

4.6 HYDROLOGY AND WATER QUALITY

INTRODUCTION

This section describes existing drainage characteristics of the Project site and surrounding portion of downtown Glendale, the quality of local surface and groundwater and evaluates potential Project impacts with respect to storm water runoff, flooding, surface water quality, and groundwater quality.

ENVIRONMENTAL SETTING

Existing Conditions

Hydrology and Drainage

The Project is located in downtown Glendale at the eastern edge of the San Fernando Valley. This valley forms part of the Los Angeles River Basin, which includes the Verdugo Mountains to the north and the Santa Monica Mountains to the southwest of the Project site. Surface water flows from the Los Angeles Basin into the Los Angeles River and eventually into the Pacific Ocean. Storm water runoff from the site is collected at 24-inch storm drains on East Broadway and North Louise Street and conveyed a short distance to the Los Angeles River Narrows.

The Project site is currently developed with an office building, alley, apartment building and a surface parking lot. All existing surfaces on the site are impervious to precipitation and runoff from neighboring properties. Additionally, given the highly urbanized character of downtown Glendale, impervious surfaces constitute a greater percentage of terrain than do natural surfaces, thereby, limiting the infiltration of precipitation and increasing the rate of storm water runoff.

As shown in **Figure 4.6-1, Surface Water Drainage Area and Storm Water Drain System**, the Project site is located within the Belson Drainage System service area. This system covers a 411-acre area that is bounded roughly by the Ventura Freeway to the north, Glendale Avenue to the east, Harvard Street/Colorado Street to the south, and Central Avenue to the west. The Belson Drain is part of a larger 1,506-acre drainage system referred to as Project 9506 by the Los Angeles County Public Works Department. Runoff from the Belson Drain flows into the Project 9506 drainage system intercept, located less than 1 mile south of the Project site at the intersection of Central Avenue and Maple Street, on its way to the Los Angeles River.¹

¹ County of Los Angeles Public Works Department, *Belson Drain Hydrology File 19.41*, 1990.

Concerning flood hazards, the United States Federal Emergency Management Agency (FEMA) has established a nationwide program for identification of flood hazards. FEMA prepares specific maps for use by the public for disclosure of flood hazards and for flood hazard purposes. According to FEMA flood hazard maps, the Project site is not located within either a 100-year or a 500-year flood plain.² There are seven dams located within the City of Glendale. The nearest dam to the Project site is the Diederich Reservoir, located approximately 1.5 miles to the north. According to the City of Glendale Safety Element, the Project is not located within any of these dam inundation zones.

Surface Water Quality

The Project site lies within the Upper Los Angeles River Area and is located approximately 1 mile east of the Los Angeles River. Surface water from the Project area drains to the Los Angeles River and eventually out to the Pacific Ocean. Natural drainage in the Project area has been modified and is now controlled by engineered drainage and flood control infrastructure. As mentioned above, the Belson Drain conveys storm water runoff from the Project site.

Water quality in the Los Angeles River is directly related to the quality of storm flows, reclaimed wastewater from water reclamation plants, and industrial discharges. Surface runoff of storm water generally contains oils and greases from street runoff, salts, trash and debris, and sodium-calcium and sulfate-bicarbonate, which are dissolved from rocks in tributary areas. Surface water discharges from industrial facilities are regulated under National Pollutant Discharge Elimination System (NPDES) regulations and permits.

