

## 4.9 HYDROLOGY AND WATER QUALITY

This section provides an overview of hydrology and water quality and evaluates the impacts associated with the proposed project. Topics addressed include surface water hydrology (drainage), surface water quality, and groundwater quality.

The proposed project is evaluated in terms of whether its implementation would result in impacts related to surface water quality, groundwater, surface water hydrology (drainage), or flood hazards compared to existing conditions.

## REGULATORY FRAMEWORK

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### Federal

**Federal Water Pollution Control Act (Clean Water Act or CWA).** The CWA was first enacted in 1948 to (1) restore and maintain the chemical, physical, and biological integrity of the Nation's waters by preventing point and non-point pollution sources, (2) provide assistance to publicly owned treatment works for the improvement of wastewater treatment, and (3) maintain the integrity of wetlands. In 1972, the CWA was amended to provide that the discharge of pollutants to waters of the United States from any point (such as discharge from an industrial facility) or non-point (surface and farmland water runoff) source is unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. In November 1990, the United States Environmental Protection Agency (USEPA) published final regulations that established stormwater permit application requirements for specified categories of industries. With subsequent amendments, current regulations provide that discharges of stormwater to waters of the United States from industrial activities and from construction activities that encompass one acre or more of soil disturbance are effectively prohibited unless the discharge is in compliance with a NPDES permit. Federal regulations allow two permitting options for stormwater discharges, individual permits and general permits. The State Water Resource Control Board (SWRCB) has elected to adopt one statewide general permit for construction activity at this time. The General Construction Activities Stormwater Permit (GCASP) applies to all stormwater discharges associated with construction activity, except for those on tribal lands, those in the Lake Tahoe Hydrologic Unit, and those performed by the California Department of Transportation (Caltrans). Currently, the GCASP requires all dischargers where construction activity disturbs one acre or more to conduct the following:

- Develop and implement a Stormwater Pollution Prevention Plan (SWPPP), which specifies Best Management Practices (BMPs) that will prevent all construction pollutants from contacting stormwater and with the intent of keeping all products of erosion from moving off-site into receiving waters;
- Eliminate or reduce non-stormwater discharges to storm sewer systems and other waters of the United States; and
- Perform inspections of all BMPs.

The federal CWA was enacted with the primary purpose of restoring and maintaining the chemical, physical, and biological integrity of the Nation's waters. The CWA also directs states to establish water quality standards for all "waters of the United States" and to review and update such standards on a triennial basis. Section 319 mandates specific actions for the control of pollution from non-point sources. The USEPA has delegated responsibility for implementation of portions of the CWA, including water quality control planning and control programs, such as the NPDES Program, to the SWRCB. Section 303(c)(2)(b) of the CWA requires states to adopt water quality standards for all surface waters of the United States based on the water body's designated beneficial use. Where multiple uses exist, water quality standards must protect the most sensitive use. Water quality standards are typically numeric, although narrative criteria based upon biomonitoring methods may be employed where numerical standards cannot be established or where they are

needed to supplement numerical standards. Water quality standards applicable to the proposed project are listed in the California Regional Water Quality Control Boards (RWQCBs) Basin Plan.

**Section 303(d) and Total Maximum Daily Loads (TMDLs).** Section 303(d) of the CWA bridges the technology-based and water quality-based approaches for managing water quality. Section 303(d) requires that States make a list of waters that are not attaining standards after the technology-based limits are put in place. For waters on this list (and where the USEPA Administrator deems they are appropriate), the States are to develop TMDLs. TMDLs are established at the level necessary to implement applicable water quality standards. A TMDL must account for all sources of pollutants that cause the water to be listed. Federal regulations require that TMDLs, at a minimum, account for contributions from point sources and non-point sources.

**National Pollutant Discharge Elimination System (NPDES).** The goal of the NPDES diffuse source regulations is to improve the quality of stormwater discharged to receiving waters to the “maximum extent practicable” through the use of BMPs. The NPDES permit system was established in the CWA to regulate point source discharges (a municipal or industrial discharge at a specific location or pipe) and certain types of diffuse source dischargers. As defined in the federal regulations, non-point sources are generally exempt from federal NPDES permit program requirements. Non-point pollution sources are diffuse and originate over a wide area rather than from a definable point. Non-point pollution often enters receiving water in the form of surface runoff and is not conveyed by way of pipelines or discrete conveyances. Urban stormwater runoff and construction site runoff, however, are diffuse-sources regulated under the NPDES permit program because they discharge to receiving waters at discrete locations in a confined conveyance system. Sections 401 and 402 of the CWA contain general requirements regarding NPDES permits. Section 307 of the CWA describes the factors that the USEPA must consider in setting effluent limits for priority pollutants. For point source discharges, each NPDES permit contains limits on allowable concentrations and mass emissions of pollutants contained in the discharge. For diffuse-source discharges (e.g., municipal stormwater and construction runoff), the NPDES program establishes a comprehensive stormwater quality program to manage urban stormwater and minimize pollution of the environment to the maximum extent practicable. The NPDES program consists of (1) characterizing receiving water quality, (2) identifying harmful constituents, (3) targeting potential sources of pollutants, and (4) implementing a Comprehensive Stormwater Management Program. State implementation of the NPDES program as it relates to the proposed project is discussed below under State regulations.

**Flood Insurance Rate Maps.** Flood Insurance Rate Maps are prepared by the Federal Insurance Administration of the U.S. Department of Housing and Urban Development (HUD) after a risk study for a community has been completed and the risk premium rates have been established. The maps indicate the risk premium zones applicable in the community and when those rates are effective. They are used in making flood plain determinations and to determine if a proposed action is located in the base or critical action flood plain, as appropriate.

## State

At the State level, the SWRCB has responsibility for the protection of water quality. The SWRCB sets statewide policies and develops regulations for the implementation of water quality control programs mandated by the State and federal water quality statutes and regulations. The SWRCB delegates to the nine RWQCBs the responsibility for the protection of water quality in each major drainage basin throughout the State. The Los Angeles Regional Water Quality Control Board (LARWQCB) has jurisdiction over the coastal drainages between Rincon Point (on the coast of western Ventura County) and the eastern Los Angeles County line. As required by the federal Clean Water Act, the LARWQCB has adopted the Water Quality Management Plan for the Los Angeles Region (Basin Plan). The Basin Plan establishes water quality objectives for surface waters and groundwater within the Los Angeles region. The California Water Code defines water quality objectives as “the allowable limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the

prevention of nuisance within a specific area.” Therefore, the Basin Plan’s (described below) water quality objectives are intended to: (1) protect the public health and welfare; and (2) maintain or enhance water quality in relation to the designated existing and potential uses of the water.

Section 401 of the CWA requires water quality certification from the SWRCB or from a RWQCB when the project requires a CWA Section 404 permit. Section 404 of the CWA requires a permit from the United States Army Corps of Engineers (ACOE) to discharge dredged or fill material into waters of the United States.

**Water Quality Management Plan for the Los Angeles Region (Basin Plan).** This proposed project is within the jurisdiction of the LARWQCB. The LARWQCB provides permits that affect surface waters and groundwater. Under Section 303(d), the LARWQCB is also responsible of the CWA for protecting surface waters and groundwater from both point and non-point sources of pollution within the West Adams CPA, and for establishing water quality standards and objectives in its Basin Plan that protect the beneficial uses of various waters. The State has developed TMDLs, which is a calculation of the maximum amount of a pollutant that a water body can have and still meet Water Quality Objectives (WQOs) established in the Basin Plan, in order to protect the valuable uses of its waters.

**Porter-Cologne Water Quality Control Act.** The Porter-Cologne Water Quality Control Act establishes the SWRCB and each RWQCB as the principal State agencies for coordinating and controlling water quality in California. Specifically, the Porter-Cologne Water Quality Control Act authorizes the SWRCB to adopt, review, and revise policies for all waters of the State (including both surface and groundwaters) and directs the RWQCBs to develop regional Basin Plans. Section 13170 of the California Water Code also authorizes the SWRCB to adopt water quality control plans on its own initiative.

**NPDES General Construction Activity Stormwater Permit (GCASP).** The SWRCB permits all regulated construction activities under NPDES GCASP for stormwater discharges associated with construction activity (Order No. 2009-009-DWQ [2009]).<sup>1</sup> This Order requires that, prior to beginning any construction activities; the permit applicant must obtain coverage under the GCASP by preparing and submitting a Notice of Intent (NOI) and appropriate fee to the SWRCB. Additionally, coverage would not occur until an adequate SWPPP has been prepared. A separate NOI shall be submitted to the SWRCB for each construction site.

Construction activities subject to the NPDES GCASP include clearing, grading, and disturbances to the ground, such as stockpiling or excavation, that result in soil disturbances of at least one acre of total land area. Because construction of the proposed project would cumulatively disturb more than one acre, all improvements and construction activities would be subject to these permit requirements.

The SWPPP, which specifies BMPs that will prevent construction pollutants from contacting stormwater with the intent of keeping all products of erosion from moving off-site into receiving waters, has two major objectives: (1) to help identify the sources of sediment and other pollutants that affect the quality of stormwater discharges and (2) to describe and ensure the implementation of BMPs to reduce or eliminate sediment and other pollutants in stormwater as well as non-stormwater discharges. The SWPPP must include BMPs that address source control, and, if necessary, must also include BMPs that address specific pollutant control. The SWPPP includes a description of (1) the site, (2) erosion and sediment controls, (3) means of waste disposal, (4) implementation of approved local plans, (5) control of post-construction sediment and erosion control measures and maintenance responsibilities, and (6) non-stormwater management controls. Dischargers are also required to inspect their construction sites before and after storms to identify stormwater discharge associated with construction activity and to identify and implement controls where necessary.

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<sup>1</sup>California Environmental Protection Agency. 2009-0009-DWQ Construction General Permit website, [http://www.waterboards.ca.gov/water\\_issues/programs/stormwater/constpermits.shtml](http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml), accessed July 11, 2011.

BMPs are intended to diminish impacts to the Maximum Extent Practicable (MEP), which is a standard developed by Congress to allow regulators the flexibility needed to shape programs to the site-specific nature of municipal stormwater discharges. Reducing impacts to the MEP generally relies on BMPs that emphasize pollution prevention and source control, with additional structural controls as needed.

