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## **4. ENVIRONMENTAL IMPACT ANALYSIS**

### **7. HYDROLOGY / WATER QUALITY**

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#### **1. INTRODUCTION**

This section of the Draft EIR provides an analysis of the Proposed Project's potential impacts associated with hydrology and surface water quality. Hydrology refers to the susceptibility of the Project Site to flooding and inundation based on existing conditions and any on- or off-site flooding impacts that may result due to the implementation of the Proposed Project. Changes to hydrological patterns can result from altering the permeability of the ground and physical alterations to the land that change the course of surface water runoff. Water quality refers to the quality of surface water flows leaving the site. Water quality can be affected by the introducing contaminants (e.g., oil and grease deposition from vehicles) or illicit discharge of contaminated water into nearby storm drains or receiving bodies of water such as streams, lakes, or the ocean.

#### **2. ENVIRONMENTAL SETTING**

##### **a. Regional Hydrology**

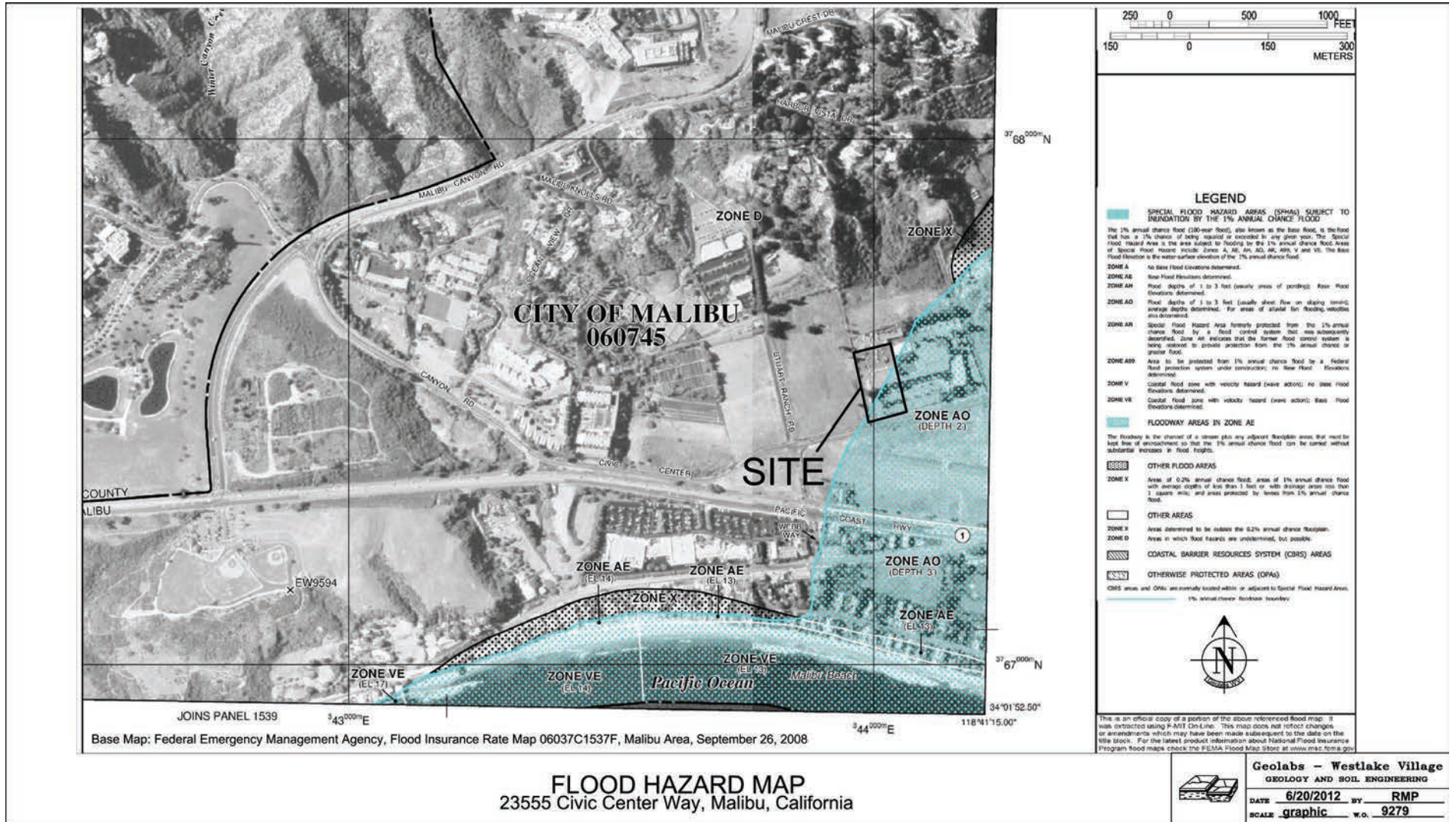
The Project Site is situated within the Malibu Creek Watershed (a sub-watershed of the larger Malibu Hydrologic Unit), which encompasses approximately 110 square miles. The tributary area to Malibu Creek is approximately 75,000 acres (115 square miles) and drains portions of the Simi Hills and Santa Monica Mountains. Malibu Creek discharges runoff directly into the Pacific Ocean.