Ground Water Quality

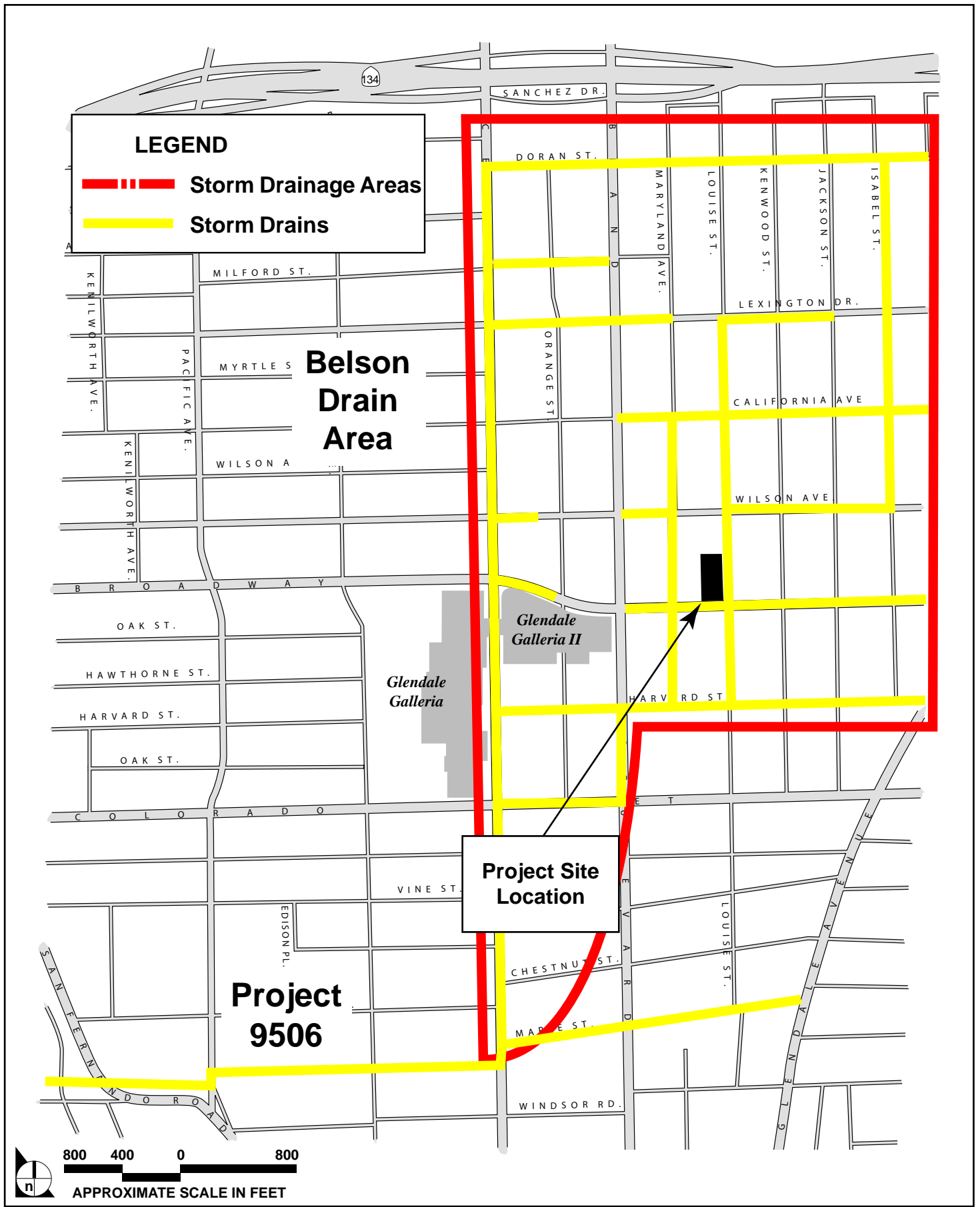
The Project site is located in the Upper Los Angeles River Area, which contains four groundwater basins: San Fernando, Sylmar, Verdugo, and Eagle Rock. While the Project site is located in the San Fernando Basin, both the San Fernando Basin and the Verdugo Basin are located under the City of Glendale. **Figure 4.6-2** identifies the location of both the San Fernando and Verdugo Basins.

San Fernando Basin

Description

The San Fernando Basin is the largest of the four basins and extends across an 112,000-acre area from the San Rafael Hills and Verdugo Mountains on the east and northeast, the Santa Susana Mountains and Simi

² ESRI/FEMA Project Impact Hazard Information and Awareness Site, www.esri.com/hazards, 2003.