**California Department of Fish and Game (CDFG).** CDFG, through provisions of the State of California Administrative Code, is empowered to issue agreements for any alteration of a river, stream, or lake where fish or wildlife resources may adversely be affected. Streams and rivers are defined by the presence of a channel bed and banks, and at least an intermittent flow of water. CDFG regulates wetland areas only to the extent that those wetlands are part of a river, stream, or lake as defined by CDFG.

Typically, wetland delineations are not performed to obtain CDFG Streambed Alteration Agreements. The reason for this is that CDFG generally includes any riparian habitat present within the jurisdictional limits of streams and lakes. Riparian habitat includes willows, mule fat, and other vegetation typically associated with the banks of a stream or lake shoreline. In most situations, wetlands associated with a stream or lake would fall within the limits of riparian habitat. Thus, defining the limits of CDFG jurisdiction based on riparian habitat will automatically include any wetland areas.

**California Wetlands Conservation Policy (1993).** The goal of the California Wetlands Conservation Policy is to ensure no net loss of wetlands within the State. This policy also encourages a long-term net gain in the State's quantity, quality, and permanence of wetlands acreage and values. Interpretation of this order indicates that any developer wishing to fill wetlands for construction of new development must perform mitigation in the form of constructed wetlands elsewhere at ratios ranging from 2:1 to 10:1. In addition to the USACE, regulatory agencies claiming jurisdiction over wetlands also include the CDFG and the SWRCB.

## Local

**Los Angeles Regional Water Quality Control Board (LARWQCB).** The LARWQCB adopted the Basin Plan for the Los Angeles Region on June 13, 1994. The Basin Plan designates the beneficial uses of receiving waters, including the Los Angeles River Estuary (Los Angeles Harbor) to which the West Adams CPA discharges, and specifies both narrative and numerical water quality objectives for these receiving waters in the County. Water quality objectives, as defined by the California Water Code Section 13050(h), are the "limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses or the prevention of nuisance within a specific area."

**Standard Urban Stormwater Mitigation Plan (SUSMP) Requirements.** On March 8, 2000, the development planning program requirements, including the SUSMP requirements (collectively, the development planning program requirements, including the SUSMP requirements), were approved by the RWQCB as part of the municipally-owned separate storm sewer systems (MS4) Permit to address stormwater pollution from new construction and redevelopment projects. The SUSMP requirements contain a list of minimum BMPs that must be employed to infiltrate or treat stormwater runoff, control peak flow discharge, and reduce the post-project discharge of pollutants from stormwater conveyance systems. The SUSMP requirements define, based upon land use type, the types of practices that must be included and issues that must be addressed as appropriate to the development type and size. The SUSMP requirements apply to all development and redevelopment projects that fall into one of the following categories:

- Single-family hillside residences
- One acre or more of impervious surface area for industrial/commercial developments
- Automotive service facilities
- Retail gasoline outlets
- Restaurants
- Ten or more residential units
- Parking lots of 5,000 square feet or greater or with 25 or more spaces
- Projects located in or directly discharging to an Ecologically Sensitive Area

**MS4 Permit and Stormwater Quality Management Plan.** The West Adams CPA falls within the jurisdiction of the LARWQCB. Discharges of urban runoff into MS4s are regulated under the general NPDES stormwater permit that has been issued by the LARWQCB for the Los Angeles Region (MS4 Permit). Development in the West Adams CPA is subject to the waste discharge requirements issued by the LARWQCB for the MS4 Permit. The City is a co-permittee under the MS4 Permit and therefore, has joint/concurrent legal authority to enforce the terms of the permit within its jurisdiction. The MS4 Permit is intended to ensure that combinations of site planning, source control, and treatment control practices are implemented to protect the quality of receiving waters. To do so, the permit requires that new development employ BMPs designed to control pollutants in stormwater runoff to the MEP, details specific sizing criteria for BMPs, and specifies flow control requirements. These BMPs include structural practices, source control and treatment techniques and systems, and site design planning principles addressing water quality.

Site design or planning management BMPs are used to minimize runoff from new development and to discourage development in environmentally sensitive areas that are critical to maintaining water quality. Source control BMPs are usually the most effective and economical in preventing pollutants from entering storm and non-storm runoff. Treatment control BMPs involve physical treatment of the runoff, usually through structural means. These are also referred to as structural BMPs.

Among other things, the MS4 Permit requires the co-permittees to prepare a Stormwater Quality Management Plan (SQMP) specifying the BMPs that will be implemented to reduce the discharge of pollutants in stormwater to the MEP. The various components of the SQMP, taken together, are expected to reduce pollutants in storm water and urban runoff to the MEP. The emphasis of the SQMP is pollution prevention through education, public outreach, planning, and implementation of source control BMPs first, followed by structural and treatment control BMPs.

**Flood Control.** In general, flood control authority can be summarized as follows: (1) the ACOE oversees construction of projects associated with navigable bodies of water, including the Los Angeles River-related flood control systems and ocean harbors; (2) the Los Angeles County Department of Public Works (LACDPW) oversees construction of ancillary Los Angeles County Flood Control District (LACFCD) facilities and designs and/or maintains the flood control drainage facilities, including the Los Angeles River system (under the guidance of the ACOE) to mitigate 100- and 500-year storms; and (3) the City of Los Angeles Bureau of Engineering (BOE) oversees construction and maintenance of the City's storm drainage system which is designed to mitigate 50-year magnitude storms. Various City agencies implement development permit, slope stability, and watershed protection regulations.

**County of Los Angeles Hydrology Manual.** Drainage and flood control within the CPA is regulated by the City of Los Angeles Department of Public Works and the Los Angeles County Department of Public Works. The County has jurisdiction over regional drainage facilities and drainage facilities. The Los Angeles County Department of Public Works' Hydrology Manual requires that a storm drain conveyance system be designed for a 25-year storm event and that the combined capacity of a storm drain and street flow system accommodate flow from a 50-year storm event.<sup>2</sup> Areas with sump conditions are required to have a storm drain conveyance system capable of conveying flow from a 50-year storm event. The County also limits the allowable discharge into existing storm drain facilities based on the MS4 Permit and is enforced on all new developments that discharge directly into the County's storm drain system. Any proposed drainage improvements of County owned storm drain facilities such as catch basins and storm drain lines requires the approval/review from the County Flood Control District department.

**City of Los Angeles General Plan, Safety, Conservation, and Framework Elements.** State law since 1975 has required city general plans to include a safety element which addresses the issue of protection of its people from unreasonable risks associated with natural disasters, e.g., fires, floods, earthquakes. The Safety Element of the General Plan contains policies related to flooding issues because flooding events present a

<sup>2</sup>County of Los Angeles Department of Public Works, *Hydrology Manual*, January 2006, available at [http://ladpw.org/wrd/Publication/engineering/2006\\_Hydrology\\_Manual/2006%20Hydrology%20Manual-Divided.pdf](http://ladpw.org/wrd/Publication/engineering/2006_Hydrology_Manual/2006%20Hydrology%20Manual-Divided.pdf), accessed April 20, 2011.

widespread threat of devastation to life and property. The Conservation Element of the General Plan contains policies to minimize impacts from erosion that can result in the loss of valuable ground surface materials, depositing them into basins and the ocean, and can result in the reduction in air quality due to wind carried dust.

The General Plan addresses community development goals and policies relative to the distribution of land use, both public and private. The General Plan integrates the Citywide elements and community plans, and gives policy direction to the planning regulatory and implementation programs.

Policies related to hazards and disasters are found in the Safety Element of the City's General Plan. Policies related to the protection and restoration of oceans and fishers are found in the Conservation Element. Policies related to groundwater recharge, runoff, and pollution are found in the Framework.

The Safety Element provides a contextual framework for understanding the relationship between hazard mitigation, response to a natural disaster, and initial recovery from a natural disaster. The policies of the Safety Element reflect the comprehensive scope of the City's Emergency Operations Organization (EOO), which is tasked with integrating the City's emergency operations into a single operation.

The intent of the Conservation Element is the conservation and preservation of natural resources. Policies of the Conservation Element address the effect of erosion on such natural resources as beaches, watersheds, and watercourses. Although the Conservation Element cites erosion of hillsides resulting in loss of natural watersheds and features, flooding and endangerment to structures and people as a continuing issue, it contains limited policies related to erosion, and instead refers to Los Angeles Municipal Code (LAMC) Sections 91.700 et seq., and the Flood Hazard Management Specific Plan Guidelines (Ordinance 172.081) for specific guidance.

The General Plan Framework Element is a more general, long-term, programmatic Element. The Framework Element, adopted December 1996 and amended most recently in August 2001, is a long-range, Citywide, comprehensive growth strategy. The policies in the Framework Element address infrastructure and public service systems, many of which are interrelated, and all of which support the City's population and economy. Policies from the Safety, Conservation, and Framework Element related to Hydrology and Water Quality are listed on **Table 4.9-1**.

**TABLE 4.9-1: RELEVANT GENERAL PLAN WATER QUALITY GOALS, OBJECTIVES, AND POLICIES**

Goal/Objective/Policy	Goal/Objective/Policy Description
<b>SAFETY ELEMENT – HAZARD MITIGATION</b>	
Policy 1.1.2	Disruption reduction. Reduce, to the greatest extent feasible and within the resources available, potential critical facility, governmental functions, infrastructure and information resource disruption due to natural disaster.
Policy 1.1.3	Facility/systems maintenance. Provide redundancy (back-up) systems and strategies for continuation of adequate critical infrastructure systems and services so as to assure adequate circulation, communications, power, transportation, water and other services for emergency response in the event of disaster related systems disruptions.
Policy 1.1.5	Risk reduction. Reduce potential risk hazards due to natural disaster to the greatest extent feasible within the resources available, including provision of information and training.
Policy 1.1.6	State and federal regulations. Assure compliance with applicable State and federal planning and development regulations, e.g., Alquist-Priolo Earthquake Fault Zoning Act, State Mapping Act and Cobey-Alquist Flood Plain Management Act.
<b>SAFETY ELEMENT – EMERGENCY RESPONSE (MULTI-HAZARD)</b>	
Policy 2.1.2	Health and environmental protection. Develop and implement procedures to protect the environment and public, including animal control and care, to the greatest extent feasible within the resources available, from potential health and safety hazards associated with hazard mitigation and disaster recovery efforts.