Historically, Malibu Creek has been subject to flooding. During a storm event in March 1983, Malibu Creek experienced a peak flow rate of 24,200 cubic feet per second (cfs). Based on Federal Emergency Management Agency (FEMA) calculations, the theoretical 100-year peak flow rate for Malibu Creek is 44,900 cfs.

##### **b. Local Hydrology**

###### **(1) Flooding and Inundation**

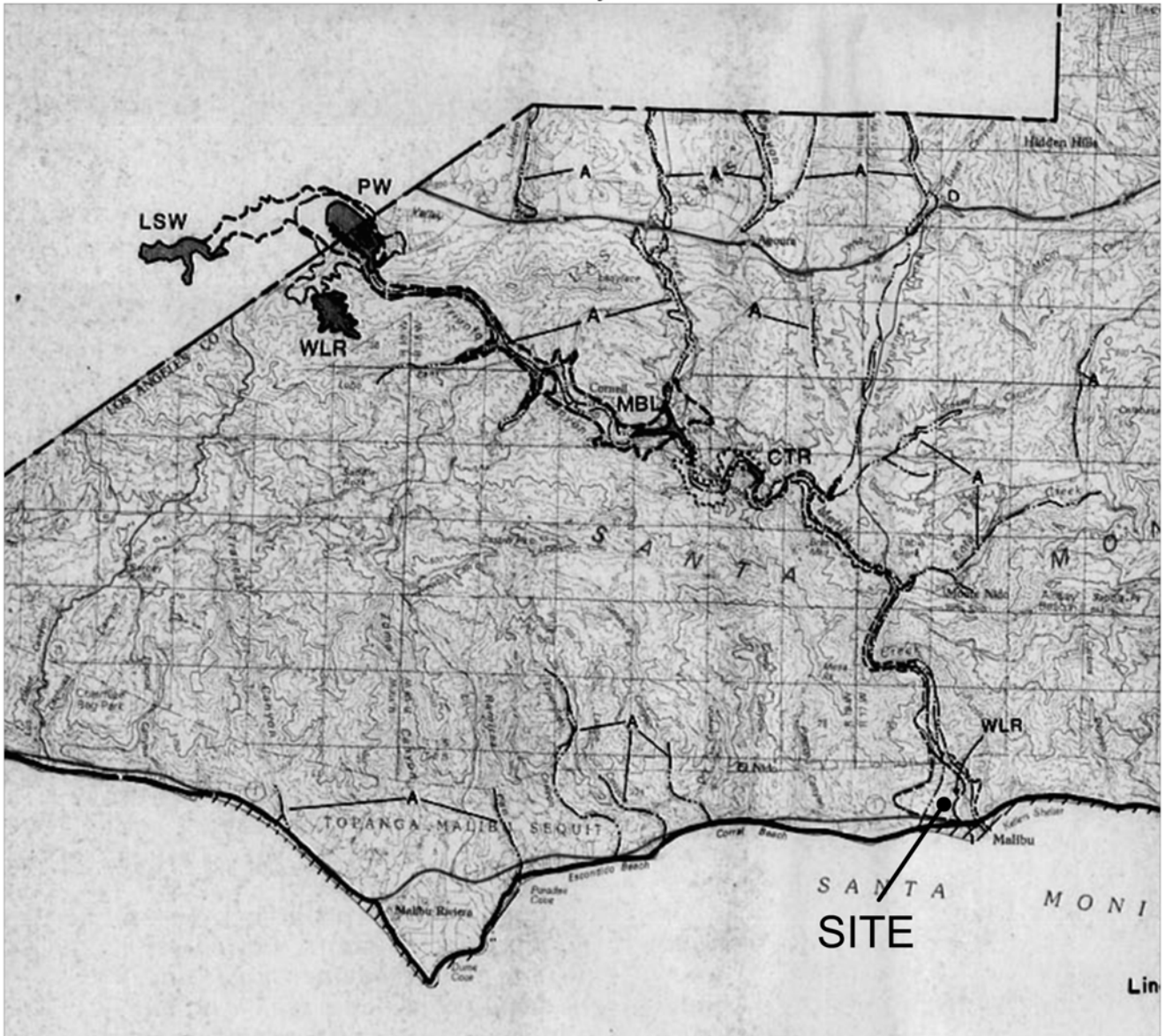
Flooding and inundation commonly happen in low-lying areas after heavy rains or in the event of a water barrier breaking (such as a levee or dam). Cities are required to identify and plan for 100-year-floods. 100-year-flood is defined as a flood event that has a 1% chance of being equaled or exceeded in any given year. Figure 4.7.1, Flood Hazard Map, below, shows the Project Site is partially located within Zone AO and could be subject to flooding and inundation with flood depths between 1 to 3 feet during a 100-year-flood event. Additionally, Figure 4.7.2, Dam Inundation Map, shows the areas around the City of Malibu that are susceptible to inundation and flooding. As seen in Figure 4.7.2, it is anticipated that the eastern side of the Project Site is affected during a 100-year-flood.