SOURCE: City of Glendale – November 2003

FIGURE 4.6-1

Surface Water Drainage Area and Storm Water Drain System

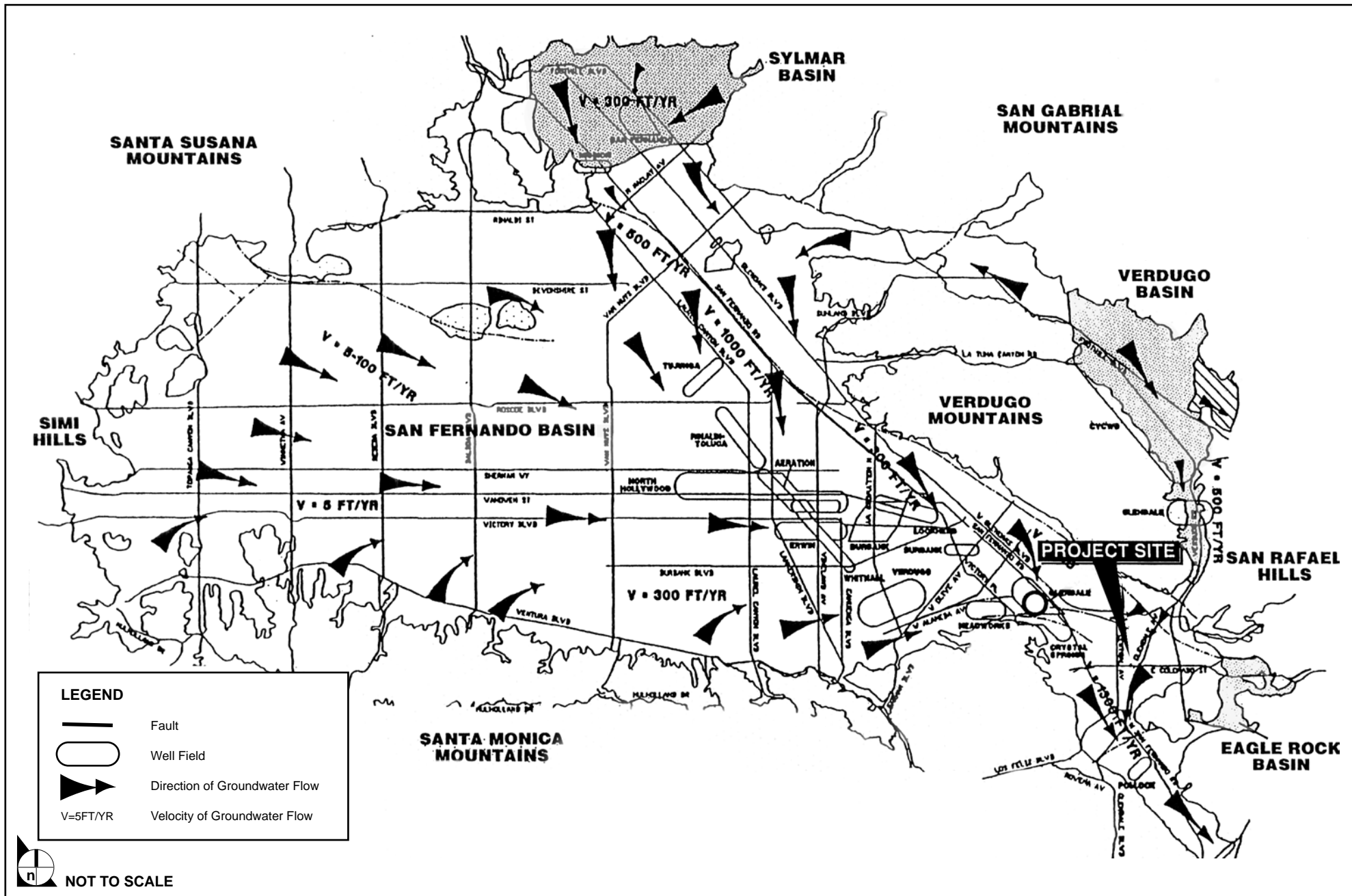


FIGURE 4.6-2

San Fernando Valley Water Basins

Hills border on the west and northwest, and the Santa Monica Mountains on the south. The San Fernando Basin is filled with alluvial deposits derived from the surrounding mountains. The sediments from the surrounding mountains comprise the three main water bearing formations, or aquifers, in the Basin: the Saugus Formation, the Older Alluvium, and the Recent Alluvium. Groundwater flow in the San Fernando Basin is generally to the east/southeast and approximates the course of the Los Angeles River. Regional magnitude and direction, or gradients, of groundwater flow within the basin have remained fairly consistent over time.

Groundwater recharge in the San Fernando Basin consists of percolation from rainfall, runoff from the Verdugo Mountains on the northeast and the Santa Monica Mountains on the south, water spread in the Headwork's spreading grounds, recharge from the Los Angeles River, and underflow from the Verdugo Basin. An unlined portion of the Los Angeles River in the Glendale area influences the flow of groundwater in the underlying aquifer. In recent years, groundwater levels in the Los Angeles River Narrows have been relatively high so that Los Angeles River flows cannot percolate into the aquifer and are discharged out of the basin through the Los Angeles River.

Water Quality

The San Fernando Basin is located within the Crystal Springs National Priority List (NPL) site and it is one of four subsections of the larger San Fernando Valley Superfund site. In 1980, concentrations of chlorinated volatile organic compounds (VOCs), including trichloroethylene (TCE) and perchloroethylene (PCE), were found to be above federal Maximum Contaminant Levels (MCLs) and State Action Levels (SAL) in a number of production wells in the Basin. In addition, high nitrate levels were detected in plumes located in the City of Burbank, located north and south of the Project site.

Chromium-6 was also detected but not above MCLs, and SALs. In response to these conditions, cities in the Basin were forced to shut down their wells and provide alternate sources of potable water or blend contaminated well water with water from clean sources.³

Over the past 10 years, several water treatment plants have been constructed to treat ground water. The United States Environmental Protection Agency (U.S. EPA) most recently focused on the construction of cleanup facilities in Glendale. The Glendale Water Treatment Plant and eight extraction wells have been constructed to pump, treat, and deliver water to the City. The cleanup facilities consist of seven shallow extraction wells and one deep well, a 5,000 gallons per minute (gpm) water treatment plant, piping to convey the untreated water from the wells to the Glendale Water Treatment Plant to remove the VOCs

³ U.S. Environmental Protection Agency, San Fernando Valley – Site History and Background Information, <http://www.yosemite.epa.gov/r9/sfund/overview.nsf>, 2003.

including trichloroethylene (TCE) and perchloroethylene (PCE), a conveyance system to convey water from the treatment plant to the Glendale potable distribution system, a facility to blend the treated ground water with Metropolitan Water District (MWD) water and a disinfection facility. The delivery of the water to the City was initially limited because of the City's reservations about taking water with higher chromium-6 levels than the current water supply, even though it met water quality standards. In January 2002, the City Council authorized the City to deliver water from the treatment facility.