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<b>Goal/Objective/Policy</b>	<b>Goal/Objective/Policy Description</b>
Policy 2.1.4	Interim procedures. Develop and implement pre-disaster plans for interim evacuation, sheltering and public aid for disaster victims displaced from homes and for disrupted businesses, within the resources available. Plans should include provisions to assist businesses which provide significant services to the public and plans for reestablishment of the financial viability of the City.
Policy 2.1.5	Response. Develop, implement and continue to improve the City's ability to respond to emergency events.
Policy 2.1.7	Volunteers. Develop and implement, within the resources available, strategies for involving volunteers and civic organizations in emergency response activities.
<b>SAFETY ELEMENT – DISASTER RECOVERY (MULTI-HAZARD)</b>	
Policy 3.1.2	Health/safety/environment. Develop and establish procedures for identification and abatement of physical and health hazards which may result from a disaster. Provisions shall include measures for protecting workers, the public and the environment from contamination or other health and safety hazards associated with abatement, repair and reconstruction programs.
Policy 3.1.3	Historic/cultural. Develop procedures which will encourage the protection and preservation of City-designated historic and cultural resources to the greatest extent feasible within the resources available during disaster recovery.
Policy 3.1.4	Interim services/systems. Develop and establish procedures prior to a disaster for immediate reestablishment and maintenance of damaged or interrupted essential infrastructure systems and services so as to provide communications, circulation, power, transportation, water and other necessities for movement of goods, provision of services and restoration of the economic and social life of the City and its environs pending permanent restoration of the damaged systems.
Policy 3.1.5	Restoration. Develop and establish prior to a disaster short- and long-term procedures for securing financial and other assistance, expediting assistance and permit processing and coordinating inspection and permitting activities so as to facilitate the rapid demolition of hazards and the repair, restoration and rebuilding, to a comparable or a better condition, those parts of the private and public sectors which were damaged or disrupted as a result of the disaster.
<b>CONSERVATION ELEMENT – EROSION</b>	
Policy 2	Continue to prevent or reduce erosion that will damage the watershed or beaches or will result in harmful sedimentation that might damage beaches or natural areas.
<b>CONSERVATION ELEMENT – OCEAN</b>	
Policy 1	Continue to reduce pollutant discharge into the bays from both natural and human sources.
Policy 2	Continue to support legislation and to seek funding and legislation intended for bay and coastal protection, enhancement and habitat restoration.
Policy 3	Continue to support and/or participate in programs to clean bay sediments and/or mitigate potentially harmful effects of contaminants in the sediments and waters of the bays.
<b>CONSERVATION ELEMENT – FISHERIES</b>	
Policy 2	Continue to consider and implement measures that will mitigate potential damage to and will encourage maintenance or restoration of fisheries.
<b>FRAMEWORK ELEMENT – WASTEWATER</b>	
Policy 9.3.2	Consider the use of treated wastewater for irrigation, groundwater recharge, and other beneficial purposes.
<b>FRAMEWORK ELEMENT – STORMWATER</b>	
Objective 9.5	Ensure that all properties are protected from flood hazards in accordance with applicable standards and that existing drainage systems are adequately maintained.
Policy 9.5.1	Develop a stormwater management system that has adequate capacity to protect its citizens and property from flooding which results from a 10-year storm (or a 50-year storm in sump areas).
Policy 9.5.2	Assign the cost of stormwater system improvements proportionately to reflect the level of runoff generated and benefits.

**TABLE 4.9-1: RELEVANT GENERAL PLAN WATER QUALITY GOALS, OBJECTIVES, AND POLICIES**

Goal/Objective/Policy	Goal/Objective/Policy Description
Policy 9.5.3	Implement programs to correct any existing deficiencies in the stormwater collection system.
Policy 9.5.4	Ensure that the City's drainage system is adequately maintained.
Objective 9.6	Pursue effective and efficient approaches to reducing stormwater runoff and protecting water quality.
Policy 9.6.1	Pursue funding strategies which link the sources of revenues for stormwater system improvement to relevant factors including sources of runoff and project beneficiaries.
Policy 9.6.2	Establish standards and/or incentives for the use of structural and non-structural techniques which mitigate flood-hazards and manage stormwater pollution.
Policy 9.6.3	The City's watershed-based approach to stormwater management will consider a range of strategies designed to reduce flood hazards and manage stormwater pollution. The strategies considered will include, but not necessarily be limited to: <ul style="list-style-type: none"> <li>a. Support regional and City programs which intercept runoff for beneficial uses including groundwater recharge;</li> <li>b. Protect and enhance the environmental quality of natural drainage features;</li> <li>c. Create stormwater detention and/or retention facilities which incorporate multiple-uses such as recreation and/or habitat;</li> <li>d. On-site detention/retention and reuse of runoff;</li> <li>e. Mitigate existing flood hazards through structural modifications (floodproofing) or property by-out;</li> <li>f. Incorporate site design features which enhance the quality of off-site runoff; and</li> <li>g. Use land use authority and redevelopment to free floodways and sumps of inappropriate structures which are threatened by flooding and establish appropriate land uses which benefit or experience minimal damages from flooding.</li> </ul>
Policy 9.6.4	Proactively participate in inter-agency efforts to manage regional water resources, such as the Santa Monica Bay Restoration Project, the Los Angeles River Master Plan, the Los Angeles River Parkway Project and the Los Angeles County Drainage Area Water Conservation and Supply Feasibility Study.
Objective 9.7	Continue to develop and implement management practices based stormwater program which maintains and improves water quality.
Policy 9.7.1	Continue the City's active involvement in the regional NPDES municipal stormwater permit.
Policy 9.7.2	Continue to aggressively develop and implement educational outreach programs designed to foster an environmentally-aware citizenry.
Policy 9.7.3	Investigate management practices which reduce stormwater pollution to identify technically feasible and cost effective-approaches, through: <ul style="list-style-type: none"> <li>a. Investigation of sources of pollution using monitoring, modeling and special studies;</li> <li>b. Prioritization of pollutants and sources;</li> <li>c. Conducting research and pilot projects to study specific management practices for the development of standards; and</li> <li>d. Developing requirements which establish implementation standards for effective management practices.</li> </ul>
Objective 9.9	Manage and expand the City's water resources, storage facilities, and water lines to accommodate projected population increases and new or expanded industries and businesses.
Policy 9.9.3	Protect existing water supplies from contamination, and clean up groundwater supplies so those resources can be more fully utilized.
Policy 9.9.4	Work to improve water quality and reliability of supply from the State Water Project and other sources.
Policy 9.9.5	Maintain existing rights to groundwater and ensure continued groundwater pumping availability.
Objective 9.11	Ensure, to the maximum extent possible, the continued provision of water capacity, quality and delivery after an earthquake or other emergency.
Policy 9.11.1	Provide for the prompt resumption of water service with adequate quantity and quality of water after an emergency.

**SOURCE:** City of Los Angeles, *The Citywide General Plan Framework, An Element of the City of Los Angeles General Plan*, re-adopted 2001.

**Los Angeles Municipal Code (LAMC).** The LAMC Section 64.72 lists the City's requirements for stormwater and urban runoff pollution control. Provisions include prohibitions of illicit discharges, illicit connections, and spills, dumping and disposals to the MS4; pollutant control requirements from sites of industrial activities; and requirements for construction activity stormwater measures. The LAMC also promulgates requirements for stormwater BMPs, which include the following:

- For parking lots with more than 25 spaces, BMPs must be implemented to reduce the discharge of pollutants to the MEP.
- For other premises exposed to stormwater, BMPs, if they exist, or other steps shall be used to reduce the discharge of pollutants to the MEP. This includes the removal and lawful disposal from all parts of the premises exposed to stormwater of any solid waste or any other substance, which if discharged to the MS4, would be a pollutant. The primary purpose of zoning is to segregate uses that are thought to be incompatible; in practice, zoning is used as a permitting system to prevent new development from harming existing residents or businesses and to preserve the "character" of a community. With respect to hydrology hazards, the City implements zoning ordinances to ensure safe construction practices.

Any proposed drainage improvements within the street right of way or any other property owned by, to be owned by, or under the control of the City requires the approval of a B-permit (Section 62.105, LAMC). Under the B-permit process, storm drain installation plans are subject to review and approval by the City of Los Angeles Department of Public Works Bureau of Engineering.<sup>3</sup> Additionally, any connections to the City's storm drain system from a property line to a catch basin or a storm drain pipe requires a storm drain permit from the City of Los Angeles Department of Public Works, Bureau of Engineering.

**City of Los Angeles Stormwater Program.** NPDES requirements mandate that stormwater BMPs be implemented during project construction into SWPPPs and during project operation into SUSMPs. The requirements are enforced through the City's plan review and approval process. During the review process, project plans are reviewed for compliance with the City's General Plans, zoning ordinances, and other applicable local ordinances and codes, including stormwater requirements. Plans and specifications are reviewed to ensure that the appropriate BMPs are incorporated to address stormwater pollution prevention goals.

The purpose of the SWPPP is to identify potential pollutant sources that may affect the quality of discharge associated with construction activity, identify non-stormwater discharges, and design the use and placement of BMPs to effectively prohibit the entry of pollutants from the site into the public storm drain system during construction. The purpose of SUSMP is to reduce the discharge of pollutants in stormwater by outlining BMPs which must be incorporated into the design plans of new development and redevelopment. The SUSMP provisions that are applicable to new residential and commercial developments include, but are not limited to, the following:<sup>4</sup>

- Peak Stormwater Runoff Discharge Rate: Post-development peak stormwater runoff discharge rates shall not exceed the estimated pre-development rate for developments where the increased peak stormwater discharge rate will result in increased potential for downstream erosion;
- Provide storm drain system Stenciling and Signage (only applicable if a catch basin is built on-site);
- Properly design outdoor material storage areas to provide secondary containment to prevent spills;
- Properly design trash storage areas to prevent off-site transport of trash;
- Provide proof on ongoing BMP Maintenance of any structural BMPs installed; and
- Design Standards for Structural or Treatment control BMPs: Post-construction treatment control BMPs are required to incorporate, at minimum, either a volumetric or flow based treatment control design or both, to mitigate (infiltrate, filter or treat) storm water runoff on-site.

