biological effects.*

Table 34

SELECTED* SEDIMENT QUALITY CONSTITUENTS IN BALLONA CHANNEL

Constituent	Units	NOAA Screening Quick Reference Table (SquiRT) Marine Sediment PELs	Total Number of Samples	Number of Samples Above Guidance Values	Observed Concentrations		
					Minimum	Maximum	Mean
Oil and Grease	mg/kg	—	11	—	ND	27,800	3,609
Tributyltin	mg/kg	—	7	—	ND	0.63	0.24
Hardness as $CaCO_3$	mg/kg	—	1	—	2,200	2,200	2,200
Total Hardness	mg/kg	—	1	—	33,000	33,000	33,000
Total Phosphorus	mg/kg	—	6	—	1.5	400	96
TKN	mg/kg	—	3	—	160	1100	504
Salinity	mg/kg	—	2	—	8,800	15,500	12,150
Total Xylenes	mg/kg	4	6	2	ND	33	9
Arsenic	mg/kg	41.6	11	0	ND	6.95	3.4
Cadmium	mg/kg	4.21	11	0	ND	1.58	0.55
Copper	mg/kg	108.2	11	0	8.1	42.3	25
Lead	mg/kg	112.18	11	3	ND	161	56
Manganese	mg/kg	260	7	1	ND	433	178
Mercury	mg/kg	0.696	11	0	ND	0.17	0.06
Nickel	mg/kg	42.8	11	1	ND	66.9	18
Selenium	mg/kg	1	6	0	ND	0.33	0.1
Silver	mg/kg	1.77	6	0	ND	0.663	0.11
Zinc	mg/kg	271	11	0	13	202	107
Aldrin	µg/kg	9.5	6	0	ND	ND	ND
Chlordane	µg/kg	4.76	7	4	ND	210	73
Dieldrin	µg/kg	4.3	6	0	ND	ND	ND
Endrin	µg/kg	—	6	—	ND	ND	ND
Toxaphene	µg/kg	—	6	—	ND	ND	ND
Heptachlor	µg/kg	0.3	6	0	ND	ND	ND
Heptachlor Epoxide	µg/kg	—	7	—	ND	ND	ND
O,P'-DDT	µg/kg	—	4	0	ND	ND	ND
P,P'-DDT	µg/kg	4.77	8	4	ND	160	39
P,P'-DDD	µg/kg	7.81	11	3	ND	190	34
Total DDT	µg/kg	51.7	1	0	17.8	17.8	18
PCB-1016	µg/kg	188.79	6	0	ND	ND	ND
PCB-1221	µg/kg	188.79	6	0	ND	ND	ND
PCB-1232	µg/kg	188.79	6	0	ND	ND	ND
PCB-1242	µg/kg	188.79	6	0	ND	ND	ND
PCB-1248	µg/kg	188.79	6	0	ND	ND	ND

Table 34

SELECTED* SEDIMENT QUALITY CONSTITUENTS IN BALLONA CHANNEL

Constituent	Units	NOAA Screening Quick Reference Table (SquiRT) Marine Sediment PELs	Total Number of Samples	Number of Samples Above Guidance Values	Observed Concentrations		
					Minimum	Maximum	Mean
PCB-1254	µg/kg	188.79	10	0	ND	20	2
PCB-1260	µg/kg	188.79	6	0	ND	ND	ND

— = No Guidance Value *mg/kg = micrograms per kilogram* *PEL=- Probable Effects Level*
NA = Not Analyzed *mg/kg = milligrams per kilogram* *ND = Not Detected*
SW = Saltwater
NOAA SQuiRT = National Oceanic and Atmospheric Administration Screening Quick Reference Tables

** "Selected" water quality constituents represent those water quality constituents most relevant to the analysis and discussion presented in this section. The data for all constituents sampled is contained in Volume I, Section 3, Water Resources Technical Report (Appendix F-1).*

Aquatic Bioassay Consulting Laboratory, September 15, 1997. The Marine Environment of Marina del Rey Harbor July 1996 – June 1997.
Buchman, M. F., 1999. NOAA Screening Quick Reference Tables, NOAA HAZMAT Report 99-1, Seattle, WA, Coastal Protection and Restoration Division, National Oceanic and Atmospheric Administration, 12 pages.
Camp Dresser & McKee Inc., August 14, 1996. Ballona Creek Water and Sediment Quality Sediment Quality Report, 1995/1996, Wet Weather Season, Playa Vista, California.
Camp Dresser & McKee Inc., October 1998. Playa Vista Area A and Area B Wetlands Surface Water and Sediment Monitoring Report.
Chambers Group, Inc., March 1993. Comparison of the Re-establishment of Tidal Flow in the Ballona Wetlands Through the Ballona Channel or Through the Marina Del Rey Entrance Channel.
Woodward-Clyde Consultants, November 1990. Final Technical Appendix to the Master EIR. Table 5-7.

Source: Camp Dresser & McKee Inc.

leakage of shallow groundwater into storm drain pipes). Other potential sources include accidental sewer overflows and illegal industrial and commercial off-site discharges. Limited tidal exchange between the Ballona Channel and the Ballona Wetlands could bring these sources into the Wetlands from the Channel.

These limited tidal exchanges also provide another source of surface water to the Wetlands. During and following storm events, water in the Wetlands is primarily dominated by wet-weather runoff, which is temporarily detained within the Wetlands, for a period depending on the height of stormwater flows within Ballona Channel. In smaller storm events the detention times could be quite low depending on tide levels.

Runoff pollutants are removed by naturally occurring processes (wetland function) as runoff passes through the Ballona Wetlands. Due to its location, the Ballona Wetlands function as a runoff detention basin that supports plant and animal life. In natural wetland systems, processes such as sedimentation, filtration, biodegradation, and plant uptake typically remove particulate and organic matter. However, the flow pathways in much of the Wetlands are channelized and therefore, for many smaller storms, the detention times and resulting treatment rates are likely not as large as would be expected in wetlands specifically constructed or managed to maximize detention times. Under dry-weather conditions, detention times are likely more significant, although difficult to estimate.

Table 35, Table 36, and Table 37 on pages 425 through 429 list selected water and sediment quality constituents in the Ballona Wetlands. All sample locations are shown on Figure 3-1 in Volume I, Section 3, of the Water Resources Technical Report (Appendix F-1). The water quality in the Ballona Wetlands had salinity concentrations similar to the Ballona Channel because the Channel and Wetlands are tidally connected (via flapgates).

Comparing wet- and dry-weather average concentrations in the Ballona Wetlands to those of the Ballona Channel, the dry-weather Ballona Wetlands concentrations were higher for total and dissolved arsenic and nickel, and the dry-weather Ballona Channel concentrations were higher for total and dissolved copper and zinc. Concentrations of total lead and selenium were higher in the Ballona Channel during dry-weather, but were higher in Ballona Wetlands during wet-weather. All other metals concentrations were similar in magnitude or were not detected. Wet-weather concentrations of dissolved copper exceeded acute CTR criteria in the sample from the effluent of the Ballona Wetlands to the Ballona Channel. During dry-weather, dissolved arsenic, copper, nickel, selenium, and alpha-BHC were higher than chronic CTR criteria. The dry-weather exceedances were in various locations throughout the Ballona Wetlands and were not specific to a particular sampling location or period. All data used for this analysis are provided in the Water Resources Technical Report (Appendix F-1).

Table 35

SELECTED* WATER QUALITY CONSTITUENTS IN BALLONA WETLANDS DURING DRY-WEATHER

Constituent	Units	Chronic CTR Criteria [a]	Total Number of Samples	Number of Samples Exceeding Criteria	Observed Concentrations		
					Minimum	Maximum	Mean
Oil & Grease	µg/L	—	5	—	ND	0.62	0.349
Total Coliform	MPN/100m	—	5	—	ND	ND	ND
Fecal Coliform	MPN/100m	—	5	—	ND	ND	ND
Hardness	mg/L	—	7	—	140	14,000	5,187
TKN	mg/L	—	6	—	1.1	3.4	2.53
Total Phosphorus	mg/L	—	6	—	0.044	1.6	0.53
Total Suspended Solids	mg/L	—	1	—	16	16	16
Salinity	ppt	—	5	—	31	79	42.8
Dissolved Arsenic	µg/L	36	8	1	ND	66	15.72
Total Arsenic	µg/L	—	7	—	2.1	59	15.18
Dissolved Cadmium	µg/L	9.3	8	0	0.1	0.11	0.04
Total Cadmium	µg/L	—	7	—	ND	0.49	0.11
Dissolved Copper	µg/L	3.1	8	10	5	20	9.02
Total Copper	µg/L	—	7	—	22.3	50.6	18.2
Dissolved Lead	µg/L	8.1	8	1	ND	2.91	0.57
Total Lead	µg/L	—	7	—	2.01	12	3.51
Dissolved Mercury	µg/L	—	8	—	ND	ND	ND
Total Mercury	µg/L	—	7	—	ND	ND	ND
Dissolved Nickel	µg/L	8.2	8	2	2.27	9	4.0
Total Nickel	µg/L	—	7	—	3.69	13	4.4
Dissolved Selenium	µg/L	71	8	1	ND	270	48.64
Total Selenium	µg/L	—	7	—	6.59	260	58.01
Dissolved Silver	µg/L	—	8	—	ND	0.12	0.02
Total Silver	µg/L	—	7	—	ND	0.31	0.04
Dissolved Zinc	µg/L	81	8	0	14	54	29.51
Total Zinc	µg/L	—	7	—	11	72.9	28.66
Acenaphthene [b]	µg/L	2700	4	0	ND	ND	ND
Acenaphthylene [b]	µg/L	—	4	—	ND	ND	ND
Anthracene [b]	µg/L	110000	4	0	ND	ND	ND
Benzo(a)anthracene [b]	µg/L	0.049	4	0	ND	ND	ND
Benzo(a)pyrene [b]	µg/L	0.049	4	0	ND	ND	ND
Benzo(b)fluoranthene [b]	µg/L	0.049	4	0	ND	ND	ND
Benzo(g,h,i)perylene [b]	µg/L	—	4	—	ND	ND	ND
Benzo(k)fluoranthene [b]	µg/L	0.049	4	0	ND	ND	ND
Chrysene [b]	µg/L	0.049	4	0	ND	ND	ND
Dibenzo(a,h)anthracene [b]	µg/L	0.049	4	0	ND	ND	ND
Fluoranthene [b]	µg/L	370	4	0	ND	ND	ND
Fluorene [b]	µg/L	14000	4	0	ND	ND	ND
Naphthalene [b]	µg/L	—	4	—	ND	ND	ND
Phenanthrene [b]	µg/L	—	4	—	ND	ND	ND
Pyrene [b]	µg/L	11000	4	0	ND	ND	ND
4,4'-DDT	µg/L	0.001	4	0	ND	ND	ND
Aldrin [c]	µg/L	1.3	4	0	ND	ND	ND
alpha-BHC [b]	µg/L	0.013	4	2	ND	0.045	0.02
Chlordane	µg/L	0.004	4	0	ND	ND	ND

Table 35 (Continued)

SELECTED WATER QUALITY CONSTITUENTS IN BALLONA WETLANDS DURING DRY-WEATHER

Constituent	Units	Chronic CTR Criteria [a]	Total Number of Samples	Number of Samples Exceeding Criteria	Observed Concentrations		
					Minimum	Maximum	Mean
Dieldrin	µg/L	0.0019	4	0	ND	ND	ND
Endosulfan I	µg/L	—	4	—	ND	ND	ND
Endosulfan II	µg/L	—	4	—	ND	ND	ND
Endrin	µg/L	0.0023	4	0	ND	ND	ND
Heptachlor Epoxide	µg/L	0.0036	4	0	ND	ND	ND
Heptachlor	µg/L	0.0036	4	0	ND	ND	ND
Aroclor-1016	µg/L	0.03	4	0	ND	ND	ND
Aroclor-1221	µg/L	0.03	4	0	ND	ND	ND
Aroclor-1232	µg/L	0.03	4	0	ND	ND	ND
Aroclor-1242	µg/L	0.03	4	0	ND	ND	ND
Aroclor-1248	µg/L	0.03	4	0	ND	ND	ND
Aroclor-1254	µg/L	0.03	4	0	ND	ND	ND
Aroclor-1260	µg/L	0.03	4	0	ND	ND	ND
Chloropyrifos	µg/L	—	4	—	ND	ND	ND

— = No Criteria *CTR = California Toxics Rule* *µg/L = micrograms per liter*
NA = Not Analyzed *N/A = Not Applicable* *mg/L = milligrams per liter*
ND = Not Detected *ppt = parts per thousand*
MPN/100 ml = Most Probable Number per 100 milliliters

[a] *For waters in which salinity is equal to or greater than 10 ppt and 95 percent or more of the time, the applicable criteria are the saltwater criteria.*
[b] *CTR Criteria are from human health organisms only criteria.*
[c] *CTR does not designate specific saltwater chronic criteria for these constituents.*

Final CTR Criteria = May 18, 2000. Federal Register Volume 65, No. 97, 40 CFR Part 131, Water Quality Standards, Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California.
Woodward-Clyde Consultants, November 1990. Final Technical Appendix to the Master EIR. Table 5-2.
Camp Dresser & McKee Inc., October 1998. Playa Vista Area A and Area B Wetlands Surface Water and Sediment Monitoring Report.
GeoSyntec Consultants, 2000. Data.

Source: Camp Dresser & McKee Inc.

Table 36

SELECTED* WATER QUALITY CONSTITUENTS IN BALLONA WETLANDS DURING WET-WEATHER

Constituent	Units	CTR Acute Criteria [a]	Total Number of Samples	Number of Samples Exceeding Criteria	Observed Concentrations		
					Minimum	Maximum	Mean
Total Hardness	mg/L	—	2	—	346	1,980	1,163
Total Suspended Solids	mg/L	—	2	—	73	187	130
Dissolved Arsenic	µg/L	69	2	0	3.02	6.79	4.905
Total Arsenic	µg/L	—	2	—	4.73	7.06	5.895
Dissolved Copper	µg/L	4.8	2	1	3.25	7.19	5.22
Total Copper	mg/L	—	2	—	13.5	24.6	19.05
Total Lead	mg/L	—	2	—	12.9	17.6	15.25
Dissolved Nickel	mg/L	74	2	0	2.23	2.74	2.485
Total Nickel	mg/L	—	2	—	4.27	9.94	7.105
Dissolved Selenium	mg/L	290	2	0	4.78	23.3	14.04
Total Selenium	mg/L	—	2	—	2.43	21	11.715
Dissolved Zinc	mg/L	90	2	0	14.6	19.9	17.25
Total Zinc	mg/L	—	2	—	29.2	131	80.1

— = No Criteria *CTR = California Toxics Rule* *ppt = parts per thousand*
NA = Not Analyzed *µg/L = micrograms per liter* *mg/L = milligrams per liter*
ND = Not Detected
MPN/100 ml = Most Probable Number per 100 milliliters

* *"Selected" water quality constituents represent those water quality constituents most relevant to the analysis and discussion presented in this section. The data for all constituents sampled is contained in Volume I, Section 3, Water Resources Technical Report (Appendix F-1).*

[a] *For waters in which salinity is equal to or greater than 10 ppt and 95 percent or more of the time, the applicable criteria are the saltwater criteria.*

Final CTR Criteria = May 18, 2000. Federal Register Volume 65, No. 97, 40 CFR Part 131, Water Quality Standards, Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California.
GeoSyntec Consultants, 2000. Data.

Source: Camp Dresser & McKee Inc.

Table 37

SELECTED* SEDIMENT QUALITY CONSTITUENTS IN BALLONA WETLANDS

Constituent	Units	NOAA SQuiRT Marine Sediment PELs	Total Number of Samples	Number of Samples Above Guidance Values	Observed Concentrations		
					Minimum	Maximum	Mean
Oil and Grease	mg/kg	—	3	—	62	2100	1081
Salinity	mg/kg	—	5	—	ND	17000	8960
TKN	mg/kg	—	5	—	190	680	520
Total Phosphorus	mg/kg	—	5	—	240	380	280
Acenaphthene	mg/kg	88.9	2	0	ND	ND	ND
Acenaphthylene	mg/kg	127.87	2	0	ND	ND	ND
Anthracene	mg/kg	245	2	0	ND	ND	ND
Benz(a)anthracene	mg/kg	692.53	2	0	ND	ND	ND
Benzo(a)pyrene	mg/kg	763.22	2	0	ND	ND	ND
Benzo(b)fluoranthene [a]	mg/kg	1800	2	0	ND	ND	ND
Benzo(g,h,i)perylene	mg/kg	670	2	0	ND	ND	ND
Benzo(k)fluoranthene [a]	mg/kg	1800	2	0	ND	ND	ND
Chrysene	mg/kg	845.98	2	0	ND	ND	ND
Dibenz(a,h)anthracene	mg/kg	134.61	2	0	ND	ND	ND
Fluoranthene	mg/kg	1493.54	2	0	ND	ND	ND
Fluorene	mg/kg	144.35	2	0	ND	ND	ND
Indeno(1,2,3-c,d)pyrene [a]	mg/kg	600	2	0	ND	ND	ND
Naphthalene	mg/kg	390.64	2	0	ND	ND	ND
Phenanthrene	mg/kg	543.53	2	0	ND	ND	ND
Pyrene	mg/kg	1397.6	2	0	ND	ND	ND
Arsenic	mg/kg	8.2	10	0	ND	4.21	2.9
Barium [a]	mg/kg	48	3	2	47.3	147	112.4
Cadmium	mg/kg	1.2	10	0	ND	2.24	1.0
Copper	mg/kg	34	10	0	14.1	63	29.4
Lead	mg/kg	46.7	10	2	3.2	258	68
Mercury	mg/kg	0.15	10	0	ND	0.184	0.06
Nickel	mg/kg	20.9	10	0	7	29	18.3
Selenium [a]	mg/kg	—	10	—	ND	ND	ND
Silver	mg/kg	1	10	0	ND	1.21	0.28
Zinc	mg/kg	150	10	2	40	359	145
Aldrin [a]	µg/kg	9.5	2	0	ND	ND	ND
Dieldrin	µg/kg	4.3	2	0	ND	ND	ND
Endosulfan I	µg/kg	—	2	—	ND	ND	ND
Endosulfan II	µg/kg	—	2	—	ND	ND	ND
Endrin	µg/kg	—	2	—	ND	ND	ND
Heptachlor Epoxide	µg/kg	—	2	—	ND	ND	ND
Heptachlor [a]	µg/kg	0.3	2	0	ND	ND	ND
PCB-1016	µg/kg	188.79	2	0	ND	ND	ND
PCB-1221	µg/kg	188.79	2	0	ND	ND	ND
PCB-1232	µg/kg	188.79	2	0	ND	ND	ND

Table 37 (Continued)

SELECTED SEDIMENT QUALITY CONSTITUENTS IN BALLONA WETLANDS

Constituent	Units	NOAA SQuiRT Marine Sediment PELs	Total Number of Samples	Number of Samples Above Guidance Values	Observed Concentrations		
					Minimum	Maximum	Mean
PCB-1242	µg/kg	188.79	2	0	ND	ND	ND
PCB-1248	µg/kg	188.79	2	0	ND	ND	ND
PCB-1262	µg/kg	188.79	2	0	ND	ND	ND
Toxaphene	µg/kg	—	2	—	ND	ND	ND
P,P'-DDT	µg/kg	4.77	3	1	ND	6.9	2.3
PCB-1254	µg/kg	188.79	3	0	ND	ND	ND
PCB-1260	µg/kg	188.79	3	0	ND	92	31
Chlordane	µg/kg	4.79	3	1	ND	84	28

— = No Guidance Value *µg/kg = micrograms per kilogram* *NA = Not Analyzed*
mg/kg = milligrams per kilogram *ND = Not Detected* *SW = Saltwater*
PEL = Probable Effects Level
NOAA SQuiRT = National Oceanic and Atmospheric Administration Screening Quick Reference Tables.

* *"Selected" water quality constituents represent those water quality constituents most relevant to the analysis and discussion presented in this section. The data for all constituents sampled is contained in Volume I, Section 3, Water Resources Technical Report (Appendix F-1).*

[a] *Apparent Effects Threshold (AET) is listed instead of PEL because PEL is not listed for this constituent.*

Woodward-Clyde Consultants, November 1990. Final Technical Appendix to the Master EIR.
Buchman, M.F., 1999. NOAA Screening Quick Reference Tables, NOAA HAZMAT Report 99-1, Seattle, WA, Coastal Protection and Restoration Division, National Oceanic and Atmospheric Administration, 12 pages. 1990, November. Woodward-Clyde Consultants, Final Technical Appendix to the Master EIR. Table 5-2.
Camp Dresser & McKee Inc., October 1998. Playa Vista Area A and Area B Wetlands Surface Water and Sediment Monitoring Report.
GeoSyntec Consultants, 2000. Data.

Source: Camp Dresser & McKee Inc.

Sediment in the drainage channels of the Ballona Wetlands was sampled in 1990, 1998, and 2000. Barium, lead, zinc, p,p'-DDT, and chlordane were detected above PEL guidance values. Mercury was detected in sediment but not in surface water samples. In addition, selenium was detected in surface water samples but not in sediment samples. Overall, the existing water and sediment quality data in the Ballona Wetlands are relatively free of contamination from potentially toxic organic contaminants (pesticides, PCBs, VOCs, SVOCs), but contain certain metals detected at levels above benchmark values in both the water and sediment. Exceedances were not consistent for all samples. Sampling results suggest past and continuing influence of urban runoff, as evidenced by the detection of lead and zinc concentrations in excess of sediment benchmarks.

2.2.1.4 Freshwater Marsh

The Freshwater Marsh receives urban runoff directly from the adjacent Playa Vista First Phase Project and the Proposed Project sites in addition to off-site properties (e.g., bluff and light industrial/residential areas north of Jefferson Boulevard). It is designed to have the capacity to process runoff from low flows up to a 1-year design storm event (at buildout) and has the flexibility to release freshwater to the Ballona Wetlands through a gated valve, should it be necessary in conjunction with any future restoration of the salt marsh. Substantial portions of the Freshwater Marsh were constructed in 2001-2002 as part of the adjacent Playa Vista First Phase Project. Only the southern portion of the Freshwater Marsh (approximately 8 acres) currently remains to be constructed.

Existing dry-weather flows within the adjacent Playa Vista First Phase Project and the Proposed Project sites are minimal due to the largely undeveloped nature of the site and the erosion control plans and BMPs implemented as part of the adjacent Playa Vista First Phase Project. There is also a minimal amount of dry-weather flow from treated groundwater dewatering from the adjacent Playa Vista First Phase Project. The quality of dry-weather runoff is influenced by the source of water, as well as, the pollutants the flow picks up as it is conveyed through the drainage system. Runoff in urban areas may contain pesticides, garden fertilizers, oil/grease, street litter, and waste.[171] Runoff pollutants in the Freshwater Marsh are removed by naturally occurring processes (such as sedimentation, filtration, biodegradation, and plant uptake, which typically remove particulate and organic matter) as runoff passes through the Marsh. The Freshwater Marsh, with its longer detention times, is expected to perform this function better than the Ballona Wetlands.

Water in the Freshwater Marsh was sampled near its inlets and outlets during its construction. Three sampling events occurred during dry-weather conditions (April 2002,[172] June 2002,[173] and April 2003[174]). As shown in Table 38 on pages 431 and 432, there were no exceedances of freshwater chronic CTR[175] criteria during dry-weather conditions in the samples

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[171] *Santa Monica Bay Project and Southern California Association of Governments, State of the Bay, Scientific Assessment, November 1988, page 3-35.*

[172] *Camp Dresser & McKee Inc., 2002. Tables reporting sampling results from April 25, 2002.*

[173] *Camp Dresser & McKee Inc., 2002. Tables reporting sampling results from June 28, 2002.*

[174] *Camp Dresser & McKee Inc., 2003. Tables reporting sampling results from April 2, 2003.*

[175] *The CTR criteria are water quality standards legally applicable to selected waters with human health or aquatic life designations, such as the Ballona Channel and the Ballona Wetlands; however, in reference to the Freshwater Wetlands System components, the CTR criteria are used as numerical water quality reference levels for comparative purposes only.*

Table 38

SELECTED* WATER QUALITY CONSTITUENTS IN FRESHWATER MARSH DURING DRY-WEATHER

Constituent	Units	Chronic CTR Criteria [a]	Total Number of Samples	Number of Samples Exceeding Criteria	Observed Concentrations		
					Minimum	Maximum	Mean
Fecal Coliforms	MPN/100 ml	—	3	—	42	8	4.67
Total Coliforms	MPN/100 ml	—	3	—	13	23	17
Total Suspended Solids	mg/l	—	46	—	ND	39	21.33
Salinity	g/l	—	46	—	ND	2	0.92
Oil and Grease	mg/l	—	46	—	ND	0.44	0.19
TKN	mg/l	—	3	—	0.37	0.72	0.59
Total Phosphorus	mg/l	—	3	—	0.15	0.64	0.41
Hardness	mg/l	—	6	—	156	800	453
Acenaphthene [b]	µg/l	2,700	3	0	ND	ND	ND
Acenaphthylene	µg/l	—	3	—	ND	ND	ND
Anthracene [b]	µg/l	110,000	3	0	ND	ND	ND
Benzo(a)anthracene [b]	µg/l	0.049	3	0	ND	ND	ND
Benzo(a)pyrene [b]	µg/l	0.049	3	0	ND	ND	ND
Benzo(b)fluoranthene [b]	µg/l	0.049	3	0	ND	ND	ND
Benzo(g,h,i)perylene [b]	µg/l	—	3	—	ND	ND	ND
Benzo(k)fluoranthene [b]	µg/l	0.049	3	0	ND	ND	ND
Chrysene [b]	µg/l	0.049	3	0	ND	ND	ND
Dibenzo(a,h)anthracene [b]	µg/l	0.049	3	0	ND	ND	ND
Fluoranthene [b]	µg/l	370	3	0	ND	ND	ND
Fluorene [b]	µg/l	14,000	3	0	ND	ND	ND
Indeno(1,2,3-c.d) pyrene	µg/l	0.049	1	0	ND	ND	ND
Naphthalene	µg/l	—	1	—	ND	ND	ND
Phenanthrene	µg/l	—	3	—	ND	ND	ND
Pyrene [b]	µg/l	11,000	3	0	ND	ND	ND
Dissolved Arsenic	µg/l	150	46	0	6	8.4	7.07
Total Arsenic	µg/l	—	9	—	6.1	11	8.5
Dissolved Cadmium	µg/l	6.2	46	0	ND	0.2	0.09
Total Cadmium	µg/l	—	9	—	ND	0.2	0.13
Dissolved Copper	µg/l	29	46	0	43.2	6.7	5.03
Total Copper	µg/l	—	9	—	3.5	16	9.37
Dissolved Lead	µg/l	11	46	0	ND	2.9	0.70
Total Lead	µg/l	—	9	—	ND	1.8	0.56
Dissolved Mercury	µg/l	—	46	—	ND	ND	ND
Total Mercury	µg/l	—	9	—	ND	ND	ND
Dissolved Nickel	µg/l	170	46	0	1.9	3.8	2.88
Total Nickel	µg/l	—	9	—	2.04	5.6	3.76
Dissolved Selenium	µg/l	—	46	—	ND	ND	ND
Total Selenium	µg/l	5	9	0	ND	ND	ND
Dissolved Silver	µg/l	—	46	—	ND	ND	ND
Total Silver	µg/l	—	9	—	ND	0.2	0.02
Dissolved Zinc	µg/l	380	46	0	1.2	28	12.25
Total Zinc	µg/l	—	9	—	1.7	16	9.78
P,P'-DDT	µg/l	0.001	3	0	ND	ND	ND
Aldrin [c]	µg/l	3	3	0	ND	ND	ND
Dieldrin	µg/l	0.056	3	0	ND	ND	ND
Endosulfan I	µg/l	0.056	3	0	ND	ND	ND

Table 38 (Continued)

SELECTED WATER QUALITY CONSTITUENTS IN FRESHWATER MARSH DURING DRY-WEATHER

Constituent	Units	Chronic CTR Criteria [a]	Total Number of Samples	Number of Samples Exceeding Criteria	Observed Concentrations Minimum	Observed Concentrations Maximum	Observed Concentrations Mean
Endosulfan II	µg/l	0.056	3	0	ND	ND	ND
Endrin	µg/l	0.036	3	0	ND	ND	ND
Heptachlor Epoxide	µg/l	0.52	3	0	ND	ND	ND
Heptachlor	µg/l	0.52	3	0	ND	ND	ND
PCB-1016	µg/l	0.014	3	0	ND	ND	ND
PCB-1221	µg/l	0.014	3	0	ND	ND	ND
PCB-1232	µg/l	0.014	3	0	ND	ND	ND
PCB-1242	µg/l	0.014	3	0	ND	ND	ND
PCB-1248	µg/l	0.014	3	0	ND	ND	ND
PCB-1254	µg/l	0.014	3	0	ND	ND	ND
PCB-1260	µg/l	0.014	3	0	ND	ND	ND

— = No Criteria *CTR = California Toxics Rule* *NA = Not Analyzed*
ND = Not Detected *µg/l = micrograms per liter* *mg/l = milligrams per liter*
MPN/100 ml = Most Probable Number per 100 milliliters

Final CTR Criteria = May 18, 2000. Federal Register Volume 65, No. 97, 40 CFR Part 131, Water Quality Standards, Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California.

Camp Dresser & McKee Inc., April 25 and June 28, 2002. Freshwater Marsh Water Quality Sampling, Dry Weather, Playa Vista, California.

Camp Dresser & McKee Inc., April 2, 2003. Freshwater Marsh Water Quality Sampling, Dry Weather, Playa Vista, California.

* *"Selected" water quality constituents represent those water quality constituents most relevant to the analysis and discussion presented in this section. The data for all constituents sampled is contained in Volume I, Section 3, Water Resources Technical Report (Appendix F-1).*

[a] *CTR Criteria was calculated using the mean hardness for all freshwater dry weather samples collected in the Freshwater Marsh. Since the mean hardness was 453 mg/l (greater than the maximum set by the CTR), a hardness of 400 mg/l was used.*

[b] *CTR criteria are for the protection of human health due to the consumption of aquatic organisms living in waters with carcinogenic compounds. CTR does not designate specific freshwater chronic criteria for these constituents.*

[c] *CTR criteria shown are the freshwater acute criteria for the protection of aquatic life. CTR does not designate specific freshwater chronic criteria for these constituents.*

Source: Camp Dresser & McKee Inc.

taken during these sampling events. In Table 38, freshwater chronic CTR criteria were used for comparison because the Freshwater Marsh is not a saltwater habitat and the biology of the waterbody is dominated by freshwater aquatic life. In addition, there is a distinct separation between the Freshwater Marsh and the downstream saltwater marsh (i.e., Ballona Wetlands) in the form of the physical berm separating the two that serves as the hydrologic control mediating the exchange between them. Therefore, freshwater criteria are appropriate.

All data used for this analysis are provided in the Water Resources Technical Report (Appendix F-1).

2.2.1.5 Point Source Pollutant Loadings

The groundwater beneath the adjacent Playa Vista First Phase Project and the Proposed Project and their vicinity has been contaminated from previous industrial operations in the area and surrounding off-site locations (see Subsection 2.2.2, Groundwater Quality, below). The only continuous point source discharge within the adjacent Playa Vista First Phase Project and the Proposed Project was from the former groundwater treatment facility (GWTF) operating at the former Howard Hughes Plant Site, in the eastern portion of the adjacent Playa Vista First Phase Project. Following a 60-day start-up period, groundwater remediation began on a continuous basis in August 1994.[176] The system extracted contaminated groundwater and removed volatile organic compounds using air stripping. Treated water, which was monitored weekly to monthly for quality, was discharged to the Centinela Creek under a RWQCB NPDES permit that included limits on discharge concentrations.