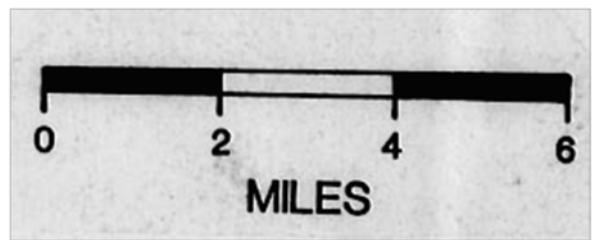
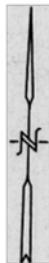
Source: GeoLabs - Westlake Village, Preliminary Geotechnical Investigation, Proposed Malibu Campus, Plate 1.8, December 13, 2013

# DAM INUNDATION MAP

23555 Civic Center Way, Malibu, California



EXPLANATION	
	TSUNAMI INUNDATION AREA
	DAM OR DEBRIS BASIN INUNDATION AREA
	DAM OR DEBRIS BASIN FLOOD BOUNDARIES
	100-YEAR FLOOD AREAS
	500-YEAR FLOOD AREAS
	NON-INUNDATED AREA



Base Map: Flood and Inundation Hazards Map  
Los Angeles County Safety Element, Plate 6



**Geolabs - Westlake Village**  
GEOLOGY AND SOIL ENGINEERING

DATE 6/20/2012 BY RMP

SCALE graphic W.O. 9279

Source: GeoLabs - Westlake Village, Preliminary Geotechnical Investigation, Proposed Malibu Campus, Plate 1.9, December 13, 2013



Figure 4.7.2  
Flood Inundation Map

Currently the Project Site is developed with a 23,882 square foot building and is improved with surface parking lots and raised median planter areas. Based on a review of Figure 2.3, Existing Site Survey, the 128,500 square foot Project Site consists of approximately 22 percent (i.e., 28,270 square feet) of permeable surface area and 78 percent (i.e., 100,230 square feet) of impermeable surface area. Drainage on the Project Site occurs through controlled sheetflow runoff from the surface parking lots towards the south portions of the Project Site, where the surface water is directed to the bio swale storm culvert on Civic Center Way.

### **(2) Tsunami and Seiche Hazards**

As noted in the Geotechnical Report prepared by GeoLabs-Westlake Village, review of the Safety Element of the City of Malibu indicates that tsunami run-up heights of up to 12± feet could be generated in the Malibu area. The low point of the Project Site is 16± feet above mean sea level, therefore the potential for a tsunami to impact the Project Site is considered low. Seiches are seismically-induced waves or oscillations within semi-enclosed bodies of water such as lakes, reservoirs, and bays. In light of the lack of significant bodies of water adjacent to the Project Site, the potential for a seiche to impact the Project Site is considered low.