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<sup>3</sup>County of Los Angeles Department of Public Works, Bureau of Engineering website, <http://eng.lacity.org/index.cfm>, accessed April 20, 2011.

<sup>4</sup>City of Los Angeles Stormwater Program, Standard Urban Stormwater Mitigation Plan website, <http://www.lastormwater.org/siteorg/businesses/susmp.htm>, accessed April 19, 2011.

## EXISTING SETTING

The proposed project is located within the Los Angeles Basin (Basin). The general region lies in the semi-permanent high pressure zone of the eastern Pacific, resulting in a mild climate tempered by cool sea breezes with light average wind speeds. Within the West Adams CPA and its vicinity, the average wind speed, as recorded at the Lennox Wind Monitoring Station, is approximately four miles per hour, with calm winds occurring approximately 13 percent of the time. Wind in the vicinity of the West Adams CPA predominately blows from the west.

The annual average temperature in the vicinity of the West Adams CPA is 65 degrees Fahrenheit (°F) with an average winter temperature of approximately 58°F and an average summer temperature of approximately 72°F.<sup>5</sup> Total precipitation in the project area averages approximately 15 inches annually. Precipitation occurs mostly during the winter and relatively infrequently during the summer. Precipitation averages approximately nine inches during the winter, approximately four inches during the spring, approximately two inches during the fall, and less than one inch during the summer.<sup>6</sup>

For planning purposes, the LARWQCB divides surface waters into hydrologic units, areas, and subareas, and groundwater into major groundwater basins. The Los Angeles-San Gabriel Hydrologic Unit covers most of Los Angeles County and small areas of southeastern Ventura County. This drainage area totals 1,608 square miles. This hydrologic unit is highly urbanized and much of the area is covered with semi-permeable or non-permeable material (i.e., paved). The Los Angeles River, San Gabriel River, and Ballona Creek, which are the major drainage systems in Los Angeles County, drain the coastal watersheds of the Transverse Ranges. These surface waters also recharge large reserves of groundwater that exist in alluvial aquifers underlying the San Fernando and San Gabriel Valleys and the Los Angeles Coastal Plain.

### Watersheds

Portions of the West Adams CPA are located within the Ballona Creek Watershed (**Figure 4.9-1**). With a land area of approximately 130 square miles (337 square kilometers), the Ballona Creek Watershed drains the Los Angeles Basin, from the Santa Monica Mountains on the north, the I-110 on the east, and the Baldwin Hills on the south.

The Ballona Creek Watershed includes most of the City of Los Angeles west of downtown, the cities of Beverly Hills, Culver City, West Hollywood, portions of the cities of Santa Monica and Inglewood, and portions of the Hollywood Hills and the Santa Monica Mountains. In addition, the watershed includes the coastal interface zone and coastal waters of Marina del Rey, the Venice Canals, Ballona Lagoon, Del Rey Lagoon, and Oxford Lagoon. Land use in the watershed is comprised of 64 percent residential, 8 percent commercial, 4 percent industrial, 17 percent open space, 4 percent public land, and 3 percent other urban land.<sup>7</sup>

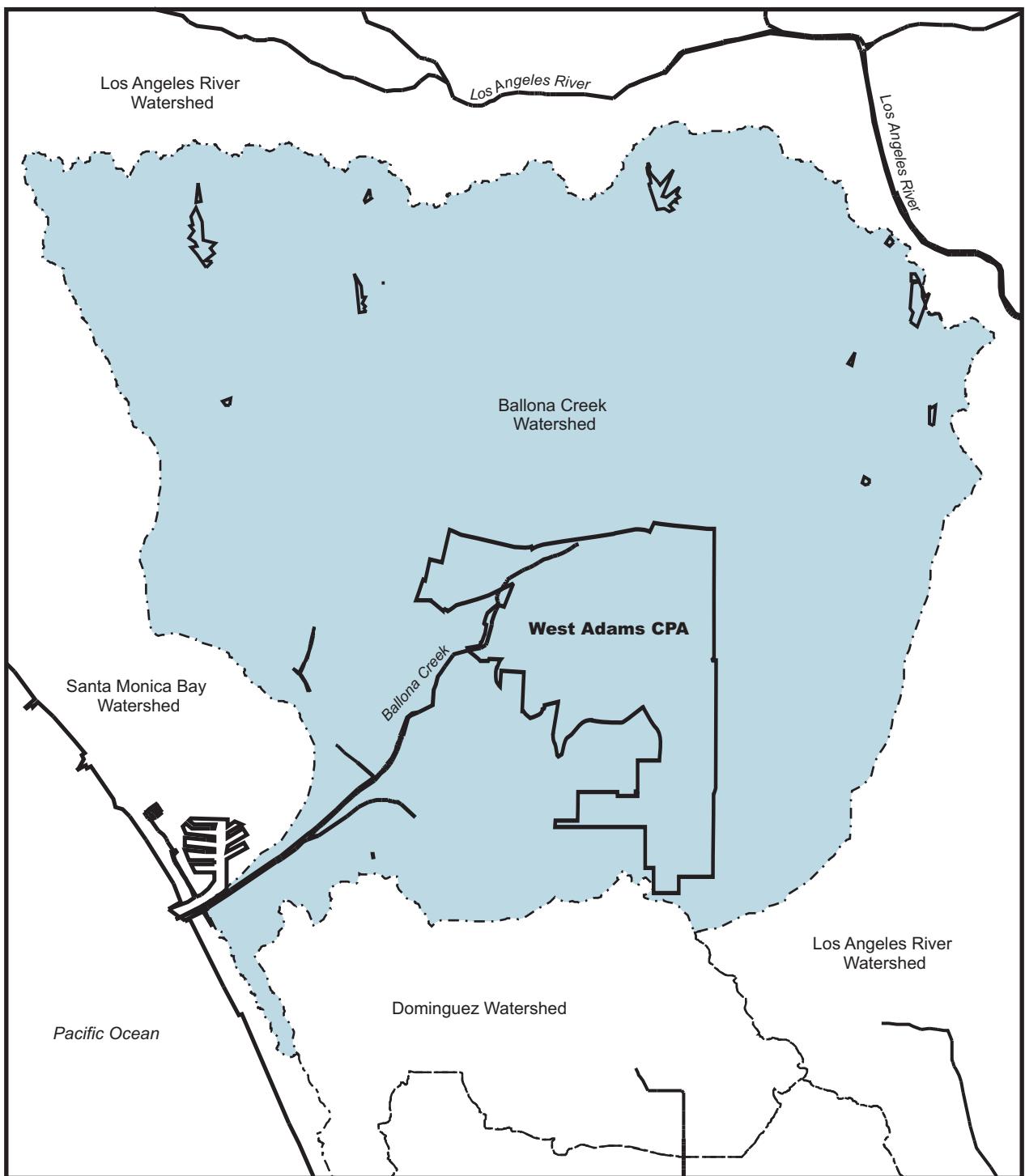
### Surface Water Resources

The major surface water resource in the vicinity of the West Adams CPA is Ballona Creek, which flows parallel to Venice Boulevard in the northwest portion of the West Adams CPA and flows southwest to the Santa Monica Bay (**Figure 4.9-2**).

<sup>5</sup>Western Regional Climate Center, Historical Climate Information website, <http://www.wrcc.dri.edu/CLIMATEDATA.html>, accessed February 16, 2012.

<sup>6</sup>Ibid.

<sup>7</sup>County of Los Angeles Department of Public Works, *Ballona Creek Watershed Management Plan*, September 2004, available at <http://dpw.lacounty.gov/wmd/watershed/bc/bcmp/masterplan.cfm>, accessed April 19, 2011.



**LEGEND:**

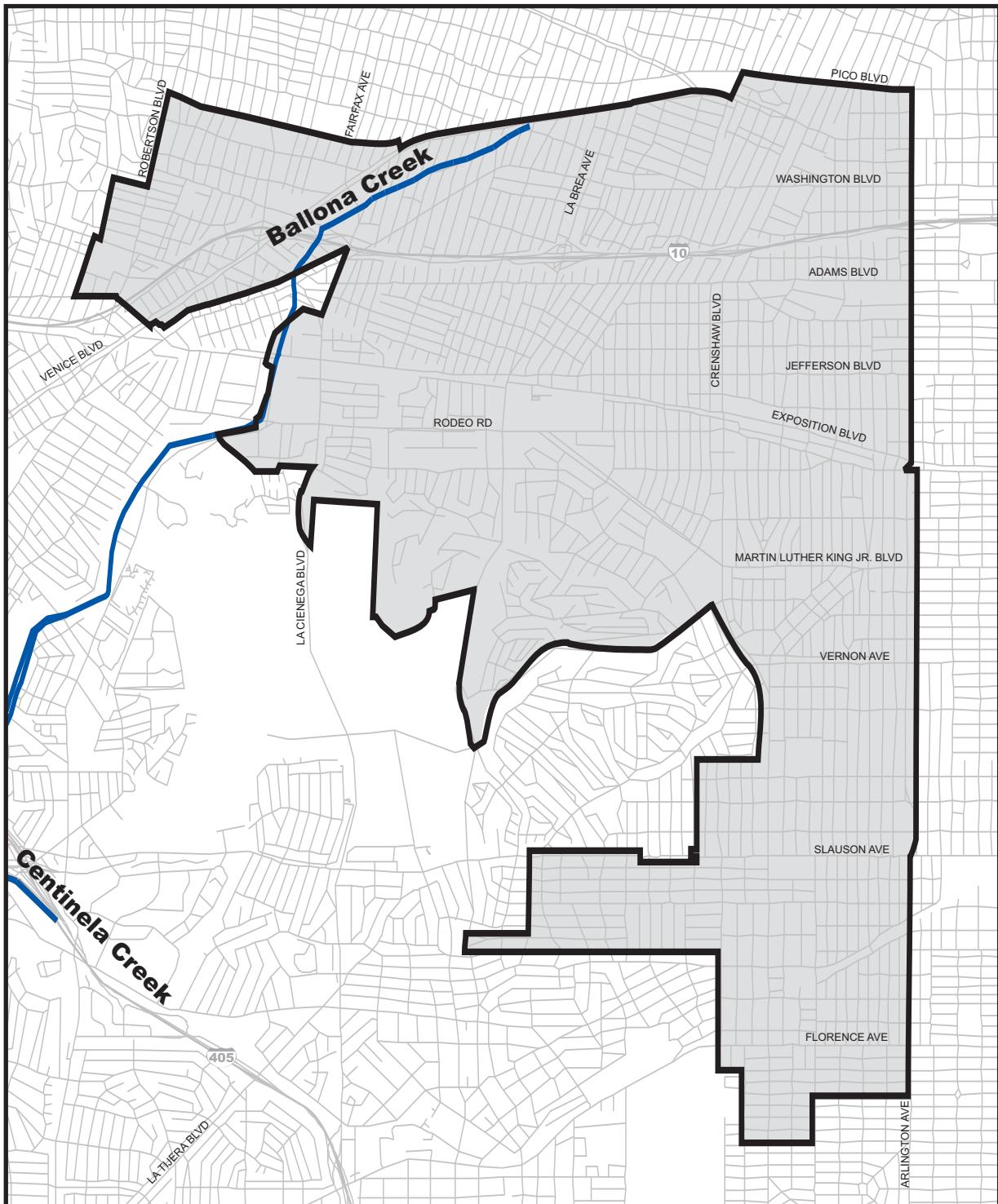
- West Adams CPA
- Ballona Creek Watershed

SOURCE: ESRI and Taha, 2012.