In June 2000, operation of the groundwater extraction system was suspended with RWQCB approval, due to grading and construction of the adjacent Playa Vista First Phase Project, and the GWTF was temporarily decommissioned. Since September 2000, a new and more efficient groundwater treatment system, designed to treat a wider range of contaminants, was installed for remediation-related activities and for construction dewatering for construction of the adjacent Playa Vista First Phase Project. This facility is located on the north side of Building 2 within the adjacent Playa Vista First Phase Project, east of the Proposed Project site, and operates under NPDES Permit #CAG914001. Currently, one other temporary portable GWTF serves the adjacent Playa Vista First Phase Project. The facility is located within the western portion of the adjacent Playa Vista First Phase Project site, east of Lincoln Boulevard, and south of Jefferson Boulevard, near Runway Road. This facility is presently in operation for treatment of construction dewatering and operates under NPDES Permit #CAG994002. As construction of the adjacent Playa Vista First Phase Project progresses, additional treatment facilities will be added as deemed necessary, and with the approval of the RWQCB, for specific construction dewatering and remediation efforts. A groundwater treatment program for the adjacent Playa Vista First Phase Project and the Proposed Project will be implemented, as necessary, in accordance with RWQCB requirements in conjunction with ongoing implementation of Cleanup and Abatement Order (CAO) No. 98-125. As an alternative to

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[176] *Broten, Scott, Project Manager, SECOR International Inc., Telephone Communication, March 4, 1996.*

treatment on site and discharge of construction dewatering under an existing NPDES permit, an Industrial Waste Discharge Permit (W-502105) has been obtained from the City of Los Angeles, Bureau of Sanitation, which allows construction dewatering water to be discharged to the sanitary sewer. The existing extraction wells will be abandoned or relocated in accordance with RWQCB requirements. For a discussion of this remediation program, refer to Section IV.I, Safety/Risk of Upset, Subsection 2.2.3. Along with on- and off-site urban runoff, the discharge of treated groundwater is one of the potential water sources for the Riparian Corridor and Freshwater Marsh.

As part of the adjacent Playa Vista First Phase Project's SWPPP and Erosion Control Plan, a temporary detention basin (located south of Runway Road and west of Building 45) has been constructed in the Proposed Project site. The detention basin provides temporary storm drainage for the adjacent Playa Vista First Phase areas currently under construction that will ultimately discharge into the Riparian Corridor, as well as portions of the eastern portion of the adjacent Playa Vista First Phase Project site, which would ultimately discharge to the Central Storm Drain. The basin will be removed when construction of these areas is complete and the portion of the Riparian Corridor adjacent to the Playa Vista First Phase residential areas is constructed.

2.2.2 Groundwater Quality

The aquifer units underlying the adjacent Playa Vista First Phase Project and the Proposed Project are the Bellflower Aquitard (from near the surface to 35 feet below ground surface (bgs)), the Ballona Aquifer (approximately 35 to 50 feet bgs), and the Silverado Aquifer (from 100 to 200 feet bgs). The hydrogeology and stratigraphy of the groundwater system beneath the adjacent Playa Vista First Phase Project and the Proposed Project sites are discussed in detail in Section IV.C(1), Hydrology. This subsection describes the existing groundwater quality beneath the Proposed Project area and vicinity, including salinity levels and pollutant concentrations in the groundwater.

2.2.2.1 Salinity

Groundwater samples from monitoring wells in the Silverado Aquifer[177] (deeper aquifer) indicate high chloride concentrations and a high level of total dissolved solids (TDS) concentrations ranging from 800 to 2,000 mg/L, well above the recommended level of 1,000 mg/L for drinking water. TDS is a general measure of salinity, and these concentrations are indicative of the degradation of groundwater from seawater intrusion.

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[177] *Aquifer – a body of rock sediment that is sufficiently permeable to conduct ground water and to yield economically significant quantities of water to wells and springs.*

Groundwater quality within the shallower Ballona Aquifer system is also considered degraded as a consequence of past overproduction of shallow groundwater and/or seawater inland penetration. Based on groundwater sampling in three wells during the third quarter of 1999, the TDS concentrations within the Ballona Aquifer system underlying the adjacent Playa Vista First Phase Project and the Proposed Project ranged from 500 mg/L to 4,200 mg/L.[178, 179] These values are higher than the drinking water standards in the Basin Plan (500 mg/L), and are likely due to the proximity to the ocean.[180] Currently, no wells on or near the sites of the adjacent Playa Vista First Phase Project and the Proposed Project extract groundwater from the Ballona Aquifer for domestic uses or irrigation.

2.2.2.2 Other Constituents In Groundwater

Contamination within the adjacent Playa Vista First Phase Project and Proposed Project sites is a result of past industrial activities. A reduction in the levels of contamination within the area is a result of the ongoing soil and groundwater remediation activities. The ongoing remediation is another factor affecting groundwater quality.

The Bellflower Aquitard and Ballona and Silverado Aquifers were sampled for priority pollutants,[181] metals, volatile and extractable organic compounds, pesticides, and PCBs on several occasions between 1988 and 2000 and are currently monitored to establish concentration trends. During these events, numerous wells were sampled in the Proposed Project area. No pesticides or PCBs were detected in any samples.[182, 183] Solvent and total petroleum hydrocarbons (TPH) contamination was identified during the 1987 through 2000 groundwater sampling in the adjacent Playa Vista First Phase Project and the Proposed Project sites. As discussed in Section IV.I, Safety/Risk of Upset, there are six study areas within the Proposed Project site and three areas within the adjacent Playa Vista First Phase Project site that were identified as

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[178] *Range in numbers is due to location in relation to the Santa Monica Bay. These TDS values represent the results of the last round of sampling that tested for TDS within the First and Second Phase Projects. As of the Third Quarter 1999 sampling event, the RWQCB agreed that TDS levels from the historical sampling data were consistent, and at this time sufficient for the RWQCB, and that no further sampling was required.*

[179] *Camp Dresser & McKee Inc., "Third Quarter 1999 Groundwater Monitoring and Progress Report," November 12, 1999.*

[180] *The Ballona Creek watershed does not have a site-specific TDS standard listed in the Basin Plan. However, the Ballona Creek is designated as having a potential municipal water supply beneficial use.*

[181] *Priority Pollutants are toxic compounds for which Cal EPA establishes numeric criteria in order to define thresholds for pollutant levels in waterbodies.*

[182] *LeRoy Crandall and Associates, Groundwater Monitoring Well Installation and Sampling, Water Quality Study, Playa Vista Project, August 21, 1990, page 10.*

[183] *Camp Dresser & McKee, Inc., Second Quarter 2000 Groundwater Monitoring and Progress Report April-June 2000, July 17, 2000, Section 5.*

potential sources of impacted groundwater that could potentially affect the Proposed Project site. Two of the six areas of concern within the Proposed Project site are the former Temporary Drum Storage Area and the former Salvage Yard Area (see Figure 57 on page 684 in Section IV.I, Safety/Risk of Upset, for a map of these areas of potential environmental concern). Monitoring wells were installed in these two areas as part of the quarterly groundwater sampling network for the Proposed Project site.[184] A discussion of the findings with respect to groundwater quality can be found in Subsection 2.2.3.2.1 of Section IV.I, Safety/Risk of Upset, of this EIR.

Groundwater under the former Salvage Yard Area has been sampled quarterly since the first quarter of 1999. During the initial sampling, groundwater was analyzed for priority pollutants, including PCBs, pesticides, VOCs, TPH, and CAM 17 metals. Because PCBs and pesticides were not detected, subsequent groundwater samples collected during the second and third quarters of 1999 were analyzed for VOCs, CAM 17 metals, and TPH. Starting with the fourth quarter of 1999, groundwater samples have been collected quarterly and analyzed for VOCs and TPH. Between the first quarter of 1999 and second quarter of 2003, groundwater samples had detectable concentrations[185] of PCE (0.8 to 3.1 µg/L), TCE (2.0 to 42 µg/L), 1,1,1-TCA (0.6 to 3.2 µg/L), 1,1-DCE (0.6 to 1.5 µg/L), 1,1-DCA (0.5 to 27 µg/L), cis-1,2-DCE (0.8 to 21 µg/L), trans-1,2-DCE (0.5 to 3.9 µg/L), toluene (vinyl chloride (2.4 to 33 µg/L), and TPH-cc (220 to 690 µg/L).[186] Toluene was detected at a concentration of 2.1 µg/L in the groundwater sample collected from the deep monitoring well (Silverado Aquifer) during the fourth quarter 1999; TPH-cc was detected in this same well at a concentration of 690 µg/L during the second quarter 2000. Neither compound has been detected in this well since those times. The highest concentrations of total metals were for barium (0.11 mg/L) and zinc (29 mg/L). The highest concentrations of dissolved metals were also for barium (7 mg/L) and zinc (2 mg/L).

Groundwater beneath the former Temporary Drum Storage Area was sampled in the first quarter of 1999 through the second quarter of 2003 for VOCs. Groundwater in this area was also sampled for PCBs and pesticides in the first quarter of 1999; for TPH between the first quarter of 1999 and the third quarter of 2001; and for total/dissolved CAM 17 metals during the second and third quarters of 1999. PCBs and pesticides were not detected during the initial sampling event. The highest concentrations of total metals were for barium (0.1 mg/L) and zinc (0.01 mg/L). The highest concentrations of dissolved metals were also for barium (0.33 mg/L) and zinc (0.04 mg/L). Some sampling events only included the analysis of dissolved metals. TPH was

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[184] *Camp Dresser & McKee, Inc., "Final Groundwater Sampling and Analysis Plan, Playa Vista Site," June 30, 1999.*

[185] *In accordance with the Cleanup and Abatement Order No. 98-125, Playa Vista will investigate and, if necessary, remediate the groundwater to RWQCB-approved clean-up levels.*

[186] *Camp Dresser & McKee, Inc. Second Quarter 2003 Groundwater Monitoring and Progress Report, Section 10, Tables 9,10, and 11, August 15, 2003.*

not detected. With respect to VOCs, groundwater samples collected between March 1999 and the second quarter of 2003 had detectable concentrations of TCE (0.51 to 4.3 µg/L), 1,1-DCE (one-time detection of 0.6 µg/L in the third quarter of 1999), 1,1,1-TCA (one-time detection of 0.65 µg/L in the fourth quarter of 1999), and cis-1,2-DCE (0.64 to 7.8 µg/L).[187]

During the 2002 soil and groundwater investigation performed by CDM, groundwater monitoring wells were installed in other areas of potential environmental concern within the Proposed Project site, including the former Remote Test Site, the former Firing Range Area, and the former Aircraft Service Area. Although monitoring wells were not installed at the former Purged Fuel Storage Area, groundwater beneath this area was investigated during a soil and groundwater investigation performed by CDM in early 2002 (see Section IV.I, Safety/Risk of Upset, for results).[188]

Starting with the third quarter of 2002, groundwater beneath the former Remote Test Site, the former Firing Range Area, and the former Aircraft Service Area has been sampled quarterly and analyzed for VOCs. Groundwater samples beneath the former Remote Test Site had detectable concentrations of 1,1-DCA (5.1 to 8.3 µg/L), 1,1-DCE (6.3 to 9.6 µg/L), cis-1,2-DCE (34 to 55 µg/L), trans-1,2-DCE (1.6 to 2.3 µg/L), PCE (0.88 to 1.8 µg/L) and TCE (2.4 to 4.3 µg/L). Groundwater beneath the former Firing Range Area had detectable concentrations of 1,1-DCA (0.59 to 41 µg/L), 1,1-DCE (one-time detection of 9.7 µg/L in the third quarter 2002), cis-1,2-DCE (1.2 to 82 µg/L), trans-1,2-DCE (7.3 to 31 µg/L), PCE (0.66 to 0.69 µg/L), TCE (0.62 to 5.9 µg/L), and vinyl chloride (0.79 to 280 µg/L). Other VOCs, including benzene, toluene, ethylbenzene, and xylenes, have also been detected at least once in groundwater beneath the former Firing Range Area, but at low concentrations (i.e., less than 10 µg/L). Groundwater samples beneath the former Aircraft Service Area had detectable concentrations of 1,1-DCA (8.2 to 15 µg/L), cis-1,2-DCE (12 to 22 µg/L), trans-1,2-DCE (1.1 to 1.7 µg/L), and vinyl chloride (0.95 to 1.1 µg/L). [189]

During the 2002 soil and groundwater investigation, groundwater samples were analyzed primarily for VOCs and metals, although other constituents (i.e., PCBs and TPH-cc) were analyzed in a few selected samples.[190] Additional groundwater sampling was performed in early 2003 to supplement and refine the delineation of VOC-impacted groundwater within the

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[187] *In accordance with the Cleanup and Abatement Order No. 98-125, Playa Vista will investigate and, if necessary, remediate the groundwater to RWQCB-approved clean-up levels.*

[188] *Camp Dresser & McKee, Inc., Soil and Groundwater Investigation Report, Phase 2 Portion of the Area D Project Area, Playa Vista Site, May 15, 2002.*

[189] *Camp Dresser & McKee, Inc., Second Quarter 2003 Groundwater Monitoring and Progress Report, Section 10, Tables 9,10, and 11, August 15, 2003.*

[190] *Camp Dresser & McKee, Inc., Soil and Groundwater Investigation Report, Phase 2 Portion of the Area D Project Area, Playa Vista Site, May 15, 2002.*

Bellflower Aquitard and Ballona Aquifer.[191] Based on the data collected during the 2002 and 2003 investigations, VOCs detected most frequently and at the highest concentration in the groundwater samples were cis-1,2-DCE, 1,1-DCA, TCE, and vinyl chloride. Cis-1,2-DCE concentrations were detected as high as 280 µg/L in the upper Bellflower Aquitard; 1,1-DCA was observed at concentrations up to 68 µg/L; TCE was detected at concentrations up to 200 µg/L; and vinyl chloride at concentrations up to 6 µg/L. In the lower Bellflower Aquitard and Ballona Aquifer, cis-1,2-DCE was detected at concentrations up to 930 µg/L; 1,1-DCA at concentrations of 70 µg/L; and vinyl chloride was detected at up to 66 µg/L. The highest cis-1,2-DCE and 1,1-DCA concentrations were detected in the Ballona Aquifer sample collected down gradient of the former Firing Range Area and the eastern portion of the former Salvage Yard Area. The highest vinyl chloride concentration was detected in the sample collected from the well located in the former Firing Range Area.

Except for one sample, all metals concentrations in the groundwater samples were below California's drinking water standard, which demonstrates that groundwater within the Proposed Project site has not been impacted by metals. Arsenic was detected in one sample, located in the former Salvage Yard Area, at a concentration of 52 µg/L, which is just slightly higher than the drinking water standard of 50 µg/L. Because this concentration is just slightly higher than the drinking water standard, which is very conservative, the detection was not considered to be of significance or environmental concern.

Since March 1999, wells located near Building 11 (within the adjacent Playa Vista First Phase Project area) have been gauged and purged of light non-aqueous phase liquid (LNAPL – a fuel hydrocarbon). At most, 2 feet of LNAPL was observed in the wells, which were manually removed from the wells on a monthly basis until July 1999, when no measurable LNAPL thickness was observed in the wells.[192] An LNAPL sheen has been observed in a few wells since November 1999; however, during the second quarter of 2003, no sheen was observed in the monitored wells.[193]

Prior to its decommissioning in June 2000, the GWTF discharged treated water to Centinela Creek under a RWQCB NPDES permit. The NPDES permit placed strict limits on the concentrations of pollutants that were acceptable for discharge and required the treated water to be monitored weekly to monthly for quality. Table 39 on pages 439 and 440 summarizes the

[191] *Camp Dresser & McKee, Inc., Soil and Groundwater Investigation Report – Phase II Addendum, Phase 2 Portion of Area D Project Area, Playa Vista Site, August 6, 2003.*

[192] *Camp Dresser & McKee, Inc., First Quarter 2000 Groundwater Monitoring and Progress Report, April 14, 2000, Section 5.*

[193] *Camp Dresser & McKee, Inc., Second Quarter 2003 Groundwater Monitoring and Progress Report, August 15, 2003.*

Table 39

GROUNDWATER REMEDIATION FACILITY DISCHARGE WATER QUALITY AND CONSTRUCTION DEWATERING DISCHARGE WATER QUALITY

			Remediation		Construction Dewatering	
Parameter	Units	EPA Method	NPDES Permit Limitation Monthly/Daily [a]	System Effluent Concentration [b]	NPDES Permit Limitation Monthly/Daily [c]	System Effluent Concentration [d]
pH	PH	150.1	6.0 – 9.0	7.05 – 7.68	6.0 – 9.0	7.37 – 8.24
Oil and Grease	mg/L	413.2	NA	ND<2.0	10/15	ND<1.0
Temperature	oF	Field	<100	73.8	<100	NA
Turbidity	NTU	180.1	50/150	ND<1.0	50/150	ND<1.0-3.5
Total Suspended Solids	mg/L	160.2	50/150	ND<10	50/150	ND<10 - 11
BOD5 20oC	mg/L	405.1	20/30	ND<2.0	20/30	ND<2.0
Sulfides (Total)	mg/L	376.2	1.0	ND< 0.1	1.0	ND<0.1
MBAS	mg/L	425.1	0.5	ND<0.10 – 0.22	0.5	0.27 – 1.1 [e]
Settleable Solids	mL/L	160.5	0.1/0.3	ND<0.1	0.1/0.3	ND<0.1
Residual Chlorine	mg/L	330.5	NA	NA	0.1	ND<0.1
Benzene	µg/L	8020	1.0	ND<0.5	1.0	ND<0.5
Toluene	µg/L	8020	150	ND<0.5	150	ND<0.5 – 0.77
Ethylbenzene	µg/L	8020	700	ND<0.5	700	ND<0.5
Total Xylenes	µg/L	8020	1,750	ND<2.0	1,750	ND<2.0 – 3.5
Ethylene Dibromide	µg/L	504	0.05	ND<0.02	0.05	ND<0.02
Carbon Tetrachloride	µg/L	8260B	NA	ND<0.5	0.5	ND<0.05
Antimony	µg/L	6020	NA	ND<2.0	NA	ND<2.0 – 3.5
Arsenic	µg/L	6020	NA	4.8	50	ND<1.0 – 52 [e]
Cadmium	µg/L	6020	NA	ND<1.0	10	ND<1.0
Chromium	µg/L	6020	NA	ND<1.0	50	ND<1.0 – 5.0
Chromium +6	µg/L	7196	NA	NA	NA	ND<8
Copper	µg/L	6020	NA	3.3	1000	ND<1.0 – 7.3
Lead	µg/L	7421	50	ND<1.0	50	ND<2.0
Mercury	µg/L	6020	NA	ND<0.2	2.0	ND<0.2
Nickel	µg/L	6020	NA	5.7	NA	ND<1.0 – 12
Selenium	µg/L	6020	NA	5.6	10	ND<1.0 – 3.5
Silver	µg/L	6020	NA	ND<1.0	50	ND<2.0
Zinc	µg/L	6020	NA	12	NA	ND<10 – 26
TPH as Gasoline	µg/L	8015M	100	ND<50	100	ND<50
1,4-Dichlorobenzene	µg/L	8260B	NA	ND<0.5	5.0	ND<0.5
1,1-Dichloroethane	µg/L	8260B	NA	ND<0.5	5.0	ND<0.5
1,2-Dichloroethane	µg/L	8260B	NA	ND<0.5	0.5	ND< 0.5
1,1-Dichloroethene	µg/L	8260B	NA	ND< 0.5	6.0	ND<0.5
1,1,1-Trichloroethane	µg/L	8260B	NA	NA	NA	ND<0.5 – 0.69
Chloroform	µg/L	8260B	NA	NA	NA	ND<0.5 – 1.1
Dichloromethane	µg/L	8260B	NA	NA	NA	ND<2
Trichloroethylene	µg/L	8260B	NA	ND<0.5	5	ND<0.5
Tetrachloroethylene	µg/L	8260B	NA	ND<0.5	5	ND<0.5
Vinyl Chloride	µg/L	8260B	NA	ND<0.5	0.5	ND<0.5

Table 39 (Continued)

GROUNDWATER REMEDIATION FACILITY DISCHARGE WATER QUALITY AND CONSTRUCTION DEWATERING DISCHARGE WATER QUALITY

			Remediation		Construction Dewatering	
Parameter	Units	EPA Method	NPDES Permit Limitation Monthly/Daily [a]	System Effluent Concentration [b]	NPDES Permit Limitation Monthly/Daily [c]	System Effluent Concentration [d]
Methyl-tert-butyl-ether	µg/L	8260	35	ND<0.5	35	ND<0.5 – 4.0
Phenols	mg/L	420.1	1.0	ND<0.1	1.0	ND<0.1
Chlorinated Phenols	µg/L	8270	NA	NA	1.0	ND [f]

NA = not applicable
mg/L = milligrams per liter *µg/L = micrograms per liter*
D< = not detected at method detection limits
J = Estimated concentrations – detected at a concentration below laboratory reporting limit
NPDES = National Pollutant Discharge Elimination System
EPA Method = United States Environmental Protection Agency specifications for sampling and laboratory testing

[a] *RWQCB NPDES Permit #CAG834001.*
[b] *Based on monitoring results from 2002 Annual Report, February 2003.*
[c] *RWQCB NPDES Permit #CAG994002.*
[d] *Based on monitoring results from 2002 Annual Report, February 2003.*
[e] *One time exceedance; water was re-treated and tested three times for compliance prior to discharge.*
[f] *Laboratory reporting limits vary by compound.*

Source: Camp Dresser & McKee Inc.

permitted and detected effluent concentrations from remediation activities and construction dewatering. As of March 2000, the total volume of groundwater treated and discharged was approximately 94 million gallons.[194] Prior to discharge, the treated groundwater was sampled and analyzed to ensure it met the effluent limit concentrations specified in the permit. Whenever treated groundwater contained pollutants at concentrations exceeding the permit requirements, the water was not discharged until the source of the exceedance was identified and corrective action implemented.

See Subsection 2.2.3.2.1 in Section IV.I, Safety/Risk of Upset, for a discussion of the assessment and remediation of soil and groundwater contamination associated with the former Howard Hughes Company Plant activity areas within the Proposed Project site.

[194] *Camp Dresser & McKee, Inc., First Quarter 2000 Groundwater Monitoring and Progress Report, April 14, 2000, Section 5.*

3.0 IMPACT ANALYSIS

The potential impacts to water quality due to the construction activities and final buildout conditions of the Proposed Project are addressed in this subsection. Impacts to surface water quality (Subsection 3.1) are addressed separately from the impacts to groundwater quality (Subsection 3.2). Each subsection outlines the methodology used for assessing impacts, the significance thresholds used as a measure of potential significant impacts to water quality, the Project Design Features specifically designed for water quality improvements, and then an assessment of the potential impacts to water quality.

3.1 Methodology

3.1.1 Surface Water Quality

Impacts to the surface water quality of the primary waterbodies of concern in the vicinity of the Proposed Project are discussed below. The assessment of the Freshwater Marsh has considered that the Marsh includes several distinct components, including the primary management areas with enhanced natural treatment capacity and the main body. The primary management areas were specifically designed to serve as the primary natural treatment areas of the Freshwater Marsh. The analyses of potential effects of the Proposed Project have focused on the quality of the water that would enter the main body of the Marsh after the primary management area. The primary waterbodies of concern for this project include those that receive direct runoff from the project areas, the Freshwater Wetlands System (Riparian Corridor/Freshwater Marsh), the Ballona Wetlands, and the Ballona Channel. Potential impacts to these waterbodies will be quantitatively assessed using the results of a pollutant loading model. The modeled parameters include: TSS, total phosphorus, total Kjeldahl nitrogen (TKN), oil and grease, and total and dissolved copper, lead, and zinc. These parameters were chosen for two primary reasons: (1) the parameters represent typical pollutants found in urban runoff (and would thus be representative of the water quality from the Proposed Project); and (2) sufficient data were available for these parameters to facilitate land use-based modeling of stormwater runoff and effluent quality predictions from stormwater BMPs; thus the modeled pollutants are expected to be a reliable indicator of water quality. Certain metals were not selected for the model as they are not likely to be present in urban runoff at levels of concern. In order to provide a more complete and meaningful analysis of water quality impacts associated with the Proposed Project and to evaluate the adequacy of the Freshwater Wetlands System to accommodate both adjacent Playa Vista First Phase Project and the Proposed Project flows, the pollutant loads from the pre-First Phase conditions have been compared to the pollutant loads estimated to occur at the completion of the adjacent Playa Vista First Phase Project and at the completion of the Proposed Project (buildout) through the use of a pollutant loading model. Table 40, Table 41, and Table 42 on pages 442, 443, and 445, respectively summarize the land use acreages used in the pollutant loading model for the Proposed Project, adjacent Playa Vista

Table 40

LAND USE BY DRAINAGE SYSTEM PRE-FIRST PHASE
(acres)

Drainage System	Industrial	Commercial/ Residential	Commercial [a]	Major Roadways [b]	Open Water [c]	High Density Residential	Low Density Residential	Open Space	Total [d]
Playa Vista Tributary									
Centinela Ditch									
Proposed Project			16		1			55	72
First Phase			81		5			120	206
Off-site			88	2			154	48	292
Jefferson Storm Drain [e]									
Proposed Project								38	38
First Phase								94	94
Off-site	65		12	37		9	93	47	263
Lincoln Storm Drain South									
First Phase									
Off-site			4	5		7	74	1	91
Freshwater Marsh [f] (First Phase)								32	32
Total [d]	65	0	201	44	6	16	321	435	1,088
Ballona Wetlands Tributary									
Ballona Wetlands			10	16	6	11	160	264	467
Total [d]	0	0	10	16	6	11	160	264	467
Total Acreage of Tributary Areas	65	0	211	60	12	27	481	699	1,555

[a] *The 16 and 81 acres within the Proposed Project and First Phase Project areas, respectively, that are tributary to the Centinela Ditch Drainage System, are the former Hughes Aircraft Company plant buildings used for commercial purposes.*

[b] *Major Roadways include Jefferson Blvd., Lincoln Blvd., Culver Blvd., and Centinela Ave.*

[c] *Open Water acreages represent the Centinela Ditch.*

[d] *Acreages are adjusted to account for rounding.*

[e] *In pre-First Phase, the Jefferson Storm Drain outlet is located near the Culver/Jefferson intersection and receives a portion of the runoff from the area near the Culver/Jefferson Boulevard intersection, west of Lincoln Boulevard, and then discharges directly to the Ballona Wetlands.*

[f] *In pre-First Phase, the Freshwater Marsh has not been constructed.*

Source: Camp Dresser & McKee Inc.

Table 41

**LAND USE BY DRAINAGE SYSTEM
WITH PLAYA VISTA FIRST PHASE
(acres)**

Drainage System	Industrial	Commercial/ Residential	Commercial [a]	Major Roadways [b]	Open Water [c]	High Density Residential	Low Density Residential	Open Space	Total [d]
Playa Vista Tributary									
Riparian Corridor									
Proposed Project			16		1			55	72
First Phase			87		14	30		26	157
Off-site			87				154	47	289
Central Storm Drain									
Proposed Project								37	37
First Phase			38			58		13	109
Off-site				8					8
Jefferson Storm Drain									
Proposed Project								1	1
First Phase			15			18		2	35
Off-site	65		12	41		9	93	1	221
Lincoln Storm Drain South									
First Phase									
Off-site			4	6		7	74		91
Freshwater Marsh									
First Phase					10			22	32
Total [d]	**65**	**0**	**259**	**56**	**25**	**122**	**321**	**204**	**1,052**

Table 41 (Continued)

**LAND USE BY DRAINAGE SYSTEM
WITH PLAYA VISTA FIRST PHASE
(acres)**

Drainage System	Industrial	Commercial/ Residential	Commercial [a]	Major Roadways [b]	Open Water [c]	High Density Residential	Low Density Residential	Open Space	Total [d]
Ballona Wetlands Tributary									
Ballona Wetlands [f]			10	20 [e]	5	11	161	296 [f]	503
Total [d]	**0**	**0**	**10**	**20** [e]	**5**	**11**	**161**	**296**	**503**
Total Acreage of Tributary Areas	**65**	**0**	**269**	**76**	**30**	**133**	**482**	**500**	**1,555**

[a] *The 16 acres within the Proposed Project area and 81 of the 87 acres within the First Phase Project area are the former Hughes Aircraft Company plant buildings used for commercial purposes.*
[b] *Major Roadways include Jefferson Blvd., Lincoln Blvd., Culver Blvd., and Centinela Ave.*
[c] *Open Water acreages represent the Centinela Ditch.*
[d] *Acreages are adjusted to account for rounding.*
[e] *Increase in acreage from Table 40 is due to the widening of Lincoln Boulevard.*
[f] *Increase in acreage from Table 40 is due to a portion of the runoff from the area near the Culver/Jefferson Boulevard intersection, west of Lincoln Boulevard, which discharges to the Jefferson Storm Drain prior to discharging to the Ballona Wetlands in pre-First Phase.*

Source: Camp Dresser & McKee Inc.

Table 42

LAND USE BY DRAINAGE SYSTEM WITH PLAYA VISTA FIRST PHASE AND PROPOSED PROJECT (acres)

Drainage System	Industrial	Commercial/ Residential	Commercial	Major Roadways [a]	Open Water	High Density Residential	Low Density Residential	Open Space	Total [b]
Playa Vista Tributary									
Riparian Corridor									
Proposed Project		8			4	17		14	43
First Phase			87		14	30		26	157
Off-site			87	1			154	47	289
Central Storm Drain									
Proposed Project		15				47		4	66
First Phase			38			58		13	109
Off-site				8					8
Jefferson Storm Drain									
Proposed Project						1			1
First Phase			15			18		2	35
Off-site	65		12	41		9	93	1	221
Lincoln Storm Drain South									
First Phase									
Off-site			4	6		7	74		91
Freshwater Marsh									
First Phase					10			22	32
Total [b]	**65**	**23**	**243**	**56**	**28**	**187**	**321**	**129**	**1,052**
Ballona Wetlands Tributary									
Ballona Wetlands [d]			10	20 [c]	5	11	161	296 [d]	503
Total [b]	**0**	**0**	**10**	**20 [c]**	**5**	**11**	**161**	**296**	**503**
Total Acreage of Tributary Areas	**65**	**23**	**253**	**76**	**33**	**198**	**482**	**425**	**1,555**

[a] *Major Roadways include Jefferson Blvd., Lincoln Blvd., Culver Blvd., and Centinela Ave.*
[b] *Acreages are adjusted to account for rounding.*
[c] *Increase in acreage from Table 40 is due to the widening of Lincoln Boulevard.*
[d] *Increase in acreage from Table 40 is due a portion of the runoff from the area near the Culver/Jefferson Boulevard intersection, west of Lincoln Boulevard, which discharges to the Jefferson Storm Drain prior to discharging to the Ballona Wetlands in pre-First Phase.*

Source: Camp Dresser & McKee Inc.

First Phase Project, and off-site tributary areas under pre-First Phase, with Playa Vista First Phase, and with Playa Vista First Phase and Proposed Project conditions. Table 43 on page 448 compares the overall land uses amongst the three scenarios analyzed. Qualitative impact assessments of the primary waterbodies of concern and of the final receiving waters, the Santa Monica Bay, will also be included in this subsection. Key elements of the water quality impacts analysis include:

1. assessing how the Proposed Project design meets or exceeds applicable local stormwater treatment system and source control requirements;

2. providing a detailed analysis of the project goal to achieve a no net-increase, compared to pre-First Phase conditions, in pollution from parameters of concern;

3. comparing predicted effluent quality of Proposed Project stormwater discharges to numerical water quality benchmarks and narrative water quality criteria and objectives;

4. assessing how the project addresses parameters that are considered water quality limited in the receiving waters (i.e., impaired waterbodies);

5. evaluating dry-weather (nuisance) water quality; and

6. estimating whether substantial erosion, sedimentation, or channel instability would result from the Proposed Project.