### **(3) Groundwater**

Based on soil borings conducted by Geolabs –Westlake Village, groundwater was encountered in each of the three exploratory borings and cone penetrometer test (CPT) soundings at depths ranging from six feet to twenty-three feet.<sup>1</sup> In the CPT soundings, the continuous push on the rods was temporarily halted in deeper sand zones to allow for monitoring of pore pressure dissipations. The groundwater reading for the CPT soundings are based on the dissipation data. The groundwater from six feet was likely perched atop the clayey alluvium in that area. However, regional hydrological maps depict historic high groundwater at five feet below the surface in the vicinity of the Project Site.

### **(4) Water Quality**

Malibu Creek has a history of water quality impairment. The Regional Water Quality Control Board's (RWQCB) Los Angeles Region Basin Plan identifies Malibu Creek as a threatened water body and Malibu Lagoon as an impaired water body. Malibu Beach and Surfrider Beach also appear on the United States Environmental Protection Agency (U.S. EPA) list of impaired water bodies. Water quality in the Malibu Creek and Lagoon is potentially impacted by increased surface water runoff, effluent infiltration from private treatment systems, and wastewater treatment plant effluent.

Under the existing conditions, surface water runoff from the paved areas within the Project Site drain towards the south into the storm basin channel along Civic Center Way. Surface water runoff is affected by oil and grease residue deposited by vehicles parking and circulating within the paved parking areas.

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<sup>1</sup> *Preliminary Geotechnical Investigation, Proposed Malibu Campus, City of Malibu, California, Geolabs – Westlake Village, June 20, 2012 (revised December 18, 2013).*

Based on the existing development and land uses presently occurring on the Project Site, no point source water discharge activities are associated with the Project Site.

**c. Regulatory Setting**

**(1) Clean Water Act**

The 1972 amendments to the Federal Water Pollution Control Act, later referred to as the Clean Water Act (CWA), prohibit the discharge of any pollutant to navigable waters of the United States from a point source unless the discharge is authorized by a National Pollution Discharge Elimination System (NPDES) permit. In 1990, the EPA promulgated final regulations that established Phase I requirements for the NPDES program to address, among other discharges, nonpoint source discharges from large construction activities of five acres or more of land. Under Phase I of the NPDES stormwater program, stormwater discharges have been primarily regulated for (1) specific industrial categories, (2) construction sites greater than five acres, and (3) municipal separate storm sewer systems (MS4s) serving populations greater than 100,000. NPDES Phase II regulations expand the existing NPDES stormwater program (Phase I) to address stormwater discharges from small MS4s (those serving less than 100,000 persons) and construction sites that disturb one to five acres.

Under the Clean Water Act (CWA), the State of California is required to issue a list of all impaired water bodies in the State. An impaired water body, by definition provided in CWA Section 303(d), is a body of water that does not meet water quality regulations, and therefore is subject to the imposition of Total Maximum Daily Loads (TMDLs) imposed by the State Water Resources Control Board. A TMDL is the maximum amount of wastewater allowed to be discharged into a given water body each day. The State Water Resources Control Board, Division of Water Quality issues the listings of impaired water bodies, and the 1998 list identified Malibu Creek, Malibu Lagoon, Malibu Beach, and Surfrider Beach as impaired water bodies with imposed TMDLs.

**(2) Porter Cologne Water Quality Control Act**

In California, the NPDES program is administered by the State Water Resources Control Board (SWRCB) through nine RWQCBs. The SWRCB and the RWQCBs were established in 1969 by the Porter-Cologne Water Quality Control Act, the principal law governing California water quality regulation. General Construction Activity Stormwater Permits (GCASP) for Los Angeles County are administered through Region 4 - Los Angeles RWQCB. Under new regulations adopted by the LARWQCB, project applicants are required to implement a Standard Urban Stormwater Mitigation Plan (SUSMP), to ensure that stormwater pollution during the operational life of the project is addressed by incorporating "Best Management Practices" (BMPs) in the design phase of development. All projects that fall into one of seven categories are identified in the Los Angeles County MS4 Permit as requiring SUSMPs.