APPROX.  
SCALE



1.0 2.0 MILES



**LEGEND:**

- [Light gray square] West Adams CPA
- [Blue line] Surface Water Resources

SOURCE: ESRI and TAHA, 2012.

APPROX.  
SCALE



0 2,000 4,000 FEET

Ballona Creek is a nine-mile long flood protection channel. Historically, Ballona Creek was a meandering stream. Various perennial streams and creeks flowed from the Santa Monica Mountains into the West Hollywood and La Cienega area, resulting in the formation of marshland and swamps that fed Ballona Creek. The major tributaries to Ballona Creek include Centinela Creek, Sepulveda Canyon Channel, Benedict Canyon Channel, and numerous storm drains. Today, most of Ballona Creek has been channelized to control runoff and reduce the impacts of major flood events in the region. Ballona Creek empties into the Santa Monica Bay and is designed to discharge at approximately 71,400 cubic feet per second from a 50-year frequency storm event.<sup>8</sup>

**Flood Control and Drainage Facilities.** Today most of the drainage network in the Ballona Creek watershed is controlled by structural flood control measures, including debris basins, storm drains, underground culverts, and open concrete channels. Ballona Creek remains underground in the eastern portion of its watershed, and becomes an open channel near Venice Boulevard and Pickford Street (west of La Brea Boulevard) in the West Adams CPA. The major flood control facilities in the vicinity of the West Adams CPA are the Hollywood Reservoir and the Oxford Flood Control Basin. Ballona Creek drains the West Adams CPA by directing stormwater runoff to the Pacific Ocean.

**Surface Water Quality.** Ballona Creek is highly modified, having been lined with concrete along most of its length. Approximately 40 percent of the watershed is covered in impervious surfaces. Because the watershed is highly urbanized, urban runoff and illegal dumping are major contributors to impaired water quality in the Ballona Creek Watershed.<sup>9</sup>

According to the Basin Plan of the LARWQCB,<sup>10</sup> uncontrolled pollutants from non-point sources are believed to be the greatest threats to rivers and streams within the Los Angeles region. The Basin Plan designates beneficial uses for surface water and groundwater, sets narrative and numerical water quality objectives that must be attained (or maintained) to protect the designated beneficial uses, and describes implementation programs to protect all waters in the region. According to the Basin Plan:

*Beneficial uses form the cornerstone of water quality protection under the Basin Plan. Once beneficial uses are designated, appropriate water quality objectives can be established and programs that maintain or enhance water quality can be implemented to ensure the protection of beneficial uses. The designated beneficial uses, together with water quality objectives (referred to as criteria in federal regulations), form water quality standards.*

**Table 4.9-2** lists the beneficial uses for Ballona Creek as well as other surface water features in the watershed that could be affected by development within the West Adams CPA as identified in the Basin Plan.

**Water Quality Monitoring.** Dischargers regulated under Waste Discharge Requirements (WDRs) are required to “self monitor,” that is, to collect regular samples of their effluent and receiving waters according to a prescribed schedule to determine facility performance and compliance with their requirements.

In addition to self-monitoring by dischargers, the LARWQCB makes unannounced inspections and collects samples to determine compliance with discharge requirements and receiving water objectives and to provide data for enforcement actions. The LARWQCB also responds to a variety of incidents, including accidental and illegal discharges of oil from offshore pipelines, oily waste discharges, and dumping in the storm drains.

Each Regional Board in the State prepares a biennial Water Quality Assessment (WQA) Report using data collected by regional planning, permitting, surveillance, and enforcement programs. The regional reports contain inventories of the pollutants in the major water bodies of the region.

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<sup>8</sup>*Ibid.*

<sup>9</sup>*Ibid.*

<sup>10</sup>Los Angeles Regional Water Quality Control Board, *Water Quality Control Plan: Los Angeles Region*, 1994.

**TABLE 4.9-2: EXISTING BENEFICIAL USES OF BALLONA CREEK**

Uses	Ballona Creek	Ballona Creek Estuary	Ballona Lagoon	Ballona Wetlands	Del Rey Lagoon
Municipal ( <i>Uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.</i> )	P /a/				
Navigation ( <i>Uses of water for shipping, travel, or other transportation by private, military, or commercial vessels.</i> )		E	E		E
Water Contract Recreation ( <i>Uses of water for recreation activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to swimming, wading, water-skiing, skin and scuba diving, white water activities, fishing, or use of natural hot springs.</i> )	P /b/	E	E	E	E
Non-Contact Water Recreation ( <i>Uses of water for recreational activities involving proximity to water, but not normally involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to picnicking, sunbathing, hiking, beachcombing, camping, boating, tide pool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities</i> )	E	E	E	E	E
Commercial and Sports Fishing ( <i>Uses of water for commercial or recreational collection of fish, shellfish, or other organisms including, but not limited to, uses involving organisms intended for human consumption or bait purposes</i> )		E	E		E
Warm Freshwater Habitat ( <i>Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates</i> )	P				
Estuarine Habitat ( <i>Uses of water that support estuarine ecosystems including, but not limited to, preservation or enhancement of estuarine habitats, vegetation, fish, shellfish, or wildlife (e.g., estuarine mammals, waterfowl, shorebirds).</i> )		E	E	E	E
Marine Habitat ( <i>Uses of water that support marine ecosystems including, but not limited to, preservation or enhancement of marine habitats, vegetation such as kelp, fish, shellfish, or wildlife (e.g., marine mammals, shorebirds).</i> )		E	E		
Wildlife Habitat ( <i>Uses of water that support terrestrial ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.</i> )	E	E	E	E	E
Rare Threatened Endangered Species ( <i>Uses of water that support habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under State or federal law as rare, threatened or endangered.</i> )		E	E	E	E
Migration of Aquatic Organisms ( <i>Uses of water that support habitats necessary for migration, acclimatization between fresh and salt water, or other temporary activities by aquatic organisms, such as anadromous fish.</i> )		E	E	E	E
Spawning, Reproduction, and/or Early Development ( <i>Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish.</i> )		E	E	E	E
Shellfish Harvesting ( <i>Uses of water that support habitats suitable for the collection of filter-feeding shellfish (e.g., clams, oysters, and mussels) for human consumption, commercial, or sports purposes.</i> )		E	E		
Wetland Habitat ( <i>Uses of water that support wetland ecosystems, including, but not limited to, preservation or enhancement of wetland habitats, vegetation, fish, shellfish, or wildlife, and other unique wetland functions which enhance water quality, such as providing flood and erosion control, stream bank stabilization, and filtration and purification of naturally occurring contaminants.</i> )			E	E	E

E - Existing Beneficial

P - Potential Beneficial

/a/ Designated under SB 88-63 and RB 89-03.

/b/ Access prohibited by Los Angeles County DPW.

SOURCE: Los Angeles Regional Water Quality Control Board, *Water Quality Control Plan Los Angeles Region*, 1994.

## Groundwater Resources

Groundwater accounts for most of the region's local (i.e., non-imported) supply of fresh water, however, groundwater from the Los Angeles Coastal Plain Groundwater Basin is not a substantial source of groundwater for the region. Major groundwater basins in the region are shown in **Figure 4.9-3**. The West Adams CPA is located within the geographic boundaries of Los Angeles Coastal Plain Groundwater Basin, specifically the West Basin (comprised of the Hollywood and Santa Monica sub-basins).

**Groundwater Quality.** According to the Basin Plan, the general quality of groundwater in the Los Angeles region has degraded substantially from background levels. Much of the degradation reflects that activities such as fertilizers and pesticides typically used on agricultural lands, which can degrade groundwater when irrigation return waters containing such substances seep into the subsurface. In areas of septic tank use, nitrogen and pathogenic bacteria from overloaded or improperly sited septic tanks can seep into groundwater and result in health risks to those who rely on groundwater for domestic supply. In areas with industrial or commercial activities, aboveground and underground storage tanks contain vast quantities of hazardous substances. Thousands of these tanks in the region have leaked or are leaking, discharging petroleum fuels, solvents, and other hazardous substances into the subsurface. The leaks, as well as other discharges to the subsurface, that result from inadequate handling, storage, and disposal practices can seep into the subsurface and pollute groundwater.<sup>11</sup>

Specific groundwater quality problems include the Central and West Coast Groundwater Basins (Los Angeles Coastal Plain) where seawater intrusion has occurred in these basins and is now under control in most areas through an artificial recharge system consisting of spreading basins and injection wells that form fresh water barriers along the coast. Groundwater in the lower aquifers of these basins is generally of good quality, but large plumes of saline water have been trapped behind the barrier of injection wells in the West Coast Basin, degrading significant volumes of groundwater with high concentrations of chloride. Furthermore, the quality of groundwater in parts of the upper aquifers of both basins is degraded by both organic and inorganic pollutants from a variety of sources, such as leaking tanks, leaking sewer lines, and illegal discharges.