By the nature of these elements of analysis, some are quantitative (numerical) and some are qualitative (narrative). Numerically based impacts have been assessed primarily using the pollutant-loading model. Narratively based impacts have been assessed by qualitatively discussing Project Design Features, and the properties of the water quality parameters and pollutants of concern.

The following paragraphs briefly describe the impact assessment methodology for the Proposed Project. For a detailed description of the methodology refer to Volume I, Section 3 of the Water Resources Technical Report (Appendix F-1).

3.1.1.1 Local Design Requirements (MS4 Permit)

As part of the Los Angeles County Municipal Stormwater NPDES Program (MS4 Permit), the County's "Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP)" details the requirements for new development and significant redevelopment BMPs. The SUSMP requires that new developments (such as the Proposed Project) employ a variety of measures, including, as applicable, treatment and source controls to reduce the discharge of

Table 43

TOTAL LAND USES TRIBUTARY TO BALLONA WETLANDS FOR EVALUATED LAND USE SCENARIOS (acres)

	Total Acreage of Tributary Areas								
Land Use Scenario	**Industrial**	**Commercial/ Residential**	**Commercial**	**Major Roadways [a]**	**Open Water**	**High Density Residential**	**Low Density Residential**	**Open Space**	**Total [b]**
Pre-First Phase	65	0	**211**	**60**	**12**	**27**	**481**	**699**	**1,555**
With Playa Vista First Phase	**65**	**0**	**269**	**76**	**30**	**134**	**482**	**499**	**1,555**
With Playa Vista First Phase and Proposed Project	**65**	**23**	**253**	**76**	**33**	**198**	**482**	**425**	**1,555**

[a] *Major Roadways include Jefferson Blvd., Lincoln Blvd., Culver Blvd., and Centinela Ave.*
[b] *Acreages are adjusted to account for rounding.*

Source: Camp Dresser & McKee Inc.

pollutants from stormwater conveyance systems. In addition, the MS4 Permit requires proof of ongoing treatment control BMP maintenance (as described in the SUSMP), including a signed statement from the developer accepting responsibility for BMP maintenance until the time of property transfer, at which time a signed agreement from a public entity, or property recipient, assuming responsibility for the maintenance would be required. For purposes of this impact analysis, the Project Design Features, including BMP maintenance agreements of the Proposed Project are compared to the SUSMP requirements. By showing that the Proposed Project would meet the SUSMP requirements, the standards of Section 402(p) of the CWA would also be met.

3.1.1.2 Antidegradation Policy

The State's Antidegradation Policy restricts degradation of surface and ground waters of the State. Based on the water quality performance of the Propose Project, if pollutant loads or concentrations from the project are such that beneficial uses in the receiving waters are maintained either through decreased loads or decreased concentrations of pollutants or both, then the Antidegradation Policy would be met, as there would be no degradation in the receiving waters compared with pre-project conditions. To this end, the pollutants that are typical of urban runoff were predicted for the Proposed Project and compared to predicted pre-First Phase concentrations and loads of the regulated receiving waterbodies (Ballona Wetlands and the Ballona Creek Estuary).

3.1.1.3 Comparison of Predicted Effluent Quality to Water Quality Benchmarks

Water quality benchmarks are used in this EIR to assess the water quality of the Project and the surrounding waterbodies. The term "benchmark" is used as a catchall phrase to represent the applicable regulatory water quality standards and objectives, as well as non-regulatory water quality objectives and guidelines. In some cases, water quality standards for a waterbody are used as water quality benchmarks for a different waterbody because applicable water quality standards are not available. For example, the COP water quality standard for total suspended solids, which is only a regulatory standard for ocean waters, was used as a water quality benchmark for the Proposed Project because there is no applicable numerical water quality standard for total suspended solids. There are narrative water quality objectives for total suspended solids (TSS) and numerical water quality objectives for turbidity listed in the Basin Plan. Theses objectives, which apply to all inland surface waters, including wetlands, are discussed and addressed below in Subsection 3.4.2.2.

The modeled parameters used for the comparison include: TSS, total phosphorus, total Kjeldahl nitrogen (TKN), oil and grease, and total and dissolved copper, lead, and zinc. To assess potential impacts of metals, the CTR criteria for the protection of aquatic life are used for comparison to predicted metals concentrations.[195] The acute CTR criteria are considered the most relevant criteria for comparison to modeled stormwater quality due to the infrequent nature of storm events in southern California and the fact that most storm events last for less than 4 days, which is the averaging period for which the chronic CTR apply (note that the maximum storm recorded at the Los Angeles International Airport rain gage from 1949-1997 is 4.2 days; average is 12 hours).[196]

The EPA Nutrient Guidelines are used to assess how the total phosphorus and TKN concentrations predicted in the stormwater runoff from the Proposed Project compare to the nutrient levels that are protective of aquatic life and recreational uses designated for the Proposed Project's receiving waterbodies.[197] To assess potential impacts of oil and grease and TSS, the COP discharge limitations are compared to predicted oil and grease and TSS concentrations.[198] The Nutrient Guidelines and the COP discharge limitations are selected as numerical water quality reference levels for comparative purposes only, to assess potential impacts of the modeled water quality parameters. Refer to Volume I, Section 3 of the Water Resources Technical Report (Appendix F-1) for the discussion and derivation of the numerical water quality reference levels.

To assess potential impacts with respect to applicable non-numerical water quality objectives, narrative objectives in the Basin Plan were compared to Project Design Features and proposed source control programs of the Proposed Project. Pursuant to Section 13050 of the CWC, stormwater runoff from the Proposed Project must not create pollution, contamination or nuisance. Since the water quality objectives in the Basin Plan are intended to protect designated beneficial uses (which includes the human contact recreation (REC1) designated use for the Ballona Wetlands and Ballona Creek Estuary), the potential for pollution or contamination, as defined in the CWC, has been addressed by comparing the Basin Plan objectives to Project Design Features. In addition, several of the narrative objectives in the Basin Plan specifically address water quality parameters that are used to indicate "nuisance" conditions, such as biostimulatory substances, color, exotic vegetation, floating material, oil and grease, solid, suspended, or settleable materials, and taste and odor. Therefore, the comparison of Basin Plan objectives also addresses the potential significant impact caused by creating a condition of nuisance.

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[195] *The CTR criteria are water quality standards legally applicable to selected waters with human health or aquatic life designations, such as the Ballona Channel and the Ballona Wetlands; however, in reference to the Freshwater Wetlands System components, the CTR criteria are used as numerical water quality reference levels for comparative purposes only.*

[196] *Strecker, E. and Howell, J., 1998. Playa Vista Stormwater Rainfall Analysis. Memo to Playa Vista EIR Team.*

[197] *USEPA, 2000. Ambient Water Quality Criteria Recommendations: Information Supporting the Development of State and Tribal Nutrient Criteria for Rivers and Streams in Nutrient Ecoregion III. EPA 822-B-00-016.*

[198] *SWRCB, 2001. California Ocean Plan: Water Quality Control Plan Ocean Waters of California.*

3.1.1.4 Assessment of Impaired Waterbody Identified Parameters

The Proposed Project discharges directly to the Ballona Creek Estuary and Ballona Wetlands (via the Freshwater Marsh, but infrequently and only during storm events). Both waterbodies are listed under Section 303(d) by the State of California as being impaired (i.e., unsupportive of at least one current or potential designated beneficial use). To assess the potential impacts of the Proposed Project relevant to water quality-limiting pollutants, constituents associated with new urban development were identified. Some constituents (such as copper, lead and zinc) were quantitatively assessed while others (such as trash and pesticides), due to a lack of sufficient urban runoff data, were addressed qualitatively.

3.1.1.5 Dry-Weather Water Quality

Stormwater drainage systems in Southern California have received increasing attention regarding the impacts of dry-weather flows and several local and regional jurisdictions have chosen to divert portions of their dry-weather flows to sanitary systems for treatment. Dry-weather flows are generally regarded as nuisance flows due to their potential effect on human health.[199] This analysis qualitatively assesses the potential effects of these dry-weather flows from the Proposed Project based upon data collected to date and potential options for their management. This analysis will address the nuisance portion of Section 13050 of the CWC with respect to dry-weather periods, and the receiving water limitations in the MS4 Permit (which states that non-stormwater discharges from the MS4 shall not cause or contribute to a condition of nuisance), as well as the proposed and potential future dry-weather TMDLs for bacteria at the Santa Monica Bay Beaches and the Ballona Creek Estuary, respectively. In addition, the CTR water quality criteria will be discussed with respect to potential dry-weather flows from the Proposed Project site.

3.1.1.6 Erosion, Sedimentation, and Channel Stability

Urban development is considered a hydromodification activity as it is a potential cause of in-stream channel erosion and habitat destruction. By design, the Freshwater Wetlands System reduces total urban runoff volume and peak flow rates to the Ballona Wetlands. Therefore, the two channels with the most potential to be impacted by discharge of stormwater would be the Centinela Ditch (to be fully replaced by the Riparian Corridor), a man-made and partially unlined facility, and the estuary portion of the Ballona Channel, which is composed of grouted riprap slopes and an earthen bottom downstream of Centinela Boulevard. Potential impacts are assessed quantitatively in Section IV.C.(1), Hydrology, and qualitatively in this section by discussing the potential of the Proposed Project to meet the requirements of the applicable MS4

[199] *See Section 3.2.1 for definition of "nuisance."*

Permit (in particular, SUSMP Standards), and Basin Plan, while not creating a condition of nuisance as defined in Section 13050 of the CWC.

3.1.2 Groundwater Quality

Short-term groundwater quality impacts could potentially occur during construction of the Proposed Project as a result of soil or shallow groundwater being exposed to construction materials, wastes, and spilled materials or as a result of construction dewatering. These potential impacts are qualitatively assessed.

Long-term (operational) groundwater quality impacts associated with the Proposed Project could potentially occur due to permanent dewatering of underground parking structures and/or groundwater remediation activities. These potential impacts are qualitatively assessed.

The potential for the Proposed Project to result in groundwater contamination, modification of existing contaminant movement, or expansion of the contaminated area is analyzed in Section IV.I, Safety/Risk of Upset.

3.2 Significance Thresholds

3.2.1 Surface Water Quality

The Draft Los Angeles CEQA Thresholds Guide (p. D.2-4) states that a project would normally have a significant impact on surface water quality if discharges associated with the Proposed Project would:

- Create “pollution,” “contamination” or “nuisance” as defined in Section 13050 of the California Water Code. These definitions are:

  – Pollution means an alteration of the quality of the waters of the state to a degree, which unreasonably affects either of the following: (1) the waters for beneficial uses;[200] or (2) facilities which serve these beneficial uses. Pollution may include Contamination.

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[200] *Section 13050 provides the following definition for beneficial uses – “‘Beneficial uses’ of the waters of the state that may be protected against quality degradation include, but are not limited to, domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves.” Beneficial uses have been designated by the RWQCB for the Ballona Wetlands and the Ballona Channel, but not for the Freshwater Wetlands System.*

- Contamination means an impairment of the quality of the waters of the state by waste[201] to a degree which creates a hazard to the public health through poisoning or through the spread of disease. Contamination includes any equivalent effect resulting from the disposal of waste, whether or not waters of the state are affected.

- Nuisance means anything which meets all of the following requirements: (1) is injurious to health, or is indecent or offensive to the senses or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property; (2) affects at the same time an entire community of neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal; and (3) occurs during, or as a result of, the treatment or disposal of wastes.

- Cause regulatory standards to be violated, as defined in the applicable NPDES stormwater permit or Water Quality Control Plan (Basin Plan) for the receiving waterbody.

These thresholds are applicable to the Proposed Project and were used to determine if the Project would have significant surface water quality impacts.

3.2.2 Groundwater Quality

The Draft Los Angeles CEQA Thresholds Guide (p. D.4-4) states that a project would normally result in a significant impact on groundwater quality if it would:

- Affect the rate or change the direction of movement of existing contaminants;

- Expand the area affected by contaminants;

- Result in an increased level of groundwater contamination (including that from direct percolation, injection or salt water intrusion); or

- Cause regulatory water quality standards at an existing production well to be violated, as defined in the California Code of Regulations, Title 22, Division 4, Chapter 15 and the Safe Drinking Water Act.

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[201] *Section 13050 provides the following definition for waste – "'Waste' includes sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation, including waste placed within containers of whatever nature prior to, and for purposes of, disposal."*

These thresholds are applicable to the Proposed Project and as such are used to determine if the Project would have significant groundwater quality impacts.

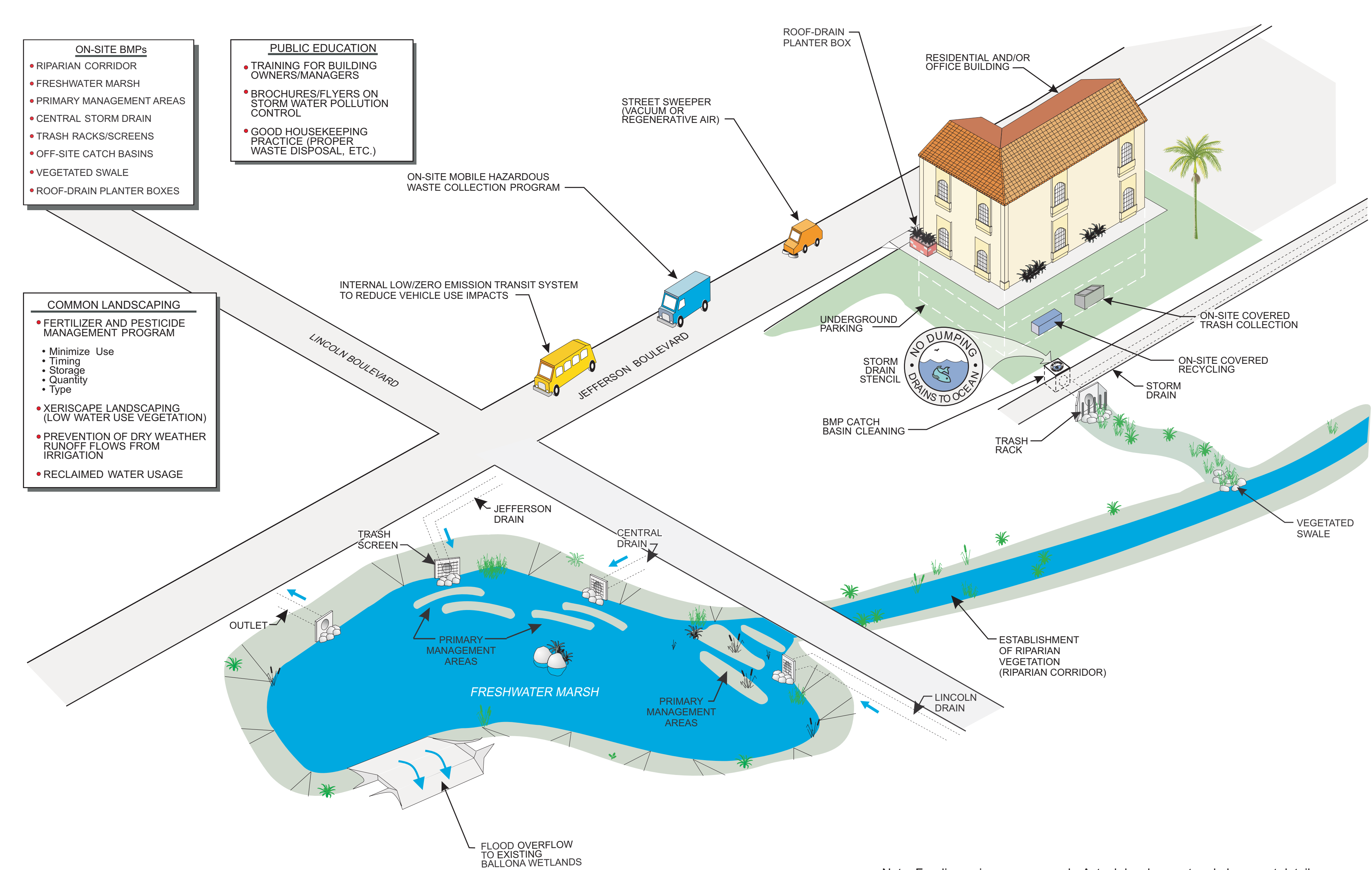
3.3 Project Design Features

3.3.1 Surface Water Quality

The design of the Proposed Project incorporates a number of pollutant source control and water quality features. Source controls include such features as underground parking (approximately 75 percent of the buildings within the Proposed Project would be designed with subterranean/underground parking), covered trash and recycling facilities, a street and catch basin cleaning program, xeriscape and native landscaping to reduce water use, a fertilizer and pesticide management program, prohibition of certain building materials such as roofing/gutter materials that are high in copper and zinc, and a tenant/resident education program. Additionally, the Proposed Project will include the use of roof drain biofiltration systems for all buildings, additional water quality inlets (BMP catch basins) for catch basins on the Central Storm Drain, and a bioswale within a park to receive and filter stormwater runoff from the Proposed Project prior to entering the Riparian Corridor. Major water quality features within the adjacent Playa Vista First Phase Project and the Proposed Project that contribute to pollutant removal through treatment of collected storm runoff include the biofiltration aspects of the Freshwater Wetlands System, water quality inlets (BMP catch basins), and other measures described in more detail below. The water quality management features have been designed to achieve specific water quality goals and benefits at buildout of Playa Vista, including the adjacent Playa Vista First Phase Project and the Proposed Project, as compared to pre-Playa Vista conditions. The Proposed Project has been designed to achieve, in conjunction with the adjacent Playa Vista First Phase Project, no net increase in pollution to receiving waters at Project buildout, compared to pre-First Phase conditions, as well as to meet or exceed water quality design standards for BMPs. Figure 33 on page 455 provides an overview of the planned BMPs for the Proposed Project. See Volume I, Section 3 of the Water Resources Technical Report (Appendix F-1) for information detailing the percent of flows to each BMP and the effluent concentrations assumed for these BMPs in the pollutant loading model.

3.3.1.1 Freshwater Wetlands System

The Freshwater Wetlands System (comprised of the Riparian Corridor and Freshwater Marsh) is a Project Design Feature, the majority of which was approved under the adjacent Playa Vista First Phase Project (the central portion of the Riparian Corridor is proposed as part of the Proposed Project) serving as a comprehensive system intended to manage and accommodate the hydrology (stormwater flows) and water quality requirements of the adjacent Playa Vista First Phase Project and the Proposed Project as well as off-site tributary areas, while providing habitat enhancement in the area. When granting their approvals for the Freshwater Wetlands System,



SOURCE: URS (Modified by CDM)

Note: For discussion purposes only. Actual development and placement details may vary.

Figure 33

Examples of Best Management Practices (BMPs)

CDM

the USACE, SWRCB, RWQCB, and CCC acknowledged the primary functions of the Freshwater Wetlands System as:

- Cleansing urban runoff from the adjacent Playa Vista First Phase Project and the Proposed Project as well as hundreds of acres outside of the adjacent Playa Vista First Phase Project and the Proposed Project areas;

- Providing flood control protection for future buildout of that portion of the adjacent Playa Vista First Phase Project and the Proposed Project located south of Ballona Channel; and

- Providing new and enhanced freshwater habitat.[202]

The agencies' approvals (404 Permit, 401 Certification, CCC Certification, and CDP) recognized the degraded nature of the pre-existing habitat in the area and the fact that urban runoff from existing development has been a contributor to that degradation, and also recognized the potential of the Freshwater Wetlands System to treat the urban runoff and increase habitat values while providing necessary flood control facilities for the adjacent Playa Vista First Phase Project and the Proposed Project. The effect of the Freshwater Wetlands System was to better manage (i.e., reduce) the amount of freshwater flowing to the Ballona Wetlands salt marsh, and to enhance the quality of dry-weather and stormwater runoff into the Ballona Channel and Santa Monica Bay such that pollutant loadings discharged to the Wetlands, Channel and ultimately the Bay are reduced after full buildout of the adjacent Playa Vista First Phase Project and the Proposed Project when compared to pre-First Phase conditions without the Freshwater Wetlands System. These water quality benefits to the Ballona Wetlands, Ballona Channel, and Santa Monica Bay were specifically contemplated and intended in the design of the Freshwater Wetlands System and the overall Playa Vista Project. In addition, the Freshwater Wetlands System is also designed to provide significant freshwater wetland and riparian habitat values, with the water supply and water quality aspects of the System ensuring that the system is supplied with enough water of sufficient quality to sustain the habitat.

Since large portions of the Freshwater Wetlands System have already been constructed or are under construction as part of the adjacent Playa Vista First Phase Project, the First Phase has provided "excess mitigation" from a hydrology and water quality perspective. With the subsequent phased construction of the Proposed Project, the Freshwater Wetlands System would still provide "over-treatment" of the runoff from the adjacent Playa Vista First Phase Project and the Proposed Project (i.e., the nature and extent of surface water quality treatment offered by the Freshwater Wetlands System would exceed the amount necessary to adequately serve the

[202] *U.S. Army Corps of Engineers Environmental Assessment 404(b)(1) Evaluation Public Interest Review, Permit Application No. 90-426-EV, at5-6 (1992).*

adjacent Playa Vista First Phase Project and the Proposed Project within their drainage systems) due to its volume of runoff capture vs. SUSMP requirements, as well as the fact that it treats significant off-site surface water to both the adjacent Playa Vista First Phase Project and the Proposed Project areas. In order to provide a more complete and meaningful analysis of water quality impacts associated with the Proposed Project and to evaluate the adequacy of the Freshwater Wetlands System to accommodate both adjacent Playa Vista First Phase Project and the Proposed Project flows, the pollutant loads from the pre-First Phase conditions have been compared to the pollutant loads estimated to occur at the completion of the adjacent Playa Vista First Phase Project and at the completion of the Proposed Project (buildout) through the use of a pollutant loading model.

The full Freshwater Wetlands System will consist of a Riparian Corridor and three primary management (enhanced natural treatment) areas at the openings of three outlet areas (Riparian Corridor/Lincoln Storm Drain South, Jefferson Storm Drain, and Central Storm Drain), as well as the larger Freshwater Marsh itself. Runoff quality would be passively improved as runoff flows through the Riparian Corridor, the primary management areas, and then the Freshwater Marsh by a number of natural physical and bio-chemical processes. The size of the system would allow dry-weather and most stormwater runoff to flow through at low velocities, thereby permitting the sedimentation and other removal processes of particulate matter and dissolved constituents through adsorption occurring mostly in the primary management areas and then in the rest of the Marsh. The natural systems in the wetland, including plantings of native vegetation, would slow velocities and facilitate the natural processes of adsorption, filtration, plant uptake, and biological degradation of dissolved constituents.

The natural functions of the Freshwater Wetlands System and the related hydrologic controls it allows, will decrease significantly pollutant loading to the adjacent Ballona Wetlands. The system manages freshwater input to the Ballona Wetlands by allowing the runoff from the adjacent Playa Vista First Phase Project and the Proposed Project and off-site areas, which flow through the adjacent Playa Vista First Phase Project and the Proposed Project sites under low-flow and up to approximately one-year design storm conditions (approximately 92 percent of the total flows anticipated to occur annually), to be diverted directly to the Ballona Channel.[203, 204] Freshwater flows greater than one-year-storm conditions (approximately 8 percent of the total annual flows) would experience similar or smaller (depending on the magnitude of the storm) contaminant removals in the Freshwater Wetlands System prior to being introduced to the Ballona Wetlands. Therefore, pollutant loads to the Ballona Wetlands will be reduced substantially by both actual redirection of stormwater away from the Ballona Wetlands, as well

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[203] *Woodward-Clyde, Playa Vista Stormwater Rainfall Analysis, Memorandum, November 3, 1998.*

[204] *The Freshwater Marsh is designed to accommodate/divert approximately 92 percent of the total annual flows; however, through the use of adjustable weirs and other design features, it can be operated in a manner that diverts a lesser amount of flows should there be a desire to route more water to the Ballona Wetlands.*

as by improved water quality of those flows that do reach the Wetlands from the Freshwater Marsh.

3.3.1.2 Other Measures to Reduce Pollutant Loadings

Similar to the provisions of the adjacent Playa Vista First Phase Project, the Proposed Project includes the installation of water quality inlets, enhanced street/catch basin cleaning, a tenant/resident education program, household hazardous waste collection, storm drain signage, landscape irrigation controls, covered trash and recycling facilities, underground parking (in most areas) and vehicle use impact reduction measures, to reduce pollutant loadings. In addition, the Proposed Project includes the use of roof drain biofiltration systems to receive and filter runoff from all buildings within the Project site. Another pollutant reduction measure to be implemented as part of the Proposed Project is a vegetated swale within a park adjacent to the Riparian Corridor. This vegetated swale will receive and filter stormwater runoff from the Proposed Project prior to entering the Riparian Corridor.

The water quality control measures proposed as part of the Project are consistent with the types of water quality management measures recommended in the plan for California's Non-Point Source (NPS) Pollution Control Program developed by the SWRCB and the CCC.[205] Of NPS Program's six (6) management measure categories, the following are relevant to the Proposed Project: Urban; Hydromodification Activities (e.g., channelization); and Wetlands and Riparian Areas. For details on the plan's management measure categories, see Volume I, Section 3 of the Water Resources Technical Report (Appendix F-1). Consistent with the recommended Urban Management Measures, the Proposed Project incorporates water quality control measures that include watershed protection and site development design features (i.e., BMPs and source controls, etc.). The Proposed Project also includes construction-related water quality control measures, treatment of runoff from existing development (off-site catch basins), and public education measures.

The construction of the Riparian Corridor incorporates erosion control measures into the grading (i.e., gentle slopes) and landscaping (i.e., vegetated channel and banks) that are consistent with the recommended management measures of the NPS Program for hydromodification. Via diversion of most storm flows to the Ballona Channel, the Freshwater Marsh reduces existing hydromodification impacts on the Ballona Wetlands due to past urbanization.

The Riparian Corridor, in the adjacent Playa Vista First Phase Project and the Proposed Project, is consistent with the NPS Program's recommended wetlands/riparian protection and

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[205] *http:\\ceres.ca.gov\coastalcomm\nps\npsndx.html.*

restoration management measures for Wetlands and Riparian Areas. Also, the proposed use of vegetated treatment systems such as vegetated swales is consistent with the vegetated treatment systems management measure.

The Proposed Project would be responsive to the Ballona Creek and Wetlands trash total maximum daily loads (TMDL), through the implementation of Project Design Features and BMPs, such as enhanced street/catch basin cleaning, an education program, storm drain signage, vegetated swales, trash racks and controls within the Freshwater Wetlands System. These Project Design Features and BMPs, which in several cases also include treatment of off-site runoff, are designed to prevent trash from being discharged into the Ballona Channel and Ballona Wetlands. The Freshwater Marsh is designed to capture in excess of the 1-year storm event. In addition, with the catch basin inserts and the three primary management areas of the Marsh, and implementation of scheduled maintenance, the Freshwater Wetlands System, as a whole, is designed to remove particles much smaller than 5 millimeters without clogging.

3.3.2 Groundwater Quality

A number of surface water quality Project Design Features have been designed to reduce the potential for pollutants associated with both construction (such as construction BMPs) and operation (such as the Freshwater Wetlands System). To the extent that there is any incidental groundwater recharge from runoff flowing over or detained in pervious surfaces on the Proposed Project, the potential for groundwater quality impacts would be reduced as a result of the measures designed to reduce pollutants in surface runoff. There is the potential to concentrate sediment in the bottom of the Freshwater Wetlands System, which could be transmitted through infiltration into the groundwater. However, the Freshwater Wetlands System has been designed to reduce pollutants, and thus sediments, in surface water. The anaerobic conditions and associated bacterial populations that are expected in the wetland soils of the Riparian Corridor and the Freshwater Marsh will reduce many metals to insoluble forms that are less toxic and less bioavailable. As part of the Freshwater Wetlands System's Operations, Maintenance and Monitoring Manual (O&M Manual), monitoring and maintenance (e.g., vegetation and sediment removal) would be performed as prescribed in the O&M Manual (see Appendix F-2 for details) to ensure that quality of the sediment accumulated remains below levels of concerns associated with metals, pesticides, and other toxic chemical as they relate to potential bioaccumulatory and toxicity impacts. In addition, the aquifers (Ballona and Silverado) underlying the site are separated from the surface with an aquitard (Bellflower). The Bellflower Aquitard acts like a barrier, slowing the hydraulic communication between the surface and the Ballona and Silverado Aquifers, thus limiting the impact of these deeper water producing units. To further limit migration of pollutant through infiltration, the Riparian Corridor portion of the Freshwater Wetlands System has been designed with a clay liner to limit flow from the surface water to the groundwater.

No land uses (e.g., industrial land uses) are planned that could legally contribute to groundwater contamination within the Proposed Project site. The design, construction and operation of any land uses that might include storage of fuel in underground tanks (such as retail gas stations), would be regulated by current state law that provides for methods which monitor and minimize the potential for leakage.

Not all structures within the Proposed Project site would be above the groundwater table. Some structures may extend into the groundwater table (e.g., two-level subterranean parking garages), and those structures would require permanent dewatering systems. The proposed permanent dewatering systems, which include dewatering for the methane safety system and dewatering of structures below the groundwater table, is a "contingent" system that would operate only if/as groundwater elevations occur at the level of the dewatering pipes. In case groundwater is present or in future rises to an elevation above the elevation of the groundwater pipes, the system is designed to convey the water to a sump where it is removed by automatic pumps. Generally, the dewatering system does not include dewatering by pumping from deep wells or any specific well points (see Appendix D-6). However, some dewatering may be necessary in connection with periodic methane system maintenance. Any necessary groundwater dewatering would be conducted in accordance with the NPDES or other applicable regulatory requirements.

3.4 Project Impacts

3.4.1 Surface Water Quality

Because the Habitat Creation/Restoration Component would not involve the construction of impervious surfaces, the land use of the area for the Habitat Creation/Restoration Component would not change, and minimal amounts of surface water runoff would be generated, compared with existing conditions. In addition, implementation of the Habitat Creation/Restoration Component would involve the construction of a major stormwater management facility, the completion of the Riparian Corridor, which was designed to serve the Proposed Project by conveying increases in peak runoff rates or volumes caused by the construction of portions of the Urban Development Component as well as provide water quality benefits through natural processes (e.g., sedimentation, biofiltration, bacterial reduction and decomposition, and plant uptake) for such runoff from the Urban Development Component. Because the Habitat Creation/Restoration Component will not have adverse impacts on surface water quality, the impacts discussion for the Proposed Project in this section focuses on surface water quality impacts of the Urban Development Component.

For the purposes of this analysis, the following regulatory standards are considered, as appropriate:

1. NPDES Stormwater Permit Requirements including:

   – The control and management of discharges from storm drains of pollutants to surface water, as required by Section 402(p) of the CWA. This is accomplished through SUSMP requirements (in the MS4 Permit) for new development projects, including structural or treatment control BMP maintenance agreements.

   – Construction Permit.

   – Dewatering Permit.

2. Basin Plan including:

   – Water quality objectives.

   – Beneficial uses.

   – Other policies as appropriate.