The Proposed Project involves the redevelopment of a surface parking lot greater than 5,000 square feet in area and is therefore subject to specific BMP to address potential water quality impacts. Parking lots contain pollutants such as heavy metals, oil and grease, and polycyclic aromatic hydrocarbons that are deposited on parking lot surfaces by motor vehicles. These pollutants are directly transported to surface waters. To minimize the offsite transport of pollutants, the following design criteria are required by the County's SUSMP manual:

- Reduce impervious land coverage of parking areas;
- Infiltrate runoff before it reaches storm drain system;
- Treat runoff before it reaches storm drain system.

BMPs are generally common sense methods for controlling, preventing, reducing or removing pollutants in urban runoff (street sweeping programs, for example). There are source-control BMPs designed to reduce or eliminate the introduction of pollutants into runoff (e.g., dry cleanup of gas fueling areas) and there are treatment BMPs designed to remove pollutants from urban runoff (e.g., straw bales to trap sediments at construction sites). Among other BMPs listed in the SUSMP, structural or treatment control BMPs selected for use at any project covered by the SUSMP are required to meet the following design standards:

A. Mitigate (infiltrate or treat) stormwater runoff from either:

- 1) The 85<sup>th</sup> percentile 24-hour runoff event determined as the maximized capture stormwater volume for the area, from the formula recommended in Urban Runoff Quality Management, WEF Manual of Practice No. 23/ ASCE Manual of Practice No. 87, (1998), or
- 2) The volume of annual runoff based on unit basin storage water quality volume, to achieve 80 percent or more volume treatment by the method recommended in California Stormwater Best Management Practices Handbook – Industrial/ Commercial, (1993), or
- 3) The volume of runoff produced from a 0.75 inch storm event, prior to its discharge to a stormwater conveyance system, or
- 4) The volume of runoff produced from a historical-record based reference 24-hour rainfall criterion for “treatment” (0.75 inch average for the Los Angeles County area) that achieves approximately the same reduction in pollutant loads achieved by the 85<sup>th</sup> percentile 24-hour runoff event, and

B. Control peak flow discharge to provide stream channel and over bank flood protection, based on flow design criteria selected by the local agency.

The City of Malibu's LCP development standards require a Water Quality Management Plan (WQMP), which is essentially a local version of the Countywide SUSMP. Pursuant to Section 17.4.3 of the LCP, all projects that require a Coastal Development Permit are required to provide post-construction plans detailing how stormwater and polluted runoff will be managed or mitigated.

### **(3) Coastal Zone Act Reauthorization Amendments**

The 1990 Coastal Zone Act Reauthorization Amendments (CZARA) identified polluted runoff as a significant factor in coastal water degradation for shore-side municipalities. To better address polluted water in the coastal zone, Congress added CZARA Section 6217, which required, among other things, the preparation of a State coastal non-point source pollution control program. The purpose of the program is to implement polluted runoff management measures and enforceable policies to restore and protect coastal waters. California's specific response to Section 6217 (the State's Coastal Non-point Pollution Control Program or "CNPCP") continues to be developed by the SWRCB and the Coastal Commission in consultation with the National Oceanographic and Atmospheric Administration (NOAA) and the EPA. It is clear that it increasingly will be incumbent upon local governments in coastal zone areas to implement more stringent water quality protection measures to address polluted runoff. The primary objectives of the CZARA program are reflected in the revised NPDES permitting requirements discussed above.

### **(4) Low Impact Development Ordinance**

The County of Los Angeles water quality regulations for development projects are contained in the County's Low Impact Development (LID) ordinance (effective, November 2008). The LID Ordinance focuses on water resources and specifies stormwater handling and treatment requirements that protect streams, groundwater, surface water quality, and natural drainage characteristics. Chapter 12.84 of the County Code requires the use of LID principles in development projects. LID encourages site sustainability and smart growth in a manner that respects and preserves the characteristics of the County's watersheds, drainage paths, water supplies, and natural resources. LID builds on conventional design strategies by using every softscape and hardscape surface in a development to perform a beneficial hydrologic function by retaining, detaining, storing, changing the timing of, or filtering stormwater and urban runoff. LID encompasses the use of structural devices, engineered systems, vegetated natural designs, and education in order to distribute stormwater and urban runoff across a development site.