Verdugo Basin

Description

The Verdugo Basin covers 4,400 acres north of the Project site and is bordered by the San Gabriel Mountains on the northeast, the Verdugo Mountains on the west, and by the San Rafael Hills on the southeast. Groundwater levels have been highly variable and based primarily on rainfall conditions.

Water Quality

In 1983, pursuant to California Assembly Bill 1803, wells within the San Fernando Valley were tested for VOCs, semi-volatile compounds, and pesticides/herbicides. Results of this sampling revealed concentrations of VOCs in the Verdugo Basin in excess of the Safe Drinking Water Act in several water supply production wells. In 1986, at the request of the state of California, the EPA designated the Verdugo Basin as part of the Crystal Springs National Priority List (NPL) site.⁴

To maintain adequate supplies of water, the Glendale maintains the Verdugo Park Wastewater Treatment Plant to address nitrate contamination in the Verdugo Basin. Treatment for VOC contamination has not been a concern due to the low concentrations present. As with water extracted from the San Fernando Basin, the City of Glendale also blends groundwater from the Verdugo Basin with imported water from the MWD prior to distribution to customers, which further reduces contaminant levels in potable water.

REGULATORY FRAMEWORK

Hydrology and Drainage

Drainage and flood control structures and improvements in Los Angeles County are subject to review and approval by the Los Angeles County Department of Public Works (LACDPW). The methodology and assumptions used in evaluating surface hydrology in this EIR are consistent with the LACDPW's

⁴ Ibid.

Hydrology Manual. The LACDPW will review and approve plans for any improvements to County-owned facilities.

Drainage and flood control structures and improvements in the City of Glendale are also subject to review and approval by Glendale's Public Works Division (GPWD). The methodology and assumptions used in evaluating the surface hydrology in this Draft EIR are consistent with City standards. The GPWD will review and approve Project storm drain plans prior to construction. As required by the GPWD, all public storm facilities are to be designed to the standards set forth by Los Angeles County.

Surface Water Quality

Federal Regulations

The federal Clean Water Act (CWA) Section 401 regulates the discharges of pollutants into "waters of the U.S." from any point or non-point source. It is the responsibility of the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Board (RWQCB) to regulate the activities and factors that affect or have the potential to affect water quality in the state. In the State of California, the federal National Pollutant Discharge Elimination System (NPDES) program is administered by the local RWQCBs. Individual permits are issued for certain defined sources of discharge while non-point source runoff from construction sites and urban development are regulated under a series of general permits.

State Regulations

The Porter-Cologne Water Quality Control Act of 1969 established the principal state program for water quality control. The Porter-Cologne Water Quality Control Act also authorizes the SWRCB to implement the provisions of the federal CWA. The Act divided the state into nine RWQCB areas. Each RWQCB implements and enforces provisions of the Porter-Cologne Act and the CWA subject to policy guidance and review by the SWRCB. The Project site is located in Region 4, which is under the jurisdiction of the Los Angeles Regional Water Quality Control Board (LARWQCB).

Local Regulations

In accordance with the Porter-Cologne Water Quality Control Act and the CWA Amendments of 1972, the LARWQCB established a Water Quality Plan for the Los Angeles River Basin, known as the Basin Plan. This document designates beneficial uses of water bodies, sets water quality objectives to protect those uses, addresses localized water quality problems and sets forth a plan to protect water quality. General discharge permits issued by the LARWQCB under the Basin Plan are used to regulate polluted storm water runoff, treated groundwater, non-hazardous soil disposal, and other discharges.

Under recent regulations adopted by the LARWQCB, projects are required to implement a Standard Urban Storm Water Mitigation Plan (SUSMP), during the operational life of the Project to ensure that storm water pollution is addressed by incorporating Best Management Practice (BMP) features into the design of the Project. This plan defines water quality design standards to ensure that storm water runoff is managed for water quality concerns, and to ensure that pollutants carried by storm water are confined and not delivered to waterways. Project applicants will be required to select source control and treatment control BMPs from the list approved by the LARWQCB and included in the SUSMP. In combination, these treatment control BMPs must be sufficiently designed and constructed to treat or filter the first 0.75 inch of storm water runoff from a storm event.

Ground Water Quality

Federal

The U.S. EPA sets drinking water standards under the federal Clean Water Act (CWA) and the Safe Drinking Water Act. These regulations apply to groundwater only if the groundwater is directly conveyed to the consumer for drinking water purposes. The U.S. EPA also sets MCLs for substances in drinking water.