3. Current and proposed future TMDLs of 303(d)-listed pollutants.

4. Water quality criteria in the California Toxics Rule (CTR).

5. Water quality standards in the California Ocean Plan (COP).

6. The state and federal Antidegradation Policies.

7. The state Nonpoint Source Program Strategy and Implementation Plan (NPS Plan).

8. Performance Criteria made applicable to the Proposed Project through the USACE 404 Permit Process.

The Performance Criteria represent site-specific "regulatory standards" (as that term is used in the Draft Los Angeles CEQA Thresholds Guide) that, if met, indicate that the Proposed Project will not cause a significant adverse impact in light of what was recognized and authorized by the regulatory agencies to be the functions of the Freshwater Wetlands System. All of the applicable standards specifically outlined or included by reference in the applicable NPDES Permit (MS4 Permit) and the Basin Plan (including pollution, contamination, and nuisance as defined in Section 13050 of the CWC) provide a comprehensive regulatory system designed to address the current and potential future water quality issues in the County of Los Angeles. If the performance of the Proposed Project satisfies the above-cited plans, policies and procedures, both of the significance thresholds as defined in the Draft Los Angeles CEQA Thresholds Guide will be met.

3.4.1.1 Construction Impacts

Activities associated with construction of the proposed uses would generate pollutants which, if not controlled, could be discharged to receiving waters at levels which result in potentially adverse water quality impacts. Erosion-induced sediment is the pollutant most frequently associated with construction activities. Other pollutants of concern during construction include nutrients, trace metals, toxic chemicals and miscellaneous wastes. These pollutants originate from a variety of construction activities and are described below.

Sediment. Soil erosion is defined as the removal and loss of soil by the actions of water, gravity, and/or wind. Rainfall and resulting runoff can loosen, pick up, and carry soil particles to receiving waters. As rainfall and runoff increase, soil particles can become detached, rills and gullies can cut into the soil surface, and soil can be transported to receiving waters. Construction activities, including clearing and grading, result in exposed soils. Sediments also can be introduced into stormwater systems by tracking from vehicles as they exit the construction area and enter paved areas. Erosion and sedimentation caused by construction activities may adversely impact receiving waterbodies and affect recreational uses, fisheries and aesthetic qualities of waterways. Excessive sediment can be detrimental to aquatic life (primary producers, benthic invertebrates, and fish) by interfering with photosynthesis, respiration, growth, and reproduction. Sediment can transport pollutants attached to it including nutrients, trace metals, and hydrocarbons. Erosion and sediment control practices are required by the General Construction Permit issued by the SWRCB to reduce the amount of sediment leaving the Project's construction sites. As compliance with the General Construction Permit requires that runoff not cause or contribute to exceedances of applicable water quality standards (including those from the Basin Plan), compliance with the General Construction Permit would amount to compliance with Basin Plan objectives as well.

Nutrients. Products containing nitrogen, phosphorus and potassium are plant nutrients that would be used for fertilizing new landscape installed during development of the Project. Rainfall can transport these potential pollutants to receiving waters. Heavy use of commercial fertilizers can result in the discharge of nutrients to waterbodies resulting in excessive algal growth, and potentially accelerated rates of eutrophication. Some soils are naturally high in phosphorus, which when eroded can contribute to elevated levels in receiving waters. Erosion and sediment control measures (e.g., sand bagging and plastic sheeting of stockpiles) would minimize the discharge of nutrients. Also, only slow-release fertilizers applied directly to the soil would be used to establish vegetation and they would not be applied during or within 72 hours of a forecasted rain event. The Freshwater Marsh will be monitored per the O&M Manual for signs of eutrophication, such as low dissolved oxygen and excessive nutrient concentrations, to ensure the Marsh retains its designed level of habitat quality in accordance with the Performance Criteria.

Potential Contaminants Associated with Construction Materials. Galvanized metal, painted surfaces and preserved wood are surfaces exposed to stormwater as a result of construction activities. These coatings and treatments may contain metals, as well other potential contaminants such as creosote. These potential contaminants may enter receiving waters as surfaces corrode, flake, dissolve, decay or leach through contact with rainfall. Acidic constituents in rain may accelerate these processes. Soils also contains natural levels of trace metals such as arsenic, copper, and zinc.

Pesticides. Herbicides, insecticides and rodenticides are used commonly at construction sites. The unnecessary or improper application of these pesticides may result in receiving water contamination and pollution through drift, or transport of soil particles by wind and rainfall. Also, pesticides may inadvertently be released to the environment if not properly labeled, handled, or stored.

Toxic Chemicals Associated with Spills and Illegal Dumping of Construction Materials. As with pesticides, the storage, handling, and use of other chemicals, such as fuels, paints, solvents, and petroleum products, associated with construction activities could cause water quality impacts if spilled or released into or near surface waters.

Miscellaneous Wastes. Miscellaneous wastes include wash from concrete mixers, solid wastes resulting from vegetation removed during land clearing, wood and paper materials derived from packaging of building products, food containers such as paper, aluminum and metal cans, and sanitary wastes. The discharge of these wastes can lead to unsightly and polluted waterways. Concrete wash water can be toxic and requires proper control.

In conjunction with the adjacent Playa Vista First Phase Project, a Stormwater Pollution Prevention Plan (SWPPP)[206] was formulated to provide a comprehensive water quality control program for the adjacent Playa Vista First Phase Project construction activities to comply with the requirements of the General Construction Permit. As part of the Proposed Project, the existing SWPPP will be modified and updated to address Proposed Project construction. The SWPPP defines temporary BMPs to be implemented in accordance with the General Construction Permit. BMPs deployed during construction include the following categories:

- Drainage Control
- Tracking Controls (from vehicles)
- Waste Management Practices
- Vehicle and Equipment Cleaning, Fueling, and Maintenance Controls

[206] *SWRCB, Consolidated Storm Water Pollution Prevention Plan (SWPPP) Playa Vista Project, July 30, 2001 (as amended).*

- Sediment Controls
- Soil Stabilization (erosion control)
- Management of Pesticides and Fertilizers
- Material Delivery and Storage Controls
- Paving Operations Controls
- Training
- Spill Prevention and Control Procedures
- Contaminated Soil Management
- Measures to Comply with Waste Disposal, Sanitary Sewer, and Septic Regulations
- Concrete and Construction Materials Management
- Wind Erosion Control
- Ponded Water Management

The Proposed Project land uses and topography are similar to the adjacent Playa Vista First Phase Project. Therefore, the Proposed Project construction activities would be similar to those of the adjacent Playa Vista First Phase Project, for which the existing SWPPP has served effectively in addressing potential short-term water impacts. Implementation of the existing SWPPP, as amended for the Proposed Project, would adequately address potential water quality impacts associated with general construction activities. Therefore, implementation of construction BMPs required as part of the SWPPP, would control the potential pollution of stormwater such that construction activities would not create pollution, contamination or nuisance as defined in Section 13050 of the CWC or cause regulatory standards to be violated as defined in the applicable NPDES Permit (MS4 Permit) or Basin Plan for the receiving waterbody. Therefore, a less-than-significant impact would occur from construction activities.

3.4.1.2 Operational Impacts

Completion and operation of the proposed land uses would increase the amount of impervious surface area within the Proposed Project area and increase the amount of urban pollutants that are entrained in the surface runoff. If any such increases in runoff and/or pollutant sources are not adequately addressed through a surface runoff management system, the waterbodies that receive the runoff could be impacted. The significance thresholds, as defined above, include both project-specific and waterbody-specific requirements and objectives. Project-specific requirements and objectives include narrative water quality standards and guidelines, including the Basin Plan objectives, SUSMP design requirements, and the Performance Criteria. Waterbody-specific requirements and objectives include numerical and narrative water quality standards and guidelines (benchmarks) and no substantial increases in 303(d)-listed pollutants. Therefore, in the following assessment of the impacts of the Proposed Project with respect to the significance thresholds, an assessment of the project-specific requirements and objectives will be made, followed by the waterbody-specific requirements and objectives. After the discussion of each waterbody, a statement will be made regarding the potential of the Proposed Project to cause a significant impact on that waterbody with respect to the significance thresholds.

3.4.1.2.1 Municipal Stormwater NPDES Permit (MS4 Permit)

In order to assess whether the Proposed Project would meet or violate MS4 Permit requirements, the nature, design, and features of the proposed Storm Water Management Program were compared to the requirements of the SUSMP program. (See Subsection 2.1.1.3 for a description of the SUSMP Program.) This comparison includes the sizing of water quality facilities to the SUSMP Standards, which details the local standards for stormwater quality BMP design sizing as well as required source controls.

Treatment Sizing Requirements

The planned BMPs (e.g., Freshwater Wetlands System, water quality inlets) have been designed to treat storms larger than the 0.75-inch requirement for both the First Phase and Proposed Project on-site areas and for the existing development (off-site areas). The Freshwater Wetlands System has been designed to treat about one inch of runoff (volume and flow rate) from its contributing watershed of over 1,000 acres. In addition, the Freshwater Marsh has been designed to prevent flooding and stream channel erosion caused by storm events equal to or less than the 50-year return interval. Also, some features of the Proposed Project (such as the adjustable weir and low-flow diversion outlet structures in the Freshwater Marsh, which will control peak runoff rates while providing substantial control of stormwater pollutants of concern during dry-weather and average-size storm events) were planned and designed in response to the general SUSMP requirements. During the planning phase of the Proposed Project, natural areas and areas with significant slope were not considered for development; instead these areas have been designated as the Habitat Creation/Restoration Component. Commitments to a Public Education Program (including storm drain stenciling and signage, and ongoing BMP maintenance) were conceived during the early planning stages of the Proposed Project, as these are specific requirements of the City of Los Angeles' MS4 Permit and the SUSMP. All other SUSMP design requirements, including those for individual priority project categories have been included in the development plan for the Proposed Project.

Peak Runoff Discharge Rates and Channel Stability

In addition to the BMP sizing requirements, the SUSMP addresses peak stormwater runoff discharge rates and protection of slopes. As discussed in Subsection 3.1.4 of Section IV.C.(1), Hydrology, the Proposed Project is not expected to increase peak runoff discharge rates to the Riparian Corridor or the Ballona Channel to an extent that would cause increased potential for downstream erosion. In fact the Freshwater Wetlands System was designed and built to handle the Proposed Project flow rates. However, a brief discussion is provided here to further emphasize that the Proposed Project would not contribute to channel instability, and as such would not create a nuisance as defined in Section 13050 of the CWC or cause a regulatory standard to be violated as defined in the applicable NPDES Permit (MS4 Permit).

Increased impervious areas associated with urban development can cause changes in stream morphology (e.g., changes in the form and structure of biological organisms). While uncontrolled urbanization typically does increase the energy in receiving waters, the status and attributes of the receiving water must be taken into account when assessing the nature, extent, and significance of such an increase.

All runoff from the adjacent Playa Vista First Phase and Proposed Project site eventually is discharged to the estuary portion of the Ballona Channel, which is composed of grouted riprap-side slopes and an earthen bottom. The earthen bottom is subject to potential scour if discharge velocities increase substantially with project implementation. However, impacts are unlikely considering that runoff from larger events would overflow into the Ballona Wetlands. During smaller events, the runoff that enters the Freshwater Marsh would be detained for up to 72 hours before discharging, reducing the energy in the Ballona Channel during stress times when flows and velocities in the Channel generally are near maximum values. The existing Ballona Wetlands do not discharge to the Channel when the Channel is full due to the one-way flap gates. The potential impact of peak runoff to the Ballona Channel would not cause a regulatory standard to be violated as defined in the applicable NPDES stormwater permit or create pollution, contamination and nuisance, as defined in Section 13050 of the CWC; therefore, a less-than-significant impact to the Channel would occur.

The other channels that would receive runoff include the Riparian Corridor, a man-made vegetated channel, and the existing channels that are presently located in the Ballona Wetlands. All of these channels have, or will have very low slopes and, therefore, relatively low velocities, even during flood events. The Proposed Project includes additional diversion of stormwater to the Ballona Channel, which historically flowed directly to the Ballona Wetlands. Runoff volumes to the Ballona Wetlands from project areas would be reduced by nearly 90 percent as compared to pre-First Phase with the completion of the Proposed Project (i.e., including the adjacent Playa Vista First Phase Project and the Proposed Project and associated Freshwater Wetlands System that diverts freshwater flows from discharge into the Ballona Wetlands).

This reduction of runoff volumes, which offsets some portion of the increases that have occurred over the last approximately 50 years due to other development, would reduce runoff energy in the channels within the Ballona Wetlands over existing conditions. Spillover from the Freshwater Marsh to the Ballona Wetlands during larger storm events (i.e., greater than a 1-year design storm) is not expected to erode the receiving area of the Wetlands. The spillover weir for the Freshwater Marsh is constructed of articulate block (i.e., “armor-lock”) and includes a spilling basin for energy dissipation of the overflow before entering the Ballona Wetlands.

During large storms, water would accumulate in the Wetlands and velocities are expected to be low within the Wetlands channels. The potential impact to the stability of the Ballona Wetlands would not cause a regulatory standard to be violated as defined in the applicable NPDES stormwater permit or create pollution, contamination and nuisance, as defined in Section 13050 of the CWC; therefore, a less-than-significant impact would occur.

BMP Maintenance

The SUSMP, as well as the MS4 Permit, requires proof that permanent structural BMPs will be maintained, including a signed statement from the developer accepting responsibility for BMP maintenance until the time of property transfer. At that time, a signed agreement from a public entity, or property recipient who would assume responsibility for the maintenance would be required. The "Ballona Freshwater Wetlands System Operations, Maintenance, and Monitoring Manual" provides a detailed maintenance and monitoring schedule for the Freshwater Wetlands System including a declaration of the entities responsible for funding and conducting the maintenance and monitoring.[207] In addition, the Proposed Project includes on-site operation and maintenance programs designed to minimize environmental impacts including: a tenant/resident education program, a street and catch basin cleaning program, a fertilizer and pesticide management system, and an internal shuttle system.

Volume I, Section 3 of the Water Resources Technical Report (Appendix F-1) provides a more detailed evaluation of the many requirements of the SUSMP that must be developed and implemented for new development and redevelopment projects, including a comparison to the corresponding Playa Vista measures that would be implemented to meet those requirements. The results of a comparison (see Table 3-22 in Volume I, Section 3, of the Water Resources Technical Report (Appendix F-1) of the Proposed Project's Stormwater Management features with the existing MS4 Permit – SUSMP requirements, demonstrates that the Proposed Project as described meets or exceeds all requirements developed by the County of Los Angeles and approved by the RWQCB as being protective of receiving water quality and meeting the waste discharge requirements of the MS4 Permit. As such, implementation of the Proposed Project would not cause regulatory standards to be violated, as defined in the applicable NPDES Permit (MS4 Permit) for the receiving waterbody; hence, the Proposed Project impacts would be less than significant.

3.4.1.2.2 Basin Plan Water Quality Objectives

While the potential impacts caused by some pollutants of concern listed in the Basin Plan will be addressed in the waterbody-specific impacts subsections below, there are additional

[207] *Surface Water Resources, Inc., The Ballona Freshwater Wetlands System Operations, Maintenance and Monitoring Manual. Prepared for Playa Capital Company, 2001.*

parameters that are not waterbody-specific and are qualitatively discussed to adequately assess potential impacts of the Proposed Project. Dry-weather flows are often considered nuisance flows and several of the water quality parameters listed in the Basin Plan, such as biostimulatory substances, floatable materials (including oil and grease), color, taste and odor, can contribute to or can be associated with nuisance conditions. The following paragraphs discuss how the Proposed Project would meet the water quality objectives of the Basin Plan. For a detailed assessment of Basin Plan water quality objectives in comparison to Project Design Features, refer to Table 3-58 of Volume 1, Section 3, of the Water Resources Technical Report (Appendix F-1). An assessment of dry-weather flows, which is also addressed in the Basin Plan, can be found below in Subsection 3.4.1.2.3.

In general, increased runoff velocities could potentially cause bank erosion and channel scouring resulting in an increase in suspended or settleable solids in the receiving waters, which could lead to a condition of nuisance as defined in the Basin Plan. However, since no substantial increases in runoff velocities are expected as a result of the Proposed Project (see Table 25 on page 376 in Section IV.C.(1), Hydrology), the Proposed Project will not cause suspended or settleable materials in the receiving waters to be in concentrations that would constitute a nuisance or adversely affect beneficial uses. Therefore, the Proposed Project would not cause regulatory standards to be violated as defined in the Basin Plan for the receiving waterbody; hence, the Proposed Project would have a less-than-significant impact.

Bioaccumulation, Chemical Constituents, Pesticides, and Toxicity

The 303(d)-listed water quality parameters for the receiving waters of Project runoff that have a tendency to bioaccumulate include arsenic, cadmium, silver, lead, PCBs, PAHs, DDT, and chlordane. Most of these metals and chemicals are likely due to historical sources, as several of them bind tightly to soils and sediment and either do not degrade (e.g, metals) or degrade slowly (e.g., DDT, PCBs, etc.). Some of these chemicals have been banned by federal law (i.e., DDT, PCB) and are no longer in common use. However, others (e.g., PAHs) may reflect more recent impacts associated with urban activities (e.g., vehicle use and maintenance). Public education efforts would focus on informing residents and businesses of some of the potential toxic and bioaccumulative pollutants that they may have in their possession and how to properly store, use, and dispose of these materials to minimize environmental impacts. Also, the proposed treatment control BMPs, with regular maintenance, should minimize the transport of any unknown sources of contaminated soils and sediment to receiving waterbodies.

Selenium, another potentially toxic and bioaccumulative pollutant that may be present in discharges to receiving waters, is proposed to be listed in the 2002 303(d) list as causing impairment to the Ballona Creek upstream of the Proposed Project. Selenium is a naturally occurring metalloid that is an essential element for vertebrates at low concentrations and toxic at elevated concentrations. The tendency of selenium to bioaccumulate in living organisms has led to adverse impacts on fish and birds in several wetlands in the western United States.[208] The CTR criteria for total selenium in freshwater is 20 µg/L for acute exposure and 5 µg/L for chronic exposure. While selenium is not listed or proposed to be listed for Project receiving waters, it may pose a risk to biota in the Freshwater Wetlands System if persistent selenium loadings occur. However urban runoff (dry- or wet-weather) is not considered a significant source of selenium,[209] and only 3 out of 25 samples collected by the Los Angeles County Department of Public Works (1997-1999) [210] in the Ballona Creek just upstream of the estuary exceeded the chronic CTR criteria (no acute criteria exceedances), and these three samples only occurred during stormwater runoff events. Potential dry-weather issues associated with selenium are discussed in Section 3.4.1.2.3. During wet-weather, possible low levels of selenium are not expected to cause impairment to receiving waters because the anaerobic wetland soils of the Riparian Corridor and the Freshwater Marsh are expected to reduce soluble selenium to immobile forms, permanently setting apart stormwater selenium in the bottom sediments. Due to the relatively low levels of selenium expected to reach the Freshwater Wetlands System, the selenium in the soils are not expected to reach levels of concern in the near or distant future. However as a precaution and as part of the HMMP, the soils and vegetation in the Freshwater Wetlands System will be periodically analyzed for bioaccumulation of toxicants, including selenium. If concentrations of toxicants approach levels of concern in soils or biota, remedial actions such as dredging and vegetation removal will be performed. The frequency of these activities will be dictated by observed sediment accumulation rates, as well as periodic sediment quality analyses (see the Freshwater Wetlands System O&M Manual, Appendix F-2).

Although pesticides can be highly persistent in the environment (because many bind tightly to soils and sediment), the monitoring of Los Angeles County's stormwater has resulted in the determination that most pesticides are at undetectable levels and, when they are detectable, the concentrations minimally exceed detection levels. Notable concentrations of pesticides have not been detected in soils or surface water at the Proposed Project site. The Proposed Project has committed to minimizing the use of pesticides and herbicides through the use of both source and structural controls. Pesticides would only be applied when needed in public landscaped areas (the vast majority of on-site landscaping) by qualified landscape professionals and these chemicals would be carefully stored in appropriate facilities when not in use. Paving and landscaping would serve to contain potential historical sources of pesticides. Public education efforts would focus on: (1) informing the public of the dangers of poor sediment control on their

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[208] *United States Department of the Interior, National Irrigation Water Quality Program Information Report No. 3: Guidelines for Interpretation of the Biological Effects of Selected Constituents in Biota, Water, and Sediment: Selenium, 1998. Participating agencies include Bureau of Reclamation, U.S. Fish and Wildlife Service, U.S. Geological Survey, and Bureau of Indian Affairs.*

[209] *RWQCB, Santa Ana Region, Total Maximum Daily Load for Toxic Pollutants for San Diego Creek and Newport Bay, California, June 14, 2002 (Technical Support Documents, Part D-Selenium, Section III, Page 13).*

[210] *RWQCB, Los Angeles Region, Ballona Creek 303d Fact Sheet. March 29, 2002. [Online] www.swrcb.ca.gov/tmdl/docs/segments/region4/ballona303d_factsheet_nomun.doc.*

properties; (2) methods to minimize off-site runoff and reduce erosion; and (3) encouraging proper disposal of banned pesticides, if in existence.

The anaerobic conditions and associated bacterial populations that are expected in the wetland soils of the Riparian Corridor and the Freshwater Marsh will reduce many metals to insoluble forms that are less toxic and less bioavailable. Also, trace metals will be sampled several times per year in the water and annually in the sediment of the Freshwater Wetlands System to ensure trace metals concentrations do not exceed levels of concern (e.g., CTR criteria or probable effects levels [PELs] for water and sediment respectively).

The Freshwater Wetlands System O&M Manual specifies bioaccumulation/toxicity analysis and monitoring on vegetation and sediment removed during maintenance operations, which will occur as needed, at least every 10 to 20 years in the Freshwater Marsh and Riparian Corridor and possibly annually in the primary management areas. Calculations based upon estimated TSS removals indicate that the frequency of maintenance might be as low as once every 100 years in the primary management areas; however, a 10- to 20-year frequency was conservatively estimated to account for unanticipated sediment loadings caused by infrequently large storm events or other unpredictable causes. Vegetation and sediment removal frequencies will depend on sediment accumulation rates and results of annual sediment quality analyses conducted as part of the USACEs Five-Year Monitoring Program and the SWRCB Water Quality Certification Program. Samples of sediment and plant materials for bioaccumulation analysis will be submitted to a state certified laboratory for soluble Threshold Limit Concentration and Total Threshold Limit Concentration analyses. Results of the bioaccumulation tests, as well as the other sediment quality monitoring results, will be used to determine proper disposal methods of the removed materials and any further measures required in the Freshwater Wetlands System to retain habitat quality objectives.

As discussed above, through extensive source and treatment control BMPs, as well as frequent monitoring and maintenance planned for the Freshwater Wetlands System, the potential bioaccumulatory and toxicity impacts associated with metals, pesticides, and other toxic chemicals are not expected to create pollution, contamination, or nuisance as defined in Section 13050 of the CWC. As such, implementation of the Proposed Project would not cause regulatory standards to be violated; hence, the Proposed Project impacts would be less than significant with respect to bioaccumulation and toxicity.

Biochemical Oxygen Demand and Biostimulatory Substances

Biodegradable organic materials, such as human and animal waste and vegetative matter, are the primary substances that could cause increases in biochemical oxygen demand (BOD) and potential decreases in dissolved oxygen in the receiving waters. Public education efforts and enforcement of City ordinances would encourage picking up and properly disposing of pet wastes. Catch basin inserts and trash racks would be the primary treatment controls for removing organic debris from stormwater runoff. The Freshwater Marsh is expected to have the ability to decrease BOD through phytoassimilation (plant uptake) of organic materials. Biostimulatory substances may increase BOD, so some measures presented above (e.g., education programs, careful landscape maintenance, structural BMPs) apply to this category as well. Biostimulatory substances include fertilizers and other sources of nutrients, which stimulate growth of aquatic organisms such as algae. The modeling of nitrogen and phosphorus indicated that there would not be any significant impact to receiving waters with respect to these nutrients. In addition, only slow-release fertilizers that are applied directly to the soil would be used to establish vegetation and they would not be applied during or within 72 hours of a forecasted rain event. Erosion and sediment control measures that are implemented with the project would minimize the export of nutrients from the Proposed Project site.

As discussed above, through the use of on-site BMPs, the Freshwater Wetlands System, and public education, BOD and biostimulatory substances are not expected to create pollution, contamination, or nuisance as defined in Section 13050 of the CWC. As discussed below under the separate receiving waterbodies, nitrogen and phosphorus were not predicted by the pollutant loading model to exceed water quality benchmarks, and therefore are not expected to cause narrative regulatory standards to be violated as defined in the Basin Plan for the receiving waterbody; hence, the Proposed Project impacts would be less than significant with regard to BOD and biostimulatory substances.

Color and Odor

Color and odor associated with water can result from decomposition of organic matter or the reduction of inorganic compounds, such as sulfate. Color in water from man-made sources typically results from commercial or industrial discharges. The Proposed Project site would consist primarily of high-density residential development with some commercial areas. Industrial sources of pollutants would not be present on the Proposed Project site. Commercial areas would consist primarily of retail outlets, which are not expected to be a significant source of water quality constituents that would impart color or odor to dry or wet-weather flows originating from the Proposed Project site. Source controls such as street sweeping and waste management services are expected to reduce the amount of plant material, which during decomposition could cause coloration from the release of dissolved or colloidal substances, from reaching the stormwater management system. The structural BMPs of the Proposed Project are designed to remove and/or assimilate suspended and dissolved organic matter, reducing the potential for discoloration in discharges to receiving waters.

The production of hydrogen sulfide, an offensive smelling gas caused by the reduction of sulfates by anaerobic bacteria, is likely to occur or continue to occur in the reduced sediments of the Riparian Corridor, the Freshwater Marsh, and the Ballona Wetlands. However, hydrogen sulfide production is not expected to increase beyond current production rates because there will not be a significant source of sulfates from the Proposed Project. The movement of air due to the close proximity to the ocean will dissipate any hydrogen sulfide gas produced.

Therefore, substances that cause odor or discoloration of water are not expected to create pollution or nuisance as defined in Section 13050 of the CWC or to cause regulatory standards to be violated as defined in the Basin Plan for the receiving waterbody. Hence, the Proposed Project impacts would be less than significant with regard to color and odor of receiving waters.

Sediments and Turbidity

Erosion and sediment controls will be the primary source control measures to limit the export of suspended or settleable material (e.g., sediment) from the Proposed Project site. All construction activities occurring after Project buildout (with the adjacent Playa Vista First Phase Project and Proposed Project) will be closely monitored to ensure effective erosion and sediment control BMPs are used. Other source controls include the use of native vegetation in much of the landscaping in order to minimize the potential for erosion. By reducing the amount of exposed soils (erosional surfaces), the development of the Proposed Project will reduce erosion. Structural BMPs specifically designed to achieve high levels of particulate removal (and associated pollutants) will be implemented to provide treatment of stormwater and dry-weather flows. The combination of source and structural controls targeted at reducing the entrainment and transport of suspended or settleable material is expected to maintain concentrations of these constituents well below Basin Plan water quality objectives.

The entire Freshwater Wetlands System, particularly the primary management areas of the Freshwater Marsh, is specifically designed to capture sediments. Sedimentation rates will be annually monitored in the Marsh and the Riparian Corridor as part of the O&M Manual. If accumulated sediments begin significantly reducing the storage volume in these areas or, as mentioned previously, begin excessively segregating pollutants, sediment removal activities will be performed. Based on estimates of total suspended sediment loads to the Freshwater Marsh after completion of the adjacent Playa Vista First Phase Project and Proposed Project, the rate of sedimentation in the primary management areas should be reduced by approximately 6 percent on average. The reduction in sedimentation is due to on-site treatment controls (i.e., vegetated swales, roof-drain planter boxes, additional catch basin inserts, etc.) included in the Proposed Project (refer to Volume 1, Section 3 of the Water Resources Technical Report, Appendix F-1, for details). Therefore with regard to captured sediment, the Proposed Project is expected to reduce sedimentation rates in the Riparian Corridor and the Freshwater Marsh as compared to the First Phase Project.

Through control of suspended and settleable materials such as sediment, as well as the control of biostimulatory substances, as discussed above, the Proposed Project will not contribute to biological growth and increased turbidity. The Proposed Project impacts would be less than significant with regard to turbidity, erosion, or suspended or settleable material.

3.4.1.2.3 Assessment of Dry-Weather Flows

An important issue when assessing potential impacts to receiving waters, especially in arid climates (such as the Proposed Project), is dry-weather flows associated with urban activities. Sources of dry-weather flows, potentially associated with the Proposed Project, include flows from on-site urban activities (e.g., irrigation runoff, car washing, pavement washing, air conditioning condensate, etc.) and perennial flows within the Riparian Corridor, both of which may transport sediment, nutrients, vehicular pollutants, and/or animal waste products from the Proposed Project areas to receiving waters. Dry-weather flows will also enter the Proposed Project area from off-site land uses, including the Westchester Bluffs. The quantity of runoff associated with dry-weather flows from the Proposed Project area is expected to be negligible as the Proposed Project includes the use of vegetation with low water requirements in approximately 50 percent of the community landscaped areas (similar to what was approved as a mitigation measure for the adjacent Playa Vista First Phase Project), a careful irrigation program that emphasizes no excess irrigation, and a public education program to inform residents of the potential receiving waters impacts of excessive dry-weather runoff.

Perennial flows within the Riparian Corridor are part of the intent and design of the Corridor and will include off-site generated dry-weather flows as well as other sources to maintain the vegetation in the system. Other sources of dry-weather flows may include illicit sewer connections to the storm drain system, which could contribute to the input of human pathogens to receiving waters. However, since the Proposed Project will be a new development with a new storm and sewer system, illicit sewer connections are unlikely. The dry-weather input of human pathogens associated with animal waste are expected to be reduced by encouraging residents to pick up after their pets and to not feed wild birds. Therefore, the potential for the Proposed Project to violate future dry-weather TMDLs for fecal coliform or other human pathogens in the Ballona Creek Estuary and/or Santa Monica Bay would be less than significant.

Limited dry-weather monitoring data are available for assessing ambient dry-weather concentrations and loads to receiving waters after build-out of the Proposed Project. As indicated in Table 38 on pages 431 and 432, dry-weather water quality samples were collected on April 25 and June 28, 2002, and on April 2, 2003 in the Lincoln and Jefferson storm drains immediately upstream of the Freshwater Marsh. The analyses of the April 2002 samples included an extensive list of parameters, including conventional parameters such as pH, total suspended and settleable solids, and turbidity, as well as total metals, total petroleum hydrocarbons, and volatile organics. The June 2002 sampling event was intended to fill data gaps of the April sampling event. During this event, samples were analyzed for total and dissolved metals, salinity, and hardness so that a comparison to CTR criteria could be made. (Note the CTR criteria for metals are both hardness and salinity dependent). The analysis of the April 2003 sample included an even more extensive list of parameters than the other two sampling events, including bacteria, general minerals, hydrocarbons, metals, nutrients, PCBs, pesticides, semi-volatile organic carbon, toxicity, and volatile organic carbon. Out of all of the trace elements analyzed during the three dry-weather sampling events, only a handful of metals were detected above analytical detection limits, and as shown in Table 38 on pages 431 and 432 none of the detected values exceeded the chronic freshwater CTR criteria. Also, the samples analyzed for coliform bacteria (fecal and total) were well below the Basin Plan water quality objectives. While these data are not completely representative of the dry-weather runoff from the First Phase and Proposed Project areas, they do represent at least a portion of the ambient, perennial flows that will be supplying the Freshwater Marsh with a continual source of fresh water; the primary sources of which will be from off-site urban runoff and groundwater-supplemented flows.