As the aquifers and confining layers in these alluvial basins are typically interconnected, the quality of groundwater in the deeper production aquifers is threatened by migration of pollutants from the upper aquifers.

Listed below are the existing beneficial uses identified in the Basin Plan for the Los Angeles Coastal Plain Groundwater Basin that could be impacted by the adoption and implementation of the proposed West Adams New Community Plan:

- Municipal and Domestic Supply - Uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.
- Industrial Service Supply (IND) - Uses of water for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well repressurization.
- Industrial Process Supply (PROC) - Uses of water for industrial activities that depend primarily on water quality.

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<sup>11</sup>Los Angeles Regional Water Quality Control Board, *Water Quality Control Plan: Los Angeles Region*, 1994.



LEGEND:

- West Adams CPA
- Groundwater Basin
- County Boundary

SOURCE: ESRI and Taha, 2012.

APPROX.  
SCALE



0 5.5 11 MILES

## Stormwater Drainage

The City's storm drain system, maintained by the City of Los Angeles Department of Public Works, is a vast network of underground pipes and open channels that were designed to prevent flooding. Runoff drains from the street into the gutter and enters the system through an opening in the curb called a catch basin. Curbside catch basins are the primary points-of-entry for urban runoff. From there, runoff flows into underground tunnels that empty into flood control channels such as Ballona Creek. Ballona Creek is a major flood control measure for draining storm water from the West Adams CPA and directing it safely to the Pacific Ocean. Storm water runoff within the West Adams CPA is directed toward Ballona Creek via storm drains, curbs and gutters (street flows), and urban sheet flow. The flood control channels eventually discharge to over 65 shoreline outfalls rimming the Los Angeles area coastline. The storm drain system receives no treatment or filtering process and is completely separate from the City's sewer system.

The City of Los Angeles Bureau of Engineering (BOE) is charged with overseeing construction of the City's storm drainage system. In addition, the BOE, under contract to the County, sometimes designs and constructs sections of the County Flood Control system. The City's storm drainage system is integrated with the County Flood Control system and drainage systems of neighboring jurisdictions. The City's system consists of streets (including gutters), approximately 1,500 miles of storm drains beneath the streets, approximately 35,000 catch basins that collect runoff from the streets, several large spreading grounds, and several pumping facilities. The City's system is designed to accommodate 50-year magnitude storms. During dry weather, the combined County and City's storm drainage systems carry tens of millions of gallons of runoff daily. During storms, the system carries billions of gallons of storm runoff per day. Runoff is carried via open flood control channels directly to the ocean or to collection systems.

**Existing Deficiencies and Proposed Upgrades.** In November 2002, Proposition 50 was approved which authorized \$3.4 billion in general obligation bonds to fund a variety of specified water and wetlands projects that utilize multiple strategies resulting in multiple benefits. Proposition 50 guidelines highlight improved water supply reliability, long-term attainment and maintenance of water quality standards, eliminated or reduced pollution in impaired water and sensitive habitat areas, planning and implementation of multipurpose flood control programs and drinking water and water quality projects that serve disadvantaged communities.

In particular, Proposition 50 set aside \$380 million for Integrated Regional Water Management Plan (IRWMP) related grants. Integrated planning involves local agencies and interest groups working together to coordinate planning activities across jurisdictional boundaries. In this regional approach, individual agencies' efforts are combined in order to leverage resources and meet multiple water resource needs at the same time. For instance, water supply, water quality, and habitat projects might be combined with a flood control project in a manner that benefits a much larger area than the original jurisdiction. The result is a multi-objective approach that multiplies the benefits of any individual agency's single project.

The Greater Los Angeles County Region, composed of five sub-regions (Upper Los Angeles River, North Santa Monica Bay, South Bay, Upper San Gabriel River and Rio Hondo River, and Lower San Gabriel and Los Angeles River), is developing an IRWMP that focuses on water resource management while creating a platform for future funding. As established by Proposition 50, an IRWMP describes regional objectives and priorities, water management strategies, implementation, impacts and benefits, data management, financing, stakeholder involvement, relationship to local planning, and State and federal coordination.

A critical component of the planning effort is identifying projects that would help achieve the goals and objectives of the IRWMP. Through the County Department of Public Works, the Greater Los Angeles County Region has identified an extensive list of proposed projects that are seeking funding through the IRWMP process. Approximately 300 projects are proposed that would benefit the South Bay Watershed, of which Ballona Creek Watershed is a part, with approximately 100 of those projects related to water quality. Of those, the projects listed in **Table 4.9-3** are representative of possible direct affects to the West Adams CPA. In addition to the proposed projects listed in **Table 4.9-3**, many other proposed regional projects would indirectly benefit the West Adams CPA.

**TABLE: 4.9-3: PROPOSED INTEGRATED REGIONAL WATER MANAGEMENT PLAN PROJECTS**

Project Name	Proponent	Project Description
Catch Basin Insert Installation	City of Los Angeles	Catch basin inserts are being installed in high trash generation areas throughout the City. This is an ongoing project.
Los Angeles River Trash TMDL-Full Capture BMP's	Los Angeles County Flood Control District	Install full capture trash capture devices within the storm drain conveyance system to prevent trash from entering the Los Angeles River and major tributaries, in compliance with the Los Angeles River Trash TMDL.
Catch Basin Screens and Inserts	City of Los Angeles	This is an ongoing effort by the City that upon completion will have installed 10,000 screens and inserts.
Baldwin Hills to Ballona Trail BMPs	City of Los Angeles	This project targets a drainage area of approximately 690 acres for the development and implementation of water quality BMPs.
South Los Angeles Wetlands Project	City of Los Angeles	This project would provide valuable green space, while creating high-quality wetlands habitat in urban Los Angeles.

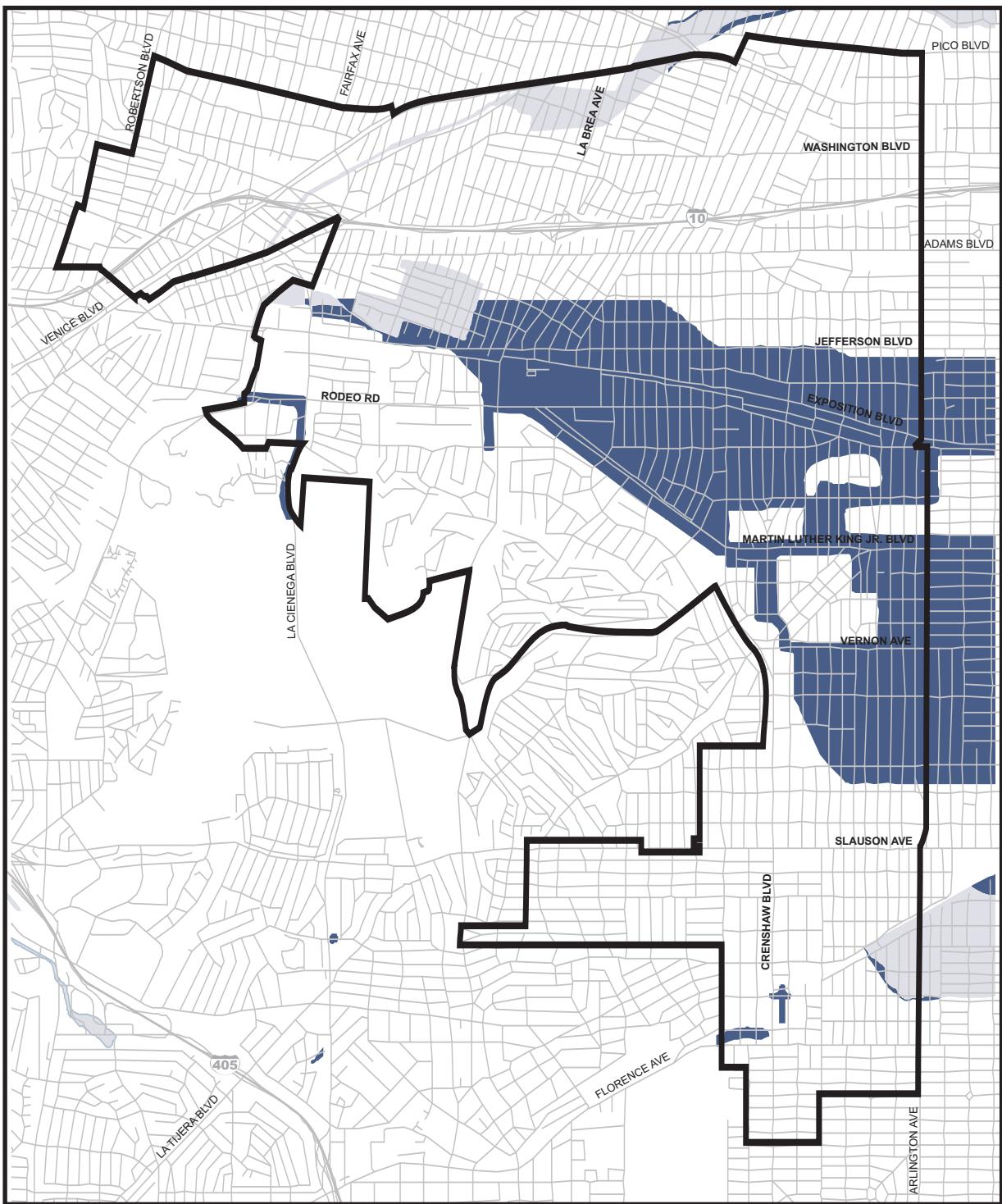
**SOURCE:** County of Los Angeles, Regional Water Management Plan website, <http://www.ladpw.org/wmd/irwmp/>, accessed April 19, 2011.

### Flooding and Inundation

Los Angeles County is subject to a wide range of flood hazards, including those caused by earthquakes, intense storms, and failure of man-made structures. Storm conditions, topography, drainage patterns, and the adequacy of the stormwater system combine under certain conditions to create areas of flooding. Aside from Ballona Creek, no other large bodies of water are present in the vicinity of the project area. According to the Safety Element of the General Plan, the West Adams CPA is not within a tsunami zone or an inundation area. The West Adams CPA is located more than five miles inland from the Pacific Ocean and the elevation ranges from approximately 100 to 425 feet above sea level.