The CWA also regulates the discharge of pollutants to “waters of the U.S.” as defined by the CWA from any point source under the auspices of the NPDES program. In the State of California, the federal NPDES program is administered by the local RWQCBs, as discussed above. The discharge of groundwater, such as from dewatering, into the storm drain or sewer system, for example, is regulated by a general NPDES permit issued by the LARWQCB.

State

The Porter-Cologne Water Quality Control Act of 1969 established the principal state program for water quality control. In accordance with this Act and the CWA Amendments of 1972, the Los Angeles RWQCB established a Water Quality Plan for the Los Angeles River Basin, known as the Basin Plan. It is the responsibility of the SWRCB and the RWQCBs to regulate the activities and factors that affect or have the potential to affect groundwater quality in the state.

The California Domestic Water Quality and Monitoring Regulations are set forth in Title 22 of the California Code of Regulations. These regulations establish primary and secondary drinking water standards for public water systems and are based on the national standards. As with federal regulations, these regulations apply to groundwater only if the groundwater is directly conveyed to the consumer for drinking water purposes.

The Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) has two basic provisions: (1) no discharge of a listed chemical shall be made in a significant amount to a potential source of drinking water or to soil, which may cause the chemical to enter groundwater, and (2) the posting of clear and reasonable warnings prior to the exposure of Proposition 65 listed chemicals is required.

Local

The Project site is located within the Upper Los Angeles River Area watershed. The Upper Los Angeles River Area Watermaster is vested with the responsibility to monitor and account for any groundwater extraction within the Project area. The Office of the Watermaster oversees the basin and manages the resource with a focus on sustainability. This responsibility was granted as a result of a January 9, 1979 California Superior Court decision referred to as the *City of Los Angeles vs. City of San Fernando, et al.*

ENVIRONMENTAL IMPACTS

Methodology

Hydrology and Drainage

To identify potential Project impacts related to hydrology and site drainage, this section addresses Project impacts to the storm drain system as well as potential flood related impacts. The potential impacts to the storm drain system were analyzed by comparing runoff resulting from Project implementation to the capacity of the existing storm drain system.

Surface Water Quality

To identify potential Project impacts to surface water quality, existing and potential point and non-point contaminant sources were considered. Existing applicable regulations were identified that specifically address potential contaminant sources, and those sources were analyzed to determine the potential impact on the surface water quality.

Ground Water Quality

To identify potential Project impacts to ground water quality, existing and potential point and non-point contaminant sources were identified. Existing applicable regulations were identified that specifically address potential contaminant sources, and those sources were analyzed to determine the potential impact on ground water quality in the San Fernando and Verdugo Basins.

Thresholds of Significance

The following thresholds for determining the significance of impacts related to hydrology, water quality and drainage are contained in the environmental checklist form contained in Appendix G of the most recent update of the *California Environmental Quality Act (CEQA) Guidelines*. Impacts related to hydrology, water quality and drainage are considered significant if the Project 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 level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned land uses for which permits have been granted).
- 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 which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.
- Otherwise substantially degrade water quality.
- 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.
- Inundation by seiche, tsunami, or mudflow.

Impact Analysis

Each applicable threshold of significance is listed below followed by analysis of the significance of potential impacts and the identification of mitigation measures that would lessen or avoid potential impacts. Finally, the significance of potential impacts after implementation of all identified mitigation measures is presented.

Thresholds: **Violate any water quality standards or waste discharge requirements.**
Otherwise substantially degrade water quality.

Impact Analysis:

Construction – Project construction would require site grading, including excavation up to depths of 30 feet below the ground surface. If a storm event were to occur during construction activities, the temporary increase in the amount of suspended solids from surface flows and/or site erosion and off-site siltation could occur. As discussed previously, Phase I ESAs were conducted for the Project site and determined that no evidence of contaminated soils or other recognized environmental conditions on the Project site. Therefore, while suspended solids are themselves a form of water pollution, sheet erosion would not result in contaminated soils entering surface waters or being deposited off site. The applicant is required to satisfy all applicable requirements of the NPDES Program and Chapter 13.42, Storm Water and Urban Runoff Pollution Prevention Control and Standard Urban Storm Water Mitigation Plan of the Glendale Municipal Code, in effect at the time of Project construction to the satisfaction of the Glendale Public Works Department. These requirements include preparation of a Storm Water Pollution Prevention Program (SWPPP) containing structural treatment and source control measures appropriate and applicable to the Project. The SWPPP would incorporate Best Management Practices (BMPs) by requiring controls of pollutant discharges that utilize Best Available Technology (BAT) economically achievable and Best Conventional Pollutant Control Technology (BCT) to reduce pollutants. Examples of BAT/BCT that may be implemented during site grading and construction could include straw hay bales, straw bale inlet filters, filter barriers, and silt fences. Implementation of BMPs would ensure that Los Angeles RWQCB water quality standards are met during construction activities and that impacts would be less than significant.