For purposes of assessing the potential for metals contained in dry weather flows to impact downstream receiving waters, the available water quality data from the downstream end of the Freshwater Marsh were compared with the chronic saltwater criteria from the CTR. The following is a comparison of the CTR criteria[211] (in µg/l = micrograms per liter) with the observed dry-weather dissolved metals concentrations of discharges to the Ballona Channel from the Freshwater Marsh:

Constituent	Chronic CTR Criteria[212]	Outlet from Freshwater Marsh (µg/l)[213]
Arsenic	36	6
Cadmum	9.3	Not Detected
Copper	3.1	3.2
Lead	8.1	Not Detected
Mercury	0.04	Not Detected
Nickel	8.2	1.9
Silver	1.9	Not Detected
Zinc	81	1.2

211 *The CTR criteria apply to receiving waters – not directly to discharges to those receiving waters. Thus, the CTR is not directly applicable to the influent to the Ballona Channel from the Freshwater Marsh. A comparison of the CTR to influent concentrations is conservative because it does not account for assimilation that may occur once the influent actually enters the receiving water.*

212 *Final Saltwater CTR Criteria – May 18, 2000. Federal Register Volume 65, No. 97, 40 CFR Part 131, Water Quality Standards.*

213 *Camp Dresser & McKee Inc., April 2, 2003. Freshwater Marsh Water Quality Sampling, Dry Weather, Playa Vista, California. Based on actual sampling. The April 2003 sampling did not include the 8 acres of the Freshwater Marsh yet to be constructed.*

This comparison presents a conservative case because: (1) there are 8 acres of the Freshwater Marsh yet to be constructed, which will add significant treatment volumet to the existing Marsh; (2) construction of the Riparian Corridor has not yet begun and when completed will add significant treatment areas; and (3) the existing vegetation in the Freshwater Marsh is emergent and will continue to mature with time, increasing biological activities, enhancing flow distributions, etc., that should improve performance over time. These factors indicate that the removal efficiency of metals will be greater in the future than it is today. In addition, it is expected that the dissolved metals concentrations will diminish as dry weather flows enter the Ballona Channel and/or the Ballona Wetlands, as the brackish and organically rich environment at those locations will have a tendency to drive metals from a dissolved state into the fraction associated with particulates and organic matter in the water. Thus, the fact that the copper concentration is 0.1 part per billion above the chronic CTR criterion is not considered significant.

As discussed above in Subsection 3.4.1.2.2, Basin Plan Water Quality Objectives, the potentially toxic properties of selenium can be of concern in wetlands. Existing dry-weather monitoring data indicate that dry-weather runoff, particularly from urban areas, is not a significant source of selenium. Therefore since urban runoff in general and dry-weather runoff in particular are not likely sources of selenium, the primary potential sources of selenium near the Proposed Project include groundwater-supplemented flows, upland weathering of minerals, and atmospheric deposition. As shown in Table 39 on page 439, the maximum selenium concentration in groundwater near the project site is 5.6 μg/L and dry-weather water quality samples in the Freshwater Marsh (Table 38 on pages 431 and 432) have not contained detectable concentrations of selenium. As such, during dry weather, selenium is not expected to be a significant biological concern in the Freshwater Marsh or its receiving waters as a result of the Proposed Project. Therefore the potential biological impacts of selenium associated with dry-weather flows are anticipated to be less than significant as a result of the Proposed Project.

According to the Basin Plan, receiving waters designated with warm freshwater habitats (WARM) should not be altered by more than 5° F above the natural temperature and at no time should the waters exceed 80° F as a result of urban runoff. Currently, none of the water bodies receiving discharges from the Proposed Project are designated WARM. However, the narrative temperature objective for wetlands in the Basin Plan applies to the Ballona Wetlands and the Thermal Plan[214] applies to the Ballona Creek Estuary. The Basin Plan narrative objectives for wetlands states that wetlands shall be protected to prevent significant adverse effects on natural temperature and, according to the Thermal Plan, discharges to estuaries must not exceed 20° F above the natural receiving water temperature or cause the receiving waters to increase by more than 4° F above the natural temperature. The Ballona Wetlands will only receive discharges from the Freshwater Marsh during storm events greater than or equal to the 1-year storm; during

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[214] *SWRCB, Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California, 1998.*

such events there would likely be significant cloud cover. Therefore, the Ballona Creek Estuary is the only receiving water that would be potentially impacted by elevated runoff temperatures. Runoff from the Proposed Project caused by excessive irrigation, car washing, pavement washing, and air conditioning condensate may absorb heat during sheet flow across pavement and deliver heated effluent to receiving waters. Also, shallow summer time flows in the Riparian Corridor and the primary management areas of the Freshwater Marsh may be warmed by solar radiation before discharging to receiving waters. Due to the relative size of the Proposed Project compared to the Ballona Creek Watershed (only about 1 percent of the watershed area), and the fact that the estuary portion of the Ballona Creek has diurnal tidal exchange, the runoff from the Proposed Project is not anticipated to cause increases in receiving water temperatures. Also, on-site BMPs are designed to reduce runoff volumes, as well as minimize the contact time of dry-weather sheet flow with impervious surfaces by quickly routing such flows to vegetated areas (e.g., roof-drain planter boxes and bioswales) and the subsurface storm drain system. With the establishment of riparian trees and vegetation in the Riparian Corridor and the primary management areas of the Freshwater Marsh, as required by the HMMP, temperature increases caused by solar radiation are expected to be lessened. In addition the mixing of deeper, cooler water in the main body of the Freshwater Marsh is expected to reduce water temperatures prior to discharging to the Ballona Creek Estuary. Therefore, the potential increase in receiving water temperatures is expected to be negligible as a result of the Proposed Project.

Based on a conservative assumption that the Proposed Project includes development typical of the existing urbanized areas in the Ballona Creek Watershed (i.e., highly connected impervious areas and few stormwater source controls), the estimated dry-weather runoff to the Freshwater Marsh would be approximately 0.5 to 1 cubic feet per second (cfs).[215] Low flows such as this would be detained in the Freshwater Marsh between 26 to 53 days in the summer and between 11 and 22 days in the winter before they would be slowly released to the Ballona Channel. With this extended detention time, substantial water quality improvements are expected, but this extended detention may contribute to increases in the production of mosquito larvae in the Freshwater Wetlands System. As part of the Operations, Maintenance and Monitoring Plan[216], the Freshwater Marsh will be monitored frequently (i.e., weekly inspections; monthly sampling) during the mosquito breeding season (May through October) for signs of increased mosquito populations or habitat, such as sightings of living larvae or adult mosquitoes, impedances to flow, high nutrient concentrations, or low dissolved oxygen. If during inspections, signs of increased mosquito habitat are noted, immediate remedial activities will be

[215] *This value was derived from an estimate of the Ballona Creek base flows to the Santa Monica Bay that are not attributable to rainfall, groundwater flow, or point source discharges. Source: Appendix E Part I of Draft Total Maximum Daily Load to Reduce Bacterial Indicator Densities at Santa Monica Bay Beaches during Wet Weather, RWQCB June 21, 2002. Refer to Volume I, Section 3 of the Technical Report (Appendix F-1) for details on how the value was derived.*

[216] *Surface Water Resources, Inc., The Ballona Freshwater Wetland System Operations, Maintenance, and Monitoring Manual, 2001.*

coordinated with the Los Angeles County West Vector Control District and/or USACE. The O&M Manual requires remedial activities that include: (1) removing vegetation, algal mats, or other objects that may be impeding flow and reducing access of predatory fish; (2) draining, filling, or treating isolated depressions containing stagnant water; (3) applying *Bacillus thuringiensis* bacterium (Bti) or alternative pesticide approved by the California Department of Health Services; and (4) introducing mosquito fish (*Gambusia affinis*) or other predatory species approved by the Los Angeles County West Vector Control District and the California Department of Fish and Game.

Based on minimal dry-weather runoff anticipated from the Proposed Project, the absence of exceedances of water quality criteria for trace elements including selenium in the existing dry-weather runoff, negligible expected increases in receiving water temperatures, extended residence time in the Freshwater Marsh (see discussion above), and the mosquito abatement procedures approved by the Los Angeles County West Vector Control District, USACE, and the California Department of Fish and Game, the Proposed Project would not create pollution, contamination, or nuisance as defined in Section 13050 of the CWC. As such, implementation of the Proposed Project would not cause regulatory standards to be violated as defined in the Basin Plan for the receiving waterbody; hence, the Proposed Project impacts would be less than significant with regard to dry-weather flows.

3.4.1.2.4 Santa Monica Bay

Santa Monica Bay receives urban runoff directly from the Ballona Channel. Development of the Proposed Project could potentially increase total annual pollutant loads to the Bay. To avoid this potential impact, the Proposed Project would incorporate a number of both source control and treatment control BMPs. A substantial proportion of stormwater pollutants that otherwise would be generated and conveyed from the Proposed Project site as well as from the adjacent Playa Vista First Phase Project would be reduced by on-site source, design and treatment control stormwater BMPs. Pollutants that cannot be further reduced at the source or retained on-site, and pollutants originating from off-site land uses tributary to the site, would be managed to acceptable levels by the natural processes of pollutant removal in the planned Freshwater Wetlands System.

Following completion of the Proposed Project and the incorporation of the proposed water quality features (i.e., Riparian Corridor and Freshwater Marsh), the predicted annual pollutant concentrations to the Santa Monica Bay via the Ballona Channel from Project runoff and upland areas that flow through the Project site either are unchanged or decrease for all modeled constituents. With the adjacent Playa Vista First Phase Project and the Proposed Project, pollutant loads to the Ballona Channel are predicted to decrease notably (7 to 42 percent) compared to the predicted loads under pre-First Phase Project conditions. One of the primary factors in this decrease is the significant treatment of existing development runoff that the

Freshwater Wetlands System provides, along with on-site stormwater treatment. As discussed below in Subsection 3.4.1.2., the Proposed Project would not cause regulatory standards to be violated in the Ballona Channel and therefore Proposed Project runoff would not cause regulatory standards (COP portion of the Basin Plan) to be violated in the Santa Monica Bay; hence, the Proposed Project impacts would be less than significant.

As shown in Table 31 on page 406, the Santa Monica Bay has 16 water quality parameters listed on the 303(d) list. Among the water quality parameters for the metals modeled for this EIR (copper, lead, and zinc) all of which are predicted to be well below the CTR criteria with implementation of the Proposed Project. The other metals listed include cadmium, mercury, nickel, and silver, which are proposed by the SWRCB for delisting. These metals are usually associated with specific industrial and commercial processes, vehicular pollutants, or improper disposal of items containing them (refer to Volume I, Section 3 of the Water Resources Technical Report, Appendix F-1, for detailed information on potential sources of these metals). Other toxic chemicals included on the 303(d) list for Santa Monica Bay include pesticides, polychlorinated biphenyls (PCBs), and polycyclic aromatic hydrocarbons (PAHs). These chemicals as well as the metals mentioned above may contribute to the fish consumption advisory and sediment toxicity parameters included on Santa Monica Bay's 303(d) list. Businesses utilizing materials and/or generating wastes containing any of these 303(d)-listed pollutants would be subject to strict materials handling and disposal requirements. Education and outreach efforts would focus on informing the public and businesses of consumer products containing these pollutants, how to properly dispose of them, and where to find, and why they should use, less toxic alternatives. Roadside BMPs and the Freshwater Wetlands System are expected to control motor vehicle-related pollutants. As mentioned above in the general discussion of dry-weather flows, the Proposed Project is unlikely to contribute to high coliform counts (a 303(d) listed parameter for the Santa Monica Bay Beaches with draft Dry-weather and Wet-weather TMDLs currently being reviewed by the SWRCB) in the Santa Monica Bay because a new sewer system, which would be unlikely to have leaks, would be installed on-site. The public would be encouraged through public outreach to pick up after their pets and to minimize dry-weather runoff from their properties, as dry-weather runoff is often associated with higher levels of bacteria. Additional discussion on this topic is provided in Subsection 3.4.1.2.5, Ballona Channel, as the Channel also has a draft TMDL for total coliform.

With the planned source control and treatment control BMPs as well as the fact that the stormwater runoff from the Proposed Project would only contribute a very minor fraction of the total runoff to the Santa Monica Bay (less than 0.4 percent),[217] the Proposed Project is not expected to cause or contribute to exceedances of regulatory standards applicable to Santa

[217] *Stenstrom, M.L. and E.W. Strecker, "Assessment of Storm Drain Sources of Contaminants to Santa Monica Bay, Volume 1, Annual Pollutant Loadings to Santa Monica Bay from Stormwater Runoff" UCLA School of Engineering and Applied Science, 1993, UCLA ENG 93-62.*

Monica Bay (such as CTR criteria) and would not create pollution, contamination, or nuisance conditions as defined in Section 13050 of the CWC in Santa Monica Bay. Hence, the Proposed Project impacts would be less than significant.

3.4.1.2.5 Ballona Channel

Ballona Creek is the largest tributary stream in the Santa Monica Bay watershed with approximately 176 of its 212-square mile area being urban development. The major tributaries to the Ballona Creek include Centinela Creek, Sepulveda Canyon Channel, Benedict Canyon Channel, and numerous storm drains that extend well into Beverly Hills. At the outfall of the Freshwater Marsh and the Ballona Wetlands, Ballona Creek is a grouted riprap-sided, earthen bottom channel with estuarine tidal exchange and dry-weather and stormwater inflows. On average, 92 percent of the discharges from the Freshwater Marsh (this is equivalent to runoff from a 1-year design storm event or less) will drain directly to the Ballona Channel with the remaining 8 percent (runoff from storms greater than a 1-year design storm event) flowing through the Ballona Wetlands prior to draining to the Channel. Discharges from the Ballona Wetlands enter the Ballona Channel before discharging to Santa Monica Bay.

The predicted annual loads and concentrations to Ballona Channel from the upstream tributary areas as well as the adjacent Playa Vista First Phase Project and the Proposed Project are shown in Table 44 on page 479. As indicated in the table, the loads and concentrations associated with the runoff from the adjacent Playa Vista First Phase Project and the Proposed Project would achieve a no-net increase from pre-First Phase conditions.

In addition to the loads predictions, there is a substantial decrease in predicted concentrations in the total influent to the Ballona Channel after the Proposed Project (buildout of the adjacent Playa Vista First Phase Project and Proposed Project) as compared to the pre-First Phase conditions. The substantial decrease in total suspended solids (TSS) concentrations is attributable to the pollutant removal achieved through the natural wetlands cleansing process of the Freshwater Wetlands System, as this system was specifically intended and designed for stormwater runoff from the adjacent Playa Vista First Phase Project and Proposed Project, as well as to enhance the water quality of existing urban runoff. In the modeling analysis, it was conservatively assumed that the Ballona Wetlands in its degraded condition would provide only marginal water quality benefits compared to the constructed Freshwater Wetlands System specifically designed for this purpose. Refer to Section 3.2.4.3.1, Model Methodology, of Volume I, Section 3 of the Water Resources Technical Report (Appendix F-1) for the assumptions used to predict pollutant removal performance of the Freshwater Wetlands System and the Ballona Wetlands.

Table 44

REPRESENTATIVE STORMWATER LOADS AND CONCENTRATIONS TO THE BALLONA CHANNEL FROM Freshwater Marsh and Ballona Wetlands

	Predicted Average Loads [a]										
	(lbs/yr)				(lbs/yr)						Volume
	TSS	**TP**	**TKN**	**O&G**	**TCu**	**DCu**	**TPb**	**DPb**	**TZn**	**DZn**	**(10^3 ft^3/year)**
Pre-First Phase [b]	67,887	395	2,321	2,592	25.5	10.6	15.4	7.1	63.3	26.1	27,497
With Playa Vista First Phase Project	36,920	287	1,885	1,794	14.4	9.6	8.8	4.9	49.3	18.8	31,447
With Proposed Project [c]	38,413	302	1,9772	1,893	15.1	10.1	9.3	5.2	51.8	19.7	33,211
Percent Change from Pre-First Phase to Proposed Project	-43%	-24%	-15%	-27%	41%	-4%	40%	26%	18%	25%	+21%
	Predicted Average Concentrations [a]										
	(mg/L)				(mg/L)						Volume
	TSS	**TP**	**TKN**	**O&G**	**TCu**	**DCu**	**TPb**	**DPb**	**TZn**	**DZn**	**(10^3 ft^3/year)**
Pre-First Phase [b]	39.5	0.23	1.4	1.5	14.8	6.5	90.0	4.1	36.9	15.2	27,497
With Playa Vista First Phase Project	18.8	0.15	1.0	0.9	7.3	4.9	4.5	2.5	25.1	9.6	31,447
With Proposed Project [c]	18.5	0.15	1.0	0.9	7.3	4.9	4.5	2.5	25.0	9.5	33,211
Percent Change from Pre-First Phase to Proposed Project	-53%	-37%	-29%	-40%	51%	21%	50%	39%	32%	38%	+21%

lbs/yr = pounds per year
10^3 ft^3/yr =one thousand cubic feet per year
mg/L = milligrams per lite
mg/L = micrograms per liter
TSS = Total Suspended Solids
TP = Total Phosphorus
TKN = Total Kjeldahl Nitrogen
O&G = Oil and Grease
TCu = Total Copper
DCu = Dissolved Copper
TPb = Total Lead
DPb = Dissolved Lead
TZn = Total Zinc
DZn = Dissolved Zinc

[a] *Subtotals and totals were calculated prior to rounding.*
[b] *Total pollutant loads for pre-First Phase conditions are included in table, to provide a basis for comparison of project impacts. Breakdown of existing pollutant loading for each area is provided in Volume I, Section 3, of the Water Resources Technical Report (Appendix F-1).*
[c] *Proposed Project at buildout which would also include the adjacent Playa Vista First Phase Project.*

Source: Camp Dresser and McKee Inc. and GeoSyntec Consultants.

The project goal of no-net increase in concentrations and total loads to the Ballona Channel is made possible due to significant natural pollutant removal provided by the Freshwater Wetlands System of off-site drainages, including the Jefferson Storm Drain, the Lincoln Storm Drain South, and the Westchester Bluffs.[218] As mentioned in Subsection 3.1.1.2, if the Project

[218] *Wetlands are recognized as effectively improving stormwater quality. See, e.g., ASCE/EPA National BMP Database www.bmpdatabase.org.*

can demonstrate that beneficial uses in receiving waters are maintained (through either "no increase" or decreases) in concentrations or total pollutant loads, it will have met the requirements of the State's Antidegradation Policy. Therefore, the Proposed Project would not contribute to violations of applicable and related regulatory standards as defined in the Basin Plan for the receiving waterbody; hence, the Proposed Project impacts would be less than significant.

Table 45 on page 481 provides a breakdown of the estimated average concentrations that contribute to the influent into the Ballona Channel with the Playa Vista First Phase and the Proposed Project. As shown in Table 45, the concentrations of the influent from the Ballona Wetlands have higher concentrations of total suspended solids (TSS), total phosphorus (TP), total Kjeldahl nitrogen (TKN), and total and dissolved copper (TCu and DCu, respectively) and total and dissolved zinc (TZn and DZn zinc, respectively) than the influent from the Freshwater Marsh. These higher concentrations are due to the fact that the Ballona Wetlands primarily receive stormwater runoff from off-site tributary areas that do not receive treatment, as well as low treatment levels projected for the Ballona Wetlands. The slightly higher concentrations of total and dissolved lead (TPb and DPb, respectively) in the Freshwater Marsh effluent compared to the Ballona Wetlands correspond to the relatively smaller amount of runoff generated (and associated pollutants) from off-site Ballona Wetlands tributary areas (which is approximately 25 percent of the Ballona Channel influent volume) compared to the Freshwater Marsh tributary area and the concentration limits applied in the model to the effluent of the Freshwater Marsh.

Table 46 on page 482 provides a breakdown of the metals concentrations that contribute to the influent quality of the Ballona Channel from the Proposed Project compared to acute CTR criteria. It is important to note that these predicted influent concentrations do not take into account the ambient water quality of the Ballona Channel or the substantial amount of stormwater runoff that occurs upstream of the Channel segment adjacent to Playa Vista (e.g., the Proposed Project area is less than 1 percent of the total Ballona Creek Watershed). However, to account for the tendency of dissolved metals to bind with organic matter (metals complexion) during the initial mixing of freshwater with the estuarine waters of the Ballona Channel, an effective dissolved metals concentration was estimated using the observed dissolved and particulate fractionation values from the County of Los Angeles' mass-emissions data for Ballona Creek.[219] These effective concentrations more accurately represent the likely contribution of dissolved metals to the saline receiving waters of the Proposed Project because

[219] *Los Angeles County Department of Public Works, 1994-2000 Integrated Receiving Waters Impact Report (http://ladpw.org/wmd/npdes/9400_wq_summaries.zip). The use of the L.A. County data for estimating changes to dissolved metals fractionation is considered a conservative use of site-specific data, as water quality monitoring in the San Francisco Bay Estuary indicates that dissolved copper, lead, and zinc are rarely measured at concentrations greater than 50 percent of the total metals concentrations (San Francisco Estuary Institute, SFEI, 1997. Regional Monitoring Program for Trace Substances, 1997 Annual Report).*

Table 45

REPRESENTATIVE STORMWATER CONCENTRATIONS TO THE BALLONA CHANNEL FROM FRESHWATER MARSH AND BALLONA WETLANDS WITH THE PLAYA VISTA FIRST PHASE PROJECT AND PROPOSED PROJECT

	Predicted Average Concentrations									
	(mg/L)				(mg/L)					
	TSS	TP	TKN	O&G	TCu	DCu	TPb	DPb	TZn	DZn
Effective Freshwater Marsh invluent to Ballona Channel (92% of total effluent) [a]	11.3	0.13	0.84	0.90	6.0	2.9	4.6	2.7	20.9	6.9
Ballona Wetlands	39.5	0.18	1.30	0.95	10.9	5.5	4.2	2.1	36.9	15.5
Ballona Channel Total Influent Concentrations	**18.5**	**0.15**	**0.95**	**0.9**	**7.3**	**4.9**	**4.5**	**2.5**	**25.0**	**9.5**

mg/L = milligrams per liter *mg/L = micrograms per liter* *TSS = Total Suspended Solids*
TP = Total Phosphorus *TKN = Total Kjeldahl Nitrogen* *O&G = Oil and Grease*
TCu = Total Copper *DCu = Dissolved Copper* *TPb = Total Lead*
DPb = Dissolved Lead *TZn = Total Zinc* *DZn = Dissolved Zinc*

[a] *The effective influent concentrations from the Freshwater Marsh represent the predicted concentrations after being adjusted to account for observed dissolved and particulate metals fractionation in estuarine waters. For a more detailed explanation, see Volume III, Appendix G, of the Water Resources Technical Report (Appendix F-1).*

Source: GeoSyntec Consultants

metals tend to bind more readily with organic complexes in saltwater systems than in freshwater systems.[220, 221] Refer to Volume III, Appendix G, of the Water Resources Technical Report (Appendix F-1) for information and additional supporting references for the behavior of metals in saline waters. As shown in Table 46 on page 482, the predicted effective dissolved metals concentrations to the Ballona Channel from the Freshwater Wetlands System meet the acute CTR criteria. Comparison of chronic CTR criteria, which is based on a 4-day averaging period rather than an instantaneous maximum, to predicted metals concentrations is not considered appropriate for assessing potential impacts of stormwater runoff at the Proposed Project due to the short storm durations usually encountered in southern California (i.e., average storm duration is less than 12 hours). Nevertheless the metals concentrations are still predicted to meet the chronic CTR criteria (DCu: 3.1 µg/L, DPb: 8.1 µg/L, DZn: 81 µg/L).

[220] *Bruland, K.W., J.R. Donat, and D.A. Hutchins, 1991. "Interactive Influences of Bioactive Trace Metals on Biological Production in Oceanic Waters," Limnological Oceanography, 36:1555-1577.*

[221] *Lores, E.M., and J.R. Pennock, 1998. "The Effect of Salinity on Binding of Cd, Cr, Cu, and Zn to Dissolved Organic Matter," Chemosphere, 39(5), 861-874.*

Table 46

REPRESENTATIVE STORMWATER DISSOLVED METALS CONCENTRATIONS OF DISCHARGES TO THE BALLONA CHANNEL FROM THE FRESHWATER MARSH COMPARED TO CTR CRITERIA*

Parameter	Acute CTR (mg/L) [a]	Predicted Effective Concentration (mg/L) [b]
Dissolved Copper (DCu)	4.8	2.9
Dissolved Lead (DPb)	210	2.7
Dissolved Zinc (DZn)	90	6.9

mg/L = micrograms per liter *CTR = California Toxics Rule*

* *The CTR criteria apply to receiving waters – not directly to discharges to those receiving waters. Thus, the CTR is not directly applicable to the influent to the Channel. A comparison of the CTR to influent concentrations is conservative because it does not account for assimilation that may occur once the influent actually enters the receiving waters.*

[a] *Final Saltwater CTR Criteria – May 18, 2000. Federal Register Volume 65, No. 97, 40 CFR Part 131, Water Quality Standards.*

[b] *The effective influent concentrations from the Freshwater Marsh represent the predicted concentrations after being adjusted to account fo observed dissolved and particulate metals fractionation in estuarine waters. For a more detailed explanation, see Volume III, Appendix G, of the Water Resources Technical Report (Appendix F-1).*

Source: GeoSyntec Consultants

Table 47 on page 483 shows the comparison of the predicted influent to the Ballona Channel to water quality benchmarks for TKN, total phosphorus, total suspended solids, and oil and grease. All of the predicted concentrations are below water quality benchmarks. Therefore, the Proposed Project would not adversely affect beneficial uses or cause a condition of nuisance associated with suspended materials, oil and grease, or biostimulatory substances as defined in the Basin Plan, in the receiving waterbody. Hence, the Proposed Project impacts associated with these water quality parameters would be less than significant, in these respects.

As shown in Table 31 on page 406, the 303(d)-listed parameters for the Ballona Creek Estuary portion of the Ballona Channel includes pesticides, lead, zinc, PAHs, PCBs, high coliform count, sediment toxicity, and shellfish harvesting advisory. The modeling of lead and zinc in Table 44 on page 479 and Table 45 on page 481 show that the listed metals are not predicted to exceed regulatory standards and would not be substantially increased beyond existing conditions. As discussed under the Santa Monica Bay assessment, PAHs and PCBs, as well as the sediment toxicity and shellfish harvesting advisory that are likely associated with metals and these toxic chemicals, are not expected to be adversely impacted by the Proposed Project due to implementation of source and treatment-control BMPs. High coliform counts are commonly introduced into stormwater runoff through exposure to animal and human wastes. Animal wastes deposited on streets or within drainage channels can be washed into storm drains.

Table 47

REPRESENTATIVE STORMWATER CONCENTRATIONS TO THE BALLONA CHANNEL FROM THE FRESHWATER MARSH COMPARED TO WATER QUALITY BENCHMARKS *

Parameter	Water Quality Benchmark	Predicted Concentration
Total Phosphorus (TP), (mg/L) [a]	0.20	0.16
Total Kjeldahl Nitrogen (TKN), (mg/L) [a]	1.5	0.9
Total Suspended Solids (TSS), (mg/L) [b]	60	17.7
Oil and Grease (O&G), (mg/L) [b]	25	0.9

mg/L = milligrams per liter

* *The Water Quality benchmarks apply to receiving waters – not directly to discharges to those receiving waters. Thus the water quality benchmarks are not directly applicable to the Channel. A comparison of the water quality benchmarks is conservative because it does not account for assimilation that may occur once the influent actually enters the receiving waters.*

[a] *U.S. EPA, 2000. Ambient Water Quality Criteria Recommendations: Information Supporting the Development of State and Tribal Nutrient Criteria for Rivers and Streams in Nutrient Ecoregion III. EPA 822-B-00-016.*

[b] *SWRCB, 2001. California Ocean Plan: Water Quality Control Plan Ocean Waters of California.*

Source: GeoSyntec Consultants

Human waste can be introduced into the storm drain system through illegal wastewater connections or through leaks from existing wastewater pipelines. Since the Proposed Project would be a new development, the wastewater collection system would be new, thus making leaks to the storm drain unlikely and minimizing the opportunity for illegal cross-connections. Public education encouraging compliance with animal defecation laws (“pick up after your pet”) is expected to reduce animal waste washed into the storm drains. In addition to these source control measures, the Riparian Corridor and the shallow primary management areas of the Freshwater Marsh are expected to reduce fecal coliform counts, as exposure to sunlight has been shown to greatly reduce coliform densities.[222]

One of the 303(d)-listed parameters is trash. A trash TMDL for the Ballona Creek and Ballona Wetland, which includes the Ballona Creek Estuary, has been approved. The Proposed Project includes stormwater BMPs that would be expected to result in a near zero release of any trash through the storm drain system. Residents and visitors would be educated through the use of signage and other programs regarding proper trash disposal. Frequent street sweeping would effectively remove trash from street surfaces. In addition, the Proposed Project includes

[222] *Burkhardt III, W., K. R. Calci, W. D. Watkins, S. R. Rippy, and S. J. Chirtel, 2000. Inactivation of Indicator Microorganisms in Estuarine Waters. Wat. Res. Vol. 34, No. 8, pp. 2207-2214.*

installation of trash racks at the inlets to the Riparian Corridor, full capture trash screens,[223] which meet TMDL requirements, at the inlets to the Freshwater Marsh, and managed indoor trash collection and storage areas for residents and managed trash collection areas for commercial businesses.

Based on the evaluation of the changes in loads and concentrations in Project discharges to the Ballona Channel, the comparison of modeled constituents to water quality benchmarks, and the assessment of 303(d)-listed parameters (including trash TMDL), the Proposed Project would not cause regulatory standards to be violated as defined or referenced in the applicable NPDES Permit (MS4 Permit) or Basin Plan. In addition, by meeting these regulatory standards and the fact that the Proposed Project is less than 1 percent of the Ballona Creek tributary area, the Proposed Project is not expected to create pollution, contamination, or nuisance as defined in Section 13050 of the California Water Code in the Ballona Channel. Therefore, a less-than-significant impact to the Ballona Channel is expected to occur as a result of the Proposed Project in these respects.

3.4.1.2.6 Ballona Wetlands

Prior to the construction of the Freshwater Marsh, all of the stormwater runoff from the Playa Vista Project area and adjacent off-site areas drained to the Ballona Wetlands prior to discharging to the Ballona Channel. Over the years, this input of urban stormwater contributed to the current degraded state of the Ballona Wetlands. To estimate the water quality impacts of the Proposed Project on Ballona Wetlands, the predicted average pollutant loads and concentrations after the Proposed Project are compared to the predicted average pollutant loads and concentrations during pre-First Phase and after the Playa Vista First Phase Project. Predicted annual average pollutant concentrations from the Proposed Project were also compared to water quality benchmarks. For the purposes of this analysis, since the Freshwater Marsh was not constructed prior to the adjacent Playa Vista First Phase Project, the loads to the Freshwater Marsh under pre-First Phase conditions are estimated using the runoff discharging to the eastern portion of the Ballona Wetlands.

The total reductions in loads and concentrations after the completion of the adjacent Playa Vista First Phase Project and the Proposed Project compared to pre-First Phase levels meets the Playa Vista buildout project goal of improved water quality. Nearly all of the runoff entering the Ballona Wetlands after project buildout (Playa Vista First Phase and Proposed Project) would be from untreated off-site areas that are not tributary to the adjacent Playa Vista

[223] *A full capture device is any device or system that traps all particles retained by a 5 millimeter mesh screen and has a design treatment capacity of not less than the peak flow resulting from a 1-year, 1-hour, storm (determined to be 0.6 inches per hour for the Los Angeles River Watershed, and assumed to be similar for the Ballona Creek Watershed).*

First Phase Project or Proposed Project areas. As indicated on Table 48 on page 486, the loads and concentrations after Proposed Project would achieve a no-net increase from pre-First Phase conditions. Since the Proposed Project would not increase loads or concentrations relative to the pre-First Phase conditions, the State and Federal Antidegradation Policies would be met. Also, the decrease in concentrations demonstrates that the Project would not create pollution or nuisance with respect to the modeled parameters as defined in Section 13050 of the California Water Code; hence, the Proposed Project impacts would be less than significant.