### **(5) LIP Chapter 17, Water Quality Protection**

The City of Malibu's water quality regulations are embodied in Chapter 17, Water Quality Protection of the Local Implementation Plan (LIP). LIP Chapter 17 provides application submittal requirements, development standards, and other measures to ensure that new development is sited and designed to conserve natural drainage features and vegetation, to prevent the introduction of pollutants into coastal waters, and to protect the overall quality of coastal waters and resources. LIP Chapter 17 states that all development should consider site design, source-control, and treatment control BMPs to prevent polluted runoff and water quality impacts resulting from development. In addition, projects should be designed to control post development peak runoff rates and volumes to maintain or reduce predevelopment downstream erosion rates.

### 3. ENVIRONMENTAL IMPACTS

#### a. Thresholds of Significance

The City of Malibu General Plan EIR considers the impacts created by the Proposed Project significant if implementation would result in:

- Significant adverse changes to the quantity and/or quality of water in local streams, creeks and/or rivers due to any of the following:
  - Changes in currents, or the course or direction of water movements, in either marine or fresh waters resulting from:
    - Additional coverage by impervious surfaces;
    - Altered drainage ways; and
    - Increase in total annual, monthly and peak surface runoff.
- Alteration in the direction or rate of flow of ground waters;
- Increased runoff volumes that exceed the capacity of storm drain facilities, cause downstream or off-site drainage problems, or alter inflows to an adjacent wetland to the extent that there is a net degradation of functions and values of aquatic habitat;
- Stormwater discharges that exceed established water quality standards, increase erosion and sedimentation, or endanger aquatic habitats;
- The change in water quality in an area of special biological significance (such as an SEA, ESHA, SERA) and other resources identified in the Malibu General Plan.

Additionally, the CEQA Guidelines identifies the following criteria for determining whether a project's impacts are considered to have a significant effect on the environment. A project is considered to have significant impacts if implementation of the project would:

#### *Drainage*

- 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 that would result in flooding on-site or off-site.
- Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems to provide substantial additional sources of polluted runoff.

#### *Flooding*

- 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 flow.
- Expose people or structures to a significant risk, loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam.



- Result in inundation by seiche, tsunami, or mudflow.

#### ***Groundwater Recharge***

- Substantially deplete groundwater supplies, or interfere substantially with groundwater recharge such that there would be net deficit in aquifer volume or a lowering of the local groundwater table.

#### ***Water Quality***

- Violate any water quality standards or waste discharge requirements.
- Otherwise substantially degrade water quality.

### **b. Project Impacts**

#### **(1) Hydrology/Flooding**

The Proposed Project includes the demolition of the existing Sheriff's Station and the construction of a 19,670 square foot community college facility and a 5,640 square foot Sheriff's Substation in the same general footprint. Construction of the Proposed Project would require excavation of the foundation and basement level of the existing Sheriff's Station that is proposed for demolition. Approximately 4,200 cy of soil is anticipated to be imported during the earthwork phase. Upon completion, the finished floors of the Proposed Project would be elevated above the flood level and would not be prone to flooding. Thus, construction of the Proposed Project would not expose people or structures to a significant risk, loss, injury, or death involving flooding. Therefore, potential impacts associated with flooding hazards would be considered less than significant impact.

#### **(2) Drainage and Water Runoff**

The Project would alter the existing configuration of the surface parking lot, which in turn would alter the surface water flows within the Project Site. As indicated on the proposed Site Plan (See Figure 2.4 in Section 2.0, Project Description), surface water runoff would continue to be directed through the Project Site's surface parking lot areas and into adjacent stormwater bio swale along Civic Center Way. The volume of surface water runoff from the Project Site is expected to decrease as a result of the Proposed Project. As mandated by the LCP, approximately 25% of the total lot area will be improved with landscaping and 0.5% of the total lot area will consist of permeable paving. Combined, approximately 40,779 square feet of the Project Site will consist of permeable surface area. As compared to the existing conditions, the Project will increase the site's permeable surface area by approximately 12,800 square feet, an increase of approximately 46%. Thus, construction of the Proposed Project would not substantially increase the rate or amount of surface runoff in a manner that would result in flooding on-site or off-site. Therefore, drainage impacts would be considered less than significant impact.