After Buildout – Stormwater quality is generally affected by the length of time since the last rainfall, rainfall intensity, urban uses of the area, and quantity of transported sediment. Typical urban water quality pollutants usually result from motor vehicle operations, oil and grease residues, fertilizer/pesticide uses, human/animal littering, careless material storage and handling, and poor property management. The majority of pollutant loads are usually washed away during the first flush of the storm occurring after the dry-season period. These pollutants have the potential to degrade water quality and may result in significant impacts. The Project would replace the existing surface parking lot and apartment building with a condominium building that provides parking within screened or subterranean parking levels. As such, pollutants from vehicles would not be carried into the storm drain system with stormwater runoff and the Project would result in a decrease in urban pollutant sources. Additionally, the quality of runoff from the Project site would be subject to Section 402(p) of the CWA

under the NPDES program. Development projects have responsibilities, under the NPDES Municipal Permit No. CAS004001,⁵ to ensure pollutant loads from the projects do not exceed total maximum daily loads for downstream receiving waters.

Development projects are required by the Storm Water and Urban Runoff Pollution Prevention Control and SUSMP of the Glendale Municipal Code, to submit and then implement a SUSMP⁶ containing design features and BMPs appropriate and applicable to the project. The purpose of the SUSMP is to reduce post-construction pollutants in stormwater discharges. The plan shall include provisions to reduce the discharge of pollutants from the developed portions of the Project site to the maximum extent practical using management practices, control techniques and systems, design and engineering methods, and other such provisions as appropriate. The plan shall address runoff volume, peak runoff, and flow frequency durations controls. Applicable post-construction low-impact development (LID) practices may include, among others: reduced or disconnected impervious surfaces; native vegetation preservation; bioretention; tree boxes to capture and infiltrate street runoff; vegetated swales, buffers, and strips; roof leader flows directed to planter boxes and other vegetative areas; permeable pavement; and/or soil amendments to increase infiltration rates. Prior to issuance of grading or building permits, the County must approve the SUSMP. Potential water quality impacts of the Project would be less than significant through the preparation of the SUSMP and implementation of the BMPs and LID practices as specified in the NPDES Permit.

Level of Significance Before Mitigation: Less than significant.

Mitigation Measures: No mitigation measures are recommended.

Level of Significance After Mitigation: Less than significant.

⁵ On December 13, 2001, the LARWCB adopted an NPDES Permit (Order No. 01-182, NPDES Permit No. CAS004001). Under the NPDES Permit, the County of Los Angeles is designated as the Principal Permittee and 84 cities, including the City of Glendale, as Permittees. The NPDES Permit consists of various storm water management programs to reduce pollutants in storm water and urban runoff.

⁶ The LARWQCB approved the SUSMP that requires new construction and development projects to implement BMPs on March 8, 2000. In May 2000, the County of Los Angeles finalized its "Manual for the Standard Urban Storm Water Mitigation Plan," which details the requirements of the SUSMP. Projects that are subject to the SUSMP requirements are required to incorporate measures into their development plans prior to issuance of grading and building permits.

Threshold: 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 level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).

Impact Analysis: Glendale Water and Power (GWP) provides potable water in the City and relies, in part, on local groundwater supplies. Consequently, implementation of the Project would result in additional development that could indirectly require an increased use of groundwater through the provision of potable water. However, groundwater to be consumed by the Project would be utilized according to current plans and projection of GWP groundwater supplies and, therefore, Project implementation would not substantially deplete groundwater supplies. In addition, the ground water basins are governed by the California Superior Court decision, the City of Los Angeles vs. City of San Fernando, et al., and the Basin Watermaster is vested with the responsibility to monitor and account for any groundwater extraction within the Project area with sustainability as a goal. Further, the Project would not directly extract and use groundwater during operation. Therefore, impacts would be less than significant.

Currently, the Project site consists of impervious surfaces and Project development would maintain this condition. Further, the Project site is not a designated groundwater recharge area nor does the Project site serve as a primary source of groundwater recharge within the Basin. Consequently, impacts would be less than significant.

Level of Significance Before Mitigation: Less than significant.

Mitigation Measures: No mitigation measures are recommended.

Level of Significance After Mitigation: Less than significant.

Thresholds: 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.

Impact Analysis: The Project site is developed and served by an existing storm water collection and conveyance system. As a result, the Project would not require any substantial changes to the existing drainage pattern of the site or the area. In addition, the Project would be designed to effectively convey surface water flows to the storm drain system. The site does not contain a stream or a river. Therefore, the Project would not contribute to substantial erosion, siltation, or on- or off-site flooding.

Under present conditions, the Project site is characterized by 100 percent impervious surfaces. After Project buildout, the Project site would include some pervious areas where landscaping has been proposed. All runoff from the Project site would continue to be conveyed via streets and gutters to storm drains on Broadway and Louise Street. The amount of storm runoff conveyed from the site due to the development of the Project would be similar to existing conditions. Consequently, potential drainage impacts are considered to be less than significant.