The reduction in loads and concentrations after the Proposed Project is related to the large amount of runoff that discharged directly to the Ballona Wetlands prior to construction of the Freshwater Marsh. Currently, this runoff flows to the Freshwater Marsh where water quality is improved prior to discharge to the Ballona Channel. This diverted runoff accounts for nearly 90 percent of the total runoff volume that once flowed untreated to the Ballona Wetlands. Overflows to the Ballona Wetlands[224] will receive some stormwater quality management in the Freshwater Marsh, contributing to additional reduction in the pollutant loads and concentrations discharging to the Ballona Wetlands.

Table 49 on page 487 shows the predicted pollutant influent concentrations to the Ballona Wetlands from each of the primary contributing source areas. (See Appendix F-1 for the average concentrations that relate to the pre-First Phase and with Playa Vista First Phase Project.) As indicated in Table 49, the influent concentrations of the runoff entering the Ballona Wetlands from the Freshwater Marsh (which includes contributions from the adjacent Playa Vista First Phase Project and the Proposed Project) are less than the influent concentrations from off-site areas for all constituents except lead, due to the size and type of land uses (more commercial and industrial) associated with the off-site tributary area of the Freshwater Marsh). The predicted influent concentrations indicate an improvement in water quality of the Ballona Wetlands due to the initial mixing that would be caused by Freshwater Marsh overflow to the Ballona Wetlands. Historically, the Ballona Wetlands has been a brackish marsh that supports a variety of saltwater tolerant species of flora and fauna. Now that less freshwater will enter the Ballona Wetlands due to the diversion of runoff to the Freshwater Marsh, habitat alterations due to urban runoff impacts should be reduced.

The pollutant concentrations in the total influent to the Ballona Wetlands compared to the water quality benchmarks, are shown in Table 50 on page 488 and Table 51 on page 489. All of the predicted concentrations are well below the water quality benchmarks and the predicted acute CTR criteria. As with the Ballona Channel, the dissolved metals concentrations predicted in the

[224] *Overflows to the Ballona Wetlands from the Freshwater Marsh is the runoff from a greater than 1-year design storm event that flows over the weir. This amount of runoff is equivalent to 8 percent of the annual average runoff.*

Table 48

REPRESENTATIVE STORMWATER LOADS AND CONCENTRATIONS TO THE BALLONA WETLANDS FROM THE FRESHWATER MARSH

	Predicted Average Loads[a]										
	(lbs/yr)				(lbs/yr)						Volume
	TSS	TP	TKN	O&G	Tcu	DCu	TPb	DPb	TZn	DZn	(10^3 ft^3/year)
Pre-First Phase[b]	71,883	241	1,459	1,671	15.9	8.6	9.7	4.4	124.9	44.7	13,329
With Playa Vista First Phase Project	1,417	17	105	113	0.8	0.6	0.6	0.3	2.6	0.9	2,008
With Proposed Project[c]	1,516	18	112	121	.08	0.6	.06	.04	2.8	1.0	2,149
Percent Change from Pre-First Phase to Proposed Project	-98%	-93%	-92%	-93%	-95%	-93%	-94%	92%	-98%	-98%	-84%

	Predicted Average Concentrations[a]										
	(mg/L)				(mg/L)						Volume
	TSS	TP	TKN	O&G	Tcu	DCu	TPb	DPb	TZn	DZn	(10^3 ft^3/year)
Pre-First Phase[b]	86.4	0.29	1.75	2.01	19.1	10.3	11.6	5.3	150.1	53.7	13,329
With Playa Vista First Phase Project	11.3	0.13	0.84	0.90	6.0	4.7	4.6	2.7	20.9	7.5	2,008
With Proposed Project[c]	11.3	0.13	0.84	0.90	6.0	4.7	4.6	2.7	20.9	7.5	2,149
Percent Change from Pre-First Phase to Proposed Project	-87%	54%	52%	-55%	-69%	-55%	60%	50%	-86%	86%	-84%

lbs/yr = pounds per year
10^3 ft^3/yr =one thousand cubic feet per year
mg/L = milligrams per liter
mg/L = micrograms per liter
TSS = Total Suspended Solids
TP = Total Phosphorus
TKN = Total Kjeldahl Nitrogen
O&G = Oil and Grease
TCu = Total Copper
DCu = Dissolved Copper
TPb = Total Lead
DPb = Dissolved Lead
TZn = Total Zinc
DZn = Dissolved Zinc

[a] *Subtotals and totals were calculated prior to rounding*

[b] *Total pollutant loads for pre-First Phase conditions are included in table, to provide a basis for comparison of project impacts. Breakdown of existing pollutant loading for each area is provided in Volume I, Section 3 of the Water Resources Technical Report (Appendix F-1).*

[c] *Which also includes adjacent Playa Vista First Phase Project (i.e., buildout of Playa Vista).*

Source: Camp Dresser and McKee Inc. and GeoSyntec Consultants

discharge to the Ballona Wetlands from the Freshwater Marsh were adjusted to account for metals complexion in the saline waters of the Ballona Wetlands (see Volume III, Appendix G, of the Water Resources Technical Report, Appendix F-1, for additional information). Note that effective effluent concentrations show in Table 50 on page 488 also meet the chronic CTR criteria. Therefore, the Proposed Project would not cause regulatory standards associated with these water quality constituents to be violated; hence, the Proposed Project impacts would be less than significant in these respects.

Table 49

REPRESENTATIVE STORMWATER CONCENTRATIONS TO THE BALLONA WETLANDS WITH PLAYA VISTA FIRST PHASE PROJECT AND PROPOSED PROJECT

	Predicted Average Concentrations									
	(mg/L)				(mg/L)					
	TSS	TP	TKN	O&G	TCu	DCu	TPb	DPb	TZn	DZn
Off-Site Stormwater Runoff Direct to Ballona Wetlands	112.6	0.20	1.5	1.0	12.6	5.8	4.1	1.9	76.7	45.7
Effective Freshwater Marsh Overflow to Ballona Wetlands [a]	11.3	0.13	0.8	0.9	6.0	2.9	4.6	2.7	20.9	6.9
Ballona Wetlands Total Influent	**87.0**	**0.18**	**1.3**	**1.0**	**10.9**	**5.5**	**4.2**	**2.1**	**62.6**	**36.0**

mg/L = milligrams per liter *mg/L = micrograms per liter* *TSS = Total Suspended Solids*
TP = Total Phosphorus *TKN = Total Kjeldahl Nitrogen* *O&G = Oil and Grease*
TCu = Total Copper *DCu = Dissolved Copper* *TPb = Total Lead*
DPb = Dissolved Lead *TZn = Total Zinc* *DZn = Dissolved Zinc*

[a] *The effective influent concentrations from the Freshwater Marsh represent the predicted concentrations after being adjusted to account for observed dissolved and particulate metals fractionation in estuarine waters. For a more detailed explanation, see Volume III, Appendix G, of the Water Resources Technical Report (Appendix F-1).*

Source: GeoSyntec Consultants

As shown in Table 31 on page 406, the 303(d) list for the Ballona Wetlands includes arsenic, trash, exotic vegetation, habitat alterations, hydromodifications, and reduced tidal flushing. Low levels of arsenic have been detected in stormwater runoff from monitoring conducted by Los Angeles County. Potential sources of arsenic include native soils, wood preservatives (chromated copper arsenate (CCA)), lead-acid batteries for automobiles, and municipal wastewater.[225] The Proposed Project would use public education and outreach as the primary source control measure for arsenic. Contractors and the general public will be encouraged not to use CCA preserved wood products and will be provided with information on how to properly dispose of used automobile batteries.

A trash TMDL for the Ballona Creek and Wetland, which includes the Ballona Wetlands, has been approved. The Proposed Project includes stormwater BMPs that would be expected to result in a near zero release of any trash through the storm drain system. Residents and visitors would be educated through the use of signage and other programs regarding proper trash disposal. Frequent street sweeping would effectively remove trash from street surfaces. In addition, the Proposed Project includes installation of trash racks at inlets to the Riparian Corridor and full capture trash screens, which meet TMDL requirements, at the inlets to the

[225] *The State of Santa Monica Bay Part One: Assessment of Conditions and Pollution Impacts, Southern California Association of Governments, by MBC Applied Environmental Sciences, October 1998.*

Table 50

REPRESENTATIVE STORMWATER DISSOLVED METALS CONCENTRATIONS OF DISCHARGES TO THE BALLONA WETLANDS FROM THE FRESHWATER MARSH COMPARED TO CTR CRITERIA*

Parameter	Acute CTR (mg/L) [a]	Predicted Effective Concentration (mg/L) [b]
Dissolved Copper (DCu)	4.8	2.9
Dissolved Lead (DPb)	210	2.7
Dissolved Zinc (DZn)	90	6.9

mg/L = micrograms per liter
CTR = California Toxics Rule

* *The CTR criteria apply to receiving waters – not directly to discharges to those receiving waters. Thus, the CTR is not directly applicable to the influent to the Wetlands. A comparison of the CTR to influent concentrations is conservative because it does not account for assimilation that may occur once the influent actually enters the receiving water.*

[a] *Final Saltwater CTR Criteria – May 18, 2000. Federal Register Volume 65, No. 97, 40 CFR Part 131, Water Quality Standards.*

[b] *The effective influent concentrations from the Freshwater Marsh represent the predicted concentrations after being adjusted to account for observed dissolved and particulate metals fractionation in estuarine waters. For a more detailed explanation, see Volume III, Appendix G, of the Water Resources Technical Report (Appendix F-1).*

Source: GeoSyntec Consultants

Freshwater Marsh, managed in-door trash collection and storage areas for residents, and managed trash collection areas for commercial businesses.

The Proposed Project would use only native vegetation in the Riparian Corridor and within the Habitat Creation/Restoration Component. Landscaping in the residential and commercial common areas would use primarily native vegetation to the maximum extent feasible. Any non-native vegetation selected for landscaping would be noninvasive. A tenant/resident education and outreach program would be used to encourage tenants/residents not to plant exotic grasses or other plants whose seeds may potentially migrate off their properties via wind, rain, or animals.

Based on the evaluation of the changes in loads and concentrations in Project discharges to the Ballona Wetlands, the comparison of modeled constituents to water quality benchmarks, and the assessment of 303(d)-listed parameters (including the trash TMDL), the Proposed Project would not cause regulatory standards to be violated as defined in the applicable NPDES Permit (MS4 Permit) or Basin Plan. By meeting these regulatory standards, the Proposed Project is not expected to create pollution, contamination, or nuisance as defined in Section 13050 of the CWC

Table 51

REPRESENTATIVE STORMWATER CONCENTRATIONS TO THE BALLONA WETLANDS FROM THE FRESHWATER MARSH COMPARED TO WATER QUALITY BENCHMARKS*

Parameter	Water Quality Benchmarks	Predicted Concentration
Total Phosphorus (TP), (mg/L) [a]	0.2	0.13
Total Kjeldahl Nitrogen (TKN), (mg/L) [a]	1.5	0.84
Total Suspended Solids (TSS), (mg/L) [b]	60	11.3
Oil and Grease (O&G), (mg/L) [b]	25	0.90

mg/L = milligrams per liter

* *The water quality benchmarks apply to receiving waters – not directly to discharges to those receiving waters. Thus the water quality benchmarks is not directly applicable to the Wetlands. A comparison of the water quality benchmarks is conservative because it does not account for assimilation that may occur once the influent actually enters the receiving waters.*

[a] *U.S. EPA, 2000. Ambient Water Quality Criteria Recommendations: Information Supporting the Development of State and Tribal Nutrient Criteria for Rivers and Streams in Nutrient Ecoregion III. EPA 822-B-00-016.*

[b] *SWRCB, 2001. California Ocean Plan: Water Quality Control Plan Ocean Waters of California.*

Source: GeoSyntec Consultants

in the Ballona Wetlands. A less-than-significant impact to the Ballona Wetlands is expected to occur as a result of the Proposed Project in these respects.

3.4.1.2.7 Freshwater Wetlands System

The Freshwater Wetlands System includes a constructed wetland and a riparian corridor designed to receive and improve the quality of stormwater from the adjacent Playa Vista First Phase Project and the Proposed Project, as well as large off-site areas. At inlets to the Freshwater Marsh, there are shallow and wide "primary management areas" that effectively divide the Marsh into a multi-celled wetland-pond system. The wide areas serve to slow flows down, allow settling, and maximize contact with vegetation and wetland soils. The previous Playa Vista First Phase Project EIR model has been adapted to estimate the effects of the Marsh primary management areas on water quality prior to flows reaching the main parts of the Freshwater Marsh. This was done in order to better assess the potential impacts to water quality within the Marsh itself. It is estimated that about 50 percent of the water quality improvements would occur in the primary management areas. This is probably a conservative assumption in that wetland and detention basin studies have shown that large portions of the pollutants in a marsh settle out within a short distance from the point of inflow.[226]

3.4.1.2.7.1 Freshwater Marsh

The pollutant loading model predicts average annual stormwater loads, concentrations, and flow volumes to each of the Freshwater Marsh primary management areas. The Freshwater Marsh contains three primary management areas: the Jefferson Storm Drain primary management area, the Central Storm Drain primary management area, and the Riparian Corridor/Lincoln Storm Drain South primary management area. For comparison purposes, the pre-First Phase influent loads and concentrations to the primary management areas were assumed equal to the effluent loads and concentrations of the respective storm drains/channels. The predicted loads and concentrations in the primary management areas of the Freshwater Marsh were predicted by conservatively assuming a mixing rate of 3 parts inflow to 1 part outflow.[227] Since the Marsh was not constructed prior to the adjacent Playa Vista First Phase Project, the loads and concentrations in the primary management areas are not included in the comparison to pre-First Phase conditions, but they are included and compared to CTR criteria and other water quality benchmarks for the Proposed Project (see Table 57 on page 496 and Table 59 on page 499). The predicted loads and concentrations from pre-First Phase, with Playa Vista First Phase Project, and with the Proposed Project for each of the three primary management areas are presented in Table 52, Table 53, and Table 54 on pages 491, 492, and 493, respectively.

Comparing the Playa Vista First Phase Project to the Proposed Project, Table 52 on page 491 shows that there is no increase in loads or concentrations for all of the modeled parameters in the effluent of the Jefferson Storm Drain. The primary reason for the no-increase is that the Proposed Project includes only about one-half of an acre of new development in the Jefferson Storm Drain watershed.

Table 53 on page 492 shows the changes in loads and concentrations in the Central Storm Drain just upstream of where it enters the Freshwater Marsh. No flows are in the Central Storm Drain during pre-First Phase, as the drain was constructed as part of the adjacent Playa Vista First Phase. The increase in loads for all parameters except TSS from with Playa Vista First

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[226] *Horner, R. R., The Puget Sound Wetlands and Stormwater Management Research Program: Program Overview and Hydrology and Water Quality Studies. In Development of Guidance for Managing Urban Wetland and Stormwater. Final Report. May 1991. Report to Washington State Department of Ecology, Coastal Zone Management Program, by King County Resources Planning Section, Seattle, Washington Measure, K. and W. Fish, 1989. Behavior of Runoff-Derived Metals in a Detention Pond System. Water, Air, and Soil Pollution, 47:125-138.*

[227] *The actual mixing rates depend on the inflow velocities, the volume of water in the Freshwater Marsh at the onset of a storm, and the physical characteristics of each primary management area.*

Table 52

REPRESENTATIVE STORMWATER LOADS AND CONCENTRATIONS TO THE JEFFERSON STORM DRAIN PRIMARY MANAGEMENT AREA

	Predicted Average Loads [a]										
	(lbs/yr)				(lbs/yr)						Volume
	TSS	TP	TKN	O&G	TCu	DCu	TPb	DPb	TZn	DZn	(10^3 ft^3/year)
Pre-First Phase [b]	59,399	117	794	706	9.6	4.5	4.1	1.9	79.3	47.2	7,500
With Playa Vista First Phase Project	38,062	127	863	880	10.4	4.8	4.5	2.0	89.4	53.2	6,987
With Proposed Project [c]	38,058	127	863	880	10.4	4.8	4.5	2.0	89.4	53.2	6,987
	Predicted Average Concentrations [a]										
	(mg/L)				(mg/L)						Volume
	TSS	TP	TKN	O&G	TCu	DCu	TPb	DPb	TZn	DZn	(10^3 ft^3/year)
Pre-First Phase [b]	126.9	0.25	1.70	1.51	20.6	9.6	8.7	4.0	169.3	100.8	7,500
With Playa Vista First Phase Project	87.3	0.29	1.98	2.02	23.9	11.1	10.3	4.7	204.9	121.9	6,987
With Proposed Project [c]	87.3	0.29	1.98	2.02	23.9	11.1	10.3	4.7	204.9	121.9	6,987

lbs/yr = pounds per year
mg/L = micrograms per liter
TKN = Total Kjeldahl Nitrogen
DCu = Dissolved Copper
TZn = Total Zinc
10^3 ft^3/yr =one thousand cubic feet per year
TSS = Total Suspended Solids
O&G = Oil and Grease
TPb = Total Lead
DZn = Dissolved Zinc
mg/L = milligrams per liter
TP = Total Phosphorus
TCu = Total Copper
DPb = Dissolved Lead

[a] *Subtotals and totals were calculated prior to rounding.*

[b] *Total pollutant loads for pre-First Phase conditions are included in table, to provide a basis for comparison of project impacts. Breakdown of existing pollutant loading for each area is provided in Volume I, Section 3 of the Water Resources Technical Report (Appendix F-1).*

[c] *Which also includes the adjacent Playa Vista First Phase Project (i.e., Playa Vista Project Buildout).*

Source: Camp Dresser and McKee Inc. and GeoSyntec Consultants

Phase Project to with Proposed Project is due to approximately 30 acres of the Riparian Corridor tributary area being routed to the Central Storm Drain after the Proposed Project. The decreases in concentrations for all of the parameters are due to the substantial amount of on-site treatment planned for the Proposed Project such as roof drain planter boxes and catch basin inserts.

Table 54 on page 493 shows the changes in predicted loads and concentrations in the Riparian Corridor/Lincoln Storm Drain South just upstream of the Freshwater Marsh. Under pre-First Phase conditions, the Riparian Corridor is not yet constructed; therefore, for comparison, the loads and concentrations are estimated from the sum of the effluent of the Centinela Ditch and the Lincoln Storm Drain South. For these discharges, there are substantial decreases in all of the pollutant loads and concentrations with implementation of the Proposed Project as compared to pre-First Phase conditions. The decrease from pre-First Phase to with Playa Vista First Phase is primarily due to the substantial water quality benefits of the Riparian Corridor as compared to the Centinela Ditch. The decrease in concentrations are due to the

Table 53

REPRESENTATIVE STORMWATER LOADS AND CONCENTRATIONS TO THE CENTRAL STORM DRAIN PRIMARY MANAGEMENT AREA

	Predicted Average Loads [a]										
	(lbs/yr)				(lbs/yr)						Volume
	TSS	TP	TKN	O&G	TCu	DCu	TPb	DPb	TZn	DZn	(10^3 ft^3/year)
Pre-First Phase (Central Drain nonexistent) [b]	0	0	0	0	0	0	0	0	0	0	0
With Playa Vista First Phase Project	16,639	68	520	447	4.5	2.1	2.2	1.0	31.6	18.8	4,019
With Proposed Project [c]	15,444	96	745	610	5.7	2.7	2.7	1.2	40.6	24.1	5,798
	Predicted Average Concentrations [a]										
	(mg/L)				**(mg/L)**						**Volume**
	TSS	**TP**	**TKN**	**O&G**	**TCu**	**DCu**	**TPb**	**DPb**	**TZn**	**DZn**	**(10^3 ft^3/year)**
Pre-First Phase (Central Drain nonexistent) [b]	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
With Playa Vista First Phase Project	66.3	0.27	2.07	1.78	17.9	8.3	8.6	3.9	125.9	74.9	4,019
With Proposed Project [c]	42.7	0.27	2.06	1.68	15.8	7.3	7.4	3.4	112.1	66.7	5,798

lbs/yr = pounds per year | *10^3 ft^3/yr =one thousand cubic feet per year* | *mg/L = milligrams per liter*
mg/L = micrograms per liter | *TSS = Total Suspended Solids* | *TP = Total Phosphorus*
TKN = Total Kjeldahl Nitrogen | *O&G = Oil and Grease* | *TCu = Total Copper*
DCu = Dissolved Copper | *TPb = Total Lead* | *DPb = Dissolved Lead*
TZn = Total Zinc | *DZn = Dissolved Zinc*

[a] *Subtotals and totals were calculated prior to rounding*
[b] *Total pollutant loads for pre-First Phase conditions are included in table, to provide a basis for comparison of project impacts. Breakdown of existing pollutant loading for each area is provided in Volume I, Section 3 of the Water Resources Technical Report, (Appendix F-1).*
[c] *Which also includes the adjacent Playa Vista First Phase Project (i.e., Playa Vista Project Buildout).*

Source: Camp Dresser and McKee Inc. and GeoSyntec Consultants

substantial amount of on-site treatment planned for the Proposed Project, such as a vegetated swale located within a park adjacent to the Riparian Corridor. Not much change is predicted in the loads or concentrations from Playa Vista First Phase Project to Proposed Project.

Representative loads and concentrations in the main body of the Freshwater Marsh are expected to be substantially better than the concentrations existing in the storm drains and Riparian Corridor at points just upstream of the Freshwater Marsh, as shown in Table 55 on page 494. Under pre-First Phase conditions, the Freshwater Marsh was not yet constructed; therefore,

Table 54

REPRESENTATIVE STORMWATER LOADS AND CONCENTRATIONS TO THE RIPARIAN CORRIDOR/LINCOLN STORM DRAIN SOUTH PRIMARY MANAGEMENT AREA

	Predicted Average Loads [a]										
	(lbs/yr)				(lbs/yr)						Volume
	TSS	TP	TKN	O&G	TCu	DCu	TPb	DPb	TZn	DZn	(10^3 ft^3/year)
Pre-First Phase (sum of Centinela Ditch and Lincoln Drain) [b]	67,384	239	1,439	1,671	15.7	8.5	9.6	4.4	124.4	44.4	13,006
With Playa Vista First Phase Project	22,965	229	1,294	1,138	10.1	7.8	7.4	3.4	114.1	33.5	13,534
With Proposed Project [c]	22,941	229	1,292	1,136	10.1	7.8	7.4	3.4	114.0	33.5	13,519
	Predicted Average Concentrations [a]										
	(mg/L)				**(mg/L)**						**Volume**
	TSS	**TP**	**TKN**	**O&G**	**TCu**	**DCu**	**TPb**	**DPb**	**TZn**	**DZn**	**(10^3 ft^3/year)**
Pre-First Phase (sum of Centinela Ditch and Lincoln Drain) [b]	83.0	0.29	1.77	2.06	19.4	10.5	11.8	5.4	153.3	54.7	13,006
With Playa Vista First Phase Project	27.2	0.27	1.53	1.35	11.9	9.2	8.8	4.0	135.0	39.7	13,534
With Proposed Project [c]	27.2	0.27	1.53	1.35	11.9	9.2	8.8	4.0	135.0	39.7	13,519

lbs/yr = pounds per year
10^3 ft^3/yr =one thousand cubic feet per year
mg/L = milligrams per liter
mg/L = micrograms per liter
TSS = Total Suspended Solids
TP = Total Phosphorus
TKN = Total Kjeldahl Nitrogen
O&G = Oil and Grease
TCu = Total Copper
DCu = Dissolved Copper
TPb = Total Lead
DPb = Dissolved Lead
TZn = Total Zinc
DZn = Dissolved Zinc

[a] *Subtotals and totals were calculated prior to rounding.*
[b] *Total pollutant loads for pre-First Phase conditions are included in table, to provide a basis for comparison of project impacts. Breakdown of existing pollutant loading for each area is provided in Volume I, Section 3 of the Water Resources Technical Report (Appendix F-1).*
[c] *Which also includes the adjacent Playa Vista First Phase Project (i.e., Playa Vista Project Buildout).*

Source: Camp Dresser and McKee Inc. and GeoSyntec Consultants

for comparison purposes, the loads for the pre-First Phase Project conditions are equivalent to the sum of the loads from each of the future contributing storm drains/channels (i.e., Jefferson Storm Drain, Lincoln Storm Drain South, and Centinela Ditch).

As compared to pre-First Phase, the concentrations of all of the modeled parameters and most loads (except dissolved lead) are also expected to decrease with implementation of the adjacent Playa Vista First Phase Project and the Proposed Project. Predicted changes in loads and concentrations are attributable to the changes to existing land uses and the improvement in stormwater quality on-site, in the water quality inlets, the Riparian Corridor, and the primary management areas of the Freshwater Marsh. The area occupied by the current Freshwater Marsh prior to its construction received both on- and off-site runoff and associated pollutants. With

Table 55

REPRESENTATIVE STORMWATER LOADS AND CONCENTRATIONS TO THE MAIN BODY OF THE FRESHWATER MARSH NEAR THE PRIMARY MANAGEMENT AREAS

	Predicted Average Loads [a]										
	(lbs/yr)				(lbs/yr)						Volume
	TSS	TP	TKN	O&G	TCu	DCu	TPb	DPb	TZn	DZn	(10^3 ft^3/year)
Pre-First Phase (sum of future contributing drainages) [b]	71,883	241	1,459	1,671	15.9	8.6	9.7	4.4	124.9	44.7	13,329
With Playa Vista First Phase Project	49,240	317	2,000	1,939	17.3	11.04	10.6	5.3	134.1	58.8	25,100
With Proposed Project [c]	49,251	338	2,158	2,069	18.2	11.6	11.1	5.6	139.7	61.8	26,863
	Predicted Average Concentrations [a]										
	(mg/L)				(mg/L)						Volume
	TSS	TP	TKN	O&G	TCu	DCu	TPb	DPb	TZn	DZn	(10^3 ft^3/year)
Pre-First Phase (sum of future contributing drainages) [b]	86.4	0.29	1.75	2.01	19.1	10.3	11.6	5.3	150.1	53.7	13,329
With Playa Vista First Phase Project	31.4	0.20	1.28	1.24	11.0	7.0	6.8	3.4	85.6	37.5	25,100
With Proposed Project [c]	29.4	0.20	1.29	1.23	10.9	6.9	6.6	3.3	83.3	36.9	26,863

lbs/yr = pounds per year
10^3 ft^3/yr =one thousand cubic feet per year
mg/L = milligrams per liter
mg/L = micrograms per liter
TSS = Total Suspended Solids
TP = Total Phosphorus
TKN = Total Kjeldahl Nitrogen
O&G = Oil and Grease
TCu = Total Copper
DCu = Dissolved Copper
TPb = Total Lead
DPb = Dissolved Lead
TZn = Total Zinc
DZn = Dissolved Zinc

[a] *Subtotals and totals were calculated prior to rounding*

[b] *Total pollutant loads for pre-First Phase conditions are included in table, to provide a basis for comparison of project impacts. Breakdown of existing pollutant loading for each area is provided in Volume I, Section 3 of the Water Resources Technical Report (Appendix F-1). Sum of future contributing drainages includes Jefferson Storm Drain, Centinela Ditch, Lincoln Storm Drain and off-site tributary areas.*

[c] *Which also includes the adjacent Playa Vista First Phase Project (i.e., Playa Vista Project Buildout).*

Source: Camp Dresser and McKee Inc. and GeoSyntec Consultants

implementation of the Proposed Project, a larger amount of impervious area would increase runoff that would be routed to the Freshwater Marsh, contributing to the larger annual total runoff volume. The conversion of undeveloped areas to commercial and residential land uses tends to decrease the amount of suspended solids associated with upland erosion, and tends to increase the amount of lead associated with urban activities.

Table 56 on page 495 shows a breakdown of the concentrations into and out of the Freshwater Wetlands System after completion of the adjacent Playa Vista First Phase Project and the Proposed Project. (See Volume I, Section 3 of the Water Resources Technical Report,

Table 56

REPRESENTATIVE STORMWATER CONCENTRATIONS TO THE FRESHWATER WETLANDS SYSTEM WITH PLAYA VISTA FIRST PHASE AND PROPOSED PROJECT

	Predicted Average Concentrations									
	(mg/L)				(mg/L)					
	TSS	**TP**	**TKN**	**O&G**	**Tcu**	**DCu**	**TPb**	**DPb**	**TZn**	**DZn**
Riparian Corridor at Lincoln [a]	24.9	0.27	1.5	1.3	11.4	9.9	9.6	4.4	140.6	35.2
Central Storm Drain [a]	42.7	0.27	2.1	1.7	15.8	7.3	7.4	3.4	112.1	66.7
Jefferson Storm Drain [a]	87.2	0.29	2.0	2.0	23.9	11.1	10.3	4.7	204.7	121.8
Lincoln Storm Drain – South	42.4	0.26	1.8	1.7	15.5	7.2	4.6	2.1	115.9	69.0
Direct runoff to Freshwater Marsh	88.9	0.05	0.4	0.1	4.1	1.9	1.3	0.6	11.9	7.1
Main Body of the Freshwater Marsh	**29.4**	**0.20**	**1.3**	**1.2**	**10.9**	**6.9**	**6.6**	**3.3**	**83.3**	**36.9**
Freshwater Marsh Effluent	**11.3**	**0.13**	**0.8**	**0.9**	**6.02**	**4.66**	**4.59**	**2.68**	**20.89**	**7.53**

WQ = Water Quality
mg/L = milligrams per liter *mg/L = micrograms per liter* *TSS = Total Suspended Solids*
TP = Total Phosphorus *TKN = Total Kjeldahl Nitrogen* *O&G = Oil and Grease*
TCu = Total Copper *DCu = Dissolved Copper* *TPb = Total Lead*
DPb = Dissolved Lead *TZn = Total Zinc* *DZn = Dissolved Zinc*

[a] These concentrations assume treatment from the on-site treatment controls (catch basin inserts, vegetated swales, and roof-drain planter boxes).

Source: GeoSyntec Consultants

Appendix F-1, for the average concentrations that relate to the pre-First Phase and with Playa Vista First Phase Project.) The Jefferson Storm Drain, which receives 83 percent of its runoff from off-site tributary areas, contributes the highest runoff concentrations to the Freshwater Marsh.

Comparisons of modeled stormwater quality in the primary management areas of the Freshwater Marsh to water quality benchmarks (acute CTR criteria) for metals for single storm events are shown in Table 57 and Table 58 on pages 496 and 497. Table 57 on page 496 shows that the predicted concentrations in the primary management areas of the main body of the Marsh are all well below the dissolved metals CTR criteria. Stormwater in the Riparian Corridor/Lincoln Storm Drain South, with the upstream Riparian Corridor treatment, and the Central Storm Drain, primary management areas are not predicted to contain concentrations greater than acute CTR.