**(3) Water Quality****(a) Construction Impacts**

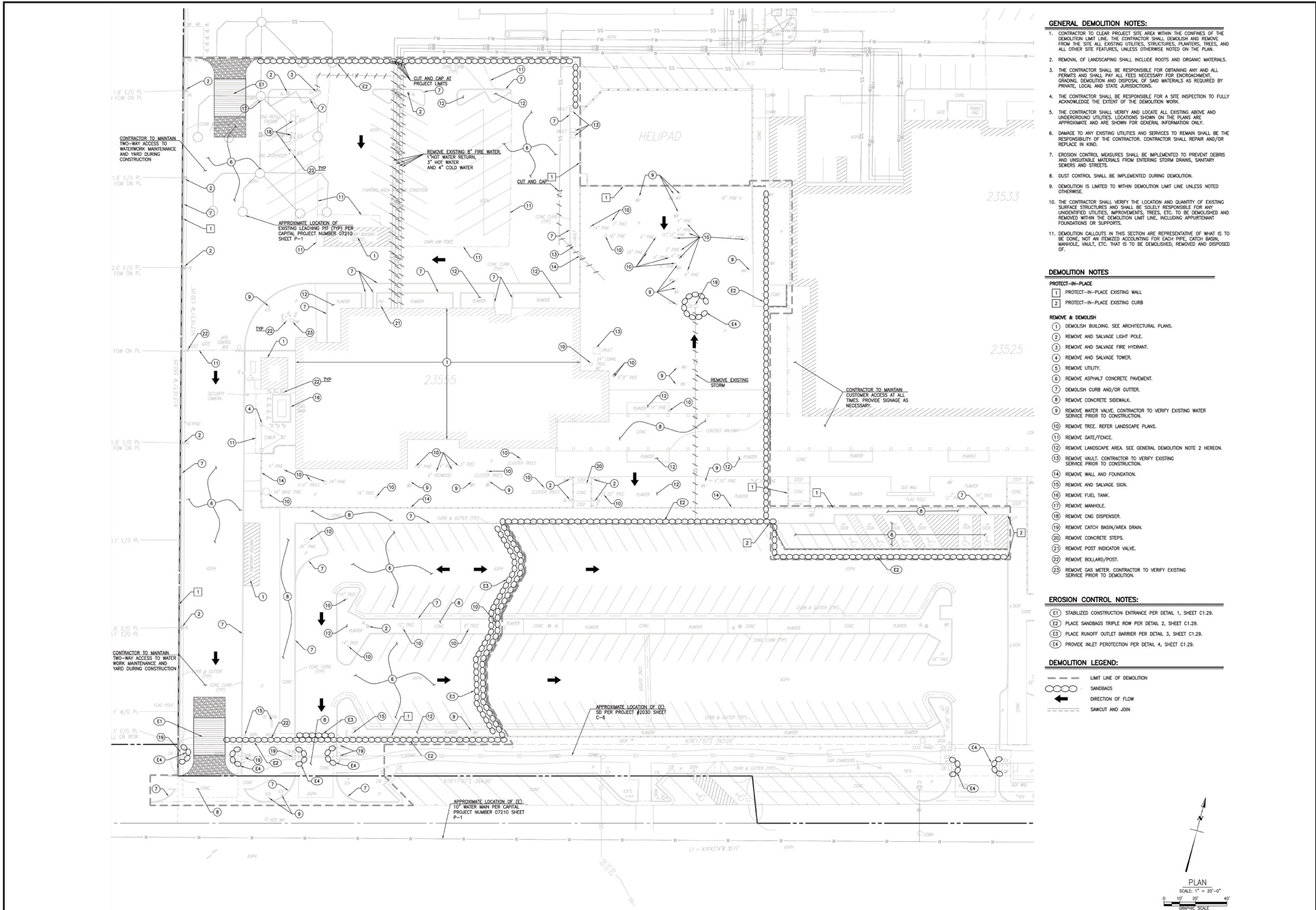
A significant impact may occur if a project is built on a site that has exposed soils that would be susceptible to weathering and erosion contributing to topsoil loss and sedimentation of local waters. The Project Site is currently occupied by a former Sheriff's Substation, surface parking areas, and a small interior courtyard with landscaping; therefore, there is little exposed soil that would be susceptible to weathering and erosion. As shown in Figure 4.7.3, Demolition and Erosion Control Plan, construction of the Proposed Project will entail demolition of the existing structure and surface grading and re-countouring of the surface parking lot throughout the Project Site. As shown, the Proposed Project would be designed with BMPs to comply with the Construction General Permit Water Quality Order 2009-0009-DWQ as amended by Order No. 2010-0014-DWQ to prevent short-term construction-induced water quality impacts resulting from erosion and sedimentation issues. Similarly, as a regulatory requirement, the Project requires the preparation of a Stormwater Pollution and Prevention Plan (SWPPP) because construction activities would disturb more than one acre of land. The SWPPP would address construction impacts, especially during soil disturbing activities when soils are exposed to wind, rain and concentrated flows that could cause erosion. Implementation of Mitigation Measure WQ-1 will ensure appropriate and effective BMPs are implemented during construction to minimize soil erosion and the transmission of sediment into the City's separate storm drain system. Therefore, construction impacts upon water quality would be less than significant.