Level of Significance Before Mitigation: Less than significant.

Mitigation Measures: No mitigation measures are recommended.

Level of Significance After Mitigation: Less than significant.

Thresholds: Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.

Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Impact Analysis: The Project site is currently occupied with structures and a paved parking area. After Project buildout, the majority of the Project site would remain covered with impervious surfaces with the exception of small areas where landscaping is proposed. All runoff would continue to be conveyed via streets and gutters to storm inlet locations around the sites. As such, the Project would neither substantially affect the rate or amount of storm water runoff generated on site nor would it affect the capacity of the existing storm drain system. Impacts would be less than significant.

Level of Significance Before Mitigation: Less than significant.

Mitigation Measures: No mitigation measures are recommended.

Level of Significance After Mitigation: Less than significant.

Thresholds: 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 that would impede or redirect flood flows.

Impact Analysis: According to Federal Emergency Management Agency flood hazard maps, the Project site is not located within a 100-year flood zone; therefore, the Project would not place housing within a

100-year flood hazard area or result in structures being constructed that would impede or redirect flood flows.⁷ Development within the Project site would not be subject to flooding and impacts, and, therefore, no impact would occur.

Level of Significance Before Mitigation: No impact.

Mitigation Measures: No mitigation measures are recommended.

Level of Significance After Mitigation: No impact.

Threshold: 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.

Impact Analysis: There are seven dams located within the City of Glendale.⁸ The nearest dam to the Project site is the Diederich Reservoir, located approximately 1.5 miles to the north. According to the City of Glendale Safety Element, the Project is not located within the inundation zone of this dam, or other dams located within the City or elsewhere. Accordingly, the risk associated with flooding resulting from dam failure is less than significant.

Level of Significance Before Mitigation: Less than significant.

Mitigation Measures: No mitigation measures are recommended.

Level of Significance After Mitigation: Less than significant.

Threshold: Inundation by seiche, tsunami, or mudflow.

Impact Analysis: The Project site is not in a coastal area. Therefore, tsunamis (seismic sea waves) are not considered a significant hazard at the site. The site is not located downslope of any large bodies of water that could adversely affect the site in the event of earthquake-induced seiches, which are wave oscillations in an enclosed or semi-enclosed body of water.

Level of Significance Before Mitigation: No impact.

Mitigation Measures: No mitigation measures are recommended.

Level of Significance After Mitigation: No impact.

⁷ City of Glendale, General Plan Safety Element, 2003, p. 3-7.

⁸ Ibid.

Cumulative Impacts

The geographic context for the Hydrology and Water Quality Cumulative Impact Analysis is the Los Angeles River watershed within the limits of the City of Glendale.

Thresholds: Violate any water quality standards or waste discharge requirements.

Otherwise substantially degrade water quality.

Impact Analysis: Development of related projects could result in the violation of water quality or waste discharge requirements during construction and operation. However, each of the related projects would be required to prepare a SWWPP for construction activities. As with the Project, the SWPPPs prepared for the related projects would incorporate BMPs by requiring controls of pollutant discharges that utilize BAT and BCT to reduce pollutants. In addition, the operation of related projects are required, by Chapter 13.42, Storm Water and Urban Runoff Pollution Prevention Control and Standard Urban Storm Water Mitigation Plan of the Glendale Municipal Code, to submit and then implement a SUSMP containing design features and BMPs appropriate and applicable to the project to reduce post-construction pollutants in storm water discharges. Potential water quality impacts of the Project and related projects would be less than significant in light of the preparation and implementation of a SWPPP and SUSMP for each project, and the enforcement of these requirements by the City.

Level of Significance Before Mitigation: Less than significant.

Mitigation Measures: No mitigation measures are recommended.

Level of Significance After Mitigation: Less than significant.

Threshold: 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 level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).

Impact Analysis: Glendale Water and Power (GWP) provides potable water in the City and relies, in part, on local groundwater supplies. Consequently, implementation of the Project and related projects would result in additional development that could indirectly require an increased use of groundwater through the provision of potable water. Groundwater to be consumed by the Project and related projects would be utilized according to current plans and projection of GWP groundwater supplies, and would not substantially deplete groundwater supplies. In addition, the ground water basins are governed by the California Superior Court decision, the City of Los Angeles vs. City of San Fernando, et al., and the Basin

Watermaster is vested with the responsibility to monitor and account for any groundwater extraction within the project area with sustainability as a goal. The Project would not extract groundwater on an operational basis and it is very unlikely that any of the related projects would do so.

The Project and related project sites largely consist of impervious surfaces at this time and this would not change with proposed redevelopment. Consequently, cumulative impacts are considered to be less than significant.

Level of Significance Before Mitigation: Less than significant.

Mitigation Measures: No mitigation measures are recommended.

Level of Significance After Mitigation: Less than significant.

Thresholds: 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.