Table 57

REPRESENTATIVE STORMWATER DISSOLVED METALS CONCENTRATIONS IN THE FRESHWATER MARSH PRIMARY MANAGEMENT AREAS COMPARED TO CTR CRITERIA*

Jefferson Storm Drain Primary Management Area (Hardness = 200 mg/L)

Parameter	Acute CTR (mg/L) [a]	Predicted Concentration (mg/L)
Dissolved Copper (DCu)	26	10.4
Dissolved Lead (DPb)	136	4.5
Dissolved Zinc (DZn)	210	108.4

Central Storm Drain Primary Management Area (Hardness = 200 mg/L)

Parameter	Acute CTR (mg/L) [a]	Predicted Concentration (mg/L)
Dissolved Copper (DCu)	26	6.9
Dissolved Lead (DPb)	136	3.2
Dissolved Zinc (DZn)	210	59.3

Riparian Corridor/Lincoln Storm Drain South Primary Management Area (Hardness = 200 mg/L)

Parameter	Acute CTR (mg/L) [a]	Predicted Concentration (mg/L)
Dissolved Copper (DCu)	26	8.6
Dissolved Lead (DPb)	136	3.9
Dissolved Zinc (DZn)	210	35.3

Main Body of Marsh (Hardness = 300 mg/L)

Parameter	Acute CTR (mg/L) [a]	Predicted Concentration (mg/L)
Dissolved Copper (DCu)	38	6.9
Dissolved Lead (DPb)	208	3.3
Dissolved Zinc (DZn)	297	36.9

mg/L = milligrams per liter
mg/L = micrograms per liter
CTR = California Toxics Rule

* *The CTR does not apply directly to stormwater but, rather, to the receiving waters to which the stormwater discharges. A comparison of the CTR to the stormwater flows is conservative because it does not account for assimilation that may occur once the stormwater enters the receiving water.*

[a] *Final Freshwater CTR Criteria – May 18, 2000. Federal Register Volume 65, No. 97, 40 CFR Part 131, Water Quality Standards. The hardness concentrations used to calculate the CTR criteria are discussed further in Section 3.2.4.2.3.1 of Volume I, Section 3 of the Water Resources Technical Report (Appendix F-1)*

Source: GeoSyntec Consultants

Table 58

REPRESENTATIVE STORMWATER CONCENTRATIONS IN THE MAIN BODY OF THE FRESHWATER MARSH COMPARED TO NUTRIENT WATER QUALITY BENCHMARKS*

Parameter	Water Quality Benchmark [a]	Predicted Concentration
Jefferson Storm Drain Primary Management Area		
Total Phosphorus (TP), (mg/L)	2.8	0.3
Total Kjeldahl Nitrogen (TKN), (mg/L)	3.3	1.8
Central Storm Drain Primary Management Area		
Parameter	**Water Quality Benchmark [a]**	**Predicted Concentration**
Total Phosphorus (TP), (mg/L)	2.8	0.3
Total Kjeldahl Nitrogen (TKN), (mg/L)	3.3	1.9
Riparian Corridor/Lincoln Storm Drain South Primary Management Area		
Parameter	**Water Quality Benchmark [a]**	**Predicted Concentration**
Total Phosphorus (TP), (mg/L)	2.8	0.3
Total Kjeldahl Nitrogen (TKN), (mg/L)	3.3	1.4
Main Body of Marsh		
Parameter	**Water Quality Benchmark [a]**	**Predicted Concentration**
Total Phosphorus (TP), (mg/L)	2.8	0.2
Total Kjeldahl Nitrogen (TKN), (mg/L)	3.3	1.3

mg/L = milligrams per liter

* *The Water Quality benchmarks apply to receiving waters – not directly to discharges to those receiving waters. Thus the water quality benchmarks are not directly applicable to the Freshwater Marsh. A comparison of the water quality benchmarks is conservative because it does not account for assimilation that may occur once the influent actually enters the receiving waters.*

[a] *U.S. EPA, 2000. Ambient Water Quality Criteria Recommendations: Information Supporting the Development of State and Tribal Nutrient Criteria for Rivers and Streams in Nutrient Ecoregion III. EPA 822-B-00-016*

Source: GeoSyntec Consultants

Table 58 provides a comparison of the nutrient water quality benchmarks. As shown in Table 58, all of the concentrations discharged to the Freshwater Marsh are predicted to be below the benchmarks. However, these benchmarks are very conservative, particularly for the Freshwater Marsh and discharges to the Ballona Wetlands, which could actually benefit from nutrient loading by promoting aquatic plant growth and benthic community activities.[228] The nutrient water quality benchmarks were chosen for comparison purposes only as numeric water quality standards for the modeled nutrients. They are not intended to represent distinct thresholds of significant impact to receiving waters, but rather are used as an assessment tool of the approximate levels of concern for waters that have not been impacted by human activities and are protective of beneficial uses, and only if substantially exceeded might an impact be

[228] *Kadlec, R. H. and R. L. Knight, Treatment Wetlands. CRC Press LLC, Boca Raton, FL, 1996.*

considered significant. By meeting these benchmarks on an annual average basis, the impact assessment concludes that the Proposed Project would not impact receiving waters with respect to TKN and total phosphorus.

The Basin Plan contains narrative water quality objectives for biostimulatory substances. Nutrients such as phosphorus and nitrogen are required by aquatic organisms for growth; however, in excess, these nutrients can "overstimulate" aquatic growth leading to degradation of water quality. Since the nutrient water quality benchmarks are based on streams that have not been heavily impacted and are protective of beneficial uses, meeting these thresholds also complies with the Basin Plan water quality objectives for biostimulatory substances.

Table 59 on page 499 provides a comparison of the TSS and oil and grease water quality benchmarks. The table shows that no benchmark exceedances will occur in the primary management areas or the main body of the Freshwater Marsh except for TSS in the Jefferson Storm Drain primary management area. However, the primary management areas are specifically designed as vegetated, shallow water areas to slow flow velocities and capture particulates. Also, the TSS benchmark is only legally applicable to publicly owned treatment works and industrial dischargers, in each case, that discharge directly to the ocean; it is used here for reference due to the lack of applicable numeric water quality standards for TSS. The higher TSS concentration predicted for the Jefferson Storm Drain primary management area is indicative of the amount of off-site areas not receiving treatment in biofilters and catch basin inserts, such as those included in the adjacent Playa Vista First Phase Project and Proposed Project. The Jefferson Storm Drain receives less than 1 percent of its runoff from the Proposed Project and less than 17 percent of its runoff from the adjacent Playa Vista First Phase Project. The remaining 83 percent of runoff is primarily from off-site residential, industrial, and transportation land uses.

For all three primary management areas, as well as the main body of the Freshwater Marsh, the concentrations are predicted to remain unchanged or decrease with implementation of the Proposed Project as compared to with the adjacent Playa Vista First Phase Project. Only for the Central Storm Drain primary management area are loads predicted to increase for some parameters between the Playa Vista First Phase Project and Proposed Project. The increases in loads for the Central Storm Drain primary management area, and consequently the main body of the Freshwater Marsh, are attributable to approximately 30 acres of the Riparian Corridor tributary area being routed to the Central Storm Drain after the Proposed Project. Due to a significant amount of on-site controls, such as roof-drain planter boxes and catch basin inserts, planned as part of the Proposed Project, the increases are much less than would occur without on-site controls.

The Freshwater Wetlands System was specifically designed to manage increases in runoff and associated pollutant loads and concentrations with implementation of the Proposed

Table 59

REPRESENTATIVE STORMWATER CONCENTRATIONS IN THE MAIN BODY AND IN THE EFFLUENT OF THE FRESHWATER MARSH COMPARED TO WATER QUALITY BENCHMARKS*

Parameter	Water Quality Benchmark [a]	Predicted Concentration
Jefferson Storm Drain Primary Management Area		
Total Suspended Solids (TSS), (mg/L)	60	79
Oil and Grease (O&G), (mg/L)	25	1.9
Central Storm Drain Primary Management Area		
Parameter	**Water Quality Benchmark [a]**	**Predicted Concentration**
Total Suspended Solids (TSS), (mg/L)	60	38
Oil and Grease (O&G), (mg/L)	25	1.6
Riparian Corridor/Lincoln Storm Drain South Primary Management Area		
Parameter	**Water Quality Benchmark [a]**	**Predicted Concentration**
Total Suspended Solids (TSS), (mg/L)	60	25
Oil and Grease (O&G), (mg/L)	25	1.3
Main Body of Marsh		
Parameter	**Water Quality Benchmark [a]**	**Predicted Concentration**
Total Suspended Solids (TSS), (mg/L)	60	29
Oil and Grease (O&G), (mg/L)	25	1.2

mg/L = milligrams per liter

* *The Water Quality benchmarks apply to receiving waters – not directly to discharges to those receiving waters. Thus the water quality benchmarks are not directly applicable to the Freshwater Marsh. A comparison of the water quality benchmarks is conservative because it does not account for assimilation that may occur once the influent actually enters the receiving waters.*

[a] *SWRCB, 2001. California Ocean Plan: Water Quality Control Plan Ocean Waters of California.*

Source: GeoSyntec Consultants

Project. Since concentrations of all modeled pollutants (chosen because they are typical of urban stormwater parameters as discussed in Subsection 3.1.1) are not predicted to increase in the Freshwater Marsh, and increases in loads are insignificant with respect to the anticipated functionality of the Freshwater Wetlands System, it is not anticipated that the Proposed Project would create pollution, contamination, or nuisance as defined in Section 13050 of the CWC associated with the modeled pollutants. In addition, the influent concentrations into the Ballona Channel do not cause regulatory standards to be violated as defined in the applicable NPDES Permit (MS4 Permit) or Basin Plan and in turn would not create pollution, contamination, or nuisance as defined in Section 13050 of the CWC. Therefore, slightly elevated loads within the Freshwater Marsh, including the primary management areas, are considered less than significant.

The predicted concentrations in all of the primary management areas are well below the CTR criteria. For all of the non-regulatory benchmarks, only the Jefferson Storm Drain primary management area exceeds the TSS benchmark, and this exceedance is associated with the existing runoff from off-site areas within the Jefferson Storm Drain watershed rather than runoff from the Proposed Project. Therefore, the Proposed Project would not contribute to this potential exceedance, and no significant impact is anticipated with respect to the modeled water quality parameters.

Since the Freshwater Wetlands System was designed to manage increases in runoff and to specifically employ the primary management areas for controlling urban pollution, it is not anticipated that the Proposed Project would create pollution, contamination, or nuisance as defined in Section 13050 of the CWC. Also, the predicted concentrations in the main body of the Freshwater Marsh, as well as the primary management areas receiving the majority of runoff from off-site areas, do not exceed CTR criteria, and do not cause regulatory standards to be violated as defined or referenced in the applicable NPDES Permit (MS4 Permit) or Basin Plan. Therefore, impacts to the Freshwater Marsh are considered less than significant in these respects.

3.4.1.2.7.2 Riparian Corridor

Discharges to the Riparian Corridor occur at several locations along its length and includes runoff from off-site areas, as well as the adjacent Playa Vista First Phase Project, and the Proposed Project. Prior to the construction of the Riparian Corridor (which will replace the Centinela Ditch), the Centinela Ditch will continue to receive all of the runoff from these areas. In fact, with the implementation of the Proposed Project the runoff area tributary to the Riparian Corridor would decrease by nearly 30 acres as compared to the Playa Vista First Phase Project due to routing of Project area runoff to the Central Storm Drain. Table 60 on page 501 and Table 61 on page 502 show the changes in loads and concentrations in the Riparian Corridor (Centinela Ditch for pre-First Phase) at the downstream Proposed Project boundary and at Lincoln Boulevard, respectively. Notice that in both tables all of the loads and concentrations with the Proposed Project are predicted to decrease compared to pre-First Phase conditions, and are predicted to either decrease slightly or remain unchanged compared to the Playa Vista First Phase Project.

Table 62 on page 503 summarizes the contributing runoff concentrations of the modeled parameters to the Riparian Corridor. (See Volume I, Section 3 of the Water Resources Technical Report, Appendix F-1, for the average concentrations that relate to the pre-First Phase and with Playa Vista First Phase Project.)

Table 63 on page 504 compares the predicted concentrations in and to the Riparian Corridor to acute CTR criteria. Table 64 on page 505 and Table 65 on page 506 compare the predicted influent concentrations, as well as the in-stream concentrations of the Riparian Corridor to the water quality benchmarks.

Table 60

REPRESENTATIVE STORMWATER LOADS AND CONCENTRATIONS IN THE RIPARIAN CORRIDOR/CENTINELA DITCH AT PROPOSED PROJECT BOUNDARY

	Predicted Average Loads [a]										
	(lbs/yr)				(lbs/yr)						Volume
	TSS	TP	TKN	O&G	TCu	DCu	TPb	DPb	TZn	DZn	(10^3 ft^3/year)
Pre-First Phase [b]	47,639	178	1,000	1,293	11.5	6.6	7.9	3.6	96.3	29.8	9,095
With Playa Vista First Phase Project	13,372	150	800	699	6.1	5.3	5.1	2.4	75.6	18.9	8,611
With Proposed Project [c]	13,349	149	799	698	6.1	5.3	5.1	2.4	75.4	18.9	8,596
	Predicted Average Concentrations [a]										
	(mg/L)				**(mg/L)**						**Volume**
	TSS	**TP**	**TKN**	**O&G**	**TCu**	**DCu**	**TPb**	**DPb**	**TZn**	**DZn**	**(10^3 ft^3/year)**
Pre-First Phase [b]	83.9	0.3	1.8	2.3	20.3	11.6	13.9	6.3	169.5	52.5	9,095
With Playa Vista First Phase Project	24.9	0.3	1.5	1.3	11.4	9.9	9.6	4.4	140.6	35.2	8,611
With Proposed Project [c]	24.9	0.3	1.5	1.3	11.4	9.9	9.6	4.4	140.6	35.2	8,596

lbs/yr = pounds per year
10^3 ft^3/yr = one thousand cubic feet per year
mg/L = milligrams per liter
mg/L = micrograms per liter
TSS = Total Suspended Solids
TP = Total Phosphorus
TKN = Total Kjeldahl Nitrogen
O&G = Oil and Grease
TCu = Total Copper
DCu = Dissolved Copper
TPb = Total Lead
DPb = Dissolved Lead
TZn = Total Zinc
DZn = Dissolved Zinc

[a] *Subtotals and totals were calculated prior to rounding*

[b] *Total pollutant loads for pre-First Phase conditions are included in table, to provide a basis for comparison of project impacts. Breakdown of existing pollutant loading for each area is provided in Volume I, Section 3, of the Water Resources Technical Report (Appendix F-1).*

[c] *Which also includes the adjacent Playa Vista First Phase Project (i.e., Playa Vista Project Buildout).*

Source: Camp Dresser and McKee Inc. and GeoSyntec Consultants.

None of the benchmarks are exceeded except for TSS in the influent to the Riparian Corridor. This exceedance is just slightly above the conservative TSS benchmark of 60 mg/L, and as shown in Table 65 on page 506 the concentrations in the Riparian Corridor, due to the natural treatment processes of sedimentation and biofiltration, are predicted to be 25 mg/L just downstream from the Proposed Project boundary. The Riparian Corridor was specifically designed to treat urban runoff containing suspended sediment and the O&M Manual includes measures for removing captured sediment in the Riparian Corridor when the average sediment depth exceeds 10 percent of its design depth.

The Riparian Corridor was specifically designed to provide enhanced treatment of First Phase and Proposed Project runoff, as well as a significant amount of off-site area runoff prior to reaching the Freshwater Marsh. Nevertheless, flows within the Riparian Corridor still meets all

Table 61

REPRESENTATIVE STORMWATER LOADS AND CONCENTRATIONS IN THE RIPARIAN CORRIDOR/CENTINELA DITCH AT LINCOLN BOULEVARD

	Predicted Average Loads [a]										Volume
	(lbs/yr)				(lbs/yr)						(10^3 ft^3/year)
	TSS	TP	TKN	O&G	TCu	DCu	TPb	DPb	TZn	DZn	
Pre-First Phase [b]	62,718	211	1,239	1,494	14.1	7.8	9.1	4.2	111.9	36.9	11,261
With Playa Vista First Phase Project	18,256	200	1,092	954	8.4	7.0	6.9	3.2	101.2	25.9	11,756
With Proposed Project [c]	18,232	200	1,091	953	8.4	7.0	6.9	3.2	101.1	25.8	11,741
	Predicted Average Concentrations [a]										**Volume**
	(mg/L)				**(mg/L)**						**(10^3 ft^3/year)**
	TSS	**TP**	**TKN**	**O&G**	**TCu**	**DCu**	**TPb**	**DPb**	**TZn**	**DZn**	
Pre-First Phase [b]	89.2	0.3	1.8	2.1	20.0	11.0	12.9	5.9	159.2	52.5	11,261
With Playa Vista First Phase Project	24.9	0.3	1.5	1.3	11.4	9.5	9.4	4.3	137.9	35.2	11,756
With Proposed Project [c]	24.9	0.3	1.5	1.3	11.4	9.5	9.4	4.3	137.9	35.2	11,741

lbs/yr = pounds per year
10^3 ft^3/yr =one thousand cubic feet per year
mg/L = milligrams per liter
mg/L = micrograms per liter
TSS = Total Suspended Solids
TP = Total Phosphorus
TKN = Total Kjeldahl Nitrogen
O&G = Oil and Grease
TCu = Total Copper
DCu = Dissolved Copper
TPb = Total Lead
DPb = Dissolved Lead
TZn = Total Zinc
DZn = Dissolved Zinc

[a] *Subtotals and totals were calculated prior to rounding.*
[b] *Total pollutant loads for pre-First Phase conditions are included in table, to provide a basis for comparison of project impacts. Breakdown of existing pollutant loading for each area is provided in Volume I., Section 3 of the Water Resources Technical Report(Appendix F-1).*
[c] *Which also includes the adjacent Playa Vista First Phase Project (i.e., Playa Vista Project Buildout).*

Source: Camp Dresser and McKee Inc. and GeoSyntec Consultants

of the in-stream water quality benchmarks used to assess potential impacts to receiving waters, so it is not anticipated that the Proposed Project would create pollution, contamination, or nuisance as defined in Section 13050 of the CWC in the Riparian Corridor, or cause any of the numerical or narrative regulatory standards to be violated as defined or referenced in the applicable NPDES Permit (MS4 Permit) or Basin Plan. Therefore, impacts to the Riparian Corridor are considered less than significant in these respects.

3.4.1.2.8 Conformance with Performance Criteria

As described above in Subsection 2.1.1.4, the Performance Criteria are site-specific regulatory requirements established for the adjacent Playa Vista First Phase Project and the Proposed Project by the regulatory agencies that permitted and approved the Freshwater

Table 62

REPRESENTATIVE STORMWATER CONCENTRATIONS TO AND WITHIN THE RIPARIAN CORRIDOR WITH PLAYA VISTA FIRST PHASE AND PROPOSED PROJECT

	Predicted Average Concentrations									
	(mg/L)				(mg/L)					
	TSS	TP	TKN	O&G	TCu	DCu	TPb	DPb	TZn	DZn
Riparian Corridor Influent (after WQ Inlets) Upstream of West Boundary of Project	66.1	0.31	2.4	2.2	23.4	10.9	12.9	5.9	160.0	95.2
Riparian Corridor at Proposed Project Boundary	24.9	0.3	1.5	1.3	11.4	9.9	9.6	4.4	140.6	35.2
Riparian Corridor Influent (after WQ Inlets) Downstream of West Boundary of Project	53.6	0.3	2.0	1.7	18.0	8.3	9.0	4.1	130.7	77.8
Riparian Corridor at Lincoln	24.9	0.3	1.5	1.3	11.4	9.5	9.4	4.3	137.9	35.2

WQ = Water Quality
mg/L = milligrams per liter *mg/L = micrograms per liter* *TSS = Total Suspended Solids*
TP = Total Phosphorus *TKN = Total Kjeldahl Nitrogen* *O&G = Oil and Grease*
TCu = Total Copper *DCu = Dissolved Copper* *TPb = Total Lead*
DPb = Dissolved Lead *TZn = Total Zinc* *DZn = Dissolved Zinc*

[a] *These concentrations assume treatment from the water quality inlets (catch basin inserts).*

Source: GeoSyntec Consultants

Wetlands System as well as by agreements resulting from litigation (404 Permit, 401 Certification, CCC Certification, CDP, and HMMP). As is detailed in the source documents establishing the Performance Criteria, the requirements relate to the three goals of the Freshwater Wetlands System: (1) water quality improvement; (2) flood control capacity; and (3) establishment and enhancement of habitat. In general, the Performance Criteria discuss requirements applicable to the design of the Freshwater Wetlands System, criteria applicable to the interim habitat-establishment period and at final buildout of the Freshwater Wetlands System, and monitoring and reporting requirements.

As not all portions of the Freshwater Wetlands System have been constructed, the final buildout-related Performance Criteria relate to conditions several years from now. With regard to "pre-final" Performance Criteria, including monitoring and reporting requirements, the primary document discussing compliance with these criteria is The Ballona Freshwater Wetland

Table 63

REPRESENTATIVE STORMWATER DISSOLVED METALS CONCENTRATIONS IN AND TO THE RIPARIAN CORRIDOR COMPARED TO CTR CRITERIA *

Total Inflows to Riparian Corridor Upstream of West Boundary of Proposed Project (Hardness = 200 mg/L)

Parameter	Acute CTR (mg/L)[a]	Predicted Concentration (mg/L)
Dissolved Copper (DCu)	26	10.9
Dissolved Lead (DPb)	136	5.9
Dissolved Zinc (DZn)	210	95.2

Total Inflows to Riparian Corridor Downstream of West Boundary of Proposed Project (Hardness = 200 mg/L)

Parameter	Acute CTR (mg/L)[a]	Predicted Concentration (mg/L)
Dissolved Copper (DCu)	26	8.3
Dissolved Lead (DPb)	136	4.1
Dissolved Zinc (DZn)	210	77.8

Riparian Corridor at West Boundary of Proposed Project (Hardness = 200 mg/L)

Parameter	Acute CTR (mg/L) [a]	Predicted Concentration (mg/L)
Dissolved Copper (DCu)	26	9.9
Dissolved Lead (DPb)	136	4.4
Dissolved Zinc (DZn)	210	35.2

Riparian Corridor at Lincoln Blvd (Hardness = 200 mg/L)

Parameter	Acute CTR (mg/L)[a]	Predicted Concentration (mg/L)
Dissolved Copper (DCu)	26	9.5
Dissolved Lead (DPb)	136	4.3
Dissolved Zinc (DZn)	210	35.2

mg/L = milligrams per liter *mg/L = micrograms per liter* *CTR = California Toxics Rule*

* *The CTR does not apply directly to stormwater inflows but, rather, to receiving waters with certain designated beneficial uses to which stormwater discharges. A comparison of the CTR to the stormwater flows is conservative because it does not account for assimilation that may occur once the stormwater enters the receiving water.*

[a] *Final CTR Criteria – May 18, 2000. Federal Register Volume 65, No. 97, 40 CFR Part 131, Water Quality Standards. The hardness concentrations used to calculate the CTR criteria are based upon weather sampling in the Centinela Ditch on April 17, 2000, where hardness was measured at 210 mg/L as $CaCO_3$. This value is considered conservative because the Riparian Corridor, which replaces the Centinela Ditch, will be a wetland-type waterbody, and such waterbodies typically develop higher hardness concentrations than other types of freshwater bodies.*

Source: GeoSyntec Consultants.

System Operations, Maintenance and Monitoring Manual (O&M Manual).[229] The O&M Manual describes the Freshwater Wetlands System goals, administration, operations and maintenance requirements (including timelines, task lists, and checklists), and monitoring and reporting

[229] *Surface Water Resources, Inc., The Ballona Freshwater Wetland System Operations, Maintenance and Monitoring Manual, October 2001(as amended).*

Table 64

REPRESENTATIVE STORMWATER CONCENTRATIONS TO AND IN THE RIPARIAN CORRIDOR COMPARED TO NUTRIENT WATER QUALITY BENCHMARKS*

Parameter	Water Quality Benchmark [a]	Predicted Concentration
Total Inflows to Riparian Corridor Upstream of West Boundary of Proposed Project		
Total Phosphorus (TP), (mg/L)	2.8	0.3
Total Kjeldahl Nitrogen (TKN), (mg/L)	3.3	2.4
Total Inflows to Riparian Corridor Downstream of West Boundary of Proposed Project		
Parameter	**Water Quality Benchmark [a]**	**Predicted Concentration**
Total Phosphorus (TP), (mg/L)	2.8	0.3
Total Kjeldahl Nitrogen (TKN), (mg/L)	3.3	2.0
Riparian Corridor at West Boundary of Proposed Project		
Parameter	**Water Quality Benchmark [a]**	**Predicted Concentration**
Total Phosphorus (TP), (mg/L)	2.8	0.3
Total Kjeldahl Nitrogen (TKN), (mg/L)	3.3	1.5
Riparian Corridor at Lincoln Blvd		
Parameter	**Water Quality Benchmark [a]**	**Predicted Concentration**
Total Phosphorus (TP), (mg/L)	2.8	0.3
Total Kjeldahl Nitrogen (TKN), (mg/L)	3.3	1.5

mg/L = milligrams per liter

* *The Water Quality benchmarks apply to receiving waters – not directly to discharges to those receiving waters. Thus the water quality benchmarks are not directly applicable to the Riparian Corridor. A comparison of the water quality benchmarks is conservative because it does not account for assimilation that may occur once the influent actually enters the receiving waters.*

Source: GeoSyntec Consultants

procedures. Through implementation of the O&M Manual, Performance Criteria are being met. Verifications of Performance Criteria related to particular water quality thresholds is documented through examination of the annual reports required by the Performance Criteria to be submitted to the USACE, the CCC, the California Department of Fish and Game, the RWQCB, the City of Los Angeles, and the Los Angeles County West Vector Control District.

With respect to water quality performance, the analysis presented above demonstrates that: (1) the water quality within the Freshwater Wetlands System will support the habitat required to be created and maintained therein; and (2) the Proposed Project will not materially affect the attainment of the specified habitat values. Further, the Proposed Project, on its own as well as in combination with the adjacent Playa Vista First Phase Project, will not significantly adversely impact water quality in Santa Monica Bay, the Ballona Wetlands, or the Ballona Creek Estuary, which conclusion is consistent with the goals for which the agencies issued their approvals for the Freshwater Wetlands System and established the Performance Criteria.

Table 65

REPRESENTATIVE STORMWATER CONCENTRATIONS TO AND IN THE RIPARIAN CORRIDOR COMPARED TO WATER QUALITY BENCHMARKS*

Total Inflows to Riparian Corridor Upstream of West Boundary of Proposed Project

Parameter	Water Quality Benchmark [a]	Predicted Concentration
Total Suspended Solids (TSS), (mg/L)	60	66
Oil and Grease (O&G), (mg/L)	25	2.2

Total Inflows to Riparian Corridor Downstream of West Boundary of Proposed Project

Parameter	Water Quality Benchmark [a]	Predicted Concentration
Total Suspended Solids (TSS), (mg/L)	60	54
Oil and Grease (O&G), (mg/L)	25	1.7

Riparian Corridor at West Boundary of Proposed Project

Parameter	Water Quality Benchmark [a]	Predicted Concentration
Total Suspended Solids (TSS), (mg/L)	60	25
Oil and Grease (O&G), (mg/L)	25	1.3

Riparian Corridor at Lincoln Blvd

Parameter	Water Quality Benchmark [a]	Predicted Concentration
Total Suspended Solids (TSS), (mg/L)	60	25
Oil and Grease (O&G), (mg/L)	25	1.3

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mg/L = milligrams per liter

* *The Water Quality benchmarks apply to receiving waters – not directly to discharges to those receiving waters. Thus the water quality benchmarks are not directly applicable to the Riparian Corridor. A comparison of the water quality benchmarks is conservative because it does not account for assimilation that may occur once the influent actually enters the receiving waters.*

Source: GeoSyntec Consultants

3.4.1.2.9 Summary of the Surface Water Quality Impact Assessment

Potential significant impacts of the Proposed Project were assessed both numerically and narratively. In the numerical assessment, a pollutant loadings and concentrations model, developed specifically for the planned development, was used to evaluate potential changes in concentrations in stormwater runoff from pre-First Phase, with Playa Vista First Phase, and with Playa Vista First Phase and Proposed Project areas. The model was also used to compare numerical water quality benchmarks to the model-predicted pollutants (i.e., total suspended solids, total phosphorus, total Kjeldahl nitrogen, oil and grease, and dissolved and total copper, lead and zinc). The numerical impact assessment found less-than-significant increases in pollutant loadings and concentrations and no exceedances of numerical water quality benchmarks in waterbodies with designated beneficial uses, as defined in the Basin Plan.

The numerical water quality benchmarks were derived from water quality standards and objectives and guidelines, all of which are not directly applicable to stormwater discharges but provide a basis for comparisons. The CTR is applicable to surface waters with beneficial uses designated by the RWQCB as protective of human health or aquatic life, which include the Ballona Channel, the Ballona Wetlands, and Santa Monica Bay. In this assessment, potential impacts were evaluated for the receiving waters—the Ballona Channel and the Ballona Wetlands—and potential impacts to the Freshwater Wetlands System are evaluated as well. All of the other water quality benchmarks are considered conservative in that they were derived from water quality criteria or objectives that are not directly applicable to stormwater discharges or the Freshwater Wetlands System. The total suspended sediment and oil and grease water quality benchmarks were derived from the COP effluent limitations for publicly owned wastewater treatment facilities and non-regulated industrial discharges to the ocean waters of the State. These benchmarks were chosen as guidelines of the desired water quality of ocean water discharges. The nutrients' water quality benchmarks (TKN and total phosphorus) were derived from federal guidelines for establishing state and tribal water quality criteria for nutrients in rivers and streams. These guidelines are not enforceable; they are values obtained from monitoring data of streams in the region that are minimally impacted by human activities and are protective of aquatic life and recreational uses. By meeting the water quality benchmarks derived from the COP and the EPA nutrient guidance document (Nutrient Ecoregion), the potential water quality impacts of the Project with respect to these parameters is considered less than significant. The pollutant loading model, due to lack of specific source control performance data, does not take into account all of the on-site source control BMPs planned in the Proposed Project (see Figure 33 on page 455 and discussion in Subsection 3.3.1). Therefore, the actual quality of runoff from the Proposed Project is expected to be better than predicted in the model.

In addition to the Freshwater Wetlands System, the treatment control BMPs that were included in the model consist of:

1. Roof downspout planter boxes for all buildings planned for the Proposed Project in the Central Drain catchment;

2. A vegetated swale for all low-flow runoff entering the Riparian Corridor from the Proposed Project area;

3. Catch basin inserts for 100 percent of the runoff entering the Central Drain from the Proposed Project area and additional catch basin inserts for 25 percent of the runoff from other adjacent Playa Vista First Phase and Proposed Project areas;

4. A vegetated swale treating Lincoln Boulevard runoff prior to discharging to the Central Drain; and

5. A hydrodynamic solids separation device treating Lincoln Boulevard runoff prior to discharging to the Freshwater Marsh.

Some of the planned BMPs that are expected to reduce pollutant loads and concentrations in the runoff of the Proposed Project but were not included in the model include street sweeping, public education, catch basin cleaning, trash racks, underground parking, an internal transit system and a pesticide and fertilizer management program. Street sweeping, public education, catch basin cleaning, and trash racks are anticipated to reduce trash and sediment loadings, as well as contaminants associated with these bulk pollutants. Underground parking and the internal transit system are anticipated to reduce vehicular pollutants including metals. The pesticide and fertilizer management program is anticipated to reduce the amount of nutrients and toxic pollutants generated from landscaping activities.

In addition to using the pollutant loadings model for assessing numerical significance impacts, narrative significance impacts were also assessed by qualitatively discussing the Project Design Features with respect to the following:

1. Potential impacts to the Santa Monica Bay;

2. Requirements in the Los Angeles County SUSMP;

3. Characteristics and potential sources of the 303(d) listed parameters;

4. Narrative water quality objectives of the Basin Plan;

5. Stability of channels receiving stormwater runoff from the Proposed Project site;

6. Potential impacts of dry-weather (nuisance) flows from the Proposed Project site; and

7. Potential deviation from the Performance Criteria.

Considering all of the inputs to Santa Monica Bay, the quantity of stormwater runoff from the Proposed Project site is less than significant in comparison. In fact the adjacent Playa Vista First Phase Project together with the Proposed Project results in net benefits to receiving waters listed in the Basin Plan, including the Ballona Wetlands, Ballona Estuary, and Santa Monica Bay. Consequently, the potential water quality impacts to Santa Monica Bay have been qualitatively discussed and determined to be less than significant, via comparisons of Project runoff quality to pre-First Phase loads and concentrations and numerical water quality benchmarks, as well as discussions of 303(d) listed pollutants.