The Federal Emergency Management Agency (FEMA) has identified areas affected by both the 100-year storm frequency flood and the 500-year storm frequency flood (**Figure 4.9-4**). A 100-year flood hazard zone is located in the vicinity of Ballona Creek in the northern portion of the West Adams CPA, as well as in the northern central portion of the West Adams CPA, south of the I-10 Freeway. A substantial portion of the eastern and central portions of the West Adams CPA are located within a 500-year flood hazard zone.

As previously discussed, Ballona Creek is the major flood control measure for draining storm water from the West Adams CPA and directing it safely to the Pacific Ocean. Storm water runoff within the West Adams CPA is directed toward Ballona Creek via storm drains, curbs and gutters (street flows), and urban sheet flow. Outside of the FEMA designated flood hazard area, local flooding may also occur at low points where clogged storm drains cause storm waters to back up.

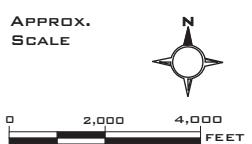


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#### LEGEND:

- West Adams CPA
- One-Hundred Year Flood Zone
- Five-Hundred Year Flood Zone

SOURCE: City of Los Angeles, ESRI, and TAHA, 2012.



## THRESHOLDS OF SIGNIFICANCE

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In accordance with Appendix G of the State CEQA Guidelines, the proposed project would have a significant impact related to hydrology and water quality if it would:

- Violate any water quality standards or waste discharge requirements;
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
- Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- Place within a 100-year flood hazard area structures which would impede or redirect flood flows;
- Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam; and/or
- Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow.

### City of Los Angeles CEQA Thresholds Guidelines

Based on the criteria set forth in the City of Los Angeles CEQA Thresholds Guide (2006), the determination of impact significance shall be made on a case-by-case basis, considering whether a project would:

- Substantially reduce or increase the amount of surface water in a water body;
- Change potable water levels sufficiently to:
  - Reduce the ability of a water utility to use the groundwater basin for public water supplies, conjunctive use purposes, storage of imported water, summer/winter peaking, or to respond to emergencies and drought; and/or
  - Reduce yields of adjacent wells or well fields (public or private);
- Adversely change the rate or direction of flow of groundwater;
- Affect the rate or change the direction of movement of existing contaminants;
- Expand the area affected by contaminants; and/or
- Result in an increased level of groundwater contamination (including that from direct percolation, injection, or salt water intrusion).

## IMPACTS

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The proposed project is the adoption of the West Adams New Community Plan and its implementing ordinances. These ordinances, which include standards and guidelines for projects within the West Adams CPA, include a Community Plan Implementation Overlay District (CPIO) containing several subdistricts throughout the plan area, as well as amendments to the existing Crenshaw Corridor Specific Plan. The proposed project further involves General Plan Amendments and zone changes to create consistency with the City's General Plan Framework Element, as well as create consistency between both planned and existing uses of parcels and their relationship to surrounding areas. Through implementation of the CPIO, the

proposed project further restricts detrimental uses, incentivizes development in targeted areas, and provides development standards to ensure that new construction is consistent with neighborhood character, as well as corrects minor errors within the existing West Adams Community Plan. While there are hydrology and water quality resources/concerns within the West Adams CPA, they are subject to the federal, State, and local policies and guidelines mentioned above; therefore, the proposed West Adams New Community Plan and its implementing ordinances do not contain any specific guidelines that would affect hydrology and water quality.

## **Construction**

The West Adams New Community Plan describes the capacity for future development for a portion of the City. While the proposed project includes a series of implementing ordinances, it is not an implementation plan in and of itself, and its adoption does not constitute a commitment to any project-specific construction. However, construction related to future capacity within the West Adams CPA would have the following potential effects.

### **Surface Water Quality**

Impacts on surface water quality during construction related to the proposed project would be short-term. However, grading, excavation, and other construction activities associated with the implementation of the proposed project could impact water quality due to erosion resulting from exposed soils that may be transported from the project area in stormwater runoff. In addition, construction related to the proposed project also has the potential to generate short-term water pollutants, including sediment, trash, construction materials, and equipment fluids. Compliance with the NPDES program would ensure these stormwater pollutants would not substantially degrade water quality. The County-wide MS4 permit requires construction sites to develop a SWPPP and implement BMPs to reduce the potential for construction-induced water pollutant impacts. All new development within the West Adams CPA would be required to comply with these regulations. Therefore, the proposed project would result in less-than-significant impacts related to surface water quality.

### **Groundwater**

As shown in **Figure 4.9-3** above, the West Adams CPA is located within the geographic boundaries of the Los Angeles Coastal Plain Groundwater Basin. According to the Basin Plan, the general quality of groundwater in the Los Angeles region has degraded substantially from background levels. Much of the degradation reflects urbanized land uses that have developed in the Los Angeles Coastal Plain Groundwater Basin. However, as previously discussed, all new development within the West Adams CPA would be required to occur in compliance with the City's SUSMP requirements, applicable LAMC water quality standards, and the General Plan Framework, which would prevent significant groundwater quality impacts.

Interference with groundwater recharge is largely caused by the construction of impervious surface area (buildings, road, parking lots, etc.) In most instances, the maximum FAR permitted on those properties affected by the proposed West Adams New Community Plan does not change. Where FAR changes are proposed in targeted CPIO subdistricts and Specific Plan subareas, they do increase permitted maximum buildable area, and could result in greater building intensity. However, since approximately less than one percent of the land in the West Adams CPA is vacant or undeveloped, any new development in the West Adams CPA, whether more intense than existing conditions or not, would not result in a substantial increase of impervious surfaces. The West Adams CPA is not a significant area for groundwater recharge. In addition, General Plan Framework policies would help minimize potential impacts to groundwater. Therefore, the proposed project would result in less-than-significant impacts related to groundwater.

## Stormwater Drainage

The proposed West Adams New Community Plan could result in grading activities on individual parcels during development. The largest land use changes would occur within the proposed CPIO subdistricts and Specific Plan subareas in the form of transit-oriented developments and increased capacity for commercial development along commercial corridors at major intersection sites. Most of this land is already developed, however, and any redevelopment would be subject to City regulations and requirements. Additionally, the proposed changes primarily promote smaller in-fill type projects rather than large scale new developments that would result in the type of land alteration that would have a greater potential to substantially alter existing drainage patterns, cause substantial erosion and siltation, reduce or increase the amount of surface water in a water body, or change the current or direction of water flow.

Any new individual project that could have a stormwater drainage impact would be required to conform to the requirements of the SUSMP, as enforced through the City's plan approval and permit process. Additionally, all applicable projects must comply with Article 4.4 of the LAMC, Section 64.72, which governs project operation pollutant control requirements. Compliance with the LAMC would ensure that the proposed project would not violate any water quality standards or discharge requirements or otherwise substantially degrade water quality through erosion or siltation. Therefore, the proposed project would result in less-than-significant impacts related to stormwater drainage.

## Flooding and Inundation

Excessive stormwater runoff is the cause of most flooding in the Los Angeles Area. The major flood control facility in the vicinity of the West Adams CPA is Ballona Creek. All runoff from the West Adams CPA is ultimately directed into Ballona Creek where it then flows west into the Pacific Ocean. The land use changes proposed by the West Adams New Community Plan would not structurally change land use patterns within the West Adams CPA. However, the proposed West Adams New Community Plan could result in grading activities on individual parcels during development. The proposed changes primarily promote smaller in-fill type projects rather than large-scale new developments which would have a greater potential to substantially alter existing drainage patterns, therefore, resulting in flooding. However, if any new large-scale (major) developments were proposed, they would be subject to site-specific environmental review as required by the City's Site Plan Review process.

Furthermore, the City of Los Angeles requires that all storm drainage improvements in new hillside developments be designed to accommodate a 50-year storm event. With implementation of the existing City of Los Angeles policies, the proposed West Adams New Community Plan would not lead to increased flooding as a consequence of increased capacity for development. Therefore, the proposed project would result in less-than-significant impacts related to flooding and or an increase in runoff.

As shown on **Figure 4.9-4** above, the flood prone areas within the West Adams CPA are located in the vicinity of Ballona Creek in the northern portion of the West Adams CPA, and in the central and eastern-central portions of the West Adams CPA.

Some of the CPIO subdistricts contain areas that are within a 100-year flood plain (Jefferson/La Cienega Boulevards, La Brea/Farmdale Avenues, Hyde Park Industrial Corridor, and the Commercial Corridors and Major Intersection Nodes). As a result, some of the capacity for more densely proposed development associated with the proposed project would be created within a flood zone. However, any new development that occurs as a result of the proposed project would be subject to restrictions and requirements as part of the City's existing permitting process. Prior to any building activity in these areas, the City would review FEMA flood maps to verify whether the buildings are within the current FEMA 100-year flood plain. Additionally, a detailed computerized flood hazard analysis would be required in accordance with current standards set forth by FEMA. If the detailed analysis shows that the proposed development area is outside of the 100-year flood plain and floodway, new development could be constructed with no further mitigation. If

the analysis shows that the proposed development area is within the 100-year flood plain or floodway, appropriate flood plain management measures would be required to be incorporated into the design of all new buildings. Flood plain management measures include, but are not limited to, constructing new residences so that the lowest floor is at least one foot above the 100-year flood level, and requiring nonresidential development in flood prone areas to be anchored and flood-proofed to prevent damage from a 100-year flood or elevated to at least one foot above the 100-year flood level.

Implementation of the existing regulatory requirements mentioned above would ensure the proposed West Adams New Community Plan would not place housing or structures within a flood hazard zone or in an area that would impede or redirect flood flows without incorporating proper mitigation measures. Therefore, the proposed project would result in less-than-significant impacts related to flooding and inundation.

#### **Inundation by Seiche, Tsunami, or Mudflow.**

Construction related to the proposed project would not affect inundation by seiche, tsunami, or mudflow. Therefore, no further discussion of construction impacts to seiche, tsunami, or mudflow is necessary.