Impact Analysis: Given the location of the related projects, it is not expected that this cumulative development would substantially alter the existing drainage pattern of the area, including the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation, flooding, or the exceedance of existing or planned storm water drainage systems. The Los Angeles River watershed, within the limits of the City of Glendale, is composed mainly of urban uses. As a result, most of the drainage system in the watershed consists of engineered storm channels, and, therefore, is expected to experience little change. Additionally, as extensive development is not expected in the remaining open spaces, it is unlikely that there will be substantial alteration of drainage systems and watercourses in those areas. This indicates that the amount of runoff would not substantially increase, thereby, avoiding substantial increases in erosion, siltation, flooding, and preventing the exceedance of the storm water drainage system. The related projects would also be required to comply with the SWPPP and SUSMP requirements and adopt BMPs to reduce the occurrence of erosion, siltation, and pollutants. Consequently, there would not be a cumulatively significant impact.

Level of Significance Before Mitigation: Less than significant.

Mitigation Measures: No mitigation measures are recommended.

Level of Significance After Mitigation: Less than significant.

Thresholds: Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.

Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Impact Analysis: Cumulative development of the related projects may result in or require the construction of new storm water drainage facilities or the expansion of existing facilities, resulting in environmental effects, although the precise need for or location of such new facilities is not yet known. Construction impacts from new facilities, wherever in the City they may be required, would be associated with air emissions, noise, and disruption of surface traffic. Such impacts would be localized in effect, and would be unlikely to have cumulatively significant effects. Future development in Glendale is not generally expected to take place in previously undeveloped areas, and, therefore, significant expansion of existing storm water drainage facilities or the construction of significant new facilities is not generally anticipated. As discussed above, existing storm water facilities are adequate to accommodate existing and anticipated flows. While future development may require that there be some localized modifications or additions to the existing storm water drainage system, it is expected that these modifications or additions would not be extensive. Consequently, it is not expected that there would be a significant cumulative impact from implementation of the related projects. As stated in the project-specific analysis above, sufficient capacity exists in the existing storm drain system to adequately convey storm water runoff generated on the Project site. No modification to the existing storm drain system serving the Project site is required. Consequently, the Project's impact would not be cumulatively considerable and is less than significant.

Short-term impacts associated with storm water infrastructure improvements needed as a result of cumulative project implementation are addressed in **Sections 4.12, Traffic, Circulation and Parking, 4.2, Air Quality, and 4.8, Noise** of this EIR.

Level of Significance Before Mitigation: Less than significant.

Mitigation Measures: No mitigation measures are recommended.

Level of Significance After Mitigation: Less than significant.

Thresholds: 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 that would impede or redirect flood flows.

Impact Analysis: According to FEMA flood hazard maps, the Project and related project sites are not located within a 100-year flood zone; therefore, the projects would not place housing within a 100-year flood hazard area or result in structures being constructed that would impede or redirect flood flows.⁹ No cumulative impact with regard to a 100-year flood hazard area would occur.

Level of Significance Before Mitigation: No impact.

Mitigation Measures: No mitigation measures are recommended.

Level of Significance After Mitigation: No impact.

Threshold: 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.

Impact Analysis: There are seven dams located within the City of Glendale.¹⁰ The nearest dam to the Project site is the Diederich Reservoir, located approximately 1.5 miles to the north. According to the City of Glendale Safety Element, the Project is not located within the inundation zone of this dam, or other dams located within the City or elsewhere. Related projects may be located within an inundation zone of a local dam. However, with City implementation of programs and policies contained in the City of Glendale Safety Element, impacts would be mitigated to a less than significant level. Specifically, Program 1.3-3 states that the City shall conduct an annual review of the dams and water storage facilities in the City, in cooperation with the State Office of Dam Safety and follow the state's requests resulting from such review and Policy 1-4 requires that the City ensure that current seismic and geologic knowledge and state-certified professional review are incorporated into the design, planning and construction stages of a project and that site-specific data are applied. Based on the above, the Project's impact would not be cumulatively considerable and is less than significant.

Level of Significance Before Mitigation: Less than significant.

Mitigation Measures: No mitigation measures are recommended.

Level of Significance After Mitigation: Less than significant.

⁹ City of Glendale, General Plan Safety Element, 2003, p. 3-7.

¹⁰ Ibid.

Threshold: Inundation by seiche, tsunami, or mudflow.

Impact Analysis: The Project and related project sites are not in a coastal area. Therefore, tsunamis (seismic sea waves) are not considered a significant hazard at the sites. The sites are not located downslope of any large bodies of water that could adversely affect the sites in the event of earthquake-induced seiches, which are wave oscillations in an enclosed or semi-enclosed body of water. No cumulative impact related to seiche, tsunami or mudflow would occur.

Level of Significance Before Mitigation: No impact.

Mitigation Measures: No mitigation measures are recommended.

Level of Significance After Mitigation: No impact.