The stormwater treatment system and source control measures for both the adjacent Playa Vista First Phase Project and the Proposed Project were designed specifically with consideration of the local design and treatment requirements and, therefore, are consistent with requirements for stormwater management. The Project Design Features were designed to specifically exceed the requirements of the Los Angeles County SUSMP (see comparison on Table 3-22 in Volume I, Section 3 of the Water Resources Technical Report Appendix F-1). This exceedance is not only based upon the size of the treatment system, but also the treatment of significant off-site areas (more than half of the total tributary area of the Freshwater Marsh is from off-site areas) and the high effectiveness of wetland treatment systems over other less effective BMP types that are allowed under the SUSMP program.

Based on an analysis of the individual 303(d) water quality parameters listed both in the original 1998 list and the newly proposed 2002 list, the Proposed Project is not expected to increase loads or concentrations of any of these constituents in the listed waterbodies, as most of the listed pollutants are from historical sources, such as contaminated soil, or are removed by on-site BMPs and the Freshwater Wetlands System. The source control measures and the structural BMPs are expected to be effective at reducing the current loading of the 303(d) listed pollutants; resulting in an expected improvement to the water quality of stormwater runoff from the Project area and contributing off-site areas.

Several of 303(d) listed parameters for receiving waters of Project runoff affect or directly relate to the narrative objectives in the Basin Plan. These narrative objectives were qualitatively assessed and are expected to be met with the implementation of the Proposed Project.

Peak stormwater runoff discharge rates and channel stability are not considered to be a significant issue with the development of the Proposed Project. The increased runoff due to increased impervious areas would be completely contained within the stormwater treatment system, which includes energy dissipaters (e.g., water quality inserts/catch basin inserts and riprap at outlets) and extended detention in the Freshwater Wetlands System. No detrimental increases in channel velocities are expected and the Proposed Project is not expected to cause regulatory standards to be violated, as defined in the applicable NPDES Permit (MS4 Permit; per SUSMP Standards) or the Basin Plan. By not causing a condition of nuisance as defined in the Basin Plan, a nuisance is also not anticipated to be created as defined in Section 13050 of the CWC. The Ballona Wetlands will receive reduced erosive flows because of the routing of flows away from the salt marsh from all but large storm events and the flow retardation in the Freshwater Marsh. The Ballona Channel is a grouted riprap sided channel that would not be impacted by the small increase in flows caused by this Project. The small increase in flows relative to those originating upstream is not expected to create pollution, contamination or nuisance as defined in Section 13050 of the CWC.

Potential dry-weather flows from the developed areas and off-site areas would be detained longer than wet-weather flows, resulting in even greater treatment. They are being employed to help sustain the Freshwater Wetlands System and, in fact, are considered a benefit to the system. Also, conservative irrigation practices and newer sewer systems are expected to minimize dry-weather flows from the Proposed Project areas.

Compliance with the Performance Criteria is an ongoing process as construction of the Freshwater Wetlands System is completed, and as habitat is established and maintained. The O&M Manual serves as the primary vehicle, in accordance with which compliance with the Performance Criteria is taking place. The analyses presented herein above demonstrate that water quality of the Proposed Project will support the required habitat of the Freshwater Wetlands System and protect downstream receiving waters, thus satisfying the water quality aspects of the Performance Criteria and the associated permits and approvals. Verification of the water quality-related Performance Criteria will be documented through the annual reports submitted to the USACE, RWQCB, CCC, and other agencies responsible for enforcement of the Performance Criteria.

Based on the numerical and narrative impact assessment, the Proposed Project is not expected to create pollution, contamination, or nuisance, as defined in Section 13050 of the CWC, or cause regulatory standards to be violated, as defined in the applicable NPDES Permit (MS4 Permit) or the Basin Plan, for the receiving waterbodies, and is expected to comply with the project-specific Performance Criteria resulting from the USACE 404 Permit and related agency actions. Mitigation measures are proposed below to require implementation of the Project Design Features which serve to eliminate potential significant impacts discussed above. Therefore, the impacts to surface waters are anticipated to be less than significant with the implementation of the Proposed Project.

3.4.2 Groundwater Quality

The potential for the Proposed Project to result in groundwater contamination, modification of existing contaminant movement, or expansion of the contaminated area is analyzed in Section IV.I, Safety/Risk of Upset.

Title 22, Division 4, Chapter 15 of the California Code of Regulations establishes primary and secondary drinking water standards for public water systems based upon national standards. Groundwater in the area of the Proposed Project is not currently used for drinking water. See Section IV.I, Safety/Risk of Upset for further discussion.

3.4.2.1 Urban Development Component

Given the relatively shallow depth to groundwater in the area of the Proposed Project, below-grade construction activities for the Urban Development Component could potentially encounter groundwater, thereby requiring dewatering during construction. In addition, long-term dewatering during operation of the Urban Development Component may be required for structures that would be constructed below the groundwater table surface, such as subterranean (underground) parking garages. The proposed permanent dewatering systems, which includes dewatering for the methane safety system and dewatering of two-level subterranean parking garages (it would not be necessary for one-level subterranean garages), is a "contingent" system that would operate only if/as groundwater elevations occur at the level of the dewatering pipes. In case groundwater is present or in the future rises to an elevation above the elevation of the groundwater pipes, the water is conveyed to a sump where it is removed by automatic pumps. The dewatering system does not include dewatering by pumping from deep wells or any specific well points.[230] Adverse impacts are not anticipated relative to the rate or change in the direction or movement of existing contaminates in groundwater from dewatering associated with operation of the permanent dewatering systems. This is because the maximum flow of the dewatering pipes is very low and their radius of influence on the groundwater unit is limited. Therefore, the dewatering pipes are not anticipated to draw water across any substantial distance, and impacts would be less than significant. To date, no effect on plume movement has been observed in relation to the operation of permanent dewatering systems anywhere within the adjacent Playa Vista First Phase Project site, and similar results are anticipated for such systems installed within the Proposed Project. See Section IV.A, Earth and Section IV.I, Safety/Risk of Upset, for further discussion of the potential impacts of dewatering on subsidence and groundwater contamination, respectively.

As described in Section IV.I, Safety & Risk of Upset of this EIR, groundwater contamination has been observed both beneath the Urban Development Component as well as under adjacent areas – former Test Site 2 and former industrial areas east of the Proposed Project site and within the adjacent Playa Vista First Phase Project. A detailed discussion of contaminated groundwater within the boundaries of the Proposed Project and adjacent areas is found in Subsection 2.2.2.1 of Section IV.I, Safety & Risk of Upset. Two potential impacts could occur from short or long-term dewatering. The dewatering could: (1) affect the rate or change the direction of the movement of existing contaminants; or (2) expand the area affected by contaminants.

Although remedial planning and design for the Proposed Project area are expected to be completed by 2004, remediation of the groundwater is expected to take several years. Therefore, depending on the timing of the construction of the Urban Development Component, dewatering activities could potentially result in the extraction of contaminated groundwater. However, any required remedial action with respect to groundwater is expected to be initiated prior to construction of the Urban Development Component. Therefore, it is likely that the extent and magnitude of contamination at the time of construction will be less than current conditions. In addition, remediation would be conducted under the direction of the RWQCB, and the RWQCB would require that construction and/or long-term dewatering be conducted in a manner that does not negatively impact ongoing remediation or exacerbate the extent of contamination. If necessary, the remedial systems would be modified to preclude or minimize the potential for

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[230] *Group Delta Consultants, "Evaluation of Subsidence Due to Lowering of Groundwater in Village at Playa Vista, Playa Vista Development, Los Angeles, California," April 15, 2003.*

dewatering activities to spread contamination. Remedial systems, if any, and dewatering activities, therefore, are expected to be fully compatible.

Short- or long-term groundwater extraction associated with remediation activities has the potential to draw groundwater contamination from areas adjacent to the Proposed Project. To the west of the Urban Development Component, a former industrial area known as former Test Site 2 within the adjacent Playa Vista First Phase Project site is currently undergoing active groundwater remediation. The groundwater remediation at former Test Site 2 includes both in-situ biodegradation of contaminants, as well as groundwater extraction and treatment. Groundwater extraction at former Test Site 2 will create an inward hydraulic gradient toward the treatment zone, i.e., away from the Proposed Project. Therefore, although the adjacent former Test Site 2 area is, under natural conditions, cross-gradient and slightly upgradient of the Proposed Project, the implemented remediation of former Test Site 2 makes it unlikely that groundwater extraction within the Proposed Project would draw contamination from the adjacent areas to the west.

Groundwater beneath the former industrial areas east of the Proposed Project site and within the adjacent Playa Vista First Phase Project is downgradient to slightly cross-gradient from the Proposed Project area. Under current natural conditions, it is unlikely that contamination in these former industrial areas could migrate westward into the Proposed Project. The Remediation Plan for these former industrial areas, approved by the RWQCB in November 2002, is expected to commence implementation by Fall 2003. This Plan specifies active extraction and treatment of groundwater at a number of contaminant source areas in the former industrial areas east of the Proposed Project site and within the adjacent Playa Vista First Phase Project. The extraction will create greater inward hydraulic gradients, away from the Proposed Project and toward the treatment zones, further decreasing the potential for migration of contaminants toward the Proposed Project.

Impacts to groundwater due to dewatering are anticipated to be less than significant with the implementation of the Urban Development component because construction and operation dewatering for the development of the Urban Development Component are not expected to affect the rate or change the direction of movement of existing contaminants or expand the area affected by contaminants for the known contaminant areas beneath the Proposed Project Site, the former Test Site 2, and the former industrial sites east of the Project Site and within the adjacent Playa Vista First Phase Project.

As discussed in Subsection 3.4.1.1, the existing SWPPP enforced by the RWQCB would be updated and amended as appropriate to include Proposed Project construction activities and would be implemented throughout the duration of construction activities on the Proposed Project site. The RWQCB also has the authority to review the SWPPP at the site, declare the SWPPP and/or BMPs to be inadequate, to require an individual NPDES permit for the activity, and to initiate enforcement actions, if necessary. While the BMPs that would be included in the SWPPP are primarily aimed at minimizing the discharge of pollutants to surface receiving waters, the BMPs would also serve to minimize any short-term impacts on groundwater quality from construction activities. Any discharge of groundwater in conjunction with construction dewatering or operational dewatering for structures placed below grade for the Proposed Project would require compliance with the Project's General Construction Permit, an individual NPDES permit, or an appropriate industrial users discharge permit issued by the City of Los Angeles Department of Public Works, Bureau of Sanitation. Although construction of the Urban Development Component would reduce open space and increase the impervious areas of the site, resulting in reduced infiltration (see Subsection 3.2.1.4.2, Section IV.C.(1), Hydrology), additional irrigation of added landscaped areas would offset the decrease, resulting in a net increase of approximately 6 acre-ft/year. This increase is considered positive, but negligible from a regional basin perspective, and is not expected to result in any measurable increase in local groundwater levels.

The Proposed Project would utilize recycled (reclaimed) water for irrigation and office toilet/cooling tower use, which may percolate to local groundwater units. However, such irrigation water must meet or exceed the State Title 22 standards for water quality. Any recycled water that would percolate into local groundwater units would be filtered through varying layers of earth, further enhancing its quality. In addition, the depth to the Silverado Aquifer, which is the only aquifer at the site with beneficial uses, is 100 to 200 feet below ground surface, requiring the recycled irrigation water to percolate through earth and rock in order to reach an aquifer that is pumped for beneficial uses. The upper portion of the Riparian Corridor will have a clay liner further limiting percolation of surface runoff to the groundwater. Therefore, no impacts to groundwater quality from the use of recycled water are expected to occur.

With respect to other operational (long-term) groundwater quality impacts, no land uses (e.g., industrial development) would be permitted or are presently planned that could legally contribute to groundwater contamination within the Proposed Project site. Current state law would regulate the design, construction and operation of any land uses that might include storage of fuel in underground tanks.

Due to the short-term nature of construction and dewatering activities, implementation of applicable construction BMPs, compliance with NPDES requirements for dewatering discharges, and compliance with State Title 22 standards for recycled water quality, development of the Urban Development Component would not result in an increased level of groundwater contamination (including that from direct percolation, injection or salt water intrusion). Therefore, a less-than-significant impact to groundwater quality would occur.

Groundwater in the area of the Urban Development Component of the Proposed Project is not currently pumped for beneficial uses (i.e., drinking water, industrial or agricultural supply).

The nearest public water supply well located at Venice Polytechnic High School, approximately 2 miles northwest of the Proposed Project, was capped in 1960 and is not active. The next closest public supply wells are located approximately 3.5 miles northwest of the Proposed Project in the City of Santa Monica. The nearest irrigation well is located approximately 2 miles southeast of the Proposed Project at the Hillside Memorial Park Cemetery. Due to the distance to these wells, the fact that drinking water, industrial or agricultural supply wells would not be constructed as part of the Urban Development Component, and compliance with State Title 22 standards for recycled water quality, construction and operation of the Urban Development Component are not expected to cause regulatory water quality standards at an existing production well to be violated, as defined in the California Code of Regulations, Title 22, Division 4, Chapter 15 and the Safe Drinking Water Act. Hence, a less-than-significant impact to groundwater quality would occur.

3.4.2.2 Habitat Creation/Restoration Component

Given the relatively shallow depth to groundwater in the area of the Proposed Project, it is reasonable to expect that any below-grade construction activities for the Habitat Creation/Restoration Component may encounter groundwater thereby requiring dewatering during construction. As described in Subsection 3.4.2.1 above, groundwater remediation at the Proposed Project site is expected to be initiated prior to construction of the Habitat Creation/Restoration Component, thereby reducing the extent and magnitude of contamination to less than current conditions. In addition, remediation would be conducted under the direction of the RWQCB, and the RWQCB would require that construction dewatering be conducted in a manner that does not negatively impact ongoing remediation nor exacerbate the extent of contamination. Remediation at the nearby areas of Test Site 2 and the former industrial areas east of the Proposed Project site and within the adjacent Playa Vista First Phase Project would create an inward hydraulic gradient toward the treatment zone, i.e., away from the Proposed Project, and would also be conducted under the direction of the RWQCB. Due to the short-term nature of construction and dewatering activities, dewatering for the Habitat Creation/Restoration Component is not expected to significantly affect the rate or change the direction of movement of existing contaminants or expand the area affected by contaminants for the known contaminant areas beneath the Proposed Project Site, the former Test Site 2, and the former industrial sites east of the Project Site and within the adjacent Playa Vista First Phase Project.

The Habitat Creation/Restoration Component does not involve the construction of any industrial development that would contribute to groundwater contamination within the Proposed Project site. The Riparian Corridor portion of the Habitat Creation/Restoration Component would collect stormwater runoff from the Proposed Project and off-site tributaries, which could contain pollutants typical of urban development. The Riparian Corridor could detain the stormwater resulting in percolation of the stormwater runoff into the groundwater. However, the upper portion of the Riparian Corridor would have a clay liner limiting percolation of surface runoff to the groundwater. In addition, the depth to Silverado Aquifer, which is the only aquifer at the site with beneficial uses, is 100 to 200 feet below ground surface. Therefore, development of the Habitat Creation/Restoration Component is not expected to result in an increased level of groundwater contamination (including that from direct percolation, injection or salt water intrusion).

As described in Subsection 3.4.2.1 above, the nearest public water supply is 2 miles northwest of the Proposed Project, and the nearest irrigation well is located approximately 2 miles southeast of the Proposed Project. Due to the distance to these wells, the fact that no wells would be constructed as part of the Habitat Creation/Restoration Component, and the compliance with State Title 22 standards for recycled water quality, construction and operation of the Habitat Creation/Restoration Component are not expected to cause regulatory water quality standards at an existing production well to be violated, as defined in the California Code of Regulations, Title 22, Division 4, Chapter 15 and the Safe Drinking Water Act.

3.5 Equivalency Program Impacts

The preceding water quality analysis addressed impacts associated with construction and operation of the Proposed Project relative to surface water and groundwater water quality. The proposed Equivalency Program allows for specific limited exchanges in the types of land uses occurring within the Project's Urban Development Component. No changes are proposed under the Equivalency Program to the Project's Habitat Creation/Restoration Component.

The exchange of office uses for retail and/or assisted living units would be accomplished within the same building parameters, and would occur at relatively limited locations within the Project site. Furthermore, under the Equivalency Program, there would be no substantial variation in the Project's street configurations, building pad elevations, or the depth of excavation. Potential changes in land use under the Equivalency Program would therefore have no substantial effect on the predicted loads and concentrations, BMPs, or groundwater use and their associated impacts, because only the use is changing. Specifically, surface water and groundwater water quality requirements for Project development would be the same under the Equivalency Program. Very minor variations regarding foundation types or in the preparation of landscaping areas could occur, however such variation would be within the range of construction procedures anticipated to occur with the Proposed Project. In addition, development under the Equivalency Program would not cause or exacerbate any impacts that would occur under the Proposed Project.

All Project Design Features (as discussed in Subsection 3.3 above) and/or recommended mitigation measures (discussed in Subsection 4.0, Mitigation Measures, below) to minimize water quality impacts under the Proposed Project would be implemented, as appropriate, under the Equivalency Program. Implementation of the Equivalency Program would, therefore, not:

(1) create "pollution," "contamination," or "nuisance," as defined in Section 13050 of the California Water Code; (2) cause regulatory standards to be violated, as defined in the applicable NPDES stormwater permit or Water Quality Control Plan (Basin Plan) for the receiving waterbody; (3) affect the rate or change the direction of movement of existing contaminants in groundwater; (4) expand the area affected by contaminants in groundwater; (5) result in an increased level of groundwater contamination (including that from direct percolation, injection or salt water intrusion); or (6) cause regulatory water quality standards at an existing production well to be violated, as defined in the California Code of Regulations, Title 22, Division 4, Chapter 15 and the Safe Drinking Water Act. Consequently, with implementation of applicable mitigation measures (discussed below), water quality impacts attributable to the Equivalency Program, as is the case with the Proposed Project, would be less than significant.

3.6 Impacts of Off-Site Improvements

Proposed Project development could result in secondary impacts arising from implementation of the Project's mitigation measures, as well as the direct impacts described above. Mitigation measures within Section IV.K.(1), Traffic and Circulation, require physical improvements in transportation facilities at numerous locations including roadway widening at seven locations, as described in Subsection 5.8 of that Section. In addition, as discussed in Section IV.N.(1), Water Consumption, the Proposed Project would require the construction of a water regulator station in the vicinity of Jefferson Boulevard and Mesmer Avenue. These off-site improvements are all located in developed urban areas. All of the off-site improvements, with the exception of the water regulator station, would occur within, or adjacent to, existing roadways. The water regulator station includes a small amount of above-ground piping equipment, a common element of the urban environment. Implementation of the Project's mitigation measures does not involve the construction of any buildings.

Although the roadway improvements would maintain all of the existing ground elevations and general drainage patterns, there exists the potential that construction-related erosion could increase the sediment content of surface water runoff. Such sediment could be borne away from the area of each improvement in stormwater flows. However, the affected areas are relatively flat and narrow, which limits potential erosion and sedimentation impacts. Nonetheless, the proximity of the improvement areas to listed impaired water bodies, the Santa Monica Bay and the Ballona Channel (via storm drain discharge and flows from the Centinela Channel), poses the potential for water quality impacts. The roadway widenings would be subject to the requirements of the City's Standard Urban Storm Water Management Plan (SUSMP). Under the SUSMP, construction procedures would be implemented to ensure that post-development peak storm water runoff discharge rates would not exceed the estimated pre-development rates such that there would be an increased potential for downstream erosion. The SUSMP requirements also include, but are not limited to, the following: minimizing stormwater pollutants of concern; providing storm drain system stenciling and signage; and providing proof of ongoing Best Management Practices (BMP) maintenance. In addition, stringent erosion controls imposed via the National Pollution Discharge Elimination System (NPDES) would further reduce the potential for surface water pollution to occur. The off-site improvements would result in an incremental increase in the amount of impervious surfaces in some areas, which potentially could provide additional sources of polluted runoff. However, the amount of impervious surface would not be substantially altered. Construction and operation of the proposed improvements are not expected to degrade water quality in the long-term, though temporary negligible water quality impacts from construction dewatering, if necessary, or during storm events may occur.

In terms of dewatering, construction of some improvements may, though unlikely, require dewatering, which would be carried out in accordance with the requirements of a General Dewatering Permit or other requirements of the Regional Water Quality Control Board. Dewatering discharges are not anticipated to violate any water quality standards or waste discharge requirements, and any impacts that result would be less than significant. Operation of the proposed improvements would not contribute wastewater to the storm drain or sanitary sewer system. The proposed improvements would not result in large amounts of wastewater discharge, with the exception of possible, albeit unlikely, dewatering associated with improvements requiring excavation. Such dewatering, if required, would be carried out in accordance with Los Angeles Regional Water Quality Control Board requirements or the provisions of a General Dewatering Permit and is not expected to exceed any wastewater treatment thresholds.

In summary, the proposed off-site roadway and intersection improvements would not result in significant water quality impacts, since the improvements would not: (1) create "pollution," "contamination," or "nuisance," as defined in Section 13050 of the California Water Code; (2) cause regulatory standards to be violated, as defined in the applicable NPDES stormwater permit or Water Quality Control Plan (Basin Plan) for the receiving waterbody; (3) affect the rate or change the direction of movement of existing contaminants; (4) expand the area affected by contaminants; (5) result in an increased level of groundwater contamination (including that from direct percolation, injection or salt water intrusion); or (6) cause regulatory water quality standards at an existing production well to be violated, as defined in the California Code of Regulations, Title 22, Division 4, Chapter 15 and the Safe Drinking Water Act.

4.0 MITIGATION MEASURES

Mitigation Measures for the Proposed Project and the Equivalency Program

Mitigation measures implemented for Hydrology will also reduce or avoid water quality impacts. (See Section IV.C.(1), of the EIR, for associated mitigation measures.)

- The Proposed Project shall incorporate the following features to reduce pollutant loadings:

  – Roof drain biofiltration systems to receive and filter runoff from all buildings within the Proposed Project;

  – Water quality catch basin inserts for all catch basins within the Proposed Project site where water is flowing to the Central Storm Drain;

  – A vegetated swale within a park adjacent to the Riparian Corridor to receive and filter low-flow runoff from the Proposed Project prior to entering the Riparian Corridor.

- Prior to issuance of a B-Permit or building permit for construction of the additional BMPs discussed above, as applicable, drawings and specifications of the proposed BMPs shall be submitted to the City of Los Angeles for review and comments. Such information shall include, but is not limited to, a site map showing locations of the proposed BMPs, product manufacturer, model number, and manufacturer's recommended maintenance schedule.

- The Proposed Project shall include on-site operation and maintenance programs designed to minimize environmental impacts including:

  – Only slow-release fertilizers that are applied directly to the soil shall be used to establish vegetation. No fertilizer shall be applied during or within 72 hours of a forecasted rain event. Erosion and sediment control measures shall be implemented during landscaping of the project to minimize the export of nutrients from the Proposed Project site.

  – The Proposed Project shall include the use of native or drought-resistant vegetation in no less than 50 percent of the community landscaped areas and an irrigation program that emphasizes no excess irrigation. Any non-native vegetation selected for landscaping shall be noninvasive.

  – The Proposed Project shall install trash racks at inlets to the Riparian Corridor.

  – All multi-family buildings within the Proposed Project shall include trash collection and storage areas for residents, and managed trash collection areas for commercial businesses.

  – The Master Homeowner's Association shall provide tenants/residents with information to encourage compliance with good housekeeping practices, such as proper disposal of household and office hazardous waste; encourage tenants/residents not to plant exotic grasses or other plants whose seeds may potentially migrate off their properties via wind, rain, or animals; and to inform residents of the potential receiving waters impacts of excessive dry-weather runoff.

- Prior to issuance of any grading, building or B-Permit, the existing Playa Vista Stormwater Pollution Prevention Plan (SWPPP) shall be amended to include the Proposed Project. The SWPPP shall identify temporary Best Management Practices (BMPs) to be implemented in accordance with the General Construction Permit issued by the Regional Water Quality Control Board (RWQCB). BMP categories deployed during construction shall include contractor activities practices, waste management practices, soil stabilization (erosion control) practices, sediment control practices, roadway cleaning/tracking control practices, vehicles and equipment cleaning, concrete truck washout and fueling practices.

Additional Mitigation Measures for the Off-Site Improvements

- Construction contractor(s) selected for the proposed improvements shall be required, through contract specifications, to use grading and excavation techniques that control runoff from the off-site traffic improvements, as well as Best Management Practices (BMPs) to avoid/control erosion and sedimentation. The contractor(s) shall also be required to implement other BMPs appropriate for the nature, location, timing (relative to rainy season) and duration of proposed construction activities. Typical BMPs related to construction activities include the following:

  – Erosion and sediment controls including soil stabilization, silt fence installation and/or sandbag installation;

  – Wind erosion controls such as using only the minimum amount of water to control dust without adding to runoff;

  – Tracking controls such as construction vehicle egress management for sedimentation carried on vehicles leaving the site;

  – Spill prevention and control measures such as regular inspections of vehicles for leaks, and prevention measures such as oil pans under parked vehicles; and

  – Concrete and construction materials management such as the avoidance of fresh concrete washing unless runoff can be drained to a bermed or level area away from drain outlets or channels.

- Permanent BMPs shall be integrated into the design and operation of off-site improvements, as appropriate. Examples of such BMPs include street sweeping, catch basins, directing surface runoff into landscaped medians/strip, and other water quality treatment measures as feasible and appropriate.

5.0 UNAVOIDABLE ADVERSE IMPACTS

With implementation of the mitigation measures, impacts to surface water quality would be less than significant, as the Proposed Project, inclusive of the Project's Equivalency Program and off-site improvements, is not anticipated to create pollution, contamination or nuisance as defined in Section 13050 of the CWC or cause a regulatory standards to be violated, as defined in the applicable NPDES stormwater permit or Water Quality Control Plan (Basin Plan) for the receiving waterbodies, and as reflected in the Performance Criteria.

Impacts to groundwater quality would be less than significant, as the Proposed Project, inclusive of the Project's Equivalency Program and off-site improvements, is not anticipated to affect the rate or movement direction of existing contaminants; expand the areas affected by contaminants; increase the level of groundwater contamination (including that from direct percolation, injection or saltwater intrusion); or cause regulatory water quality standards of existing production wells to be violated as defined in the California Code of Regulations, Title 22, Division 4, Chapter 15 and the Safe Drinking Water Act.

6.0 CUMULATIVE IMPACTS

The majority of the off-site tributary area (see Figure 32 on page 371 of Section IV.C.(1), Hydrology, for a map of the tributary area) is already highly urbanized. The off-site tributary area includes the Proposed Project, including the Project's Equivalency Program, and the subset of related projects within the tributary area, which includes the adjacent Playa Vista First Phase Project, West Bluff project (Tentative Tract 51122), and the Loyola Marymount University expansion. These development projects are able to be accommodated by the Freshwater Marsh, and are therefore not expected to substantially affect the water quality or hydrology of the Freshwater Marsh, the Ballona Wetlands, or the Ballona Channel. The Loyola Marymount University expansion is not expected to cause any cumulative impacts in the Freshwater Marsh or it receiving waters because the overall land use and drainage areas are not changing significantly. The West Bluff Project includes 27 acres of area that will be diverted to the Freshwater Marsh via the Lincoln Storm Drain. This diverted runoff increases the average annual runoff volume to the Freshwater Marsh by approximately 3.4 percent, which is insignificant considering the Marsh has approximately a 50 percent excess capacity (i.e. the SUSMP requires that a 0.75-inch storm must be captured and treated and the Freshwater Marsh has a capacity for about an 1.1-inch storm). This small increase in runoff may add to the current annual pollutant loadings to the Marsh and the Ballona Channel (an estimated 2 to 4 percent increase in modeled pollutant loadings). With this small loading increase, overall pollutant loads to the Ballona Channel and Wetlands would still be substantially below pre-First Phase conditions, prior to construction of the Freshwater Marsh. In addition, the concentrations of all modeled pollutants are still expected to either decrease or remain the same in the main body and the effluent from the Marsh due to the increase in runoff volume combined with increased pollutant removals expected in the CDS unit to be installed by Caltrans that will treat Lincoln Boulevard runoff prior to discharging to the Freshwater Marsh. Finally, the Freshwater Marsh was designed with an adjustable outlet weir to accommodate runoff from potential future development and other watershed management changes. Therefore, the addition of the West Bluff Project runoff is not anticipated to cumulatively impact the Freshwater Marsh or its receiving waters.

In addition to the two off-site projects discussed above, there are seven roadway widenings that are planned to mitigate traffic congestion caused by the Proposed Project. The Centinela Corridor improvements will add approximately 0.6 acres of impervious surfaces. The other intersection improvements which include Culver Boulevard and Inglewood Boulevard, Sawtelle Avenue and Culver Boulevard, La Tijera Boulevard and Centinela Avenue, Centinela Avenue and Washington Place, Overland Avenue and Culver Boulevard and Centinela Avenue and Culver Boulevard, will add approximately 0.3 acres of impervious surfaces. All of these improvements would eventually drain to the Ballona Channel. The combined imperviousness of the roadway improvements projects is expected to increase the average annual runoff volume to the Ballona Channel by approximately 0.5 acre-feet per year, which is only about 0.2 percent of the average annual runoff from the adjacent Playa Vista First Phase and the Proposed Projects combined. All of these widening projects will be required to meet SUSMP requirements. Given the SUSMP requirements that will apply to these projects and their small size, it is anticipated that the impact associated with these off-site construction projects will be less than significant.

Since the areas surround the Proposed Project are already highly urbanized, other changes or development are not likely to cause substantial changes in regional surface water or groundwater quality. Predicted loads and concentrations in this analysis were based on the total tributary drainage area generating runoff using designated zoning/land uses. In fact, with redevelopment projects (with application of the SUSMP requirements as appropriate) and increases in system-wide controls associated with other elements of the MS4 Permit, it is anticipated over time, regional water quality may improve.

Additionally, related projects are unlikely to cause or increase groundwater contamination because existing statutes prohibit contamination of groundwater by existing and future land uses and also require remediation of existing contamination. The Proposed Project occupies less than 1 percent of the coastal plain hydrologic groundwater basin. As such, and in light of the limited contribution from other projects and Proposed Project's control measures, the Proposed Project's contribution to surface water or groundwater quality impacts, including that of the Project's Equivalency Program, is not cumulatively considerable and, therefore, less than significant. Furthermore, given the overall nature and limited areal extent of the Project's off-site improvements, the potential for cumulative groundwater quality impacts to result from implementation of the roadway and water system improvements is considered low.

Cumulative impacts to surface water quality would be less than significant, as the Proposed Project, inclusive of the Project's Equivalency Program and off-site improvements, is not anticipated to create pollution, contamination or nuisance as defined in Section 13050 of the CWC or cause regulatory standards to be violated, as defined in the applicable NPDES stormwater permit or Water Quality Control Plan (Basin Plan) for the receiving waterbodies.

Cumulative impacts to groundwater quality would be less than significant, as the Proposed Project, the Project's Equivalency Program, and off-site improvements are not anticipated to affect the rate or direction of movement of existing contaminants; expand the areas affected by contaminants; increase the level of groundwater contamination (including that from direct percolation, injection or saltwater intrusion); or cause regulatory water quality standards of existing production wells to be violated as defined in the California Code of Regulations, Title 22, Division 4, Chapter 15 and the Safe Drinking Water Act.