## ***Operations***

### **Surface Water Quality**

Surface Water Quality within the West Adams CPA is highly influenced by the Ballona Creek. Ballona Creek flows through the West Adams CPA, ultimately conveying runoff and flood flows from the West Adams CPA to Santa Monica Bay. Ballona Creek is highly modified, having been channelized with concrete along most of its length. Surface waters and water from Ballona Creek and associated drainage facilities could potentially become contaminated with uncontrolled pollutants from non-point sources (resulting from roof and parking lot runoff, pesticides and fertilizers, and sediment) flowing from development in the West Adams CPA as a result of the proposed project. The introduction of pollutants could affect water supply or could potentially contribute polluted runoff to the Pacific Ocean, thereby affecting water quality.

The majority of land use changes proposed by the West Adams New Community Plan would refine the General Plan land use designations, Community Plan footnotes, and revise zoning designations to maintain General Plan land use consistency. For most of the land area within the West Adams CPA, the maximum floor area ratio (FAR) would not be altered. The CPIO subdistricts, however, would change FAR values by increasing the permitted maximum buildable area in targeted areas. Some of the proposed changes could result in changes to building density, building bulk, or increases in impervious surfaces; however, if changes in building density or bulk are made to areas that are already developed, only an insubstantial increase in non-point pollution would occur. Since less than one percent of the land in the West Adams CPA is undeveloped, the changes proposed by the West Adams New Community Plan will not result in substantial new sources or quantities of urban pollutants.

In addition, the City has a wide variety of prevailing requirements for new developments to ensure that violations of water quality standards do not occur. Compliance with these regulations is required, not optional. Compliance must be demonstrated by the project proponent to have been incorporated into a project's design before permits for construction would be issued. For example, the City enforces SUSMP requirements, a comprehensive stormwater quality program to manage urban stormwater and minimize pollution of the environment to the maximum extent practicable. The goals and objectives of the SUSMP are achieved through the use of BMPs that attempt to manage runoff water quality. The SUSMP identifies the types and sizes of private development projects that are subject to its requirements. BMPs that are typically used include controlling roadway and parking lot contaminants by installing oil and grease separators at storm drain inlets, cleaning parking lots on a regular basis, incorporating peak-flow reduction and infiltration features (such as grass swales, infiltration trenches, and grass filter strips) into landscaping, and implementing educational programs.

Requirements of the SUSMP are enforced through the City's plan approval and permit process and all new development projects are subject to City inspection. Furthermore, all applicable projects must comply with Article 4.4 of LAMC, Section 64.72, which governs project operation pollutant control requirements. Compliance with the LAMC would ensure that the proposed project would not violate any water quality standards or discharge requirements or otherwise substantially degrade water quality. Additionally, the Conservation Element, the General Plan Framework, and the proposed project contain policies that would help minimize this potential impact (**Table 4.9-1** above). Adoption and implementation of the proposed West Adams New Community Plan, in conjunction with individual project compliance with the federal, State, and local regulations, code requirements, and permit provisions would prevent significant impacts related to the discharge of potentially polluted runoff into surface water. Therefore, the proposed project would result in less-than-significant impact related to surface water quality.

## Groundwater

The proposed West Adams New Community Plan does not propose any drilling that would create a net deficit in aquifer volume, yields, or change the rate or direction of groundwater. Proposed land use changes in the West Adams New Community Plan consist of General Plan Amendments and proposed zone changes to maintain General Plan land use consistency. Though these zone changes will provide development incentives to revitalize commercial corridors, they do not substantially change the overall land use patterns within the West Adams CPA.

## Stormwater Drainage

Policies from the General Plan Conservation and Framework Elements would help minimize any potential impacts, and projects implemented by the IRWMP would also minimize potential impacts. With implementation of these policies and projects, the adoption and implementation of the proposed West Adams New Community Plan would not substantially alter the existing drainage pattern of the West Adams CPA resulting in erosion/siltation 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. Therefore, the proposed project would result in less-than-significant impacts related to stormwater drainage.

## Flooding and Inundation

As previously discussed, less than one percent of the land in the West Adams CPA is vacant or undeveloped; although new development could occur as part of the proposed project, it would not result in substantial changes to building density, bulk, or decreases in setbacks throughout the plan area. Therefore, new development would not result in large amounts of impervious surfaces that would cause an increase in the volume of stormwater runoff or increase in the amount of surface water in a water body. Consequently, the proposed West Adams New Community Plan would not be expected to create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems and result in flooding. Additionally, the Safety Element and General Plan Framework policies would help minimize any potential impact in this area.

Furthermore, the City of Los Angeles requires that all storm drainage improvements in new hillside developments be designed to accommodate a 50-year storm event. With implementation of the existing City of Los Angeles policies, the proposed West Adams New Community Plan would not lead to increased flooding as a consequence of increased capacity for development. Therefore, the proposed project would result in less-than-significant impacts related to flooding and or an increase in runoff.

As shown on **Figure 4.9-4** above, the flood prone areas within the West Adams CPA are located in the vicinity of Ballona Creek in the northern portion of the West Adams CPA, and in the central and eastern-central portions of the West Adams CPA.

Some of the CPIO subdistricts contain areas that are within a 100-year flood plain (Jefferson/La Cienega Boulevards, La Brea/Farmdale Avenues, Hyde Park Industrial Corridor, and the Commercial Corridors and Major Intersection Nodes). As a result, some of the capacity for more densely proposed development associated with the proposed project would be created within a flood zone. However, any new development that occurs as a result of the proposed project would be subject to restrictions and requirements as part of the City's existing permitting process. Prior to any building activity in these areas, the City would review FEMA flood maps to verify whether the buildings are within the current FEMA 100-year flood plain. Additionally, a detailed computerized flood hazard analysis would be required in accordance with current standards set forth by FEMA. If the detailed analysis shows that the proposed development area is outside of the 100-year flood plain and floodway, new development could be constructed with no further mitigation. If the analysis shows that the proposed development area is within the 100-year flood plain or floodway, appropriate flood plain management measures would be required to be incorporated into the design of all new buildings. Flood plain management measures include, but are not limited to, constructing new residences so that the lowest floor is at least one foot above the 100-year flood level, and requiring nonresidential development in flood prone areas to be anchored and flood-proofed to prevent damage from a 100-year flood or elevated to at least one foot above the 100-year flood level.

Implementation of the existing regulatory requirements mentioned above would ensure the proposed West Adams New Community Plan would not place housing or structures upon a flood hazard zone or in an area that would impede or redirect flood flows without incorporating proper mitigation measures. Therefore, the proposed project would result in less-than-significant impacts related to placing housing or structures within a 100-year flood hazard zone.

#### **Inundation by Seiche, Tsunami, or Mudflow.**

There are no surface water bodies in the West Adams CPA that are potentially susceptible to seiche events during strong earthquakes or are potential sources of inundation. The West Adams CPA is located more than five miles inland from the Pacific Ocean and the elevation ranges from approximately 100 to 425 feet above sea level. Therefore, the potential for tsunamis to affect the project site is considered low. As discussed in Section 4.6 Geology and Soils, the adoption and implementation of the proposed West Adams New Community Plan, in combination with the City's standard grading and building permit requirements, would not expose people or structures to potential substantial risk due to geologic hazards that lead to seiches or tsunamis. Additionally, existing Safety Element policies would further minimize this impact.

Implementation of existing City policies and standards, and the West Adams CPA's location relative to the Pacific Ocean, would ensure the adoption and implementation of the proposed West Adams New Community Plan would not result in significant impacts from inundation by seiche, tsunami, or mudflow. Therefore, the proposed project would result in less-than-significant impacts related to inundation by seiche, tsunami, or mudflow.

## **MITIGATION MEASURES**

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### ***Construction***

The West Adams New Community Plan describes the capacity for future development for a portion of the City. While the proposed project includes a series of implementing ordinances, it is not an implementation plan in and of itself, and its adoption does not constitute a commitment to any project-specific construction.

#### **Surface Water Quality**

Impacts related to surface water quality would be less than significant. No mitigation measures are required.

## **Groundwater**

Impacts related to groundwater would be less than significant. No mitigation measures are required.

## **Stormwater Drainage**

Impacts related to stormwater drainage would be less than significant. No mitigation measures are required.

## **Flooding and Inundation**

Impacts related to flooding and inundation would be less than significant. No mitigation measures are required.

## **Inundation by Seiche, Tsunami, or Mudflow.**

No impacts related to inundation by seiche, tsunami, or mudflow would occur. No mitigation measures are required.

## ***Operations***

### **Surface Water Quality**

Impacts related to surface water quality would be less than significant. No mitigation measures are required.

### **Groundwater**

Impacts related to groundwater would be less than significant. No mitigation measures are required.

### **Stormwater Drainage**

Impacts related to stormwater drainage would be less than significant. No mitigation measures are required.

### **Flooding and Inundation**

Impacts related to flooding and inundation would be less than significant. No mitigation measures are required.

### **Inundation by Seiche, Tsunami, or Mudflow.**

Impacts related to inundation by seiche, tsunami, or mudflow would be less than significant. No mitigation measures are required.

## **SIGNIFICANCE OF IMPACTS AFTER MITIGATION**

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## ***Construction***

The West Adams New Community Plan describes the capacity for future development for a portion of the City. While the proposed project includes a series of implementing ordinances, it is not an implementation plan in and of itself, and its adoption does not constitute a commitment to any project-specific construction. However, construction related to future capacity within the West Adams CPA would have the following significance after mitigation.

### **Surface Water Quality**

Impacts related to surface water quality were determined to be less than significant without mitigation.

## **Groundwater**

Impacts related to groundwater were determined to be less than significant without mitigation.

## **Stormwater Drainage**

Impacts related to stormwater drainage were determined to be less than significant without mitigation.

## **Flooding and Inundation**

Impacts related to flooding and inundation were determined to be less than significant without mitigation.

### **Inundation by Seiche, Tsunami, or Mudflow.**

No impacts related to inundation by seiche, tsunami, or mudflow would occur.

## ***Operations***

### **Surface Water Quality**

Impacts related to surface water quality were determined to be less than significant without mitigation.

## **Groundwater**

Impacts related to groundwater were determined to be less than significant without mitigation.

## **Stormwater Drainage**

Impacts related to stormwater drainage were determined to be less than significant without mitigation.

## **Flooding and Inundation**

Impacts related to flooding and inundation were determined to be less than significant without mitigation.

### **Inundation by Seiche, Tsunami, or Mudflow.**

Impacts related to inundation by seiche, tsunami, or mudflow were determined to be less than significant without mitigation.