**(b) Operational Impacts**

Post-development stormwater runoff has the potential to contribute pollutants to the stormwater conveyance system and ultimately to the ocean. The quality of stormwater is generally affected by the length of time since the last rainfall, the rainfall intensity, the urban uses of the area, and the quantity of transported sediment. The EPA considers street and parking lot surfaces to be the primary source of stormwater pollution in urban areas. Post-construction phase water quality BMPs are required as stated in Section 17.4.2 of the LCP. Section 17.4.2 of the LCP requires post-construction plans detailing how stormwater and polluted runoff will be managed or mitigated during the life of the project. A WQMP is required for all development that requires a Coastal Development Permit and shall require the implementation of appropriate site design and source control BMPs from Section 17.6 of the LIP and Appendix A to minimize or prevent post-construction polluted runoff. With the preparation, approval and successful implementation of a WQMP, impacts to water quality would be mitigated less than significant levels.

**(4) Groundwater**

Construction of the Proposed Project would require excavation of the foundation and basement level of the existing Sheriff's Station that is proposed for demolition. Excavations would not extend deeper than required to remove the existing basement level and would be filled with approximately 4,200 cy of soil to



Source: Quatro Design Group, July 21, 2014.



Figure 4.7.3  
Demolition and Erosion Control Plan

raise the finished floor to a surface elevation of 23 feet. Thus, the Proposed Project will not include deep excavations into the groundwater table. Therefore, impacts to groundwater would be less than significant.

#### **4. CUMULATIVE IMPACTS**

Development of the Proposed Project in conjunction with the related projects identified in Section 3.0, Environmental Setting, would result in the further infilling of uses in the City. Development of the related projects would result in additional cumulative surface water runoff with urban water pollutants (i.e., oil, grease and sedimentation). However, similar to the Proposed Project, in accordance with the City's Local Coastal Plan- Local Implementation Plan (LCP-LIP), each related project would be required to develop a water quality mitigation plan (WQMP) to reduce impacts upon water quality. The Proposed Project would not expose people or structures to a significant risk, loss, injury, or death involving flooding, would not substantially increase the rate or amount of surface runoff in a manner that would result in flooding on-site or off-site, and would result in less than significant impact with respect to the volume and quality of surface water runoff. Therefore, the Proposed Project's contribution to cumulative wastewater impacts would be less than significant.

#### **5. MITIGATION MEASURES**

The following mitigation measures are required to mitigate any significant hydrology or water quality impacts:

WQ-1: The Project shall comply with all applicable City and County Low/Impact Development water quality requirements. The Proposed Project shall be designed and constructed in accordance with the Construction General Permit Water Quality Order 2009-0009-DWQ as amended by Order No. 2010-0014-DWQ. The Applicant shall submit a Stormwater Pollution and Prevention Plan (SWPPP) to the appropriate governing agency.

WQ-2 Prior to the start of any construction activity, SMC or its contractor shall submit a Water Quality Management Plan (WQMP) to the satisfaction of the City of Malibu that incorporates appropriate site design and source control BMPs from Section 17.6 of the LIP and Appendix A to minimize or prevent post-construction polluted runoff.

#### **6. LEVEL OF SIGNIFICANCE AFTER MITIGATION**

With implementation of the mitigation measures listed above, impacts to hydrology and water quality would be less than significant.